

Welcome to UVM ECHO: Lyme Disease and Tick-borne Illness

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Faculty: Jean Dejace MD, Mark Levine MD

May 17, 2019



The University of Vermont
LARNER COLLEGE OF MEDICINE
OFFICE OF PRIMARY CARE & AHEC PROGRAM

www.vtahec.org



Introduction to ZOOM

- Mute microphone when not speaking
- Position webcam effectively
- Test both audio & video
- Use “chat” function for:
 - Attendance—type name and organization of each participant upon entry to each teleECHO session
 - Technical issues
- Communicate clearly:
 - Use “raise hand” feature; the ECHO team will call on you
 - Speak clearly



CME disclosures

University of Vermont (UVM) Office of Continuing Medical and Interprofessional Education (CMIE) is approved as a provider of Continuing Medical Education (CME) by the ACCME. UVM designates this educational activity for a maximum of 1.5 AMA PRA Category 1 Credits. Participants should claim only the credit commensurate with the extent of their participation in the activity.

Interest Disclosures:

- As an organization accredited by the ACCME to sponsor continuing medical education activities, UVMCMIE is required to disclose any real or apparent conflicts of interest (COI) that any speakers may have related to the content of their presentations.



No relevant disclosures

Planners:

- Elizabeth Cote
- Mark Pasanen, MD
- Charles MacLean, MD

Faculty/Guest Faculty:

- Jean Dejace, MD
- Mark Levine, MD
- Mark Pasanen, MD



Introductions...



2019 PROGRAM SCHEDULE

DATES (All Fridays, 12pm to 1pm)	SESSION	DIDACTIC TOPICS (in addition to case review)
May 17	TeleECHO Session #1	<ul style="list-style-type: none"> • Orientation to Project ECHO • Program Overview • Anatomy of teleECHO Session • Case Presentation Templates • Tick-borne Illness/Epidemiology
June 21	TeleECHO Session #2	<ul style="list-style-type: none"> • Early localized Lyme diagnosis, treatment, and interpreting tests
July 19	TeleECHO Session #3	<ul style="list-style-type: none"> • Early disseminated and late Lyme diagnosis and treatment (cardiac, rheumatologic, neurologic)
August 16	TeleECHO Session #4	<ul style="list-style-type: none"> • Chronic Lyme Disease
Sept 20	TeleECHO Session #5	<ul style="list-style-type: none"> • Anaplasmosis
October 25	TeleECHO Session #6	<ul style="list-style-type: none"> • Other tickborne diseases (babesiosis, etc.)



Goals for Session 1

1. What is ECHO?
 - Impact on care
 - Impact on providers
 - Format
2. Become familiar with case presentation template
3. Overview of tick-borne illness in Vermont
 - Tick basics
 - Epidemiology
 - Standard testing strategies
4. Identify cases for subsequent sessions and elicit feedback



Project ECHO

Project ECHO® is a lifelong learning and guided practice model that **revolutionizes medical education** and exponentially **increases workforce capacity** to provide **best practice specialty care** and **reduce health disparities** through its **hub-and-spoke** knowledge sharing networks



People need access to specialty care for complex conditions



Not enough specialists to treat everyone,

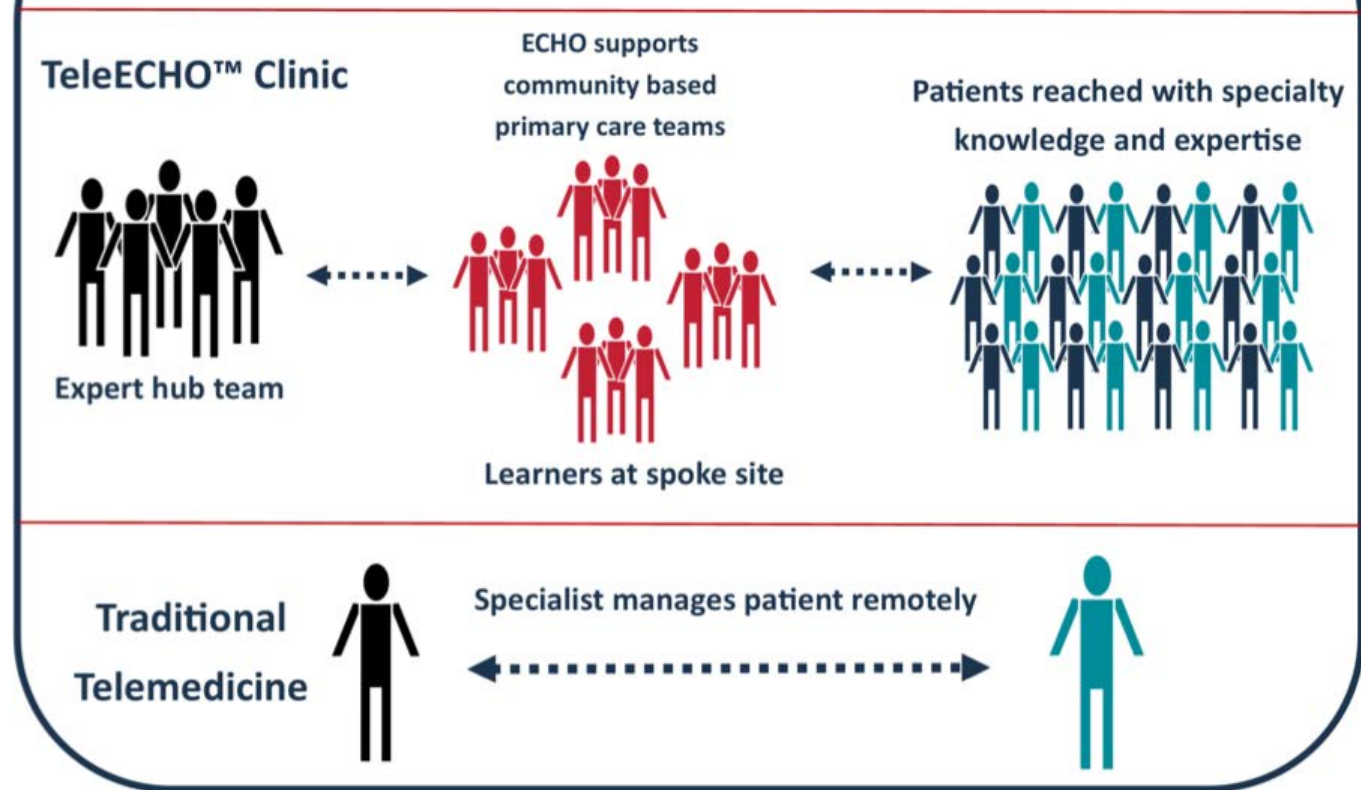


ECHO® trains primary care clinicians to provide specialty care services



Patients get the right care, in the right place, at the right time.

ECHO vs. Telemedicine



ECHO model is not ‘traditional telemedicine’.

Treating Physician retains responsibility for managing patient.

ECHO topics

- Common diseases
- Management is complex
- Evolving treatments and medicines
- High societal impact (health and economic)
- Serious outcomes of untreated disease
- Improved outcomes with disease management



What is Best Practice?

- Standardization
 - Algorithms
 - Checklists
- Experience:
 - Case-based learning = “learn by doing”
 - Volume



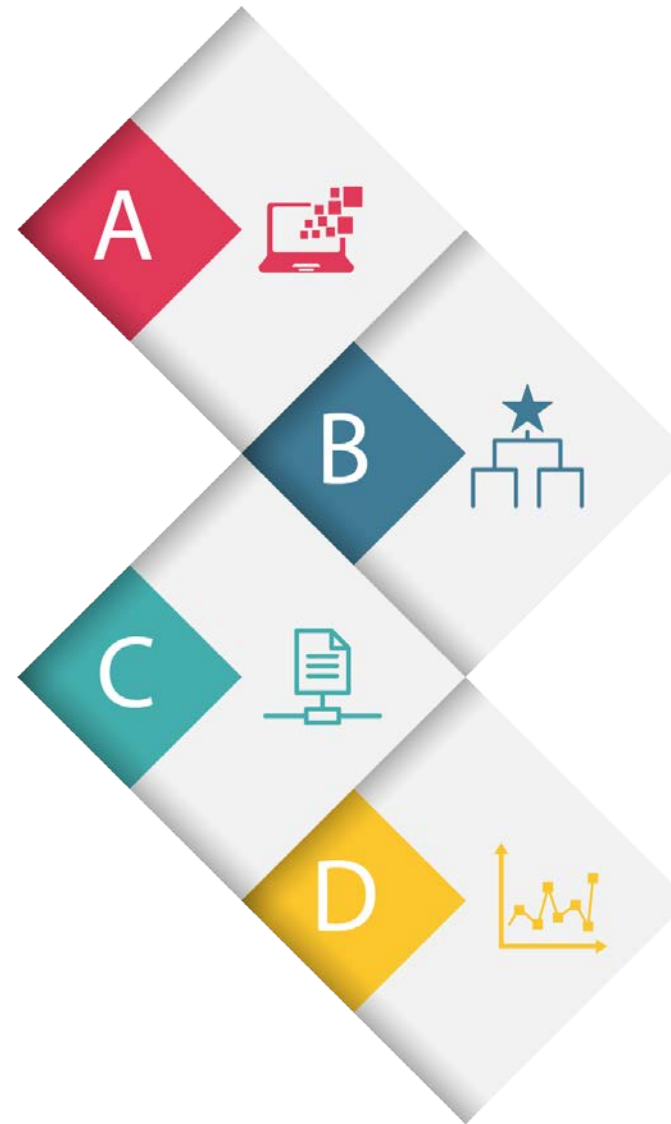
ECHO Model

Amplification – Use **T**echnology
to leverage scarce resources

Case Based Learning
to master complexity

Share **B**est Practices
to reduce disparity

Web-based **D**atabase to
Monitor **O**utcomes



Is ECHO effective? (Scale 1-5)

- My participation in Project ECHO benefits patients under my care whom I co-manage with ECHO specialists. 4.45
- The patients under my care whom I co-manage with ECHO specialists receive best-practice care. 4.43
- My participation in Project ECHO benefits the patients under my care whom I do not co-manage with ECHO specialists. 4.19
- Through the Project ECHO telehealth clinics, I am learning best-practice care in chronic disease. 4.68
- I am connected with peers in the ECHO telehealth clinic whose opinion I respect for professional advice and consultation. 4.55
- I am developing clinical expertise through participation in Project ECHO. 4.48

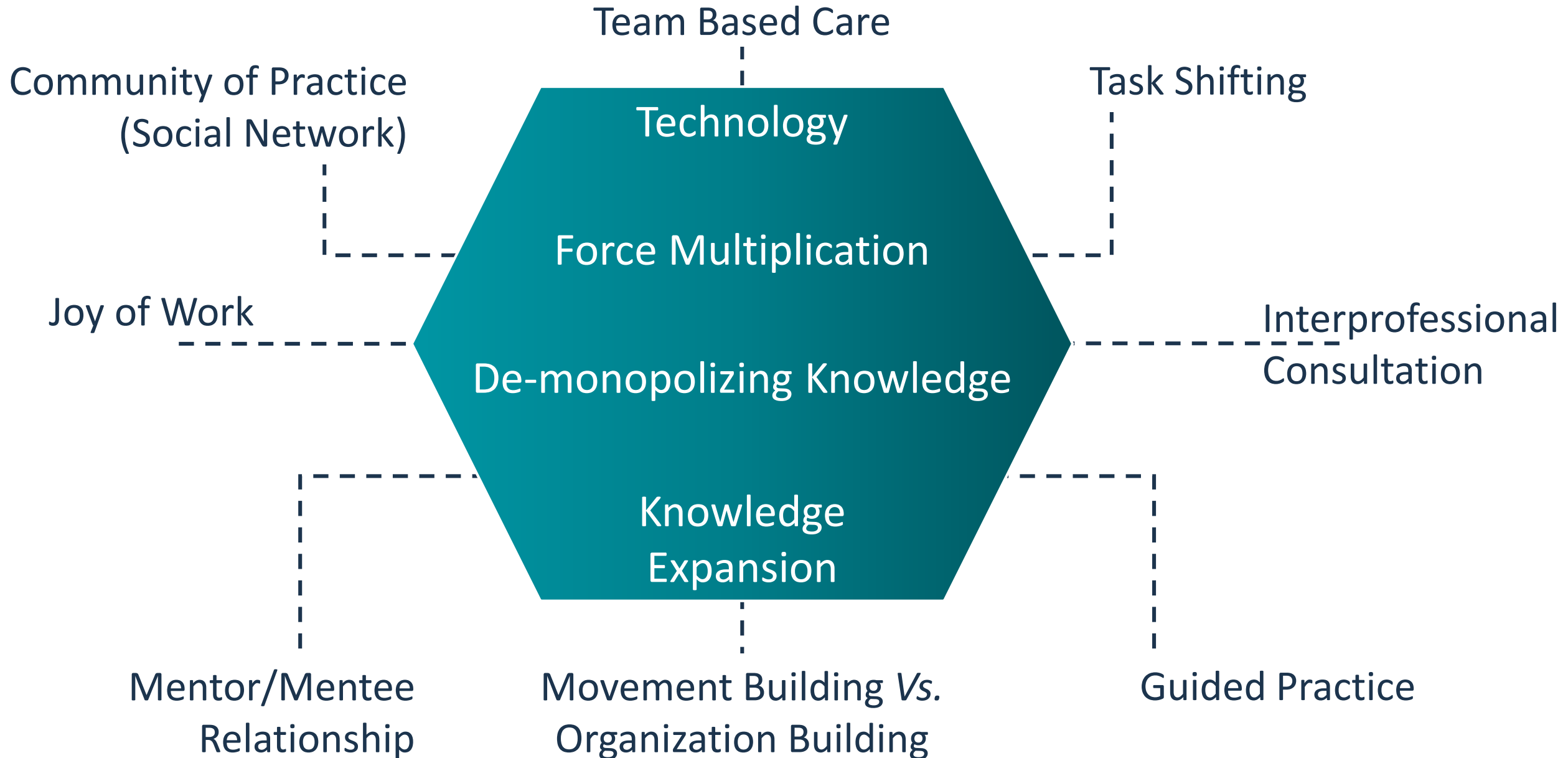


Other ECHO outcomes

- Enhances professional satisfaction
- Decreases professional isolation
- “Benefits my clinic”
- Expands access to treatment for patients
- Helps address limited access to specialists



What Makes ECHO Work?





ECHO Hubs & Superhubs: United States

Hub Locations

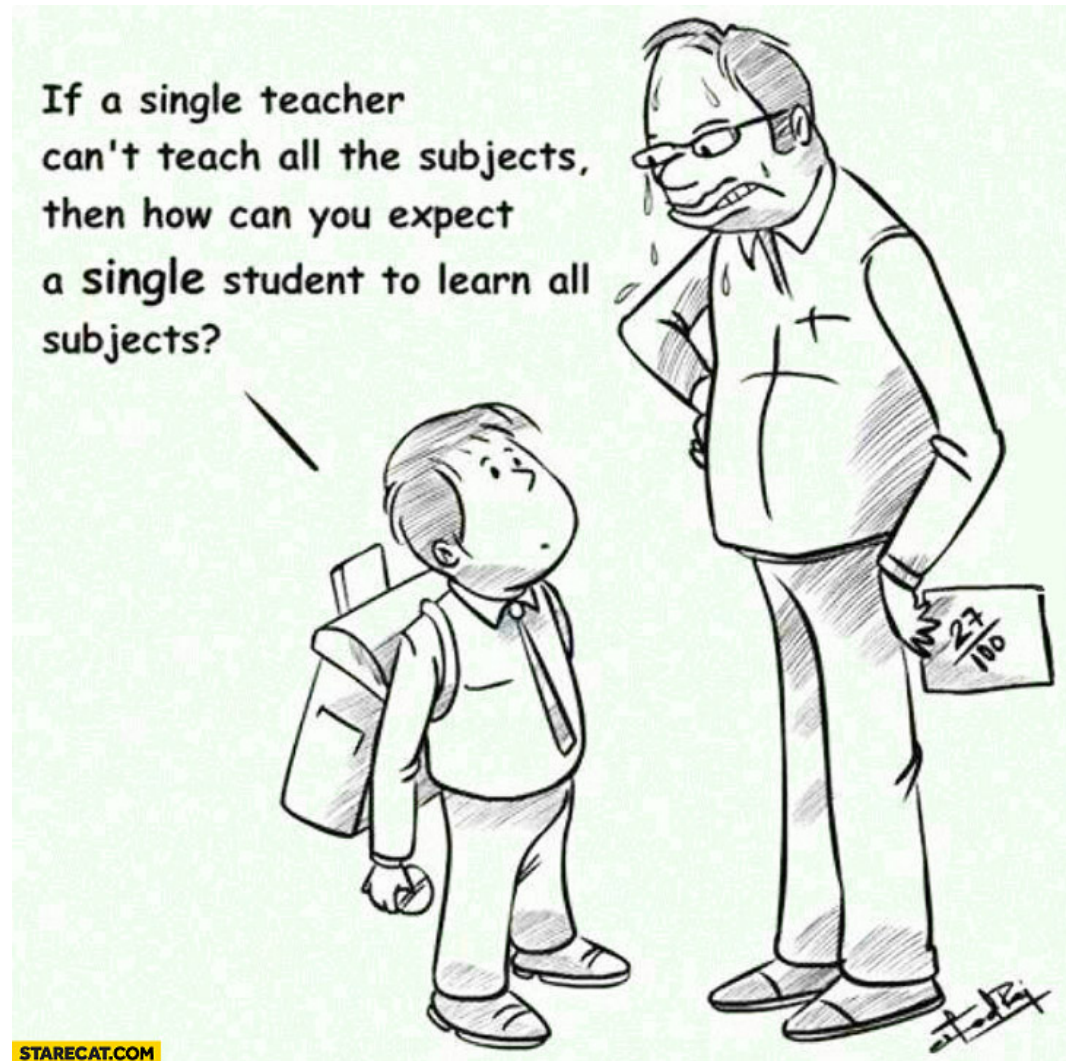


ECHO format

- Introductions
- Announcements
 - ZOOM etiquette
 - Review agenda
 - Follow-up
- Didactic (15-20 min)
- Case presentation
 - Spoke participant presents
 - Facilitator summarizes
- Clarifying questions
 - Participants – then hub
- Impressions
- Recommendations
 - Participants – then hub
- Summary
 - Sent to presenter
- Closing Announcements
 - Submission of new cases
 - Completion of evaluations



ALL TEACH --- ALL LEARN



STARECAT.COM



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Ticks

American Dog Tick



Blacklegged Tick (ixodes)

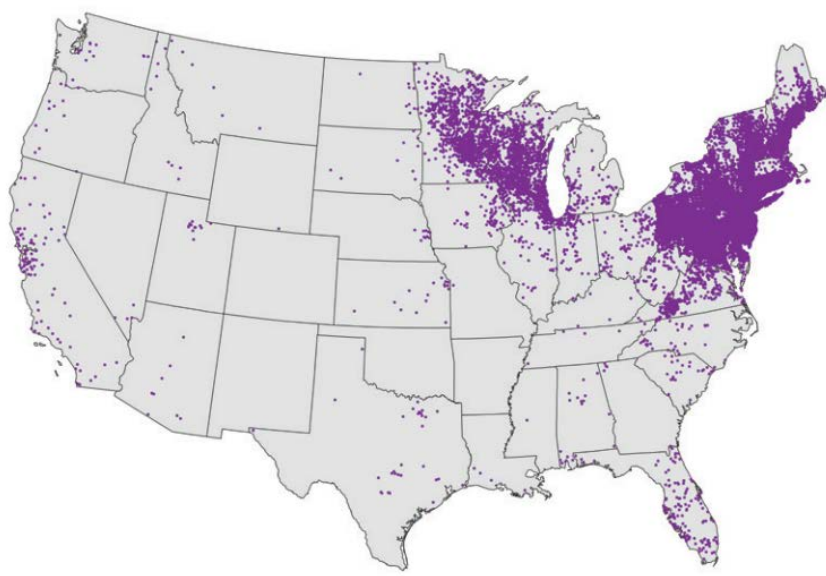
Brown Dog Tick



Tick-borne Diseases in Vermont

1. Lyme Disease
2. Anaplasmosis
3. Babesiosis
4. Borrelia burgdorferi
5. Powassan Virus Disease
 - Not reported since 1999





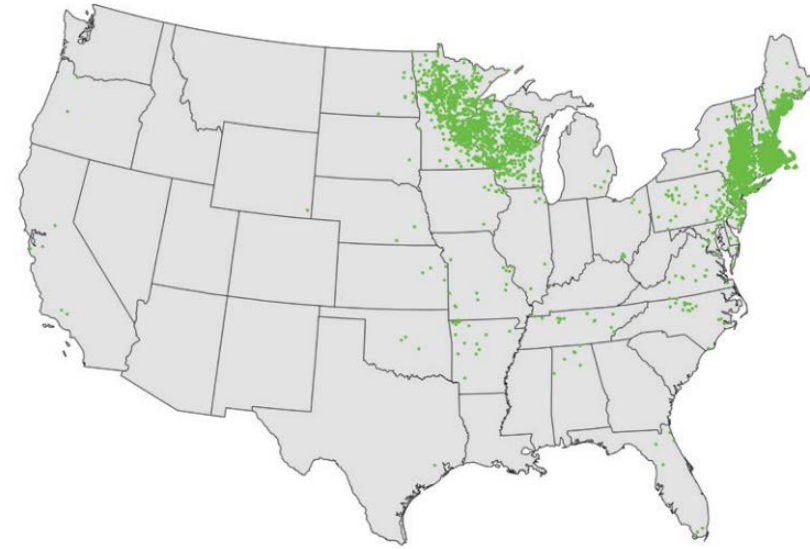
LYME DISEASE



EHRlichiosis



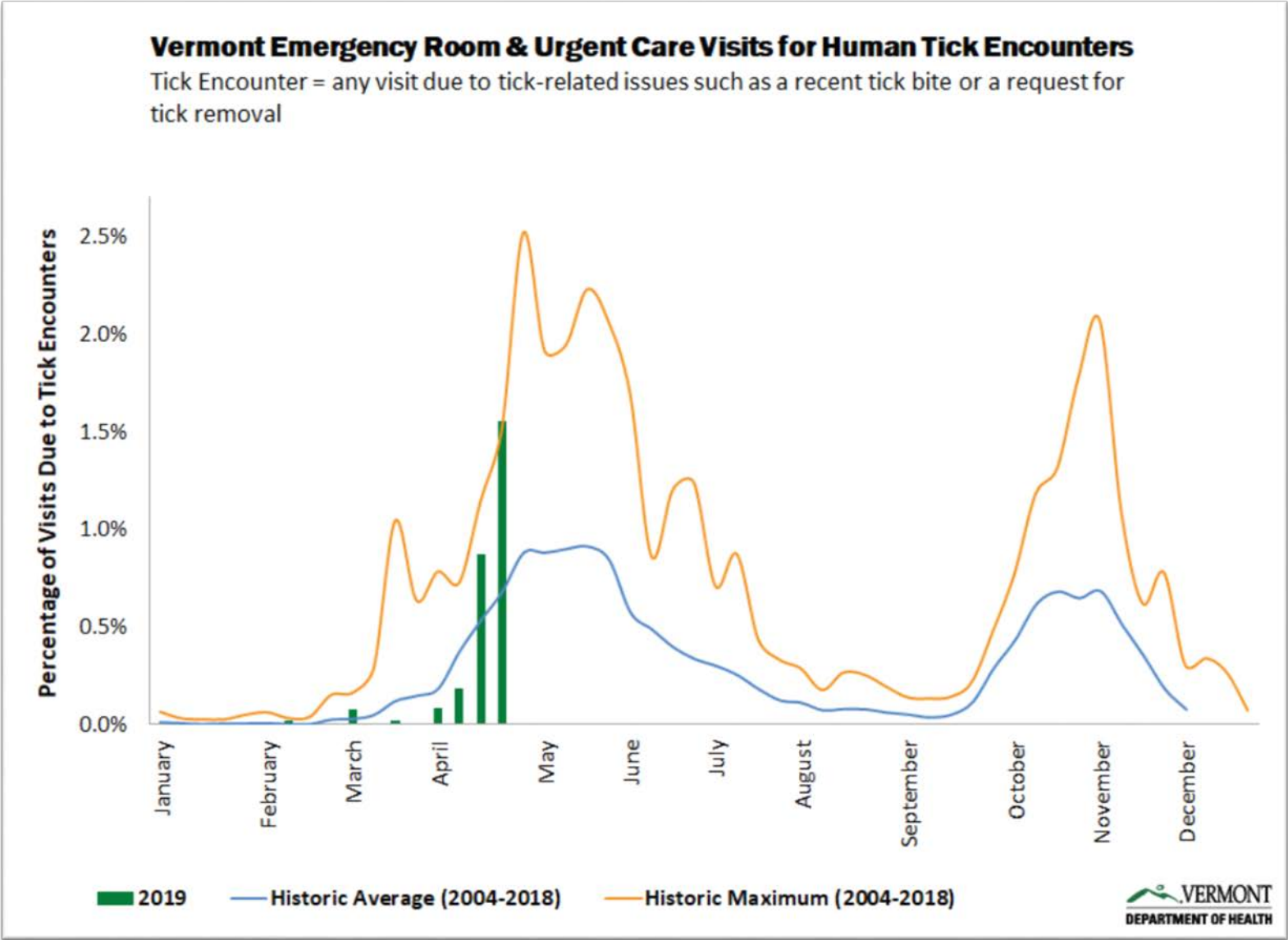
BABESIOSIS



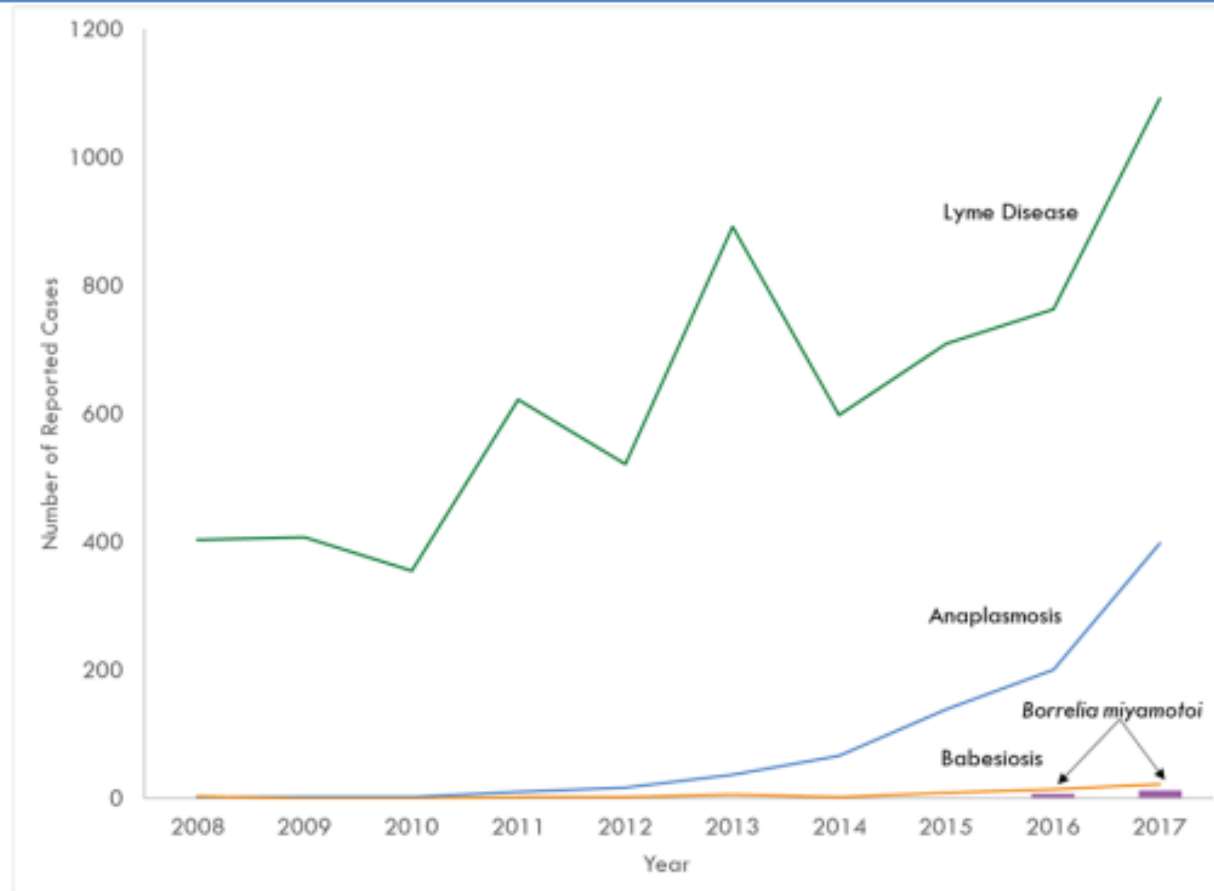
ANAPLASMOSIS



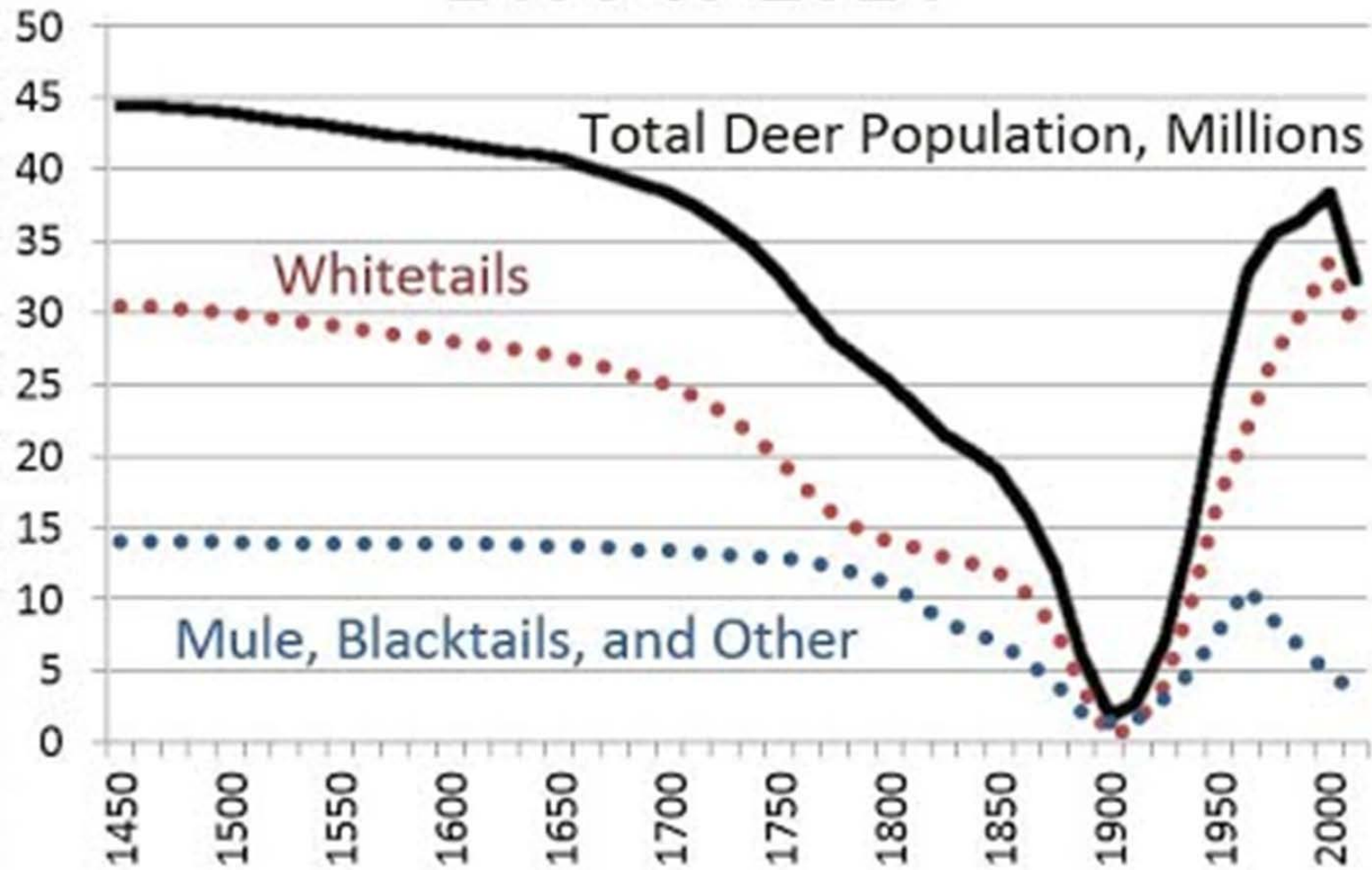
Tick Visits



Tickborne Diseases Indigenous to Vermont



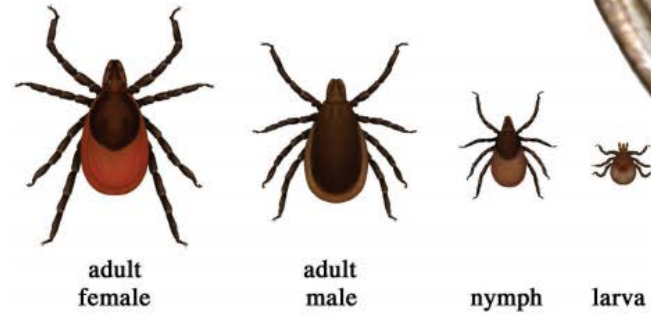
U.S. Deer Population 1450 to 2014



Ticks

TICKS THAT COMMONLY BITE HUMANS

Blacklegged Tick (*Ixodes scapularis*)



Lone Star Tick (*Amblyomma americanum*)



Dog Tick (*Dermacentor variabilis*)

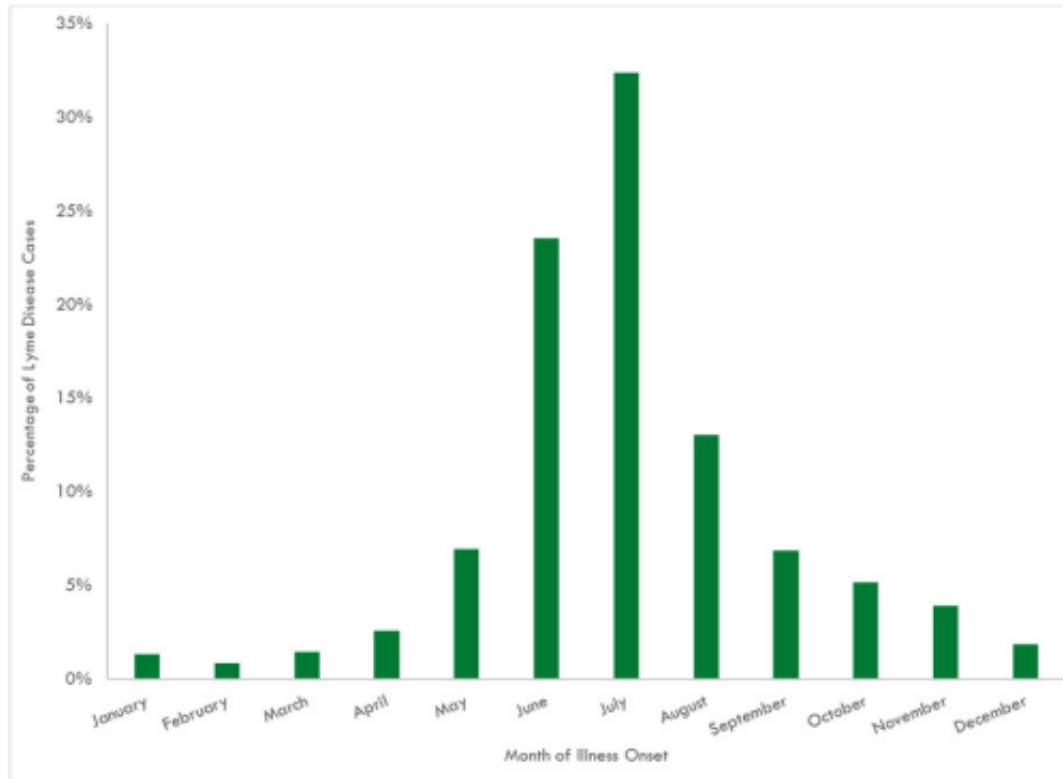


Rates for VT Blacklegged ticks

Infection	Rate
Borrelia burgdorferi	51-53%
Anaplasma phagocytophilum	7-8%
Babesia microti	1-2%
Powassan virus	1%
Borrelia miyamotoi	0.8 %

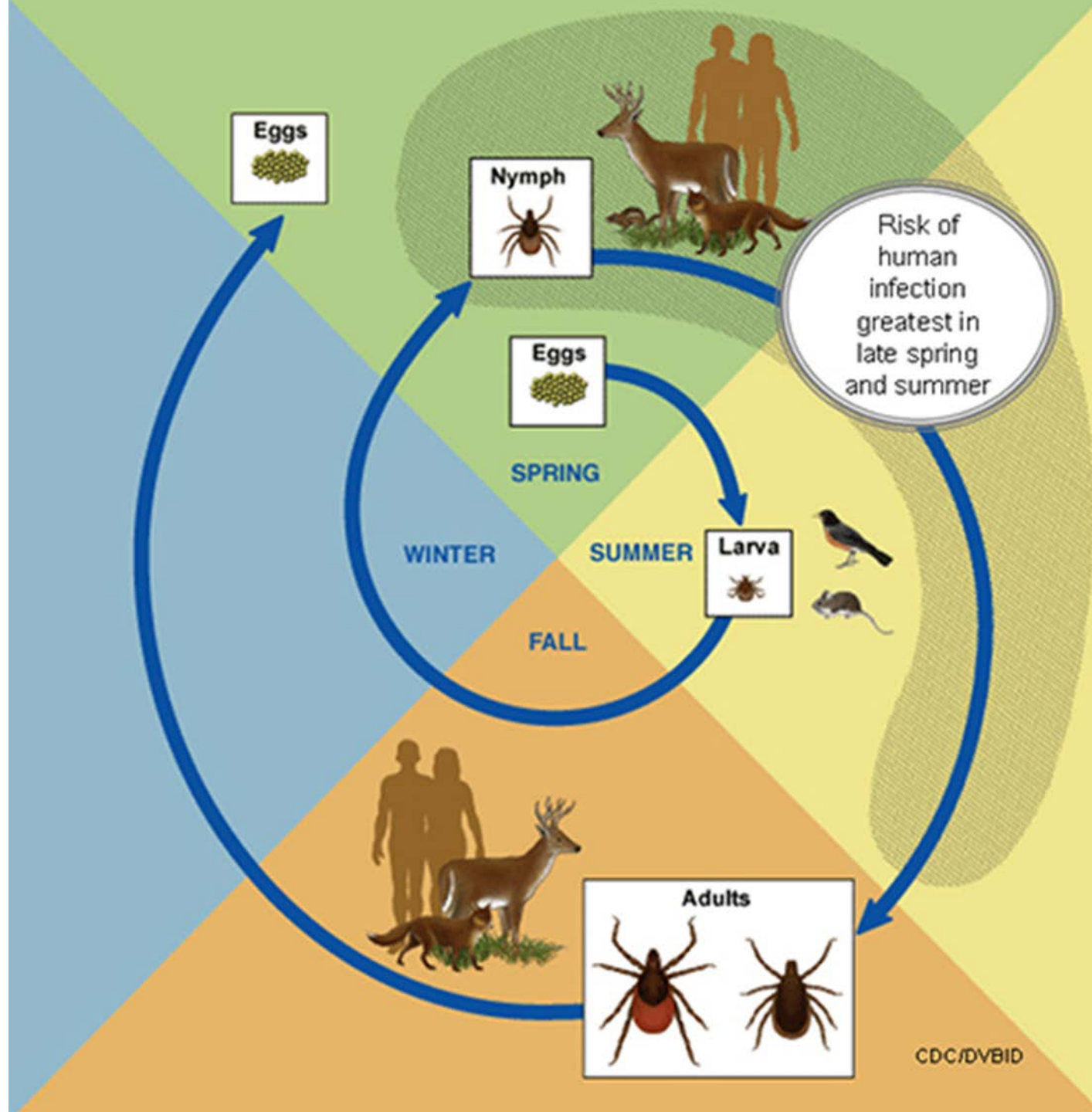


Seasonality of Lyme Disease in Vermont



- Cases of Lyme disease occur throughout the year
- Over half all cases become sick in June & July





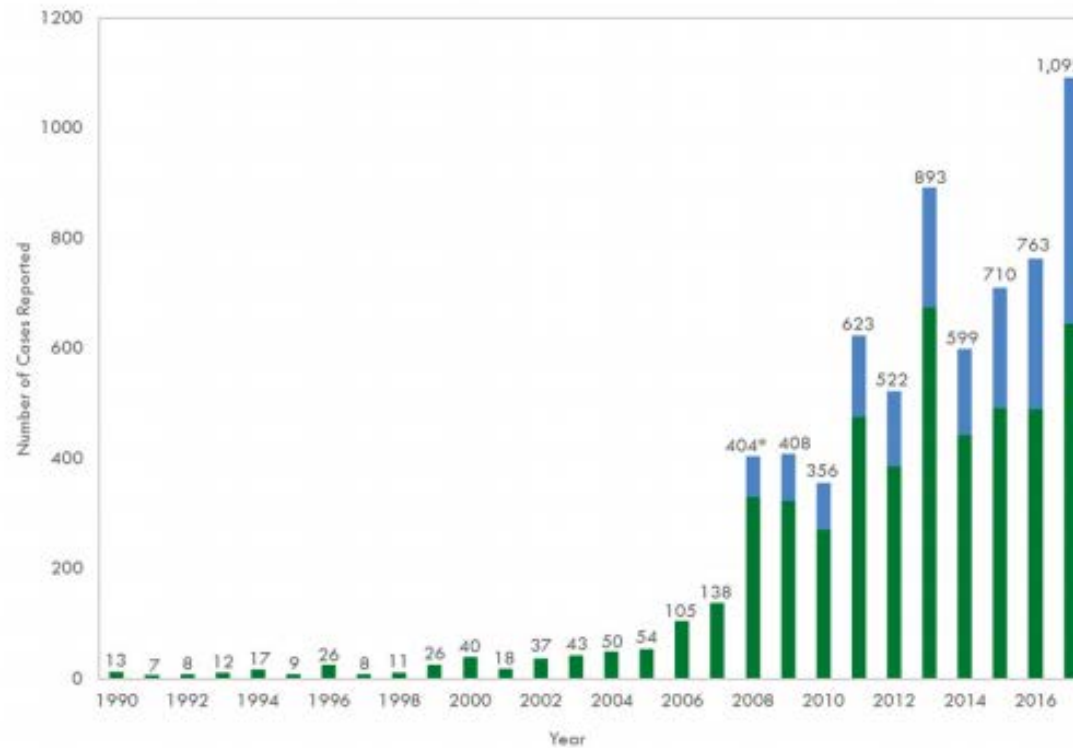
National Notifiable Infectious Diseases and Conditions: United States

TABLE 2i. Reported cases of notifiable diseases, by region and reporting area - - United States and U.S. territories, 2017

Reporting Area	Lyme disease		
	Total	Confirmed	Probable
United States	42,743	29,513	13,230
New England	7,916	5,323	2,593
Connecticut	2,051	1,381	670
Maine	1,850	1,424	426
Massachusetts	410	321	89
New Hampshire	1,381	956	425
Rhode Island	1,132	595	537
Vermont	1,092	646	446
Middle Atlantic	22,147	16,381	5,766
New Jersey	5,092	3,629	1,463
New York (excluding New York City)	4,072	2,906	1,166
New York City	1,083	596	487
Pennsylvania	11,900	9,250	2,650

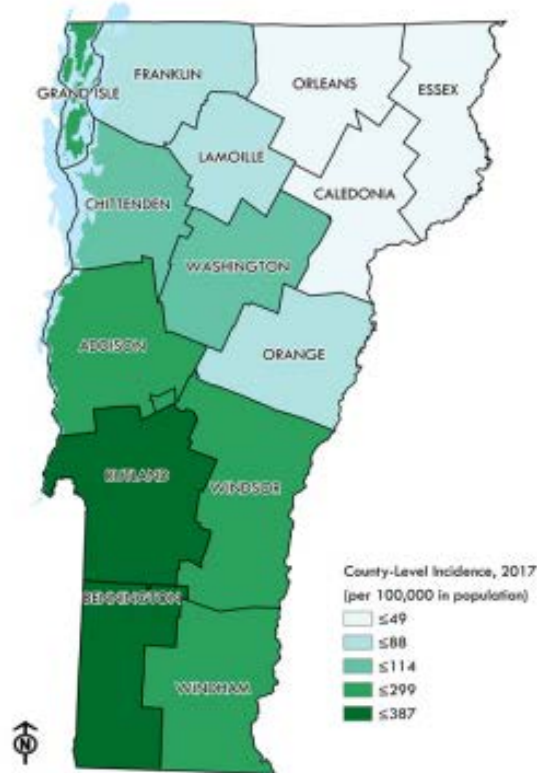


Changes in Lyme Disease Over Time and Geography

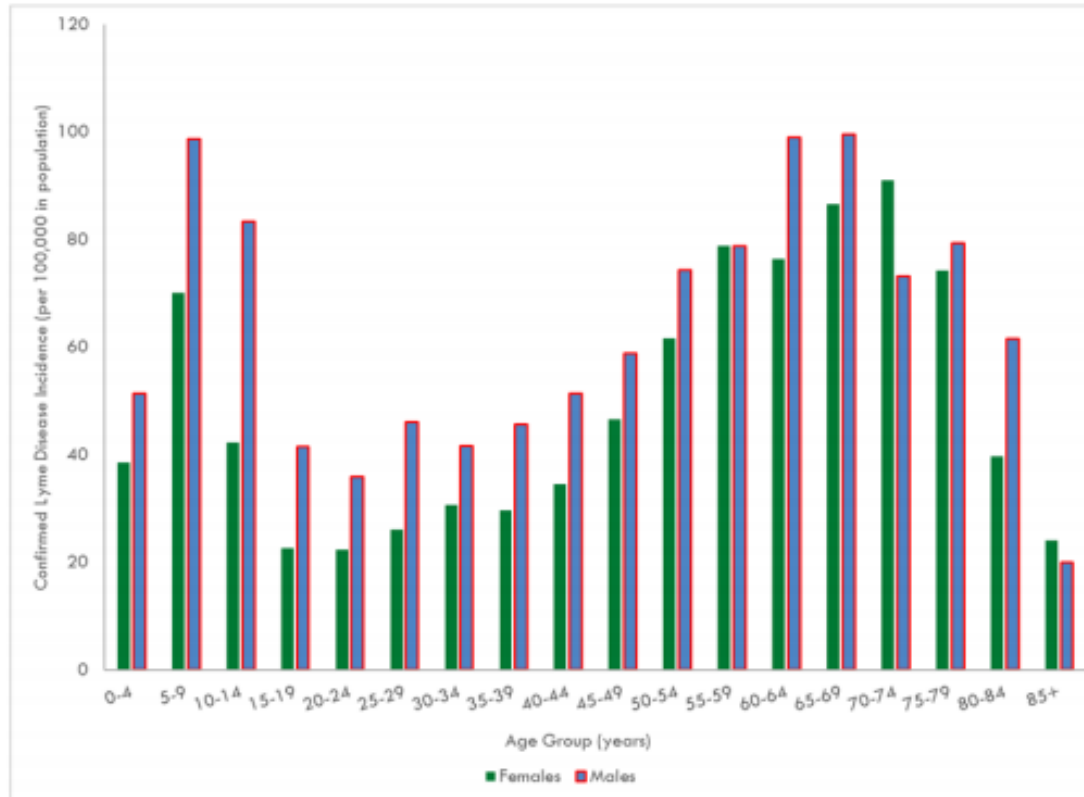


* First year that probable cases were counted

■ Confirmed ■ Probable



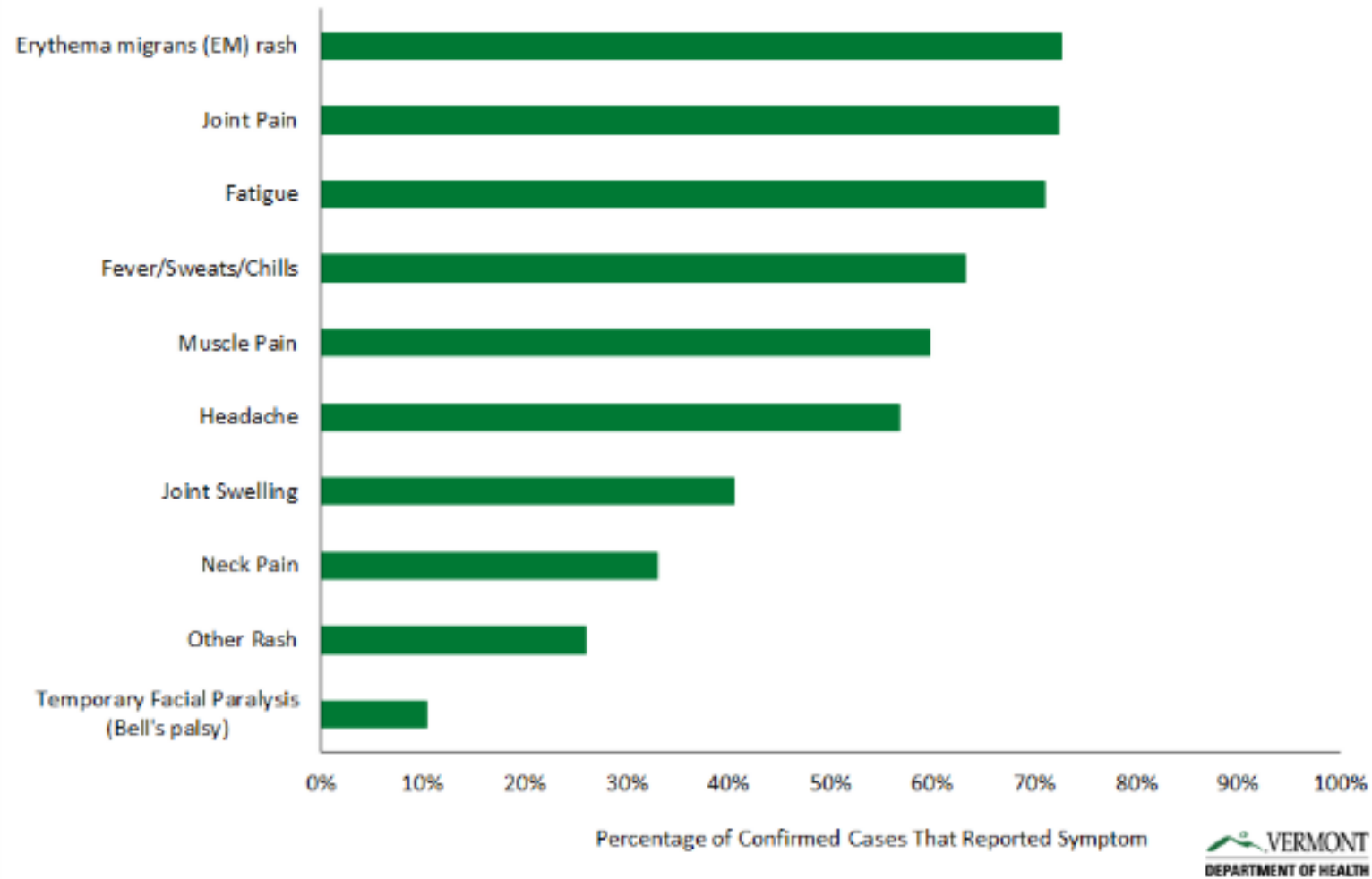
Demographics of Lyme Disease in Vermont



- Vermonters of all age groups are at risk for Lyme
- Higher risk groups:
 - ▣ Children between 5-14 years
 - ▣ Middle-aged & older adults
 - ▣ Males



Ten Most Commonly Reported Symptoms of Confirmed Lyme Disease Cases Reported to the
Vermont Department of Health, 2005-2017



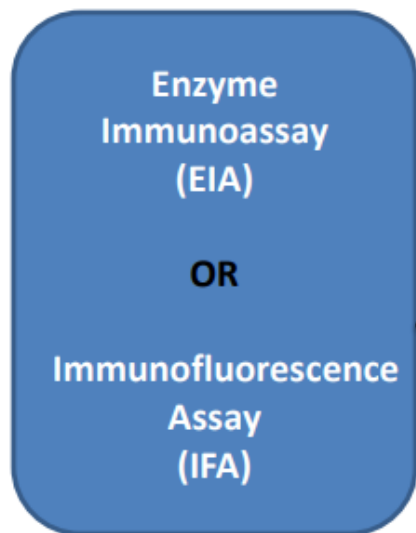
Primer: Laboratory Testing In Lyme Disease

- Testing is imperfect
 - Lyme is difficult to culture
 - insensitive
 - takes several weeks to grow
 - Diagnosis is based on clinical presentation and serologic testing
- Sensitivity of serology (CDC 2-tiered testing)
 - Erythema migrans : <50%
 - Early disseminated disease: ~80%
 - Late disease: >95%
- Antibody can be falsely positive:
 - syphilis, leptospirosis, mono, autoimmune disease, periodontal disease



Two-Tiered Testing for Lyme Disease

First Test



Positive
or
Equivocal
Result

Negative
Result

Second Test

Signs or
symptoms
 ≤ 30 days

Signs or
symptoms
 > 30 days

IgM and IgG
Western Blot

IgG Western Blot
ONLY

Consider alternative diagnosis

OR

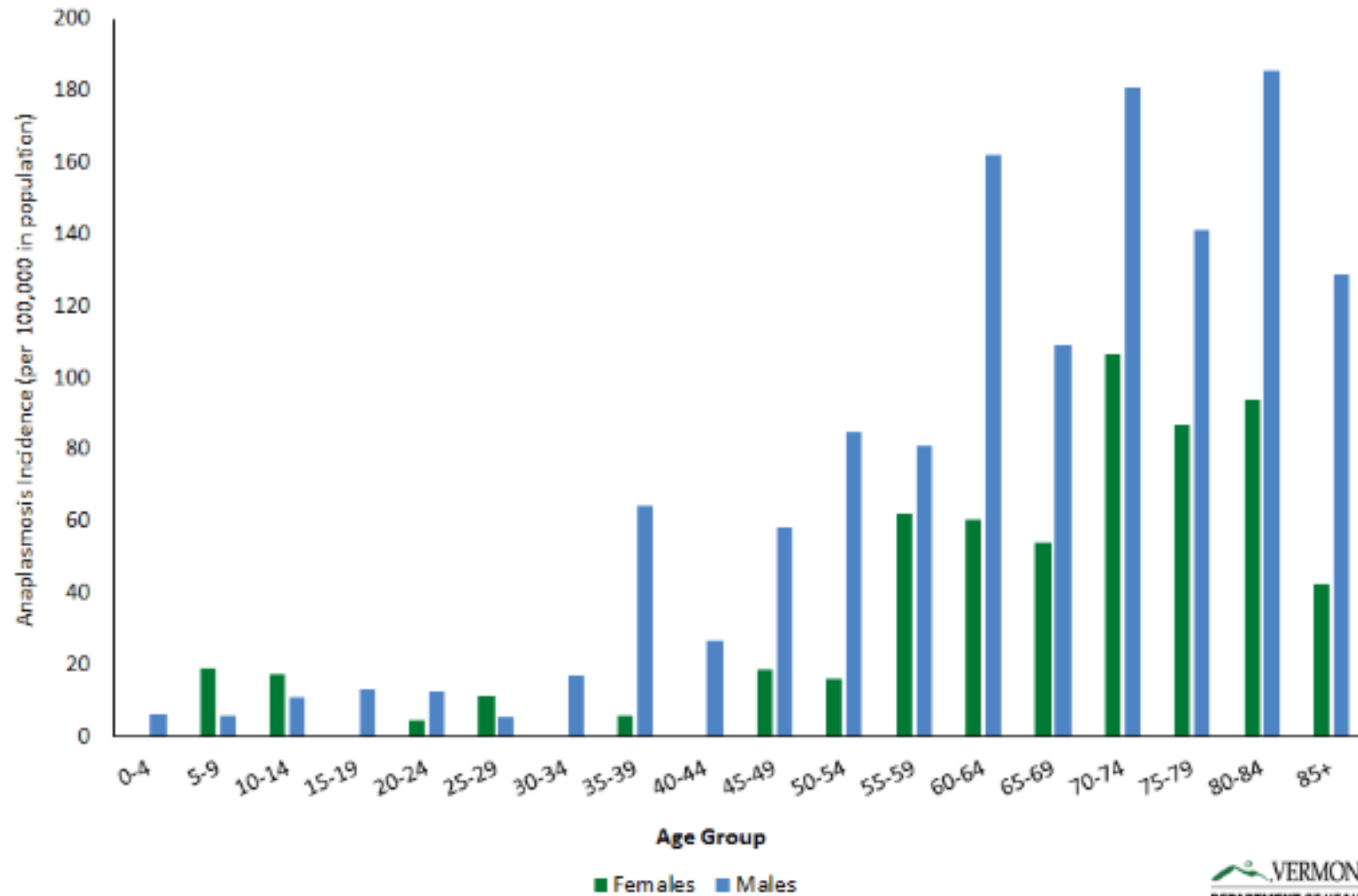
If patient with signs/symptoms consistent
with Lyme disease for ≤ 30 days, consider
obtaining a convalescent serum

National Center for Emerging and Zoonotic Infectious Diseases

Division of Vector Borne Diseases | Bacterial Diseases Branch



**Age Distribution of Confirmed & Probable Anaplasmosis Cases Reported to the Vermont
Department of Health, 2008-2015**



Cases/HIPAA

- Names
- Address
- DOB
- Phone/Fax #
- Email address
- Social Security #
- Medical Record #



Go to Case Template



Conclusion

- Volunteers to present cases (this is key to the Project ECHO model)
 - Use the case template form posted at www.vtahec.org
 - Return completed case forms to mark.pasanen@uvmhealth.org
- Please complete evaluation survey after each session
- Claim your CME at www.highmarksce.com/uvmmed
- Please contact us with any questions/concerns/suggestions
 - Mark.Pasanen@uvmhealth.org
 - Elizabeth.Cote@uvm.edu
 - ahec@uvm.edu

