Lyme and Other Tickborne Illnesses 2023 Annual Report

Pursuant to Title 22 MRS §1645

Submitted to the Joint Standing Committees on
Health and Human Services and
Health Coverage, Insurance, and Financial Services

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Executive Summary

Pursuant to 22 MRS section 1645, the Department of Health and Human Services Maine Center for Disease Control and Prevention (Maine CDC) annually reports out information on Lyme disease and other tickborne illnesses in Maine, including incidence rates, recommendations related to the prevention and treatment, and related program activities.

Lyme disease is one of the tickborne diseases designated as a notifiable condition in the State of Maine requiring reporting to the Department as means of surveillance, in accordance with rule 10-144 CMR chapter 258[1]. The goal of tick-related disease surveillance is to help define demographic, geographic, and seasonal distribution; monitor disease trends; identify risk factors for transmission; and promote prevention and education efforts among the public and medical communities. An epidemiologist classifies reported cases as *probable*, *suspect*, and *not a case* based on laboratory testing interpreted using criteria established by the Council of State and Territorial Epidemiologists[2]. The surveillance case definition is not intended to be used in clinical diagnosis. Lyme disease surveillance is passive, dependent upon reporting, and therefore likely to be an under-representation of the true burden of Lyme disease in Maine. The U.S. CDC released an updated statement in 2021 that the true burden of Lyme disease may be more than ten times the number of reported cases. In 2022, they estimated that the aggregate cost of diagnosed Lyme disease alone could be $345-968 million to U.S. society[3].

Maine Tickborne Disease Summary, 2023

- 2,943 probable cases of Lyme disease (preliminary data as of March 13, 2024)
- 777 confirmed and probable cases of anaplasmosis (preliminary data as of March 13, 2024)
- 195 confirmed and probable cases of babesiosis (preliminary data as of March 13, 2024)
- 14 confirmed and probable cases of Hard Tick Relapsing Fever (preliminary data as of March 13, 2024)
- 7 confirmed cases of Powassan virus disease (preliminary data as of March 13, 2024)

[1] 10-144 CMR c. 258, Control of Notifiable Diseases and Conditions Rule, https://www.maine.gov/sos/cec/rules/10/144/144c258.docx

[2] Council of State and Territorial Epidemiologists (CSTE) promotes the effective use of epidemiologic data to guide public health practice and improve health. CSTE accomplishes this by supporting the use of effective public health surveillance and good epidemiologic practice through training, capacity development, and peer consultation, developing standards for practice, and advocating for resources and scientifically based policy. https://www.cste.org/

[3] US CDC, Understanding Lyme and other Tickborne Diseases; https://www.cdc.gov/ncezid/dvbd/media/lyme-tickborne-diseases-increasing.html

Introduction and Background

Public law 2007 chapter 561, An Act to Implement the Recommendations of the Joint Standing Committee on Insurance and Financial Services Regarding Reporting on Lyme Disease and Other Tickborne Illnesses, was enacted by Maine's 123rd Legislature. This law directs Maine Center for Disease Control and Prevention (Maine CDC) to monitor, review and evaluate Lyme disease and other tick-borne illnesses in the State.

Annually, the Maine CDC is required to report to the joint standing committee of the Legislature having jurisdiction over health and human services matters and the joint standing committee of the Legislature having jurisdiction over health insurance matters. The report is to include information on Lyme disease, including incidence rates, treatment recommendations and other public awareness activities, and summaries of recent related studies and legislation enacted across the nation.

Title 22 §1645 requires Maine CDC to report on:

I. The incidence of Lyme disease and other tickborne illness in Maine;
II. The diagnosis and treatment guidelines for Lyme disease recommended by Maine Center for Disease Control and Prevention and the United States Department of Health and Human Services, Centers for Disease Control and Prevention;
III. A summary or bibliography of peer-reviewed medical literature and studies related to the surveillance, diagnosis, medical management, and treatment of Lyme disease and other tickborne illnesses, including, but not limited to, the recognition of chronic Lyme disease and the use of long-term antibiotic treatment;
IV. The education, training, and guidance provided by Maine Center for Disease Control and Prevention to healthcare professionals on the current methods of diagnosing and treating Lyme disease and other tickborne illnesses;
V. The education and public awareness activities conducted by Maine Center for Disease Control and Prevention for the prevention of Lyme disease and other tickborne illnesses; and
VI. A summary of the laws of other states enacted during the last year related to the diagnosis, treatment, and insurance coverage for Lyme disease and other tickborne illnesses based on resources made available by the federal Centers for Disease Control and Prevention or other organizations.

This is the fifteenth annual report to the Legislature and includes an update on activities conducted during 2023.

I. The incidence of Lyme disease and other tickborne illness in Maine

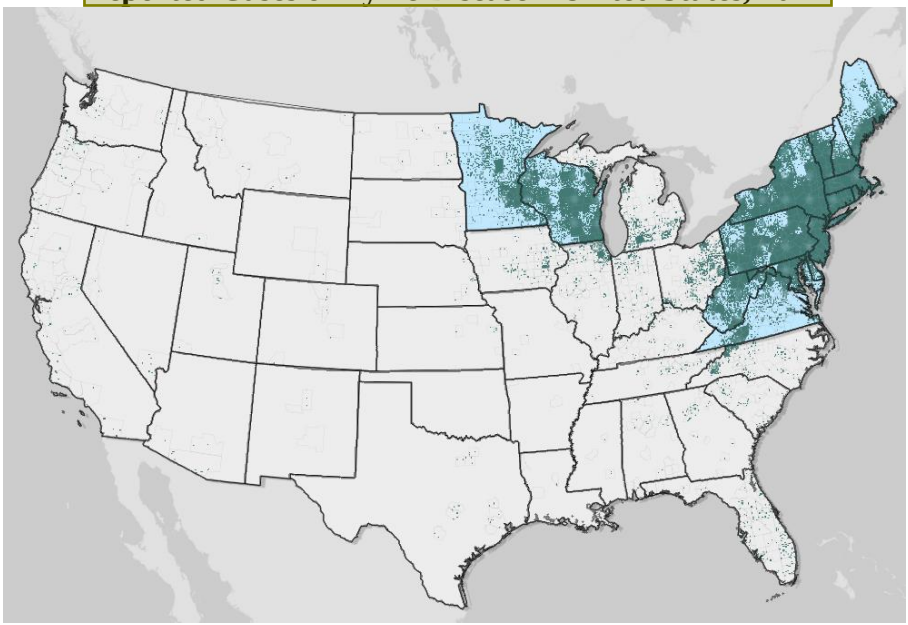
Lyme disease

Lyme disease is caused by the spiral-shaped bacteria *Borrelia burgdorferi*, and in rare cases by *Borrelia mayonii*. Two species of North American ticks, the deer or blacklegged tick (*Ixodes scapularis*) and the western blacklegged tick (*Ixodes pacificus*) can spread these pathogens to humans when they bite. Symptoms of Lyme disease caused by *B. burgdorferi* include the formation of a characteristic expanding rash (*erythema migrans*) that usually appears 3 to 30 days after exposure and may appear on any area of the body. Fever, headache, joint and muscle pains, and fatigue are also common during the first several weeks. Later features of Lyme disease can include arthritis in one or more joints (often the knee), facial palsy, meningitis, and carditis (AV block). Lyme disease is rarely fatal. The great majority of Lyme disease cases can be treated very effectively with oral antibiotics for ten days to a few weeks. Some cases of Lyme disease which affect the nervous system, joints, or heart may need intravenous antibiotics for up to 28 days.

In 2013, scientists at the Mayo Clinic discovered *B. mayonii* while testing blood from patients thought to have Lyme disease with *B. burgdorferi* infection. Instead, they found a new bacterium that is also transmitted by deer ticks. Currently, *B. mayonii* is only found in the Upper Midwest and is not thought to infect ticks in Maine. *Borrelia mayonii* causes a similar illness to *B. burgdorferi*, but can also cause nausea and vomiting; large, widespread rashes; and a higher concentration of bacteria in the blood. Lyme disease caused by *B. mayonii* can be diagnosed with the same tests used to identify Lyme disease due to *B. burgdorferi* infection and treated with the same antibiotics.

In the United States, the highest rates of Lyme disease occur across the eastern seaboard (Maryland to Maine) and in the upper Midwest (Wisconsin and Minnesota), with the onset of most cases occurring during the summer months. Where they are endemic, deer ticks are most abundant in wooded, leafy, and brushy areas ("tick habitat"), especially where deer populations are large.

Reported Cases of Lyme Disease – United States, 2022



One dot placed randomly within county of residence for each confirmed case. High incidence states highlighted in light blue. Source: U.S. CDC (www.cdc.gov/lyme/datasurveillance/index.html)

Healthcare providers documented the first case of Maine-acquired Lyme disease in 1986. In the 1990s the great majority of Lyme disease cases occurred among residents of south coastal Maine, principally in York County. Currently the Midcoast and Downeast areas have the highest incidence of Lyme disease in the state. Based on 2023 data, eight counties have rates of Lyme disease higher than the State rate (Franklin, Hancock, Knox, Lincoln, Sagadahoc, Somerset, Waldo, and Washington).

In 2023, (preliminary data as of March 13, 2024) providers reported 2,943 probable cases of Lyme disease among Maine residents, which is a rate of 212.4 cases of Lyme disease per 100,000 persons in Maine. This is a 11% increase from the 2,652 cases in 2022. Twenty-nine percent (29%) of reported cases were from the Midcoast counties (Knox, Lincoln, Sagadahoc, and Waldo) and 13% were from the Downeast counties (Hancock and Washington).

Forty-two percent (42%) of cases were female and 58% of cases were male. The median age of cases in 2023 was 59 years of age (average age of 51 years). The age at diagnosis ranged from 2 to greater than 85 years of age. For further Lyme disease statistics in Maine, please see Appendix 1.

Anaplasmosis

Anaplasmosis is a disease caused by the bacterium *Anaplasma phagocytophilum*, which infects white blood cells (neutrophils). Anaplasmosis was previously known as human granulocytic ehrlichiosis (HGE) or human granulocytic anaplasmosis (HGA) but the name changed in 2008 to differentiate between two different organisms that cause similar diseases (anaplasmosis and ehrlichiosis). Signs and symptoms of anaplasmosis include fever, headache, malaise, and body aches. Nervous system involvement may occur but is rare. Later features of anaplasmosis can include respiratory failure, bleeding problems, organ failure, and death. Anaplasmosis is transmitted to a person through the bite of an infected deer tick. As of March 13, 2024, Maine reported 777 confirmed and probable cases of anaplasmosis in 2023, a 6% decrease from the 824 cases in 2023. Cases occurred in every county in Maine except Aroostook County. For further anaplasmosis disease statistics in Maine, please see Appendix 2.

Babesiosis

Babesiosis is a potentially severe tickborne disease transmitted through the bite of an infected deer tick. Signs of babesiosis range from no symptoms (asymptomatic) to serious disease. Common symptoms include extreme fatigue, aches, fever, chills, sweating, body aches, dark urine, and anemia. Infected people generally make a full recovery if they have a healthy spleen and do not have other diseases that prevent them from fighting infections. As of March 13, 2024, Maine reported 195 confirmed and probable cases of babesiosis in 2023, a 2% increase from the 193 cases in 2023. Cases occurred in every county in Maine. For further babesiosis disease statistics in Maine please see Appendix 2.

Hard Tick Relapsing Fever

Hard Tick Relapsing Fever (HTRF), previously referred to as *Borrelia miyamotoi* disease, is caused by a species of spiral-shaped bacteria, called *B. miyamotoi*, that is closely related to the bacteria that causes tickborne relapsing fever (TBRF). It is more distantly related to the bacteria that causes Lyme disease. First identified in 1995 in ticks from Japan, two species of North American ticks carry *B. miyamotoi*, the deer or blacklegged tick and the western blacklegged tick. Common symptoms include fever, chills, headache, joint pain, and fatigue. Although HTRF is not nationally notifiable, U.S. CDC, in association with endemic states, developed a case classification to standardize reporting and understand the

prevalence in the United States. Hard Tick Relapsing Fever is a notifiable condition in Maine. As of March 13, 2024, Maine reported 14 probable or confirmed cases of HTRF in 2023 in Maine. Cases occurred in Androscoggin, Cumberland, Hancock, Kennebec, Knox, Penobscot, Sagadahoc, and York counties. For further HTRF statistics in Maine, please see Appendix 2.

Ehrlichiosis

Ehrlichiosis is a disease caused by the bacteria *Ehrlichia chaffeensis* and *Ehrlichia ewingii* which infect white blood cells (monocytes and granulocytes). In the United States, *E. chaffeensis* causes most cases. Ehrlichiosis was previously known as human monocytic ehrlichiosis (HME). Signs and symptoms of ehrlichiosis include fever, headache, nausea, and body aches. A rash may develop, especially in children. Severe illness, especially when treatment is delayed, may include encephalitis/meningitis, kidney failure, and liver failure. *Ehrlichia chaffeensis* and *E. ewingii* spread to a person through the bite of an infected lone star tick (*Amblyomma americanum*). This tick does not currently live in Maine, so ehrlichiosis is uncommon. However, as lone star tick populations continue to creep northward, this disease may become more common in Maine in the future. At present, most cases detected in Maine are due to exposure to infected ticks during travel to an endemic state. As of March 13, 2024, Maine reported three confirmed and probable cases of ehrlichiosis in 2023 from Kennebec and Sagadahoc counties. Maine had no reports of *Ehrlichia/Anaplasma* Undetermined in 2023, which occurs when serologic testing results in titers that are the same for both *Ehrlichia* and *Anaplasma*, making it impossible to determine which organism was present. For further ehrlichiosis disease statistics in Maine please see Appendix 2.

Powassan virus disease

Two viruses cause Powassan virus disease, Powassan virus and deer tick virus, which are transmitted to humans through the bite of an infected woodchuck tick (*Ixodes cookei*) or deer tick, respectively. Signs and symptoms of Powassan virus disease include fever, headache, vomiting, weakness, confusion, seizures, and memory loss. Long-term neurologic problems may occur. As of March 13, 2024, Maine reported seven confirmed case of Powassan encephalitis in Maine in 2023. This is a record number of Powassan virus diseases cases in Maine. These cases occurred in Androscoggin, Kennebec, Oxford, Sagadahoc, Waldo, and York counties.

Spotted fever rickettsiosis

Spotted Fever Rickettsioses (SFR) are a group of bacterial illnesses, the most common of which is Rocky Mountain Spotted Fever (RMSF), caused by the bacterium *Rickettsia rickettsii*. Signs and symptoms of RMSF include fever, chills, headache, gastrointestinal symptoms, and a non-itchy spotted rash (called maculopapular) often on the palms and the soles of the feet. Other spotted fever rickettsioses show similar symptoms, including fever, headache, and rash, and may also feature a dark scab at the site of the tick bite (known as an eschar). Rocky Mountain Spotted Fever is transmitted to a person through the bite of an infected American dog tick (*Dermacentor variabilis*) in most of the U.S. Rocky Mountain Spotted Fever is not known to be endemic in Maine but could emerge, as American dog ticks are commonly found across the state. As of March 13, 2024, Maine reported no probable case of SFR in 2023. For further SFR disease statistics in Maine please see Appendix 2.

Alpha-gal syndrome

While not an infectious disease, alpha-gal syndrome (AGS) is an allergic condition associated with tick bites. Alpha-gal (galactose-α-1,3-galactose) is a sugar molecule found on the muscle tissue of most

mammals, but not in humans. Alpha-gal can be found in red meat (pork, beef, rabbit, lamb, venison, etc.) and products made from mammal tissues (including gelatin, milk, milk products, and some medical products). Alpha-gal syndrome is a potentially life-threatening allergic condition, also known as red meat allergy. People with AGS experience symptoms after eating red meat or being exposed to other mammal products. Symptoms are similar to other food allergies and can include hives or itchy rash, cough or difficulty breathing, swelling of the throat or face, severe stomach pain, indigestion, diarrhea, among others. In the United States, AGS is associated with lone star tick bites. The lone star tick is not believed to be established in Maine, currently, though populations are moving up the east coast and are established in southern Massachusetts. Alpha-gal syndrome is not presently a reportable condition, either in Maine or nationally.

Other emerging tickborne diseases

U.S. CDC and other researchers are continually on the watch for new or emerging tickborne diseases. Pathogens emerging in the United States include Bourbon virus, Colorado Tick Fever virus, Heartland virus, and *Ehrlichia muris eauclairensis*. While Maine has no documented cases of any of these diseases, there is serological evidence from whitetail deer of Heartland virus in Maine. Several of these pathogens are transmitted by ticks that already live in Maine or may move into Maine in the future, so Maine CDC monitors these pathogens. Maine CDC also continues to monitor regional surveillance for the expansion of lone star and longhorned tick (*Haemaphysalis longicornis)* populations into the Northeast.

II. The diagnosis and treatment guidelines for Lyme disease recommended by Maine Center for Disease Control and Prevention and the United States Department of Health and Human Services, Centers for Disease Control and Prevention

Maine CDC continues to adhere to the strongest science-based source of information for the diagnosis and treatment of any infectious disease of public health significance. Nationally, the Infectious Disease Society of America (IDSA) is the leader in setting the standard for clinical practice guidelines on Lyme disease and other tickborne illnesses.

Lyme disease is diagnosed clinically with the aid of laboratory testing. An *erythema migrans* (bullseye rash) on a person from an endemic area is distinctive enough to allow a clinical diagnosis in the absence of laboratory confirmation. Patients should be treated based on clinical findings. Either a standardized or modified two-tier testing algorithm (STTT or MTTT, respectively) is recommended for laboratory testing. With STTT, the first tier includes an enzyme immunoassay (EIA) or immunofluorescence assay (IFA). If this first tier is positive or equivocal, an IgM and/or IgG Immunoblot follows. The IgM Immunoblot is only considered reliable if the person is tested within the first 30 days after symptom onset. With MTTT, the first tier uses an EIA, similar to STTT. If positive or equivocal, a second EIA follows. Acute and convalescent testing, or testing run on samples collected during illness and after recovery, is useful to determine final diagnosis. Providers should consider other potential diagnoses for untreated patients who remain seronegative despite having symptoms for 6-8 weeks, as they are unlikely to have Lyme disease. A diagnosis of Lyme disease made by a clinician may or may not meet the federal surveillance case definition, and therefore may not always be counted as a case. Maine CDC refers physicians with questions about diagnosis to the IDSA guidelines: www.idsociety.org/practice-guideline/lyme-disease/.

In 2015, IDSA convened a panel to assess and update guidelines for the treatment and prevention of Lyme disease and other tickborne diseases. The results from this panel were published in the 2020 Lyme disease guidelines found at www.idsociety.org/practice-guideline/lyme-disease/. This panel affirmed "the term 'chronic Lyme disease' as currently used lacks an accepted definition for either clinical use or scientific study." Currently, U.S. CDC recognizes Post-Treatment Lyme Disease Syndrome (PTLDS), defined as symptoms of pain, fatigue, or difficulty thinking that lasts for more than 6 months after completion of Lyme disease treatment (https://www.cdc.gov/lyme/postlds/index.html). There is no proven treatment for PTLDS, but U.S. CDC notes that patients with PTLDS usually get better over time, though this may take many months. The 2015 panel also noted "[Studies] of persistent symptomatology after treatment of verified Lyme disease have found that prolonged antimicrobial therapy is not helpful and may cause harm. From this, one can infer that prolonged antibiotic treatment is unlikely to benefit individuals who lack a verifiable history of Lyme disease while exposing them to significant risk."

III. A Summary or bibliography of peer reviewed medical literature and studies related to the surveillance, diagnosis, medical management, and the treatment of Lyme disease and other tickborne illnesses, including, but not limited to, the recognition of chronic Lyme disease and the use of long-term antibiotic treatment

A bibliography of peer reviewed journal articles published in 2023, as related to surveillance, diagnostics, medical management, treatment, and other topics relevant in Maine for Lyme and other tickborne illnesses is included in Appendix 3. Maine CDC reviews these journal articles to maintain an understanding of the current research and literature available on Lyme and other tickborne diseases.

IV. The education, training, and guidance provided by Maine Center for Disease Control and Prevention to healthcare professionals on the current methods of diagnosing and treating Lyme disease and other tickborne illnesses

Maine CDC continues to emphasize prevention and control of Lyme disease and other tickborne diseases. The Division of Disease Surveillance Infectious Disease Epidemiology Program conducts surveillance for tickborne diseases, since anaplasmosis, babesiosis, ehrlichiosis, Hard Tick Relapsing Fever (*B. miyamotoi* disease), Lyme disease, Powassan virus disease, and spotted fever rickettsiosis are notifiable by both medical practitioners and clinical laboratories. Reporting clinicians must submit subsequent clinical and laboratory information following the initial report. Maine CDC also monitors tickborne diseases through syndromic surveillance. By querying participating hospital emergency department (ED) patient visit data, Maine CDC can identify patients that complain of a tick bite. An increase in ED visits for tick bites is usually a precursor for the typical seasonal increase in incidences of Lyme and other tickborne diseases. A comparison of 2021, 2022, and 2023 syndromic data is included in Appendix 4. Maine CDC displays 2023 Lyme disease surveillance data at the county level in Appendix 5, showing the geographic spread of the disease in Maine.

Outreach and education to clinicians and other healthcare providers is ongoing. Maine CDC epidemiologists provide consultation to the medical community on tickborne diseases and conditions, offering educational and preventive information as needed. Maine CDC epidemiologists present educational outreach activities and seminars on tickborne disease prevention targeting the medical community at statewide meetings of school nurses and others. During 2023, Maine CDC Infectious Disease Epidemiology Program mailed a clinical management guide, "Tickborne Diseases of the United

States: A Reference Manual for Healthcare Providers," to hospitals, urgent care providers, and pediatricians. This guide includes information on ticks found in the US and signs/symptoms, laboratory services, diagnosis, and treatment of twelve tickborne diseases, including Lyme disease. Maine CDC distributed 421 copies of this guide in 2023.

Maine CDC continues to contribute to national surveillance and prevention activities. During 2023, epidemiologists from Maine CDC represented the State at national and regional meetings:

- CDC Vector Day Conference, January 2023
- CDC High Incidence Lyme and Tickborne Diseases Meeting, New Jersey, March 2023
- Northeast Regional Center for Excellence in Vectorborne Diseases Annual Meeting, April 2023
- Council of State and Territorial Epidemiologists (CSTE) Annual Conference, Utah, June 2023
- United States Geological Survey (USGS) Tick Decision Support Workshop, West Virginia, September 2023
- Region 1 Collaborative Call: Mosquito and Tickborne Diseases, September 2023
- Northeast Epidemiology Conference, Connecticut, November 2023
- National Academy of Sciences Workshop: Mitigating Arboviral Threats and Strengthening Public Health Preparedness, December 2023
- Northeast Regional Center for Excellence in Vectorborne Diseases Arbovirus Situational Awareness Calls (weekly)
- USDA National Asian Longhorned Tick Stakeholder Calls (monthly)
- National Association of Vectorborne Disease Control Officials (NAVCO) Board Meetings (throughout the year)
- NAVCO Regional Calls (throughout the year)
- NAVCO Membership Calls (throughout the year)
- New England Center of Excellence in Vectorborne Diseases (NEWVEC) Stakeholder Advisory Council (throughout the year)

Maine Epidemiologists are active contributors in federal working groups on:

- Alpha-gal allergy (monthly)
- Babesiosis Case Definition Working Group

V. The education and public awareness activities conducted by Maine Center for Disease Control and Prevention for the prevention of Lyme disease and other tickborne illnesses

Maine CDC promotes ongoing educational outreach activities targeting the public and Maine municipalities. During 2023, Maine CDC epidemiologists provided consultation to the public on tickborne diseases and conditions, offering educational and preventive information as needed. Maine CDC epidemiologists presented educational outreach activities and seminars on tickborne disease prevention to the general public including:

- One presentation to community members and two presentations to health care providers
- Three tabling events for community members at Kittery Trading Post, LL Bean, and Maine 4-H Days
- Six media interviews given by Maine CDC employees (Infectious Disease Epidemiology Program Director and Vectorborne Disease Health Educator

Maine CDC's Infectious Disease Epidemiology Program Director chairs the State Vectorborne Disease Work Group; a group comprising both state agencies and private entities, which meets on a bimonthly basis to proactively address surveillance, prevention, and control strategies. Members of this group include Maine Department of Health and Human Services; Maine Department of Agriculture, Conservation, and Forestry; Maine Department of Inland Fisheries and Wildlife; Maine Department of Education; Maine Department of Environmental Protection; Maine Forest Service; University of Maine Cooperative Extension Services; and the United States Department of Agriculture. A full list of members can be found in Appendix 6. Educational efforts by the Vectorborne Work Group in 2023 included:

- Presentations given on ticks and tickborne diseases
- Presence in radio and television interviews
- Distribution of educational materials including Lyme brochures, tick spoons, fact sheets, etc.
- Participation in a Decision Workshop hosted by United States Geological Survey (USGS) to discuss challenges and feasibility of Vector Control District creation.

Maine CDC maintains an educational curriculum aimed at teaching students in grades 3 through 8 about tick biology and ecology, tickborne diseases, and tick prevention. The program consists of a twenty-minute PowerPoint presentation on tick biology, ecology, and tickborne disease information; four ten-minute interactive activities; and a take-home packet with games, activities, and information for parents. Maine CDC's interactive workbook called "Take Back Your Yard! A workbook for kids to fight the bite!" is also available with the curriculum. This workbook is designed for students in grades 3 through 5 grades to work with an adult parent/guardian to identify and remove tick and mosquito habitat around their homes to prevent vectorborne diseases.

Maine CDC works with Maine DOE to share this curriculum with school nurses and administrators throughout the State.

- The school curriculum webpage (www.maine.gov/dhhs/schoolcurricula) recorded 558 unique pageviews in 2023.

May through July 2023, Maine CDC ran a Social Media Campaign. This campaign consisted of a series of static ads and short videos on Facebook, Instagram, and Twitter. Static ads and videos focused on tick identification, recognition of different life stages of the deer tick (especially nymphs and adults), bite prevention, symptoms of tickborne diseases, and EM rash (bullseye rash) recognition on different anatomical sites and on different skin tones.

Reach and engagement during the campaign include:

- Facebook (21 Total Posts in Campaign)
  - Total Reach for Campaign: 313,382 (range 1,295-141,164 per post)
  - Total Post Engagements for Campaign (reactions, link clicks, comments, and shares): 3,883 (range 15-1,477 per post)
- Instagram (17 Total Posts in Campaign)
  - Total Reach for Campaign: 11,928 (range 240-1,711 per post)
  - Total Post Engagements for Campaign (reactions, comments, and shares): 290 (range 8-45 per post)

Maine CDC maintains a series of short instructional videos to educate the Maine community in tick

prevention and tickborne diseases. All of the instructional videos are available at www.youtube.com/MainePublicHealth. These videos include:

- Choosing and Applying Personal Repellents – viewed 380 total times
- Do You Know Who's Most at Risk for Lyme Disease – viewed 103,875 total times
- How to Choose a Residential Pesticide Applicator – viewed 250 total times
- How to Perform a Tick Check – viewed 6,310 total times
- Know How to do Tick Checks – viewed 277,899 total times
- Know How to Prevent Tick Bites – viewed 132,035 total times
- Know How to Remove Ticks – viewed 169,267 total times
- Reducing Tick Habitat Around Your Home- viewed 1,617 total times
- Tick Identification – viewed 31,551 total times
- Tickborne Diseases in Maine: Anaplasmosis – viewed 4,139 total times
- Tickborne Diseases in Maine: Babesiosis – viewed 1,213 total times
- Tickborne Diseases in Maine: Lyme Disease- viewed 576 total times
- Tickborne Diseases: Powassan Encephalitis– viewed 1,216 total times

Maine CDC's Lyme disease website is continually updated to provide information to the public and to health professionals about Lyme disease in Maine. In 2023:

- The Lyme disease homepage (www.maine.gov/lyme) received 5,244 unique pageviews.
- The tick frequently asked questions homepage (www.maine.gov/dhhs/tickfaq) received 1,259 unique pageviews.

Each of the tickborne disease webpages is designed in a health literate format to increase material comprehension and features sections on symptoms, prevention (both personal prevention and environmental management), and resources. Tickborne disease educational resources on Maine CDC's website include:

- Printable resources: Fact sheets (Anaplasmosis, Babesiosis, Ehrlichiosis, Hard Tick Relapsing Fever, Lyme disease, Powassan virus disease, Rocky Mountain Spotted Fever, and Repellents), arboviral testing handout for health care providers, tick bite prevention and tick identification posters
- Tickborne disease videos: Tickborne diseases in Maine webinar (updated yearly), short educational videos on each endemic disease, short video on property management and pesticide application
- Interactive tick identification game
- Tickborne disease school curriculum
- Tick frequently asked questions (with peer-reviewed citations)
- Disease surveillance data: Maine Tracking Network, surveillance reports for selected diseases, link to University of Maine Cooperative Extension Tick Lab tick testing data

During 2023, Maine CDC distributed Lyme disease educational materials to partners and members of the public. Due to interruptions in availability of materials from U.S. CDC, certain materials, including the Lyme disease brochure and bookmarks, were not available to order throughout the entirety of the year. All printed materials are also available for download. Approximate numbers of materials distributed in 2023 include:

- 5,163 Wallet-sized laminated tick identification cards
- 1,248 Tick ID posters

- 1,047 What to Do after a Tick Bite posters
- 965 Prevent Tickborne Diseases bookmarks
- 625 Tick remover spoons
- 421 Tickborne Diseases in the United States: A Reference Manual for Healthcare Providers
- 414 EM Rash posters
- 303 Lyme Disease Awareness Month 2022 posters
- 204 Prevent Tickborne Diseases in People and Pets bookmarks
- 65 Lyme disease brochures
- 27 Prevent Tick Bites trail signs

Members of the Vectorborne Disease Working Group assist Maine CDC in distributing educational materials as widely as possible throughout the State.

Maine CDC releases Health Alerts (www.maine.gov/dhhs/mecdc/all-health-advisories.shtml), press releases, and other information on disease concerns of public health significance, including tickborne diseases. Maine CDC also responds to numerous press inquiries and releases press statements as appropriate. Official releases in 2023 included:

- 2023 Lyme and Other Tickborne Disease Information (Health Alert) – May 8th
- Maine CDC Marks Lyme Disease Awareness Month with "Tick Free ME" Tips (Press Release) – May 8th
- Maine CDC Confirms Death from Powassan Virus Disease (Press Release) – May 17th
- Arbovirus Update for Healthcare Providers in Maine (Health Alert) – July 10th
- Maine CDC Encourages Continued Precautions Against Tick Bites This Fall (Press Release) – October 25th
- Maine CDC Encourages Continued Precautions Against Tick Bites This Winter (Press Release) – December 7th
- Maine CDC Reports Record Number of Lyme Disease Cases (Health Alert) – December 7th
- Severe and Fatal Rocky Mountain Spotted Fever Following Travel To Tecate, Mexico (U.S. CDC Health Alert) – December 21st

Pursuant to legislation enacted in the Second Regular Session of the 124th Legislature, May was declared to be Lyme Disease Awareness Month (PL 2009 c. 494). Educational activities took place the entire month including:

- Governor's Proclamation of Lyme Disease Awareness Month (Appendix 7)
- Information distributed through social media (Facebook, Instagram, and Twitter)
- Information distributed through multiple newsletters throughout the state (medical, veterinary, and other general audiences)
- Information distributed through multiple media interviews across the State of Maine
- Educational tabling event at Kittery Trading Post in Kittery, Maine and LL Bean in Freeport, Maine

Another major Lyme Disease Awareness Month activity was the statewide poster contest for students in grades K-8. Maine CDC asked students to create a poster with the theme "Tick Free ME" demonstrating at least one of the four Lyme disease prevention methods (wear protective clothing, use repellent, use

caution in tick infested areas, and perform daily tick checks). The four winning posters and one honorable mention poster are available for viewing at the Lyme disease website: www.maine.gov/lyme/month. Maine CDC used one of the winning posters for our 2023 statewide educational campaign (Appendix 8). Maine CDC distributed this poster to schools, state parks, the board of tourism, and historical sites. An online poster gallery of all artworks submitted over the past fourteen years is available for viewing on Maine CDC's Lyme Disease Awareness Month website: www.maine.gov/lyme/month.

In 2023, Maine CDC updated the Maine Tracking Network (MTN) Portal, a web-based portal that allows users to access environmental and health data. The Maine Tracking Network shares near real-time data on Lyme disease, anaplasmosis, and babesiosis for the current and previous year. Near real-time data is updated weekly with the rates (per 100,000) and number of cases. The data portal also shares data on suspected tick-related emergency department visits (as counts and percent of all emergency visits) and historical case data. The portal allows users to customize data inquiries at the town, county, and state level. The Tickborne Disease portion of the portal was accessed 3,445 times during 2023. The MTN Tickborne Disease Data is accessible on Maine CDC's website at www.maine.gov/idepi.

Please see Appendix 9 for a sample table, Appendix 10 for sample maps, and Appendix 11 for a sample trend chart. Data can be broken down by town, county, gender, and age group.

Maine CDC's main prevention message is encouraging Maine residents and visitors to use personal protective measures to prevent tick exposures. Personal protective measures include avoiding tick habitat, using EPA-approved repellents, wearing long sleeves and pants, and daily tick checks and tick removal after being in tick habitats (ticks must be attached >24 hours to transmit Lyme disease). Persons who spent time in tick habitats should consult a medical provider if they have unexplained rashes, fever, or other unusual illnesses during the first several months after exposure. Possible community approaches to prevent Lyme disease include landscape management and control of deer herd populations.

Maine CDC partners with the University of Maine Cooperative Extension Office to monitor the identification of deer ticks (*Ixodes scapularis*) in Maine through a passive submission system.

Beginning in April 2019, the University of Maine Cooperative Extension Office offers the testing of deer ticks for the pathogens that cause Lyme disease, anaplasmosis, and babesiosis. In 2020, the Cooperative Extension Office added a panel to test non-*Ixodes* tick species, including the American dog tick and lone star tick for the pathogens that cause Rocky Mountain Spotted Fever, ehrlichiosis, and tularemia. In 2023, the Cooperative Extension Office added Powassan and Heartland virus testing to the *Ixodes* and non-*Ixodes* panels, respectively. While the testing of ticks should not be used for clinical diagnosis or medical treatment decisions, this service provides surveillance information on ticks and tickborne diseases in Maine. For more information on this service, please visit www.ticks.umaine.edu. Data on the tick submission and tick testing results for 2023 can be found in Appendix 12.

VI. A summary of laws of other states enacted during the past year related to the diagnosis, treatment, and insurance coverage for Lyme disease and other tickborne illnesses based on resources made available by federal Centers for Disease Control and Prevention or other organizations

Maine CDC performed a search of state and federal legislation. A state-by-state listing of legislation relating to Lyme and other tickborne diseases can be found in Appendix 13.

On the national level, the FY 2023 appropriations bill had an increase of $13.5 million for the CDC's Lyme disease and vector-borne diseases programs – which support the programs authorized under the Kay Hagan Tick Act, introduced by US Senators Susan Collins (R-ME) and Tina Smith (DMN) and signed into law in 2019. The legislation also includes nearly $240 million in additional funding to support the Institute at the National Institutes of Health that carries out Lyme and other tick-borne diseases research. As part of the Kay Hagan Tick Act, the national strategy outlines five goals to reduce the impact of tick-related disease. These include seeking to:

- Better understand when, where, and how people are exposed to and get sick or die from VBDs.
- Develop, evaluate, and improve tools, methods, and guidance to diagnose VBDs and their pathogens.
- Develop, evaluate, and improve tools, methods, and guidance to prevent and control VBDs.
- Develop and assess drugs and treatment strategies for VBDs.
- Disseminate and implement public health tools, programs, and collaborations to prevent, detect, diagnose, and respond to VBD threats.

Appendices

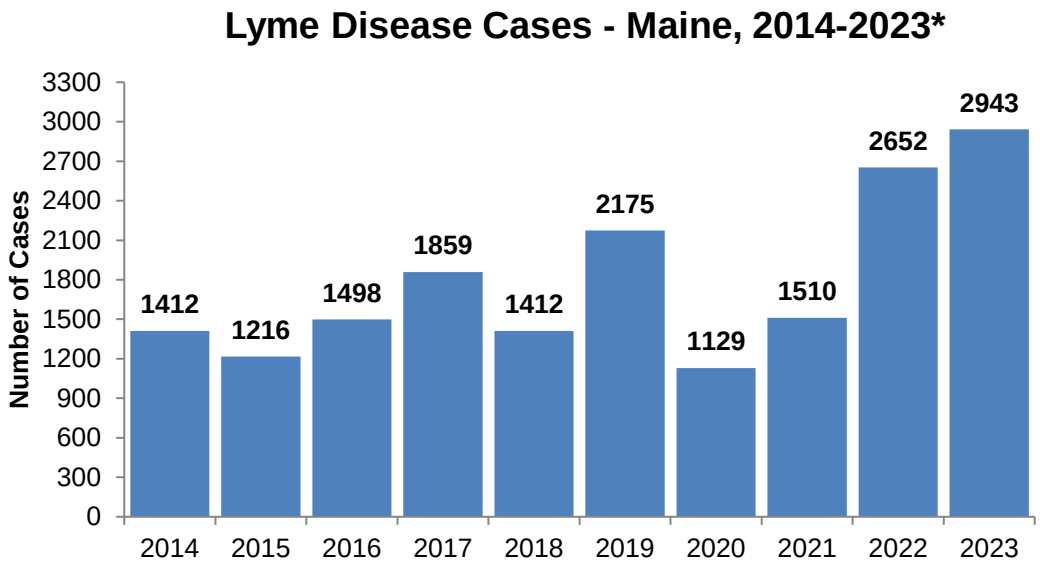
Appendix 1

Maine Lyme disease statistics

Number and Rate per 100,000 persons of Lyme Disease Cases by County of Residence – Maine, 2019-2023*

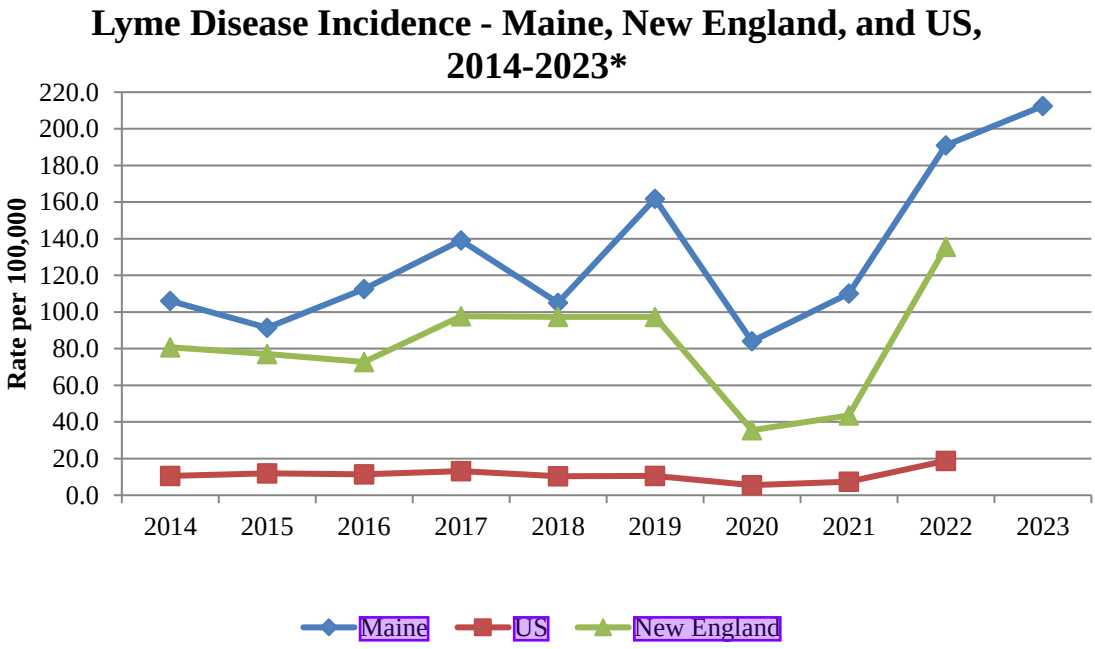
County	2019 Count	2019 Rate	2020 Count	2020 Rate	2021 Count	2021 Rate	2022 Count	2022 Rate	2023 Count*	2023 Rate*
Androscoggin	98	90.5	40	36.9	64	57.6	79	69.9	140	123.9
Aroostook	2	3.0	4	6.0	3	4.5	13	19.3	13	19.3
Cumberland	354	120.0	178	60.3	226	74.0	355	115.5	387	125.9
Franklin	39	129.1	18	59.6	24	80.8	40	131.3	70	229.7
Hancock	193	351.0	117	212.8	186	331.0	363	640.2	321	566.1
Kennebec	279	228.1	125	102.2	167	134.2	233	185.6	264	210.3
Knox	238	598.4	121	304.2	138	335.9	264	641.3	281	682.6
Lincoln	132	381.1	65	187.7	65	181.4	184	508.1	183	505.3
Oxford	88	151.8	43	74.2	57	97.2	65	109.3	102	171.4
Penobscot	111	73.0	85	55.9	126	82.5	239	155.5	239	155.5
Piscataquis	4	23.8	4	23.8	5	29.1	15	86.1	25	143.5
Sagadahoc	83	231.5	27	75.3	45	121.4	101	270.1	124	331.6
Somerset	68	134.7	37	73.3	80	158.1	127	248.5	134	262.2
Waldo	143	360.1	91	229.1	113	283.1	203	504.5	256	636.2
Washington	31	98.8	33	105.2	38	122.1	94	299.0	73	232.2
York	312	150.3	141	67.9	173	80.6	277	127.8	331	152.7
State	2175	161.8	1129	84.0	1510	110.0	2652	190.9	2943	212.4

*2023 data are preliminary as of 03/13/2024

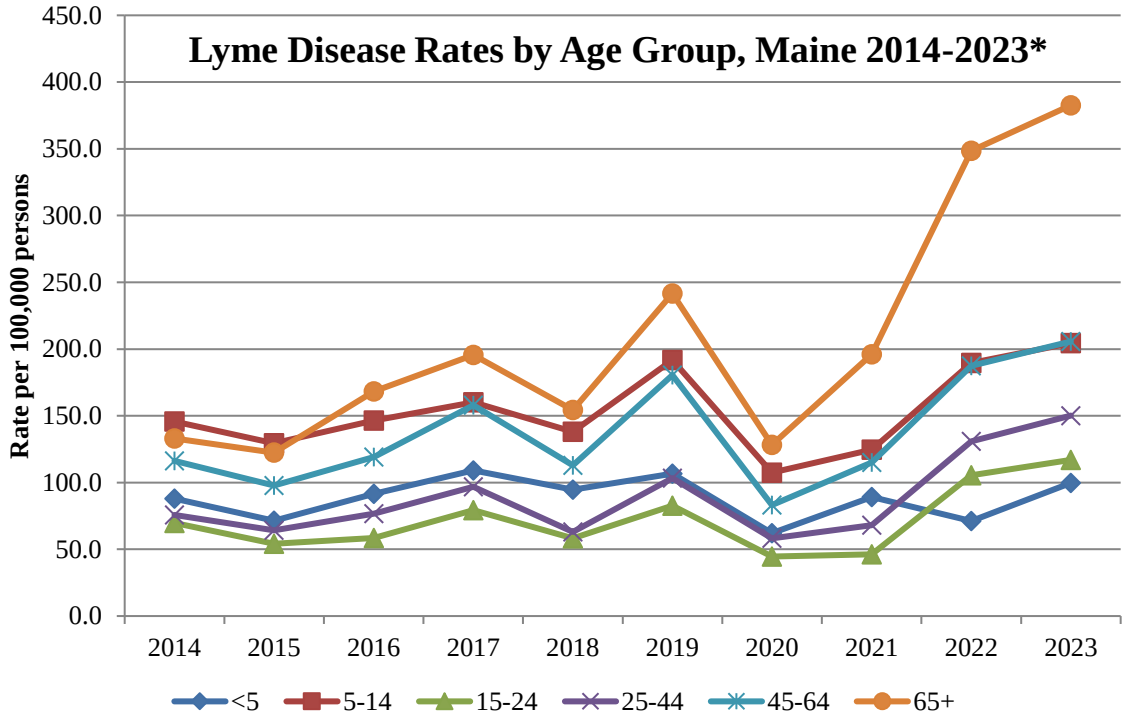


*2023 data are preliminary as of 03/13/2024

Note about the data: Effective 01/02/2022, CSTE changed the Lyme disease surveillance case definition to a lab-only definition, which includes only probable cases. All data prior to 2022 includes confirmed and probable cases.



*2023 data are preliminary as of 03/13/2024



*2023 data are preliminary as of 03/13/2024

Note about the data: Effective 01/02/2022, CSTE changed the Lyme disease surveillance case definition to a lab-only definition, which includes only probable cases. All data prior to 2022 includes confirmed and probable cases.

Appendix 2

Maine tickborne disease statistics (excluding Lyme disease)

Number of Selected Tickborne Disease Cases by County of Residence – Maine, 2023*

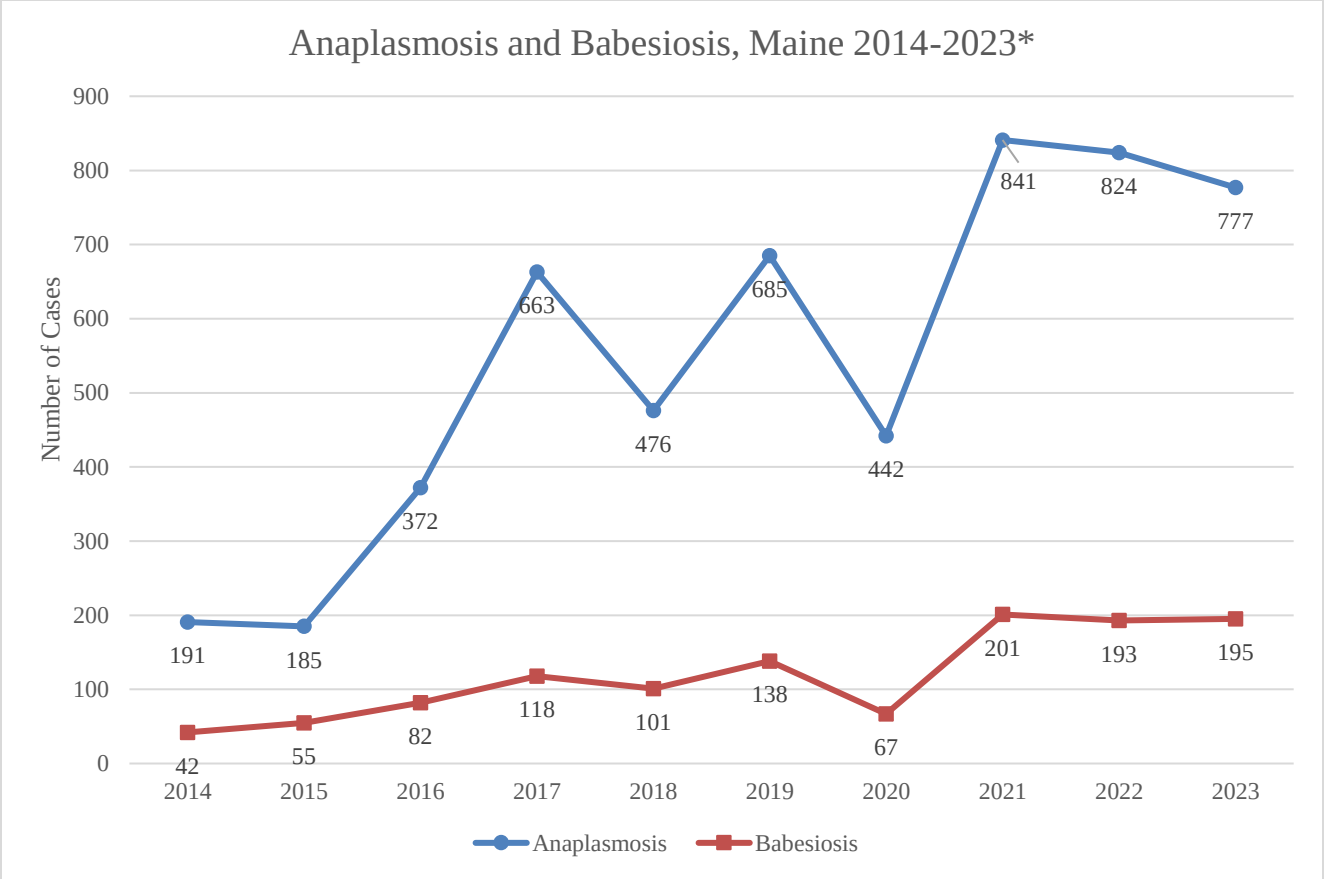
County	Anaplasmosis	Babesiosis	Ehrlichiosis	Ehrlichiosis/ Anaplasmosis Undetermined	Hard Tick Relapsing Fever	Powassan	Spotted Fever Rickettsiosis
Androscoggin	35	7	0	0	1	1	0
Aroostook	0	2	0	0	0	0	0
Cumberland	94	29	0	0	2	0	0
Franklin	16	2	0	0	0	0	0
Hancock	108	18	0	0	2	0	0
Kennebec	85	30	2	0	3	1	0
Knox	84	16	0	0	1	0	0
Lincoln	81	17	0	0	0	0	0
Oxford	26	6	0	0	1	1	0
Penobscot	42	9	0	0	1	0	0
Piscataquis	1	2	0	0	0	0	0
Sagadahoc	27	14	1	0	3	2	0
Somerset	28	5	0	0	0	0	0
Waldo	78	14	0	0	0	1	0
Washington	18	3	0	0	0	0	0
York	54	21	0	0	0	1	0
Total	777	195	3	0	14	7	0

* 2023 data are preliminary as of 03/13/2024

Number of Selected Tickborne Disease Cases– Maine, 2014 - 2023*

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023*
Anaplasmosis	191	185	372	663	476	685	443	841	824	777
Babesiosis	42	55	82	118	101	138	66	201	193	195
Ehrlichia chaffeensis	8	5	7	10	19	13	2	4	7	3
Ehr/Ana undetermined	6	1	4	10	9	2	2	0	1	0
Hard Tick Relapsing Fever	0	0	0	6	8	13	12	9	12	14
Powassan	0	1	1	3	0	2	1	3	4	7
SFR	3	1	4	3	10	5	0	2	1	0

* 2023 data are preliminary as of 03/13/2024



* 2023 data are preliminary as of 03/13/2024

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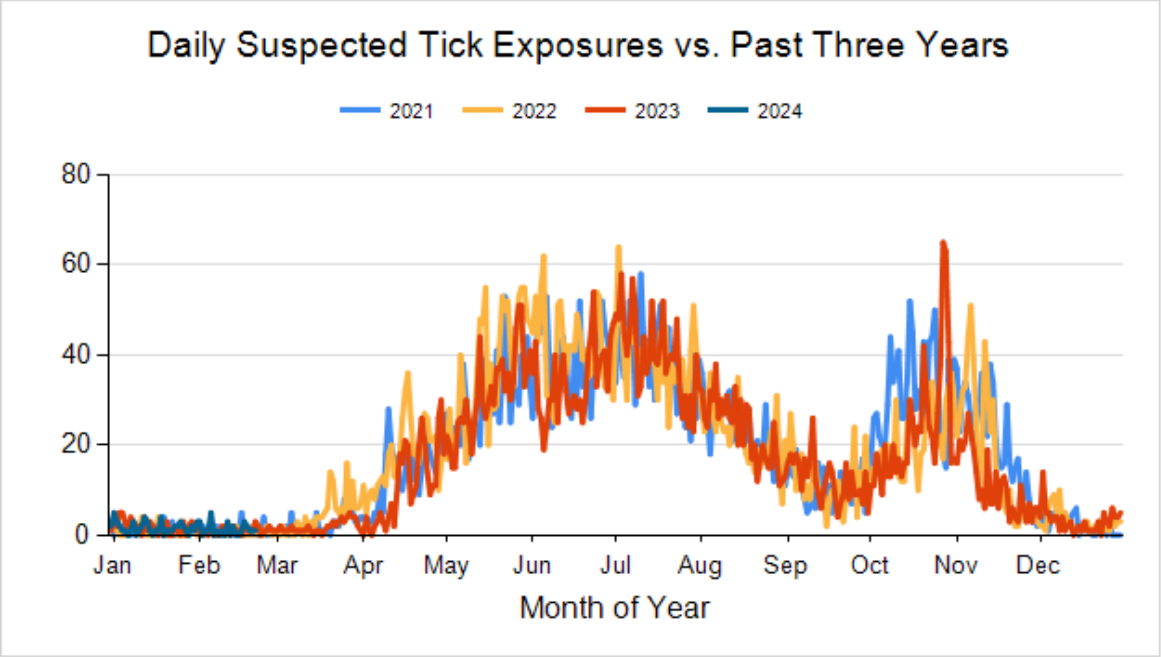
Appendix 4

Maine CDC *Syndromic Surveillance Report*

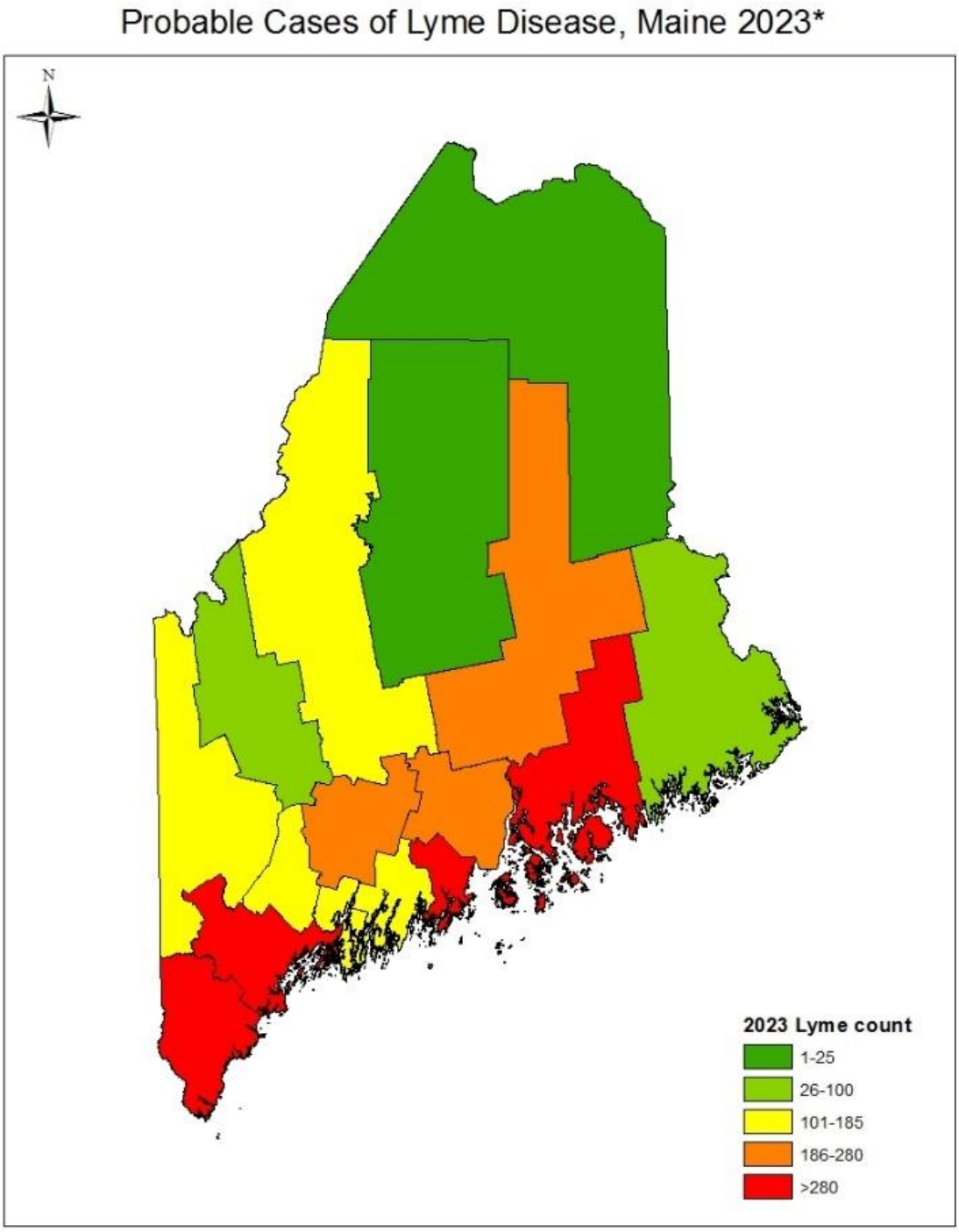
Report run: 2/22/2024 3:30:52 PM



Data Notes:

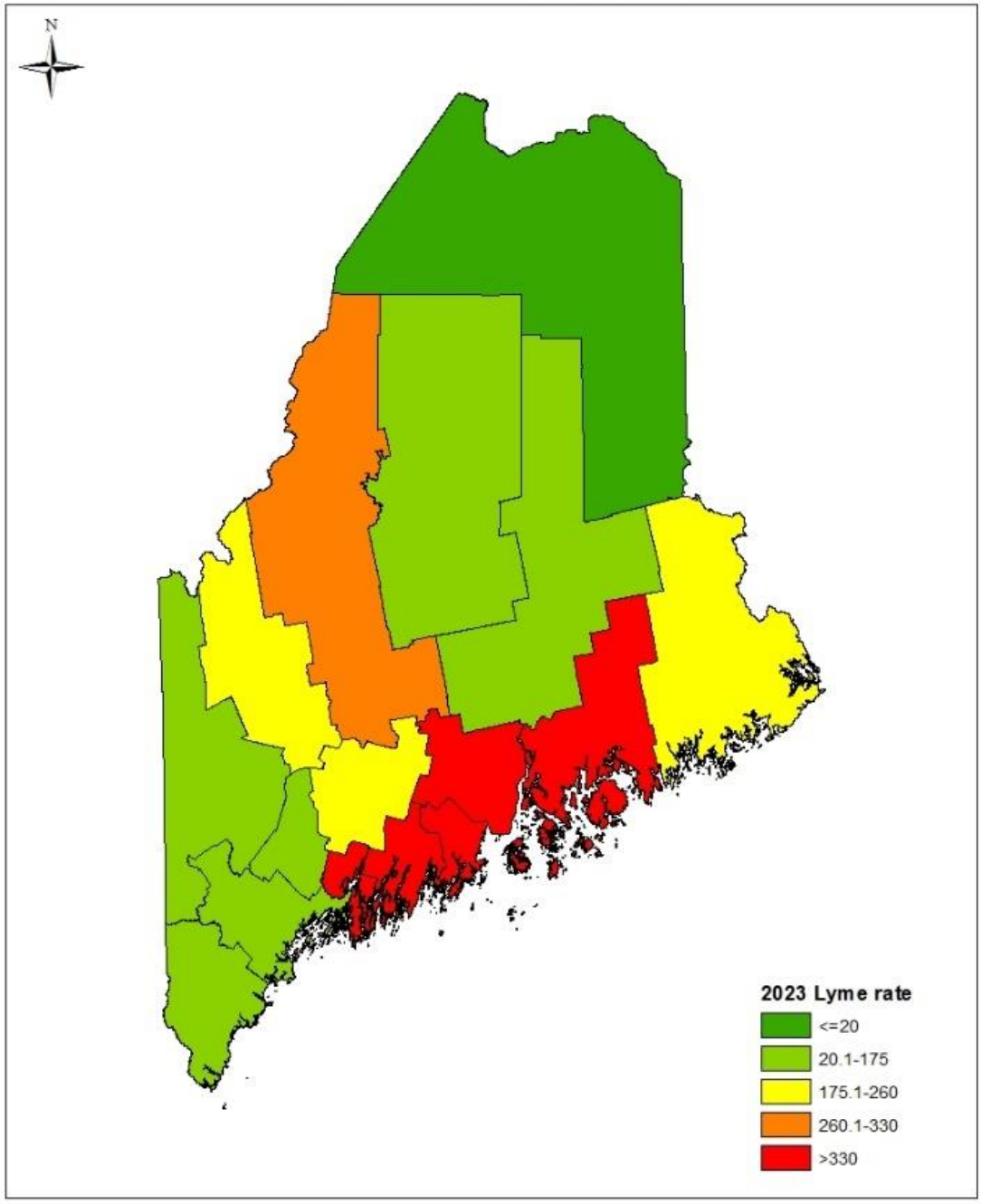
The number of suspected tick exposures is based on automated processing of chief complaint text and diagnosis codes from patient encounters at Maine emergency departments and affiliated urgent care facilities. For more information about Maine's syndromic surveillance data and methods, please contact syndromic@maine.gov.

Appendix 5



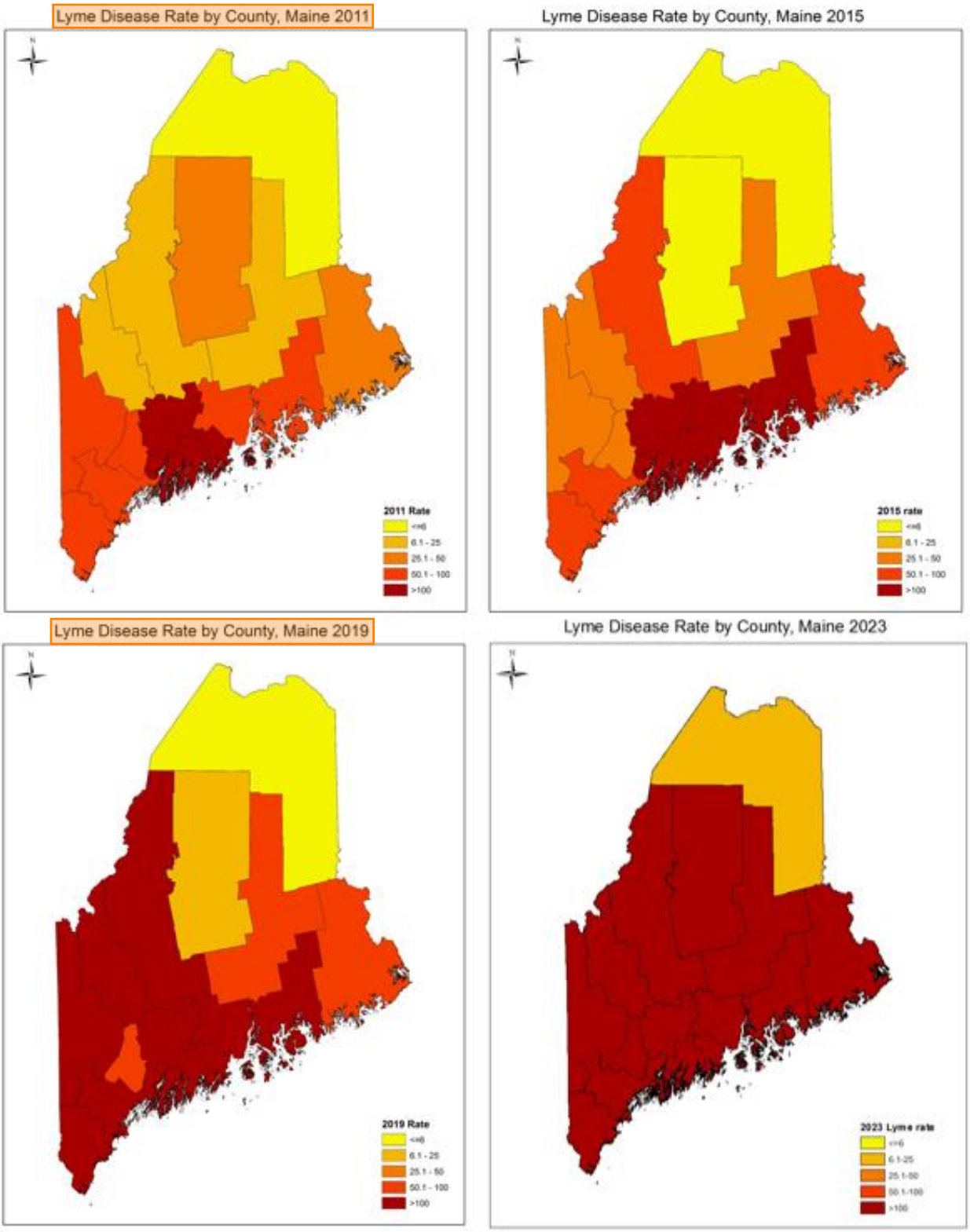
* 2023 data are preliminary as of 03/13/2024

Lyme Disease Cases per 100,000 persons (Rate), Maine 2023*



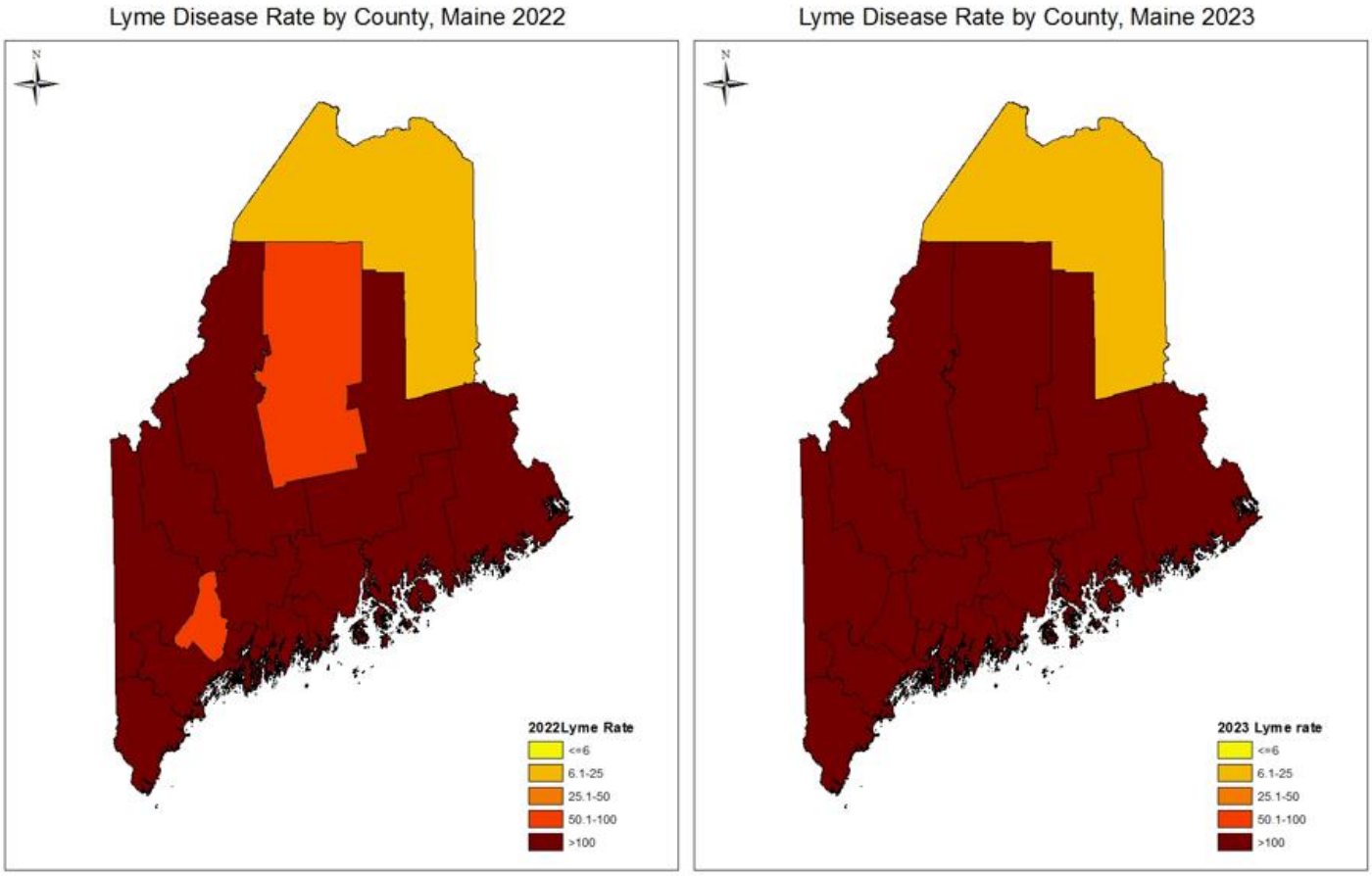
* 2023 data are preliminary as of 03/13/2024

Lyme Disease Cases per 100,000 people (Rate) – Maine, Selected years 2011-2023*



*2023 data are preliminary as of 03/13/2024

Lyme Disease Cases per 100,000 people (Rate) – Maine, 2022 and 2023*



*2023 data are preliminary as of 03/13/2024

Effective January 2, 2022, the Council of State and Territorial Epidemiologists (CSTE) modified the Lyme disease surveillance case definition. Under the previous surveillance definition, Maine CDC followed up with healthcare providers to collect corresponding clinical information for every laboratory report received before the case could be classified as confirmed, probable, suspect, or not a case. Reported erythema migrans rashes with likely exposure in a state with high Lyme disease incidence were automatically classified as confirmed cases. Under the new surveillance definition, Lyme disease case counts may increase by 50-100% compared to previous years under the old surveillance definition (including 2021 case data) (Kugeler et al. 2022). Under the previous case definition, epidemiologists classified Lyme disease lab reports as confirmed or probable if the healthcare provider returned the case report form with clinical information for the patient. As healthcare providers in Maine only returned these reporting forms approximately 50% of the time, epidemiologists classified lab results lacking this clinical information as suspect cases. The number of confirmed and probable Lyme disease cases reported by Maine CDC likely underrepresented the true number of cases that could be classified as confirmed or probable as a result. Under the new case definition, Lyme disease cases are classified by lab results alone, without needing corresponding clinical information from healthcare providers, reducing the number of labs that remained uncounted due to failure of healthcare providers to report clinical information

Appendix 6 Maine Vectorborne Work Group

Chair: Sara Robinson, Maine Center for Disease Control and Prevention (Maine CDC)	
Bolas, Stefanie	Maine Department of Agriculture, Conservation, and Forestry
Bonthius, Jessica	Maine CDC
Boyd, Karla	Maine Board of Pesticide Control
Camuso, Judy	Maine Department of Inland Fisheries and Wildlife
Cosenza, Danielle	MaineHealth Institute for Research
DeCato, Sarah	Maine Department of Education
Dill, Griffin	Maine Cooperative Extension
Elias, Susan	MaineHealth Institute for Research, University of Maine Orono
Fish, Gary	Maine Department of Agriculture, Conservation, and Forestry
Fiske, Rachael	Maine Department of Agriculture, Conservation, and Forestry
Gardner, Allison	University of Maine, School of Biology and Ecology
Henderson, Elizabeth	MaineHealth Institute for Research
Hill, Dana	University of Maine, Animal Health Laboratory
Jensen, Gary	Swamp, Inc.
Jensen, Rose	Swamp, Inc.
Kanoti, Allison	Maine Forest Service
Kantar, Lee	Maine Department of Inland Fisheries and Wildlife
Keenan, Patrick	Biodiversity Research Institute
Lubelczyk, Charles	MaineHealth Institute for Research
Matluk, Nick	Maine CDC
Meagher, Molly	MaineHealth Institute for Research
Meak, Sim	Maine CDC
Morris, Jesse	US Department of Agriculture
Morrison, Michael	Swamp, Inc.
Patterson, Megan	Maine Board of Pesticides Control
Peterson, Hillary	Maine Department of Agriculture, Conservation, and Forestry
Poland, Emily	Maine Department of Education
Porter, Megan	Maine CDC
Robich, Rebecca	MaineHealth Institute for Research
Rounsville, Thomas	Maine Cooperative Extension
Schappach, Brittany	Maine Department of Agriculture, Conservation, and Forestry
Schmeelk, Thomas	Maine Forest Service
Smith, Rob	MaineHealth Institute for Research
Sohail, Haris	Maine CDC
Staples, Joe	University of Maine, Department of Environmental Science and Policy
Szantyr, Beatrice	Physician, Lincoln Maine
Taylor, Tegwin	Maine Department of Inland Fisheries and Wildlife
Urcuqui, Andres	University of Maine, School of Forest Resources
Webb, Nathan	Maine Department of Inland Fisheries and Wildlife
Webber, Lori	Maine CDC

To reach a member of the VBWG or to express interest in joining this workgroup, contact disease.reporting@maine.gov.

Appendix 7
2023 Governor's Proclamation

WHEREAS, the Maine Center for Disease Control and Prevention reported over 2,600 probable cases of Lyme disease in 2022; and

WHEREAS, the actual incidence of Lyme disease in Maine is likely much higher than reported, disproportionately affecting children between five and fifteen years and adults over sixty-five years; and

WHEREAS, tickborne illnesses can be prevented by staying in the center of wooded paths, wearing light-colored, long-sleeved clothing, using an EPA-approved insect repellent, performing daily tick checks, and properly removing ticks; and

WHEREAS, public awareness and education are necessary to help reduce tickborne illnesses in Maine by promoting awareness of Lyme disease, other tickborne illnesses, and the regular use of prevention measures, as illustrated by the 2023 theme "Tick Free ME"; and

WHEREAS, the 124th Maine Legislature enacted Public Law Chapter 494, L.D. 1709, Item 1, *An Act to Enhance Public Awareness of Lyme Disease;*

NOW THEREFORE, be it resolved that I, Janet T. Mills, Governor of the State of Maine, do hereby proclaim the month of May 2023 as

Lyme Disease Awareness Month

in Maine, and I urge all the citizens of Maine to become aware of the steps that can be taken to reduce the risk of tickborne illnesses.

In testimony whereof, I have caused the Great Seal of the State to be hereunto affixed GIVEN under my hand at Augusta this twelfth day of April Two Thousand Twenty-Three

Janet T. Mills
Governor

Shenna Bellows
Secretary of State

Appendix 8

Maine CDC Lyme Disease Awareness Month Poster 2023

Artwork submitted by Charlotte Chamberlain from Thomaston Grammar School

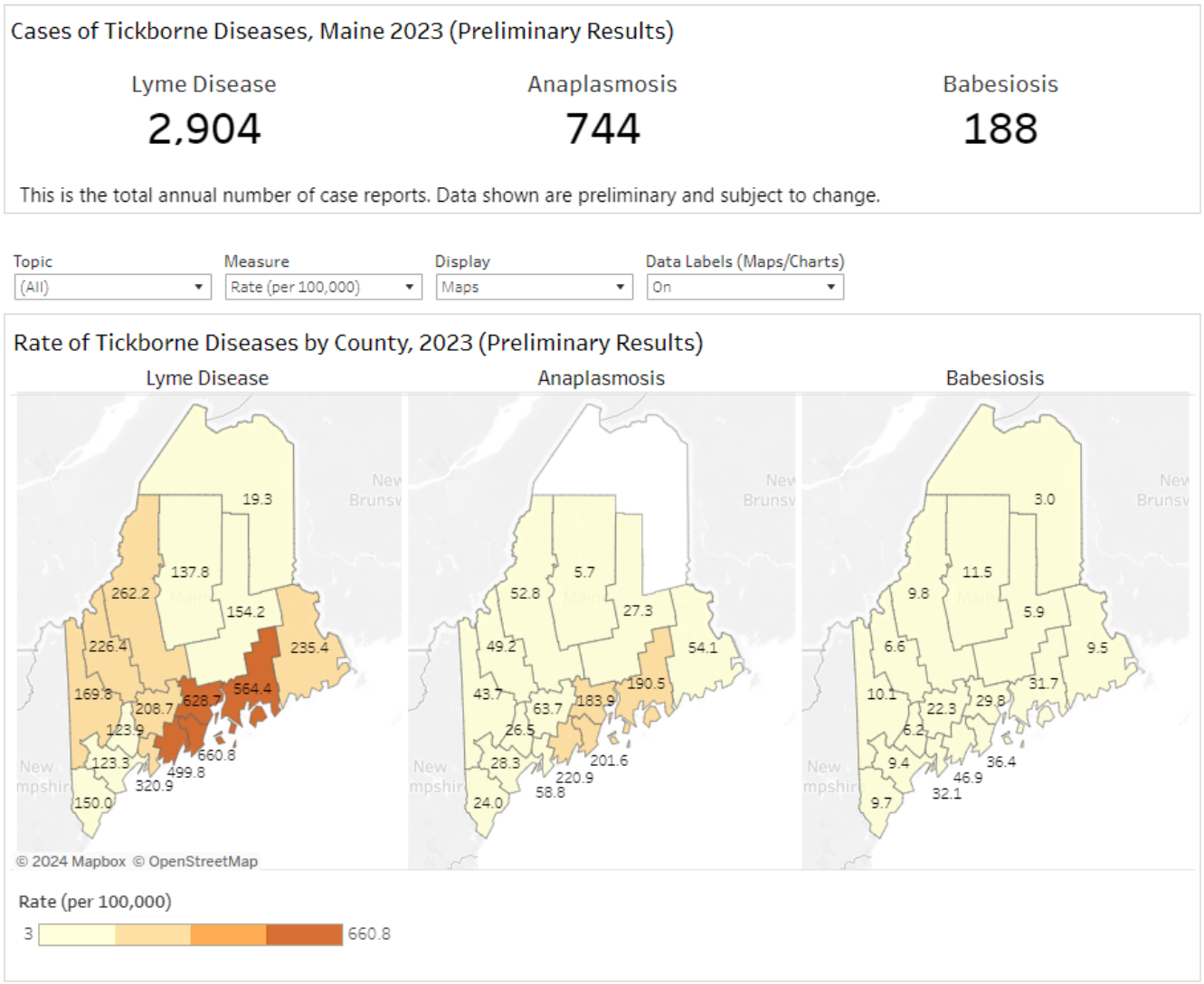
Appendix 9
Maine Tracking Network

Selected Tickborne Diseases | by Location, Year, Age Group and Sex

					Selected Tickborne Diseases		
					Anaplasmosis	Babesiosis	Lyme
Region	Location	Year	Sex	Age Group	Number	Number	Number
Town	Portland	2016-2020	Both	All Ages	37	7	155
	Windham	2016-2020	Both	All Ages	34	9	134
	Augusta	2016-2020	Both	All Ages	31	7	123
	Islesboro	2016-2020	Both	All Ages		0	118
	Gorham	2016-2020	Both	All Ages	24	8	114
	Brunswick	2016-2020	Both	All Ages	48	8	102
	Bar Harbor	2016-2020	Both	All Ages	23	6	95
	Freeport	2016-2020	Both	All Ages	39	5	94
	Deer Isle	2016-2020	Both	All Ages			86
	Sanford	2016-2020	Both	All Ages	58	3	81
	York	2016-2020	Both	All Ages	21	11	79
	Saint George	2016-2020	Both	All Ages	49	7	76
	Ellsworth	2016-2020	Both	All Ages	3	1	75
	Yarmouth	2016-2020	Both	All Ages	8	3	71
	Kittery	2016-2020	Both	All Ages	20	17	69
	Winthrop	2016-2020	Both	All Ages	11	4	68
	Gray	2016-2020	Both	All Ages	17	7	68
	Bangor	2016-2020	Both	All Ages	6	1	68
	Auburn	2016-2020	Both	All Ages	44	4	68
	Warren	2016-2020	Both	All Ages	65	16	67
	Camden	2016-2020	Both	All Ages	25	6	64
	Waldoboro	2016-2020	Both	All Ages	46	6	62
	Union	2016-2020	Both	All Ages	46	8	61
	Cumberland	2016-2020	Both	All Ages	13	6	61
	Vassalboro	2016-2020	Both	All Ages	16	4	60
	Scarborough	2016-2020	Both	All Ages	14	2	60
	Blue Hill	2016-2020	Both	All Ages	12	0	60
	Lewiston	2016-2020	Both	All Ages	25	4	59

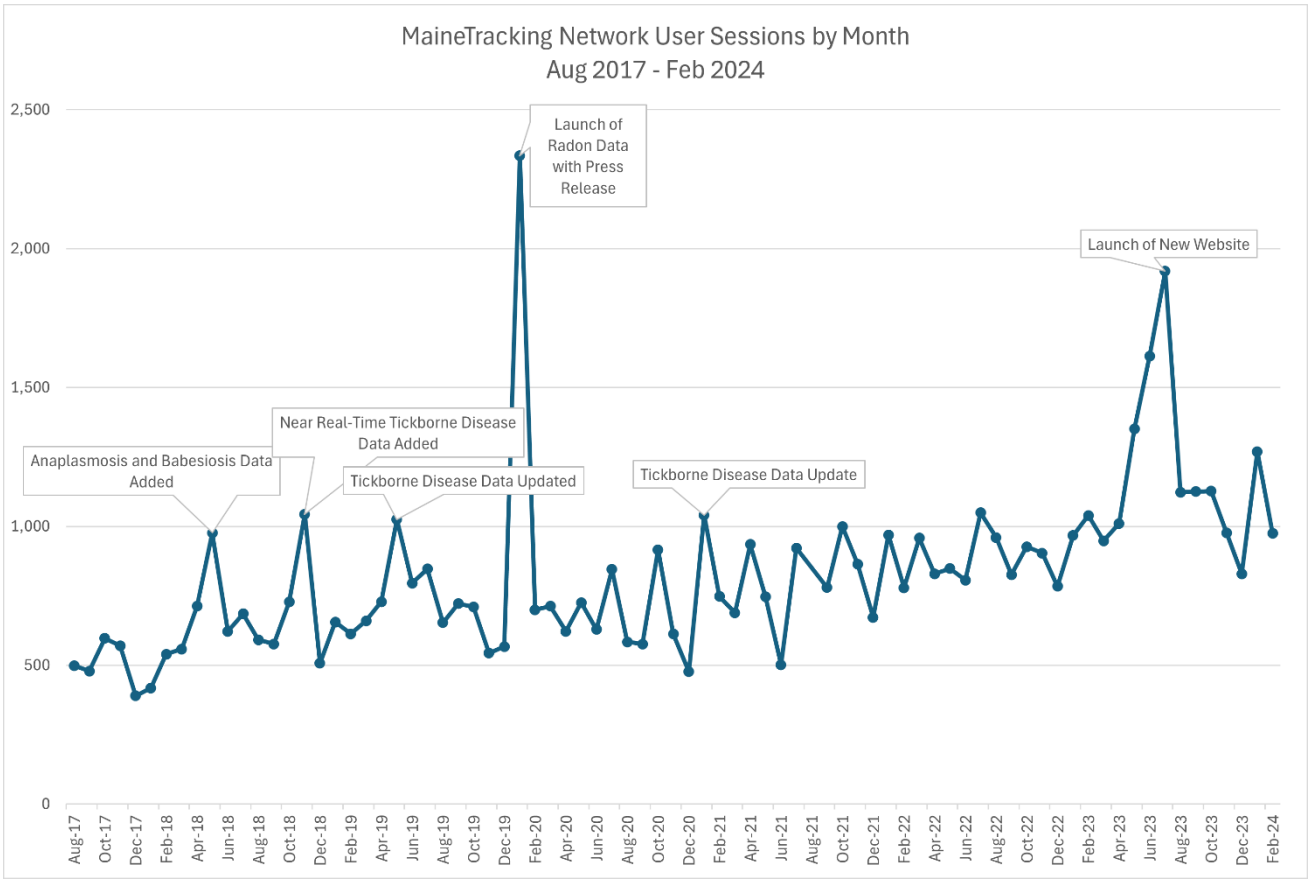
Maine CDC's Infectious Disease Epidemiology Program collected and analyzed the data. Maine CDC used population data from the U.S. Census Bureau to calculate state and county rates of tickborne disease. Maine CDC used population data from Maine CDC Data, Research, and Vital Statistics (DRVS) to calculate town-level rates of tickborne disease. The Maine Environmental Public Health Tracking Program prepared the data display. Data updated: 05/2021. Display updated: 07/2023.

Appendix 10
Maine Tracking Network



Maine CDC's Infectious Disease Epidemiology Program obtains tickborne disease data through notifiable conditions surveillance, based on reports from healthcare providers, laboratories, and other healthcare partners. Maine CDC used population data from the U.S. Census Bureau to calculate rates of tickborne disease. Surveillance case definitions are determined by the Council of State and Territorial Epidemiologists (CSTE) and change over time in accordance with disease trends and surveillance needs.

Appendix 11
Maine Tracking Network



Appendix 12

University of Maine Tick Submission and Tick Testing Data for 2023

Tick Species Submitted to the UMaine Extension Tick Lab in 2023

Tick Species	Common Name	Total
Ixodes scapularis	Blacklegged tick (also known as deer tick)	3342
Dermacentor variabilis	American dog tick	2706
Amblyomma americanum	Lone star tick	17
Ixodes cookei	Woodchuck tick	40
Dermacentor albipictus	Winter Tick	1
Ixodes marxi	Squirrel tick	1
Unknown	Specimens damaged during removal/delivery	7

Source: University of Maine Cooperative Extension Tick Laboratory 2023 Annual Report

Infection Prevalence in Submitted Blacklegged (Deer) Ticks (*Ixodes scapularis*) in 2023

Pathogen	% of nymphs infected	% of adults infected	% of ticks infected
Borrelia burgdorferi	21.5%	42.9%	35.9%
Anaplasma phagocytophilum	8.7%	11.5%	10.6%
Babesia microti	3.5%	8.3%	6.8%
Borrelia miyamotoi	0.5%	0.7%	0.6%
Powassan Virus	0.2%	1.2%	0.9%
Borrelia + Anaplasma	3.0%	6.1%	5.1%
Borrelia + Babesia	1.7%	5.7%	4.4%
Anaplasma + Babesia	0.2%	1.2%	0.9%
Borrelia + Anaplasma + Babesia	0.1%	0.9%	0.6%

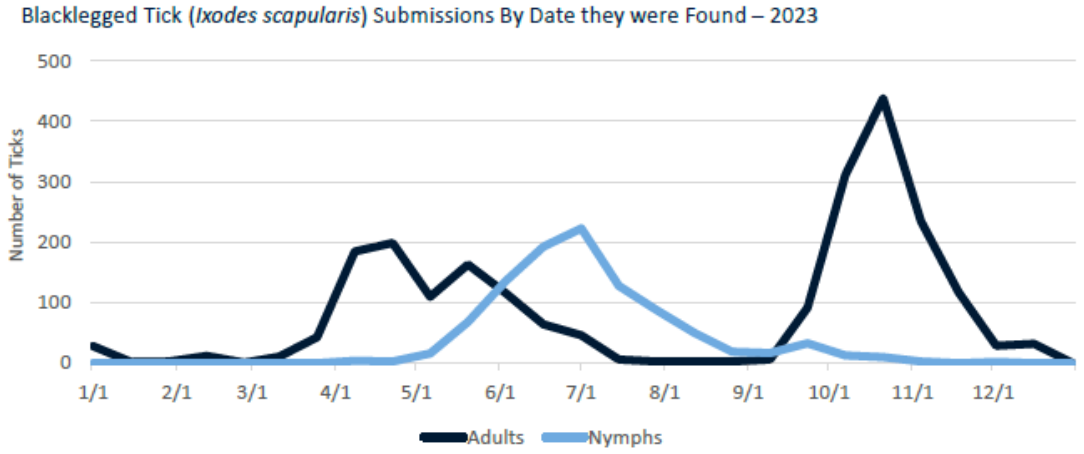
Source: University of Maine Cooperative Extension Tick Laboratory 2023 Annual Report

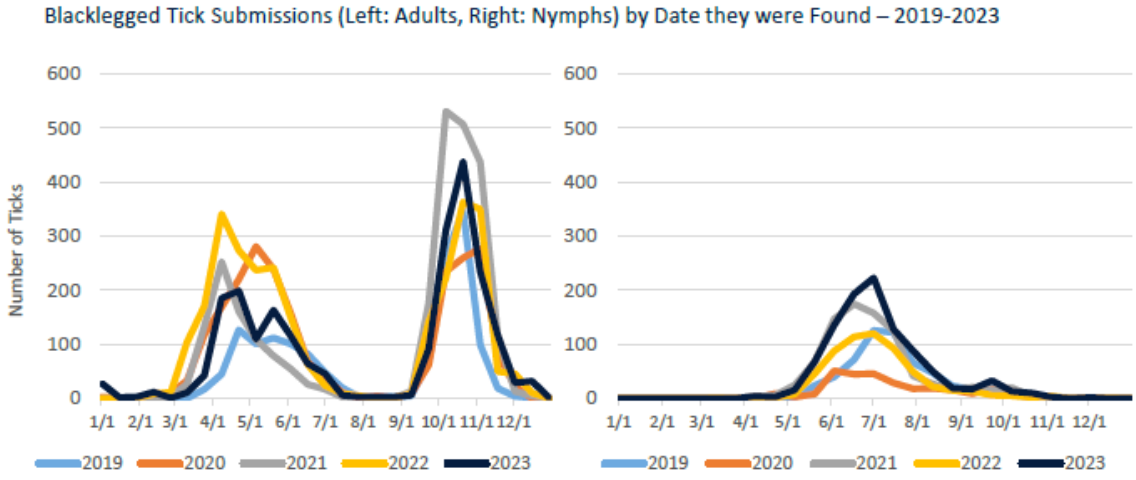
Infection Prevalence in Submitted American Dog Ticks (*Dermacentor variabilis*) and Lone Star Ticks (*Amblyomma americanum*) in 2023

Pathogen	American Dog Ticks (*Dermacentor variabilis*)	Lone Star Ticks (*Amblyomma americanum*)
Rickettsia rickettsii	0/1054 (0%)	0/6 (0%)
Ehrlichia spp.	1/1054 (<1%)	0/6 (0%)
Francisella tularensis	1/1054 (<1%)	0/6 (0%)
Heartland Virus	0/1054 (0%)	0/6 (0%)

Source: University of Maine Cooperative Extension Tick Laboratory 2023 Annual Report

Tick Submissions by Date Found in 2023





Source: University of Maine Cooperative Extension Tick Laboratory 2023 Annual Report

Appendix 13

2023 Tickborne Disease Legislation - status recorded from LegiScan

Delaware

Title: An Act To Amend Title 16 Relating To The Lyme Disease Education Oversight Board (HB71)
Status: Passed

Title: Designating The Month Of May 2023 As "Lyme Disease Awareness Month" In The State Of Delaware (SCR58)
Status: Failed

Illinois

Title: Tick-Borne Disease Warning (HB2421)	Status: Failed
Title: VEH CD-Lyme Disease Spec Decal (HB2548)	Status: Passed
Title: Wildlife CD-Tick Grants (HB3526)	Status: Failed
Title: Lyme Disease Awareness Month (HR0216)	Status: Passed
Title: Lyme Disease Innovation Prog (SB1803)	Status: Passed
Title: Tickborne Disease Prevention (SB2044)	Status: Failed
Title: Lyme Disease Task Force (HB2855)	Status: Passed

Maine

Title: An Act to Support Research, Education and Outreach Efforts at the University of Maine Cooperative Extension Tick Laboratory (LD 1021)
Status: Dead

Title: An Act to Require Lyme Disease Vaccine Coverage for State-regulated Health Plans (LD 1220)
Status: Failed

Title: An Act to Ensure Physicians Receive Full Diagnostic Test Data Concerning Tick-borne Diseases (LD 906)
Status: Failed

Title: Joint Resolution Recognizing May 2023 as Lyme Disease Awareness Month (SP0802)
Status: Passed

Maryland

Title: Health Insurance - Lyme Disease and Related Tick-Borne Illnesses - Long-Term Antibiotic Treatment (HB1199)
Status: Failed

Massachusetts

Title: Establishing a special commission to find the best practices to promote education, awareness, and prevention of Lyme disease (S1442)
Status: Failed

New Jersey

Title: Requires school districts to provide instruction on prevention of Lyme Disease and other tick-borne diseases in grades kindergarten through 12; requires DOH to publish certain guidelines concerning ticks. (A4820, S2463)
Status: Passed

New York

Title: Memorializing Governor Kathy Hochul to proclaim May 2023, as Lyme Disease Awareness Month in the State of New York (J00991, K00240)
Status: Passed

Pennsylvania

Title: Providing for patient access to diagnostics and treatments for Lyme disease and related tick-borne illnesses; and requiring health care policies to provide certain coverage (SB100)
Status: Failed

Title: An Act providing for continuing education in Lyme disease and related tick-borne diseases for health care professionals (SB233)
Status: Failed

Title: A Resolution designating the month of May 2023 as "Lyme Disease and Tick-Borne Illness Awareness Month" in Pennsylvania (SR87)
Status: Failed

Title: An Act providing for school entity procedures for tick removal, for notification and for duties of the Department of Health and the Department of Education. (SB568)
Status: Failed

Virginia

Title: Tick-borne diseases; VDH to study reducing occurrence & impact (HB2008)
Status: Passed

United States

Title: Cattle Fever Tick Eradication Program Enhancement Act (HB2420, SB1836)
Status: Failed

Title: Tick Identification Pilot Program Act of 2023 (HB4412)
Status: Failed

Title: Stamp Out Lyme Disease Act (HB4413)
Status: Failed