

Tick Talk: Spreading the Word Before the Bite

Massachusetts Health Officer Association
Annual Conference
November 5, 2025

Patrick Roden-Reynolds
Public Health Biologist
Director of MV Tick Program



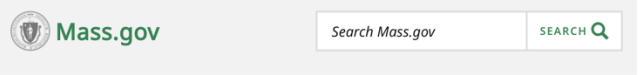
Lea Hamner, MPH
Contract Epidemiologist



Roadmap

- The Challenge: communication & ticks
- The MV Tick Program & the power of a public health biologist
- Being evidence-informed, community-driven
- Partnerships & sustainability

Conventional Communication



Health & Social Services > Disease Control & Prevention > Tick-borne Diseases

OFFERED BY Department of Public Health | Show 1 more

Tick-borne disease surveillance summaries and data

Health care providers can view various surveillance summaries and data regarding tick-borne diseases.

The Massachusetts Department of Public Health (DPH) conducts ongoing surveillance of several tick-borne diseases, including:

- Babesiosis
- Human granulocytic anaplasmosis (HGA)
- Borrelia miyamotoi
- Powassan virus
- Lyme disease

Feedback

Tickborne Diseases Reported in Massachusetts, 2015-2025

The Tickborne Diseases 10-Year Morbidity Report, below, gives an overview of incidence of tickborne disease in Massachusetts.

TICKBORNE DISEASES REPORTED IN MASSACHUSETTS, 2015 - 2025 ¹												
Disease	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	YTD ¹
Lyme Disease ²	4370	207	416	189	165	103	28	5102	9728	8840	7210	
Babesiosis	448	519	591	527	640	580	610	454	837	788	818	
Human Granulocytic Anaplasmosis	771	874	1218	658	703	740	773	625	747	1060	1146	
Borrelia miyamotoi	8	16	43	63	32	16	26	16	47	57	82	
Powassan virus	3	5	3	7	9	7	6	5	11	11	4	
Total:												9260



Conventional Communication

 **Mass.gov**

SEARCH

[Home](#) > [Health & Social Services](#) > [Disease Control & Prevention](#) > [Tick-borne Diseases](#)

OFFERED BY [Department of Public Health](#) Show 1 more

Feedback

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 The Martha's Vineyard Times

Hospital reports rise in tick bites

Jul 9 • By Eunki Seonwoo & Sam Houghton



 Boston Herald

Tick bite ER visits on the upswing in Massachusetts

Jul 13



 The Boston Globe

New England is seeing one of its worst tick seasons in years

Jul 7 • By Angela Mathew



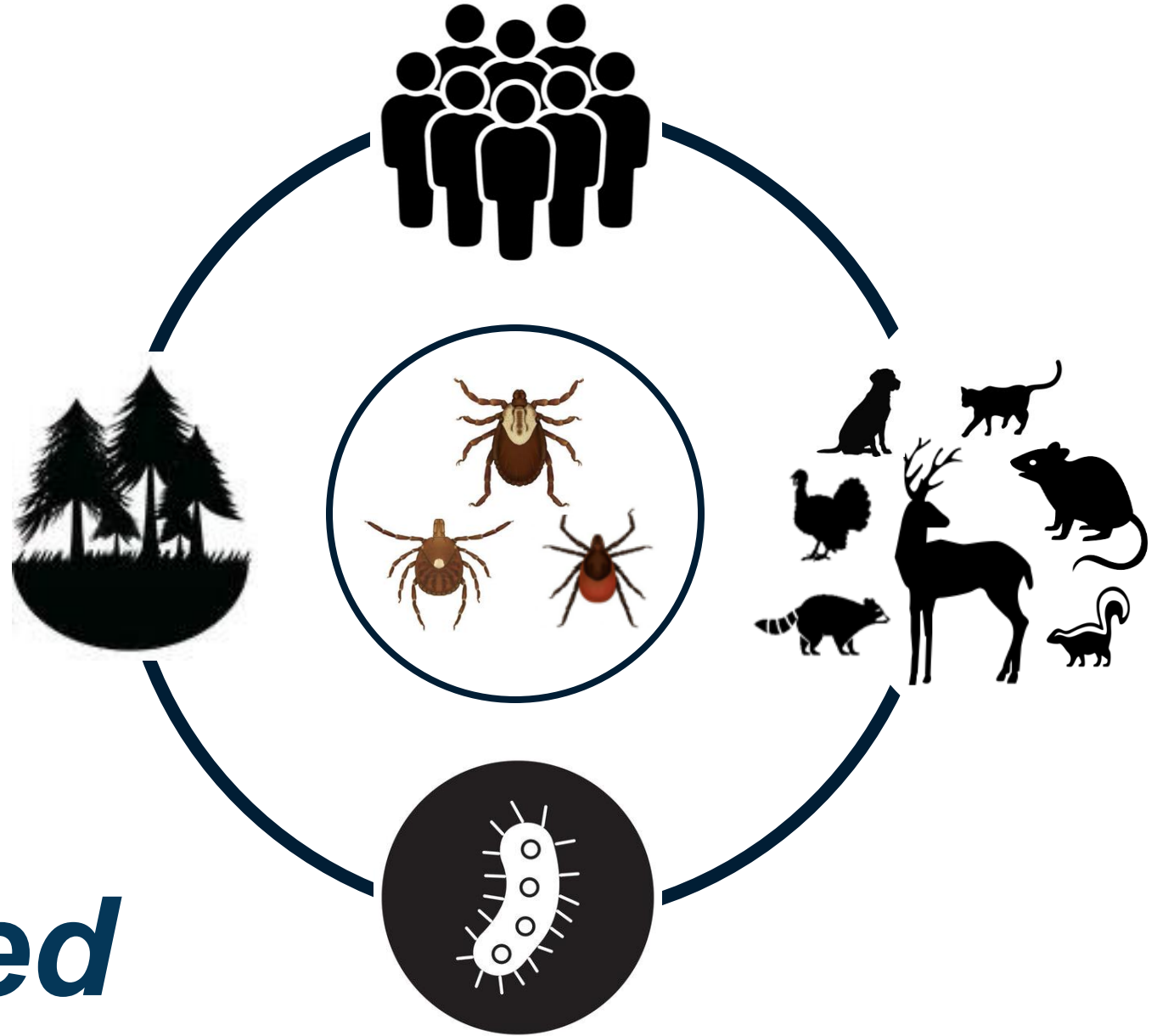
 MassLive

Tick, tick... boom? Mild weather has kept populations rising, experts say





**Ticks
(and their
diseases)
are
*complicated***





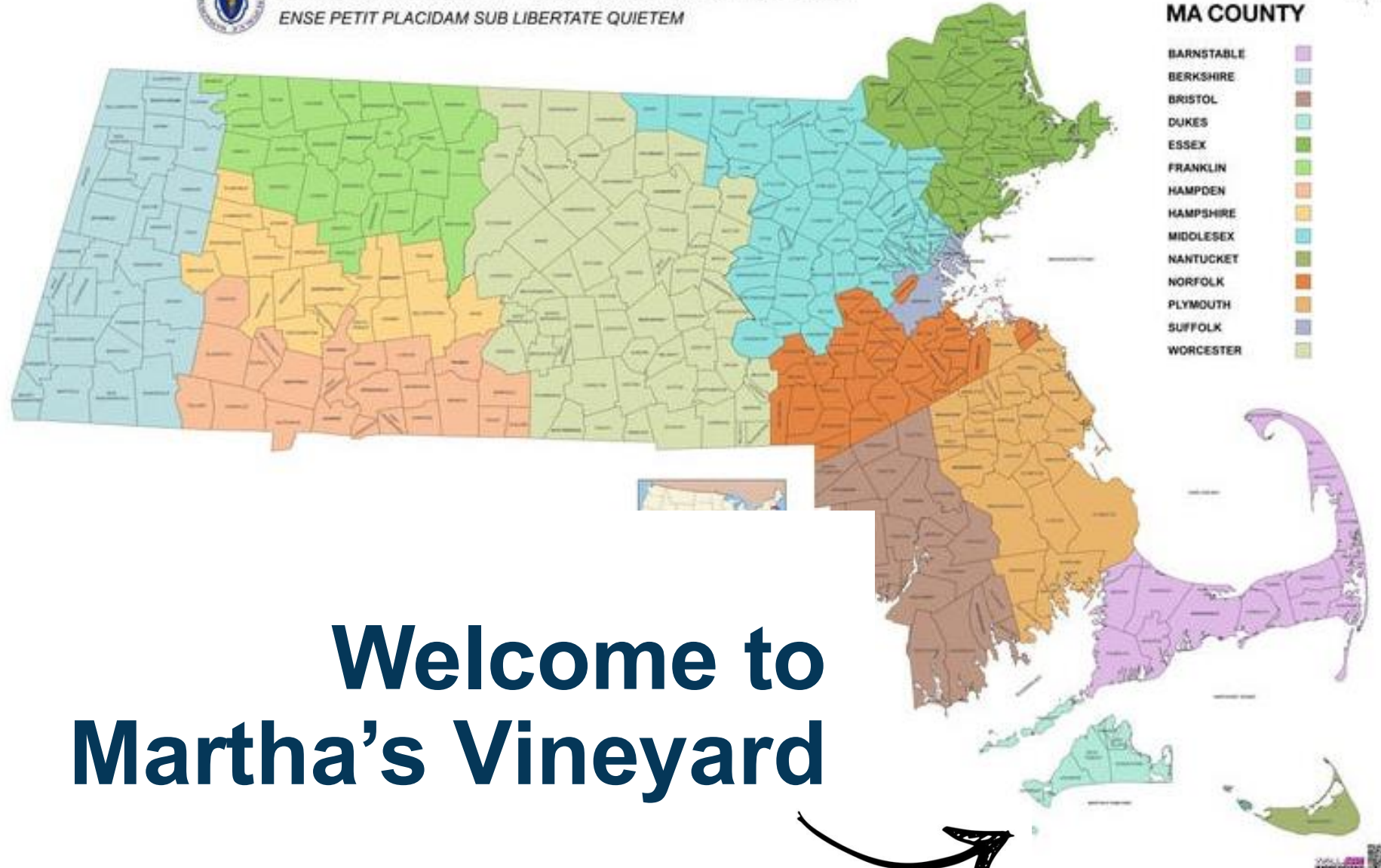


Patience. Presence. Persistence.



MASSACHUSETTS CITIES AND TOWNS

ENSE PETIT PLACIDAM SUB LIBERTATE QUIETEM



Welcome to Martha's Vineyard



A Bit About Our Home – What you see



A Bit About Our Home – What we see



FARM & GARDEN FARM & FIELD

Farm and Field: Trade-Offs

Thomas Humphrey Thursday, July 4, 2024 - 1:55pm

NEWS COMMUNITY BUSINESS

Ever-Increasing Demand Fuels Landscaping Business Growth

Thomas Humphrey Thursday, September 21, 2023 - 4:00pm

ARTS & ENTERTAINMENT COMMUNITY

Brazil Fest Helps Islanders Connect Across Cultures

Addison Antonoff Monday, June 17, 2024 - 4:05pm



NEWS

Islanders Highlight Crisis During State Housing Leader's Visit

Noah Glasgow Wednesday, June 5, 2024 - 4:30pm

COMMUNITY BUSINESS

Housing Insecurity Poses Health Risks, Hospital Survey Finds

Holly Pretsky Monday, September 2, 2019 - 6:05am

Housing for hospital workers called 'crisis'

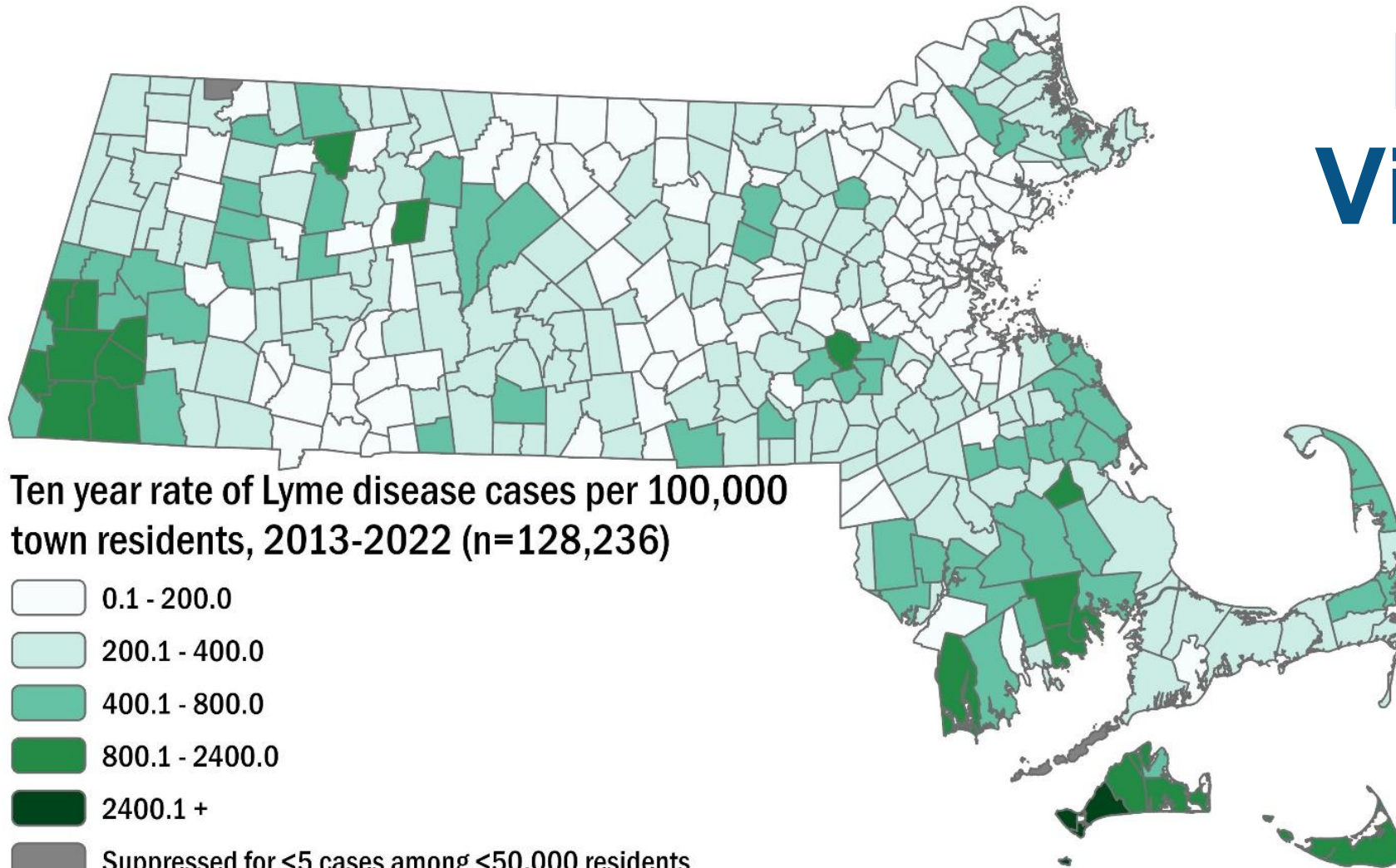
MVH has difficulty attracting and retaining employees because of housing.

By George Brennan - March 14, 2022





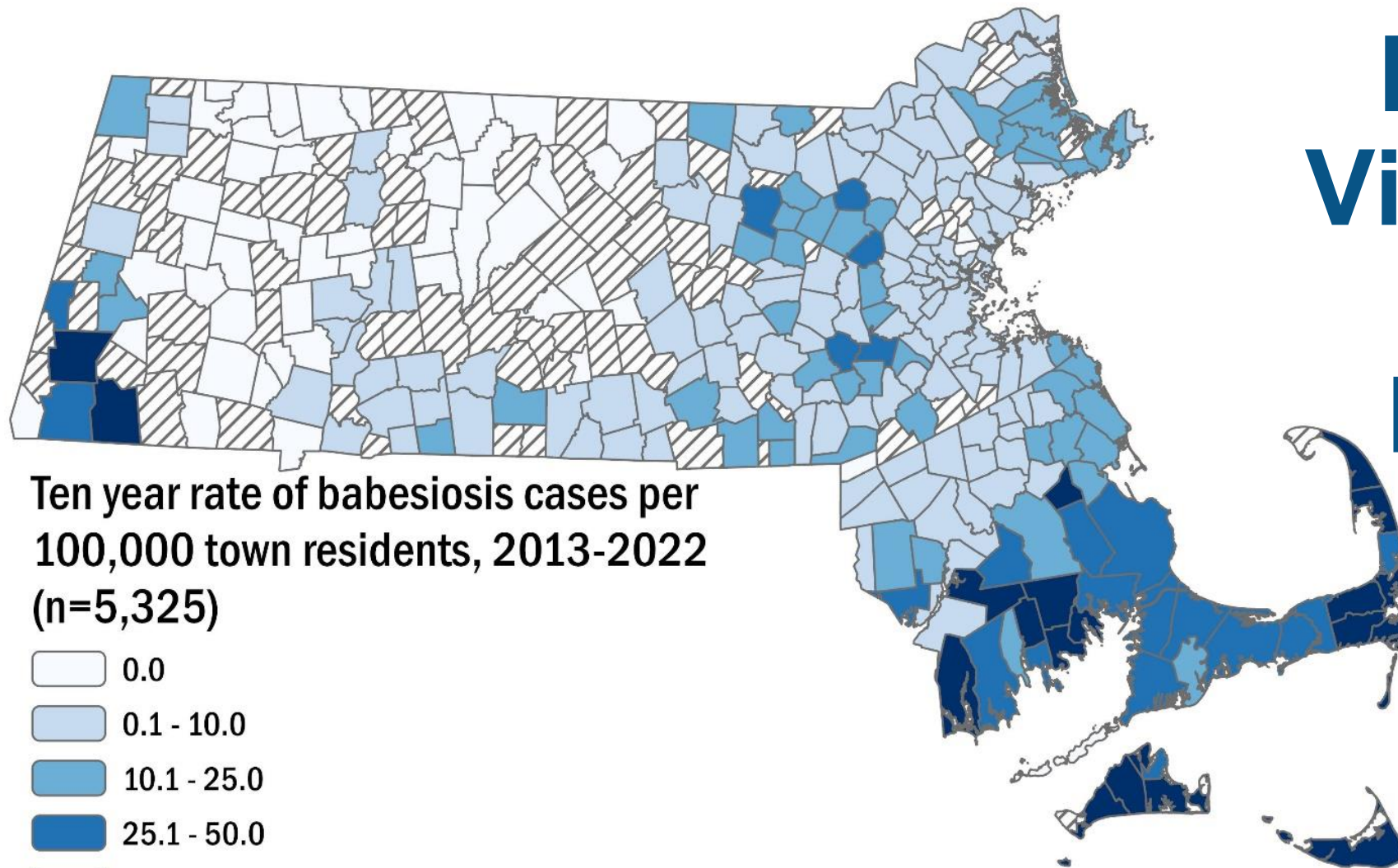
Martha's Vineyards Tick Problem



There were 4,851 cases with no town assigned that are not represented on this map. Data are current as of February 2024 and are subject to change.

Massachusetts Department of Public Health
Bureau of Infectious Disease and Laboratory Sciences

Martha's Vineyards Tick Problem



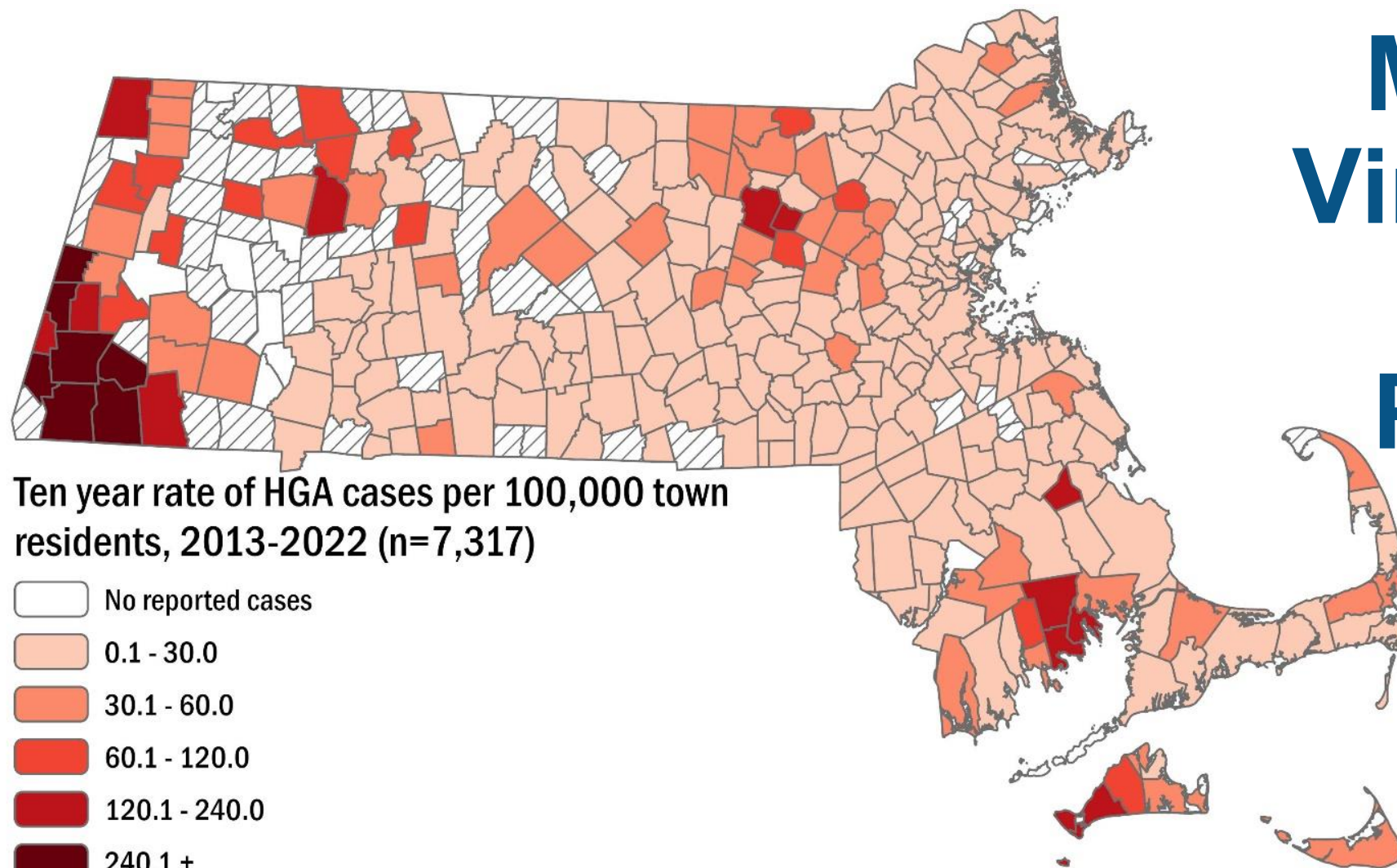
Suppressed for <5 cases among <50,000 residents

Data are current as of February 2024 and are subject to change.

Massachusetts Department of Public Health

Bureau of Infectious Disease and Laboratory Sciences

Martha's Vineyard Tick Problem



There were 5 cases with no town assigned that are not represented on this map. Data are current as of February 2024 and are subject to change.

Massachusetts Department of Public Health
Bureau of Infectious Disease and Laboratory Sciences

A New Tick in Town

A Chilmark Backyard

May 2024

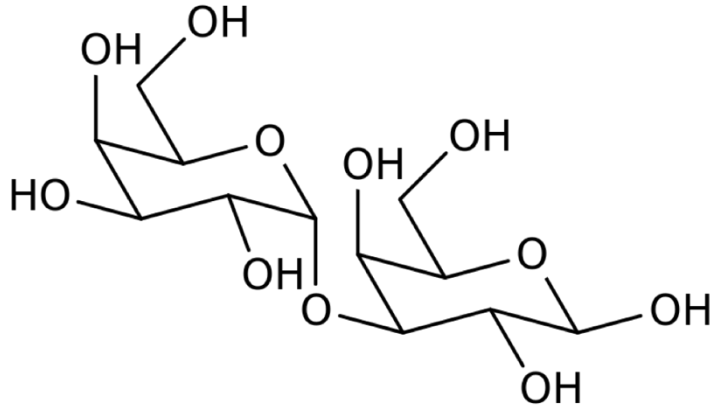
Ticks collected by
Patrick Roden-Reynolds



Lone Star ticks can cause...

Alpha Gal Syndrome

An extremely abbreviated overview



Galactose alpha-1,
3-galactose
(A **carbohydrate**)

Alpha Gal Syndrome



Present in
tissues & cells of
**ALL non-primate
mammals &
some other
organisms too**

Alpha Gal Syndrome

An allergy caused by Lone Star tick bites

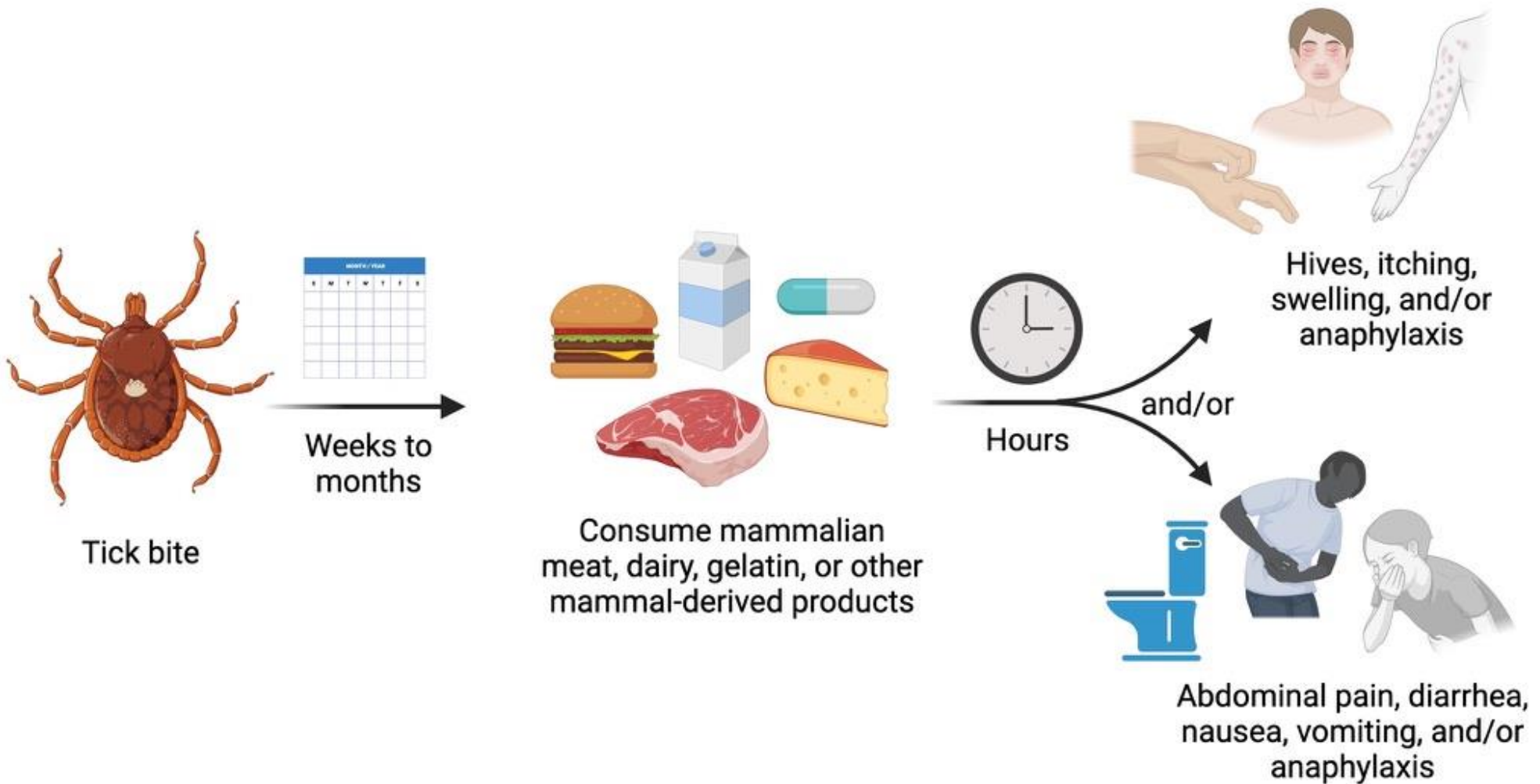
Wide range of symptoms that can affect gastrointestinal, skin, cardiovascular, and respiratory systems.

Delayed symptoms (2-8 hours) after exposure

“Consistently Inconsistent”

Reactions can be mild to life-threatening

Alpha-gal syndrome



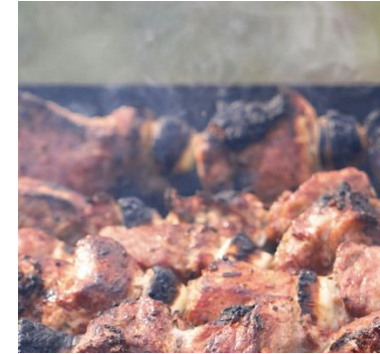
Adapted from McGill SK, Hashash JG, Platts-Mills TA. AGA Clinical Practice Update on Alpha-Gal Syndrome for the GI Clinician: Commentary. *Clin Gastroenterol Hepatol*.

Created with BioRender.com

To learn more about AGS, visit
www.AlphaGalInformation.org



Exposure Sources



Food Allergen Regulations:

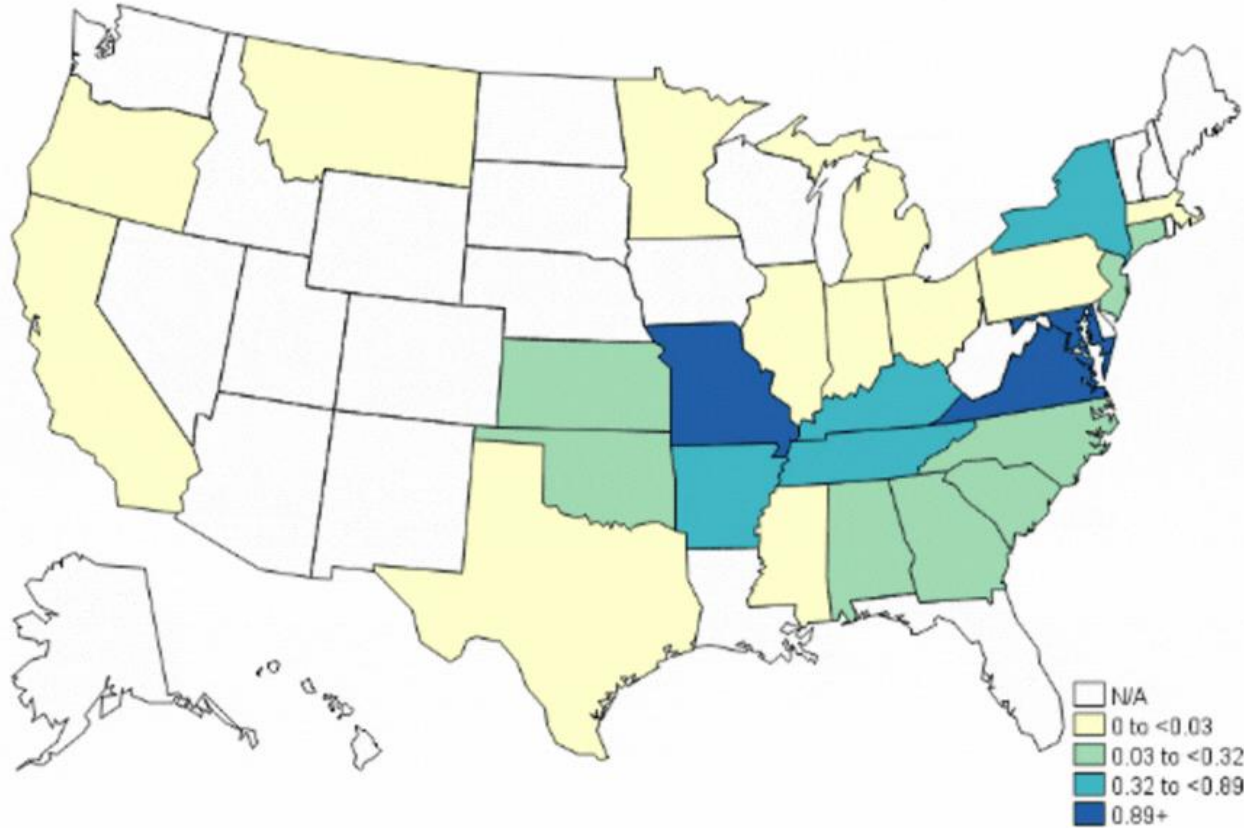
- Currently **NO** regulatory requirements for the labeling of foods, medications, or products with mammalian content.
- Term “Vegan” is also not regulated. “Vegan-certified” products are safer but not guaranteed.

2013

An Allergy Epidemic

Persons positive
per 100,000
population

Article: Binder,
Commins, et al
2021



SCHOOL OF
MEDICINE

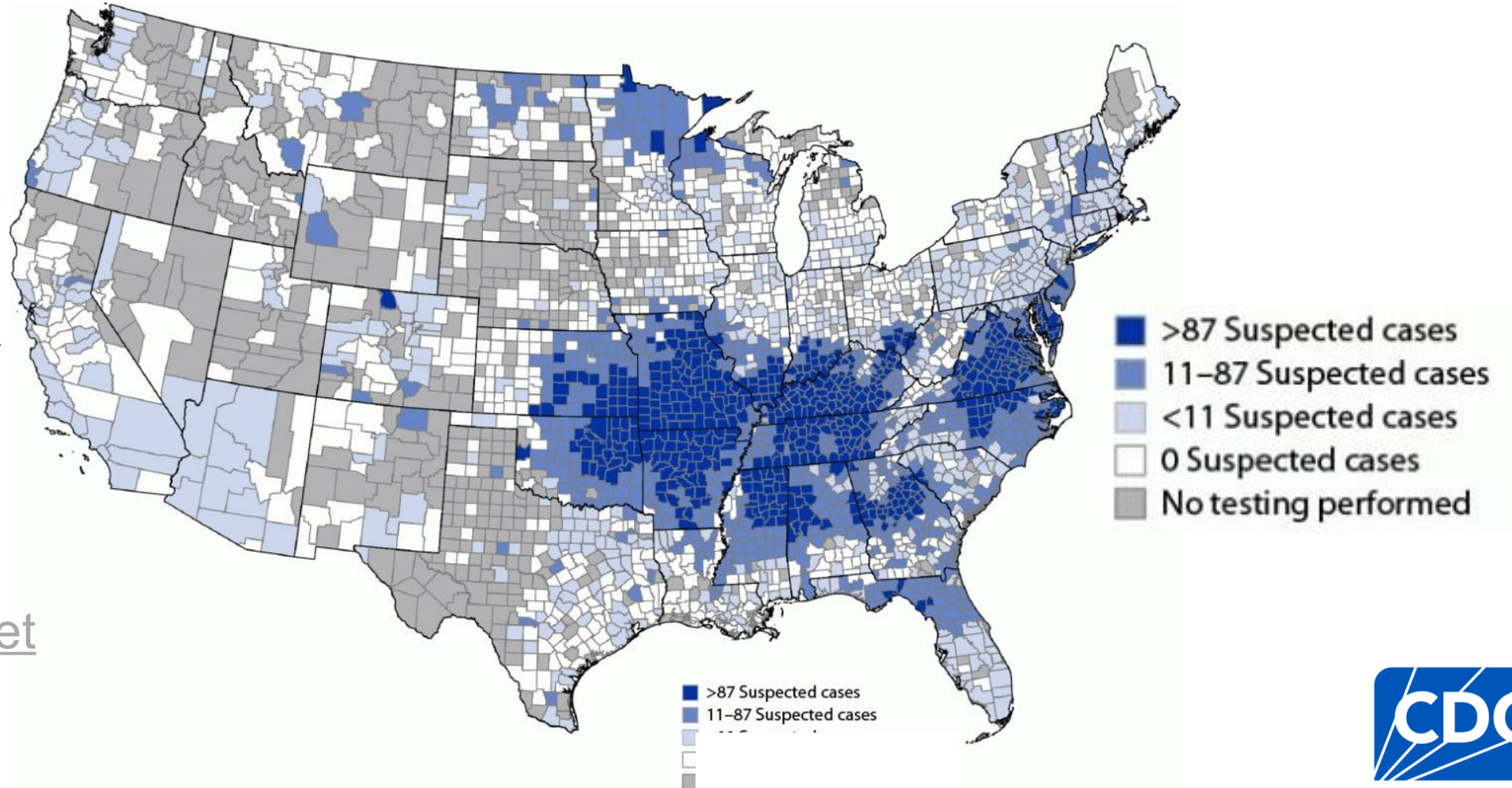


Most Recent Map per Lab Surveillance

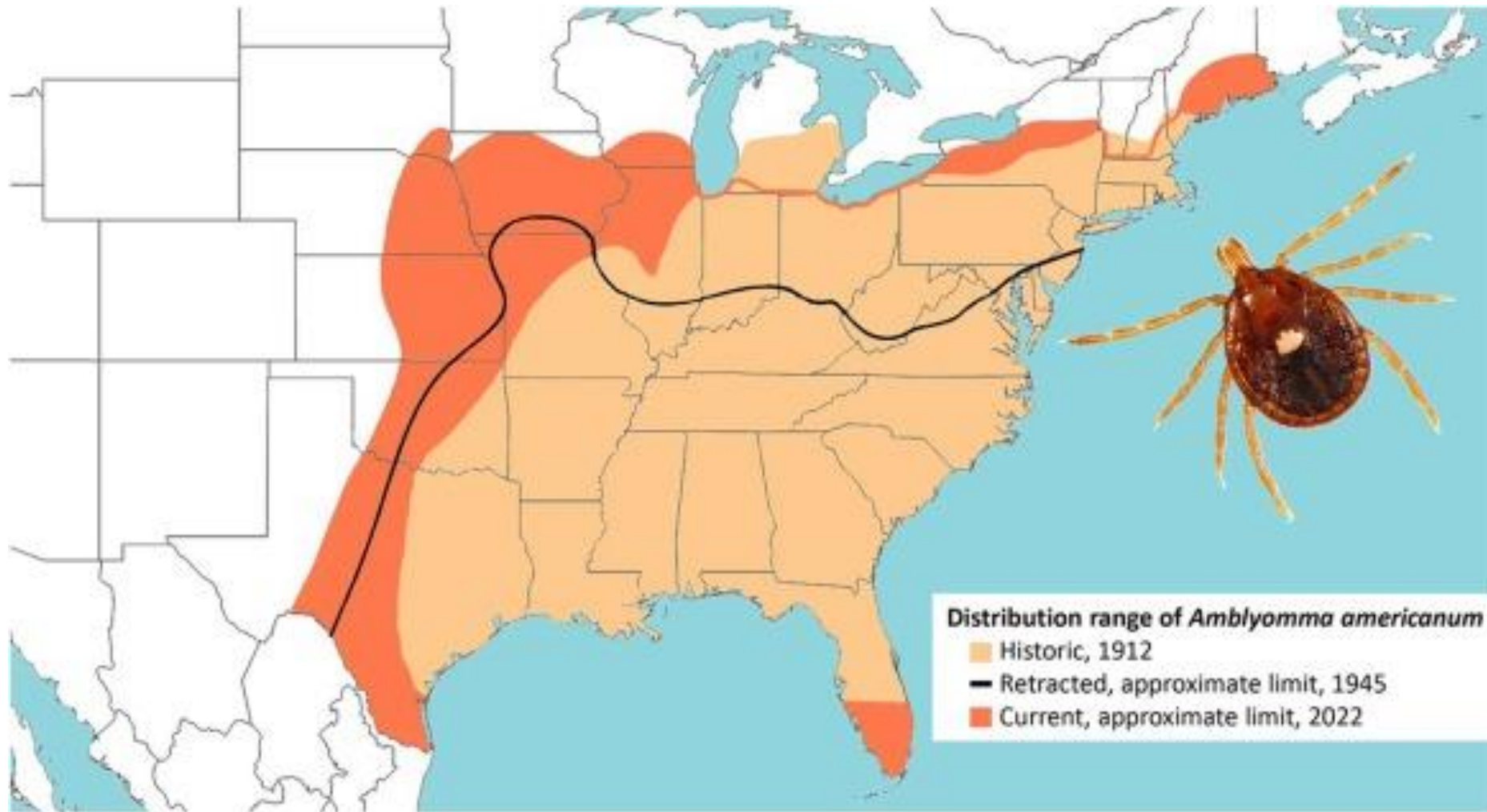
**2017-
2022**

Persons
positive per
1,000,000
population

Article:
Thompson et
al, 2023



Lone Star Tick Distribution



Alpha Gal Syndrome is NOT a Reportable Disease in MA

MAVEN Electronic Disease Surveillance System(EDSS)

Several Tickborne Conditions are NOT Reportable in MA State Law:

- Alpha Gal Syndrome (an allergy)
- Heartland Virus
- Bourbon Virus
- Southern tick-associated rash illness (STARI)
- Colorado tick fever
- Tickborne relapsing fever (Soft tick relapsing fever)



Surveillance: What Data Can We Get with the Resources We Have



Aggregate Lab Surveillance

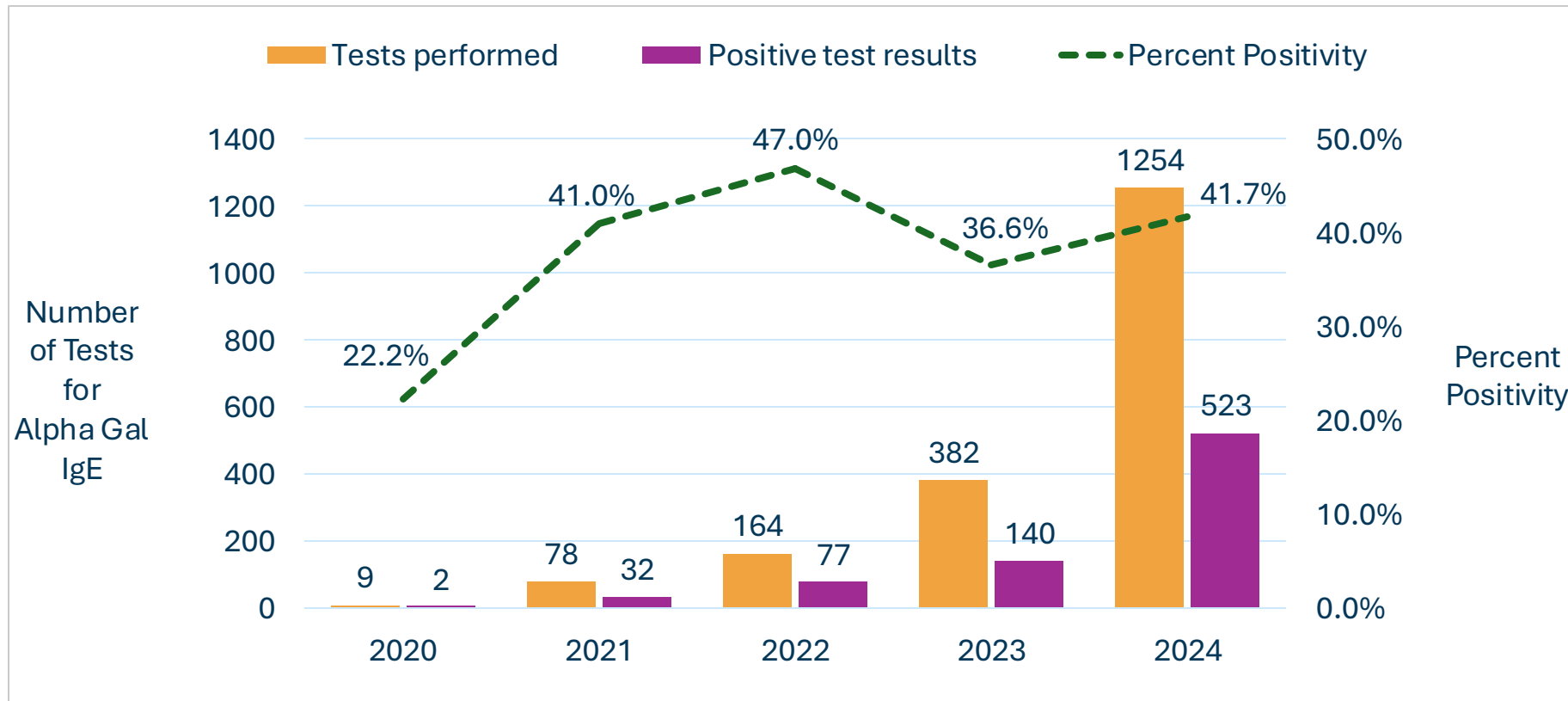
Small island is an advantage (sometimes)

- 1 lab on Martha's Vineyard
- Seasonal & tourists use it too
- Easy to pull out of Epic

Limitation:

- Maintenance testing of diagnosed patients creates **duplicate records**
- Alpha Gal IgE values don't tell the whole story
 - People can test positive without symptoms (sensitized) but to have the allergy you **must** have symptoms
- "Worried well" seeking testing

Exponential Growth in Alpha-gal IgE Testing and Positive Results at Martha's Vineyard Hospital, 2020-2024



Important note about this data: Testing for Alpha Gal IgE captures sensitization only. A positive test PLUS symptoms are required to be diagnosed with Alpha Gal Syndrome. Once diagnosed, patients may be retested every 10-12 months. This data is testing data only and is not deduplicated by individual patients. For more information, contact Lea Hamner at hamner@oakbluffsma.gov.

Key Takeaways:

- Lone Star tick populations have exploded on Martha's Vineyard.
- Lone Star tick bites can cause Alpha Gal Syndrome, an allergy to mammalian meat and products.
- Awareness and concern about Alpha Gal Syndrome (AGS)—indicated by **tests performed**—has increased exponentially year over year.
- While testing data does not equate to number of AGS cases (see note above), the exponential trend in **positive tests** clearly indicates an increasing burden of allergic individuals.

Option #3:

Aggregate Healthcare Surveillance

Small island is an advantage (sometimes)

- 1 allergy clinic
- 1 hospital
- 4 healthcare provider groups

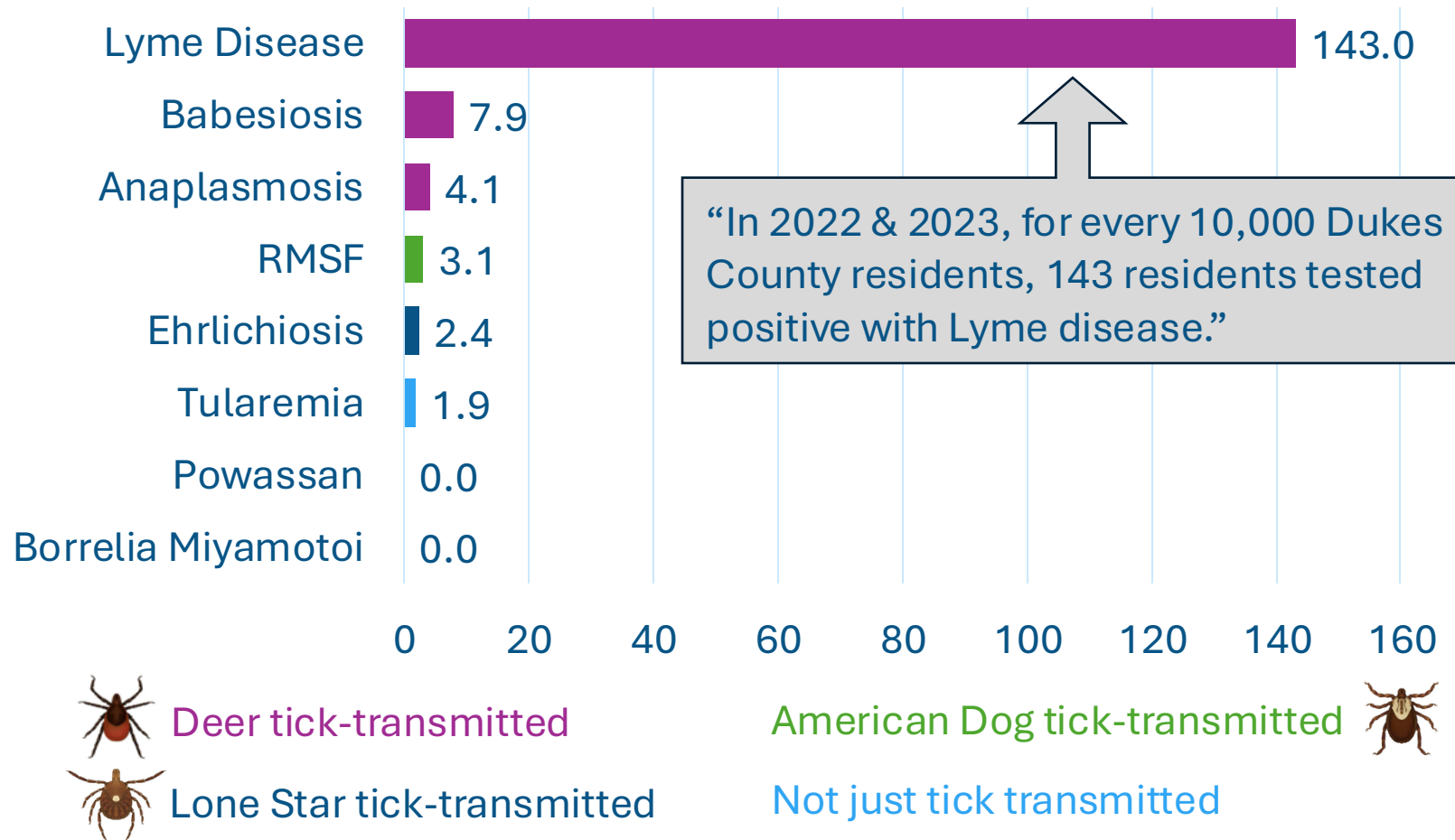
In 2025,
1 island allergist had
400 AGS patients.
150 *new* patients in the last
year alone

Limitation:

- In national data, generally poor understanding of AGS among healthcare providers
- Many patients seek care off-island
- Access to care challenges
- Seasonal and tourists aren't getting primary care here

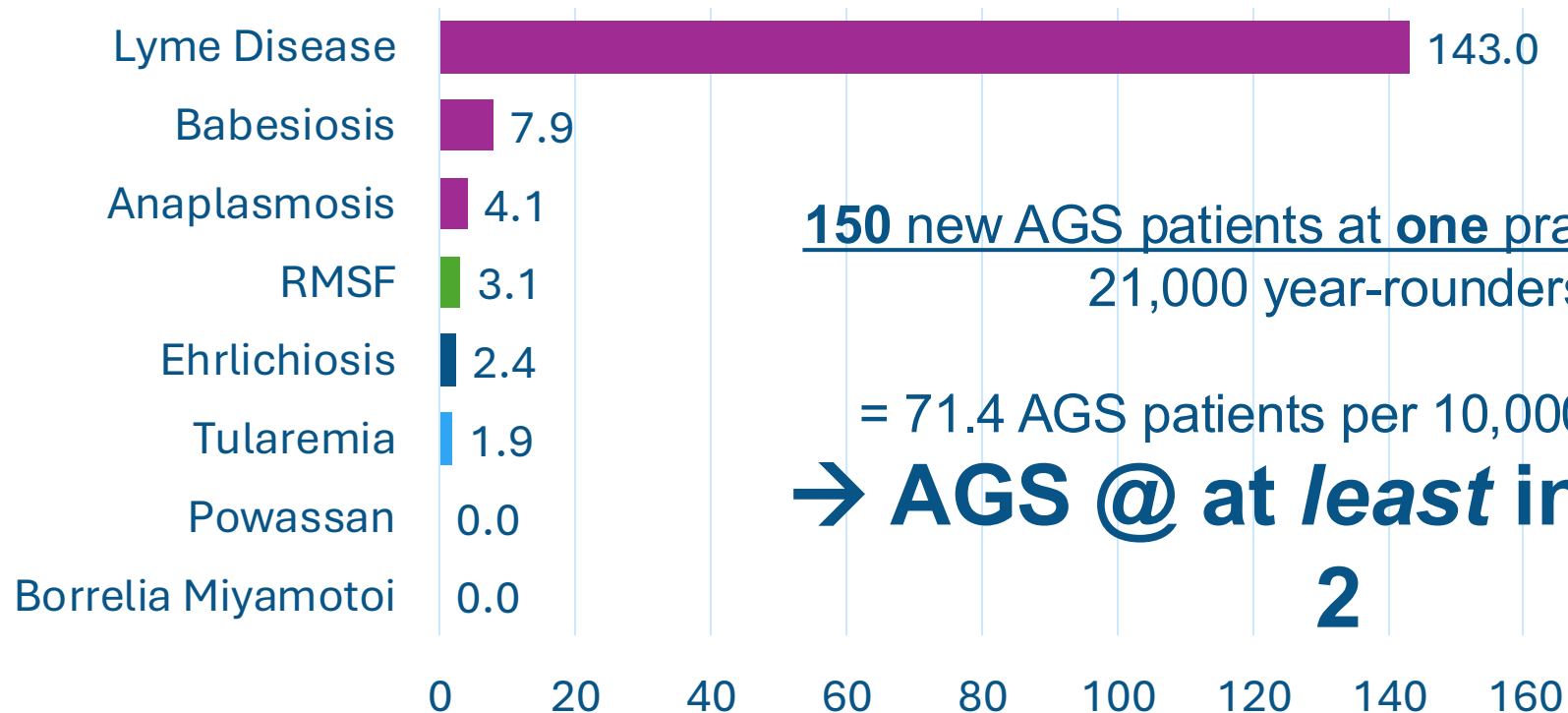
How Does Alpha Gal Stack Up?

Dukes County Tickborne Disease Incidence per 10,000 Residents, 2022-2023



How Does Alpha Gal Stack Up?

Dukes County Tickborne Disease Incidence per 10,000 Residents, 2022-2023



150 new AGS patients at **one** practice in 2025
21,000 year-rounders

= 71.4 AGS patients per 10,000 residents

→ **AGS @ *at least* in the top**
2



Deer tick-transmitted



Lone Star tick-transmitted

American Dog tick-transmitted

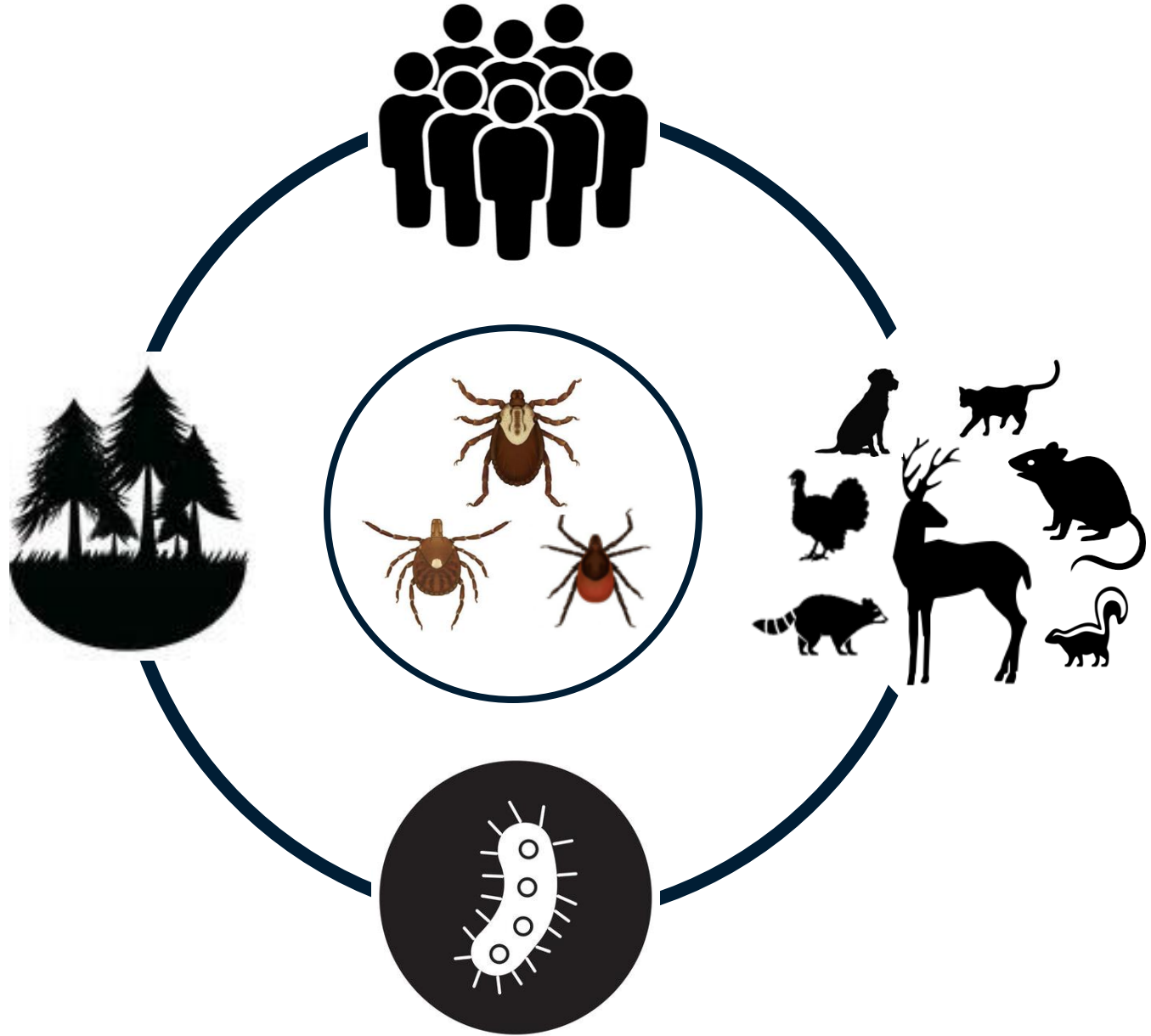


Not just tick transmitted

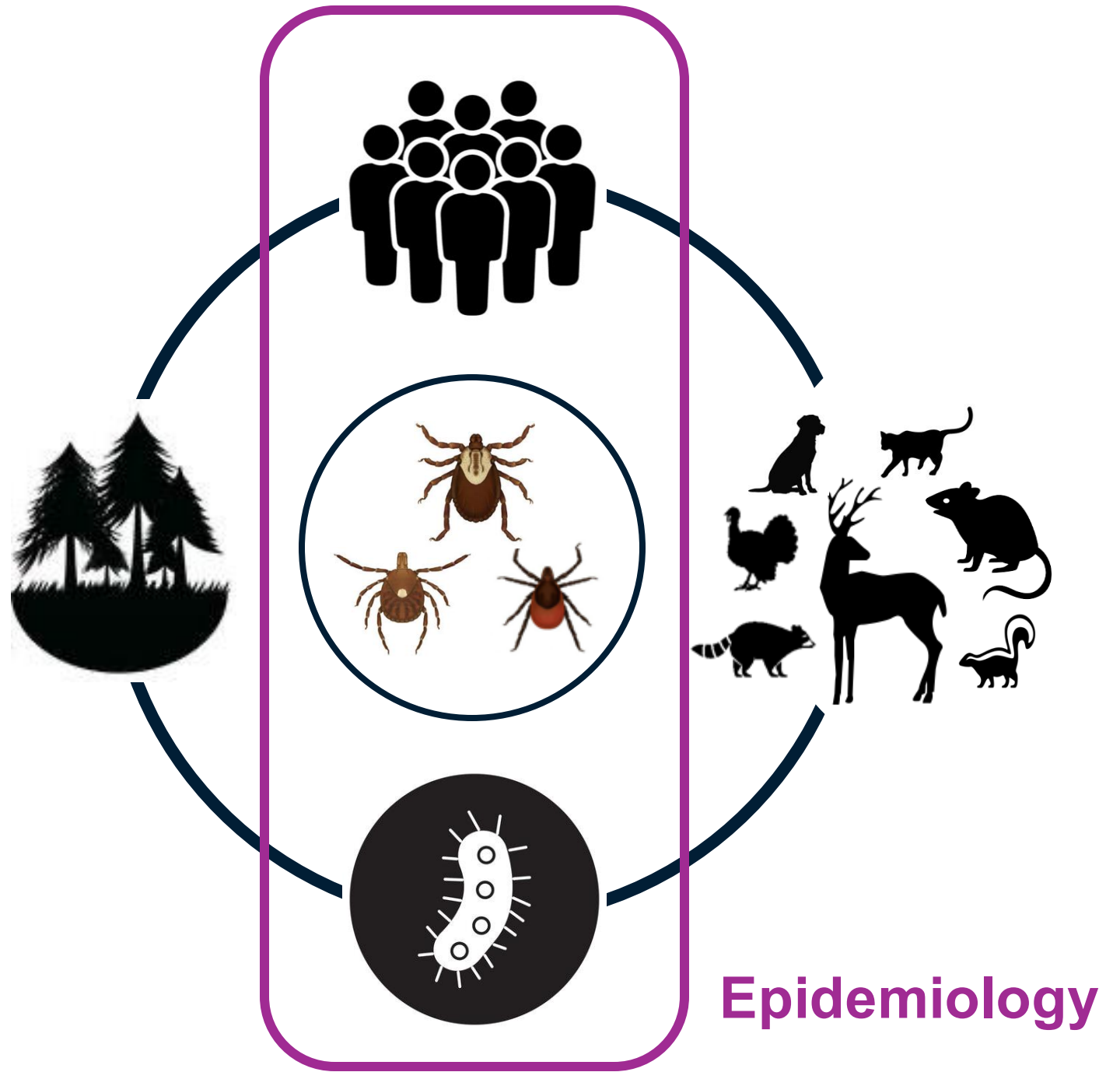
The Martha's Vineyard Tick Program

Our Approach:

- ✓ One Health
- ✓ Interdisciplinary
- ✓ Evidence-informed
- ✓ In the community,
of the community

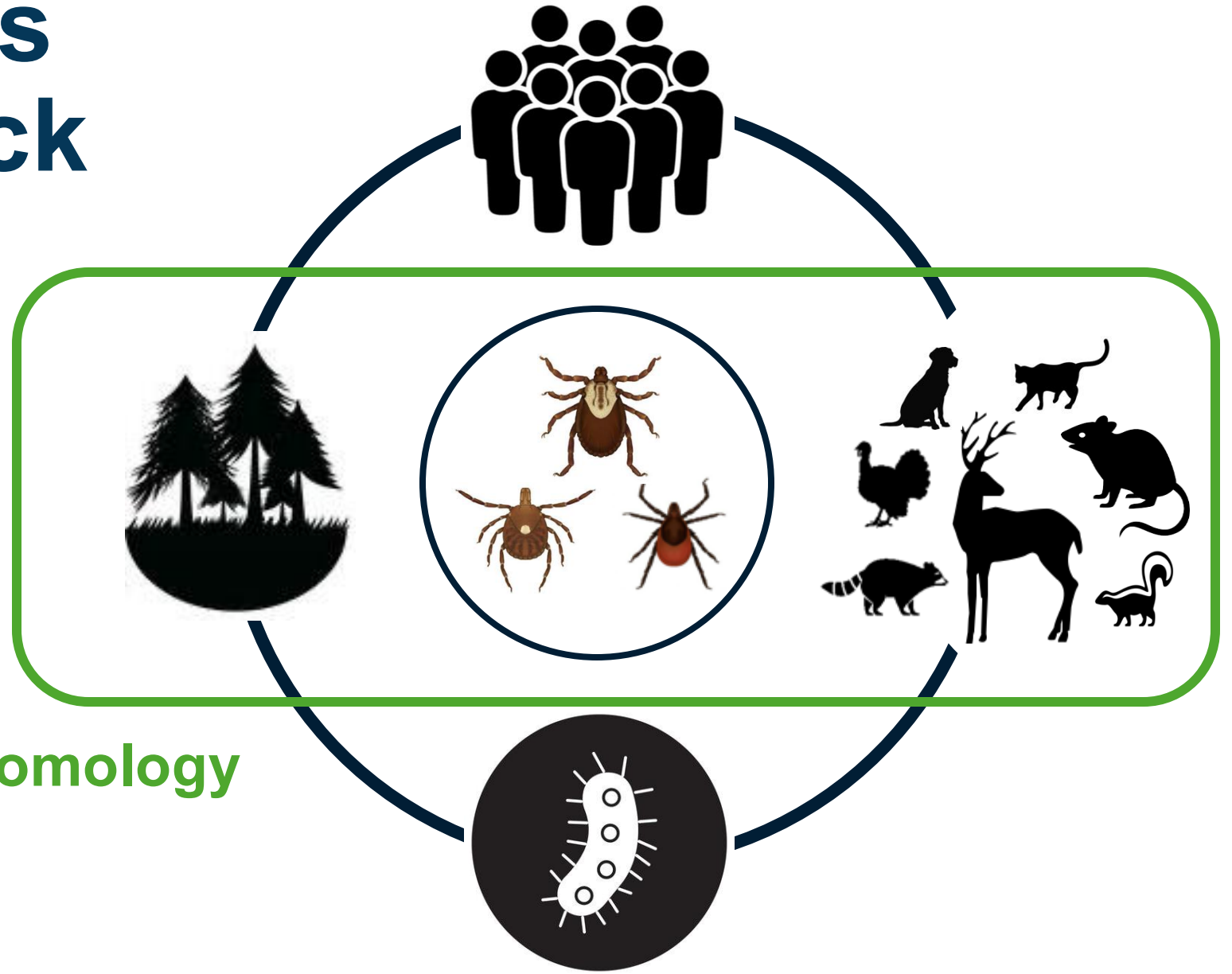


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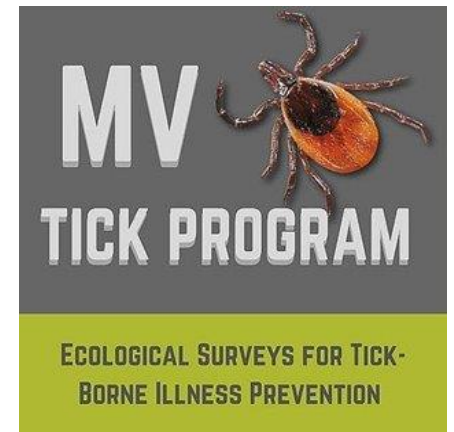
The Martha's Vineyard Tick Program

Biology & Entomology



The MV Tick Program

The Martha's Vineyard Tick-borne Illness Reduction Initiative



2011 -2015

Martha's
Vineyard
Hospital Grant

Tick Biologist (0.5 FTE)
Board of Health
Committees
Researcher

2016 - 2021

Private &
Philanthropic
Fundraising

Tick Biologist (0.5)

2022 - 2025

PHE Grant
CICT Grant

Tick Biologist (1.0)
Epidemiologist (0.25)
Case Investigator (0.75)
Public Health Nurse
(0.25)

2026 - Future?

PHE Grant
Private & Philanthropic
Fundraising

Tick Biologist
Epidemiologist
Case Investigator
Public Health Nurse



On-Island: Who Does What on Ticks

	Biologist Patrick Roden-Reynolds	Case Investigator Betsy VanLandingham	Public Health Nurse [Vacant]	Epidemiologist Lea Hamner
Surveillance	Tick speciation, distribution, density, & activity Deer activity	Case investigation	Health care provider & lab relationship building	Disease trends Data collection, analysis, interpretation
Outreach & Education	Tick bite prevention education Residential yard surveys Ecological interventions Attracting experts	Provider engagement, outreach & education	Health education Alpha Gal Syndrome Support group Provider engagement, outreach & education	Inform decision-making with evidence Public & provider engagement, outreach & education
Partnerships	Public Health (local, state, regional, federal) Academia Public-Private	Public Health (local & state) Health care & labs	Public Health (local) Health care & labs	Public Health (local, state, regional, federal) Academia Health care & labs Public-Private
Prevention	Homeowner education Tick-bite prevention Permethrin clothing Landscaper intervention	Patient education during interviews	Health screenings Home visits	Tick-bite prevention Permethrin clothing Landscaper intervention

The Power of a Public Health Biologist



The MV Tick Program

The Martha's Vineyard Tick-borne Illness Reduction Initiative



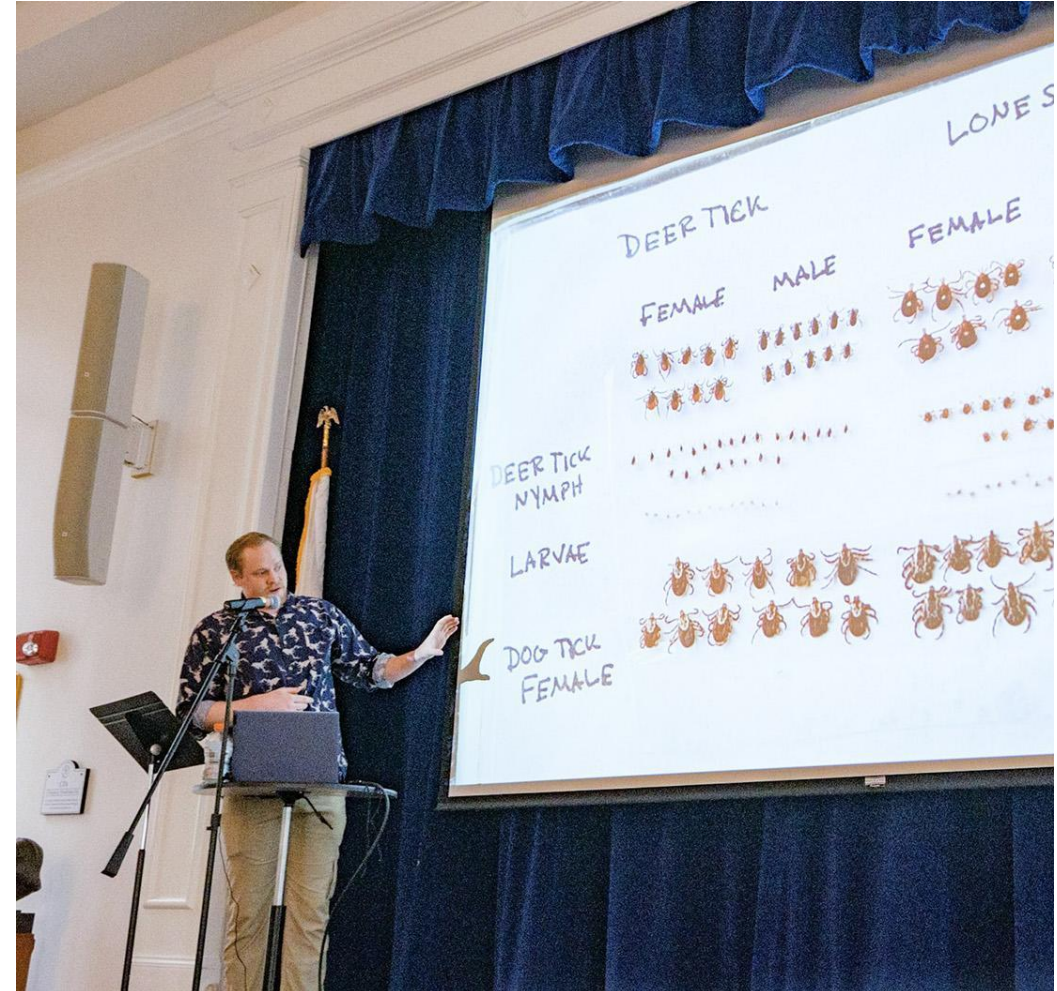
Conventional Work

In-person outreach and education

Virtual, recorded talks

Reportable disease surveillance

Tick bite prevention messaging



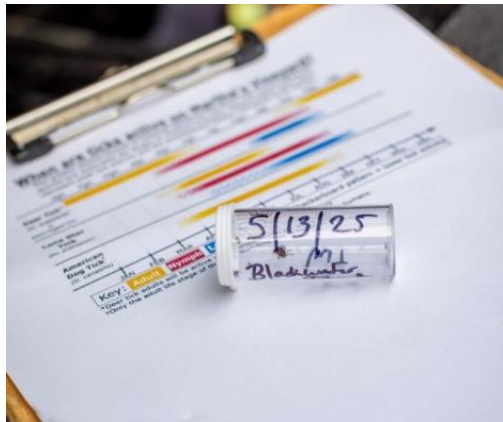
The MV Tick Program

The Martha's Vineyard Tick-borne Illness Reduction Initiative

Island Tick-Borne Illness Prevention Fund

The goal of the Tick-Borne Illness Prevention Program is to reduce the incidence of tick-borne illnesses on Martha's Vineyard. To achieve this goal, the program combines research, public...

DONATE



Innovative Work



Residential Yard Surveys & tick surveillance

Deer management

Alpha Gal Syndrome (AGS) Surveillance

AGS Support Group

Collective Action & Partnerships

Striving to be
**Evidence-Informed,
Community-Driven**



Evidence Informed, Community Driven

Goal 1:

Prevent tick bites

Goal 2:

Increase awareness and accurate information among public, providers, leaders, schools, etc

Goal 3:

Support those currently suffering.

Goal 4:

Investigate & add to the science; surveillance efforts & attracting experts to study AGS here.

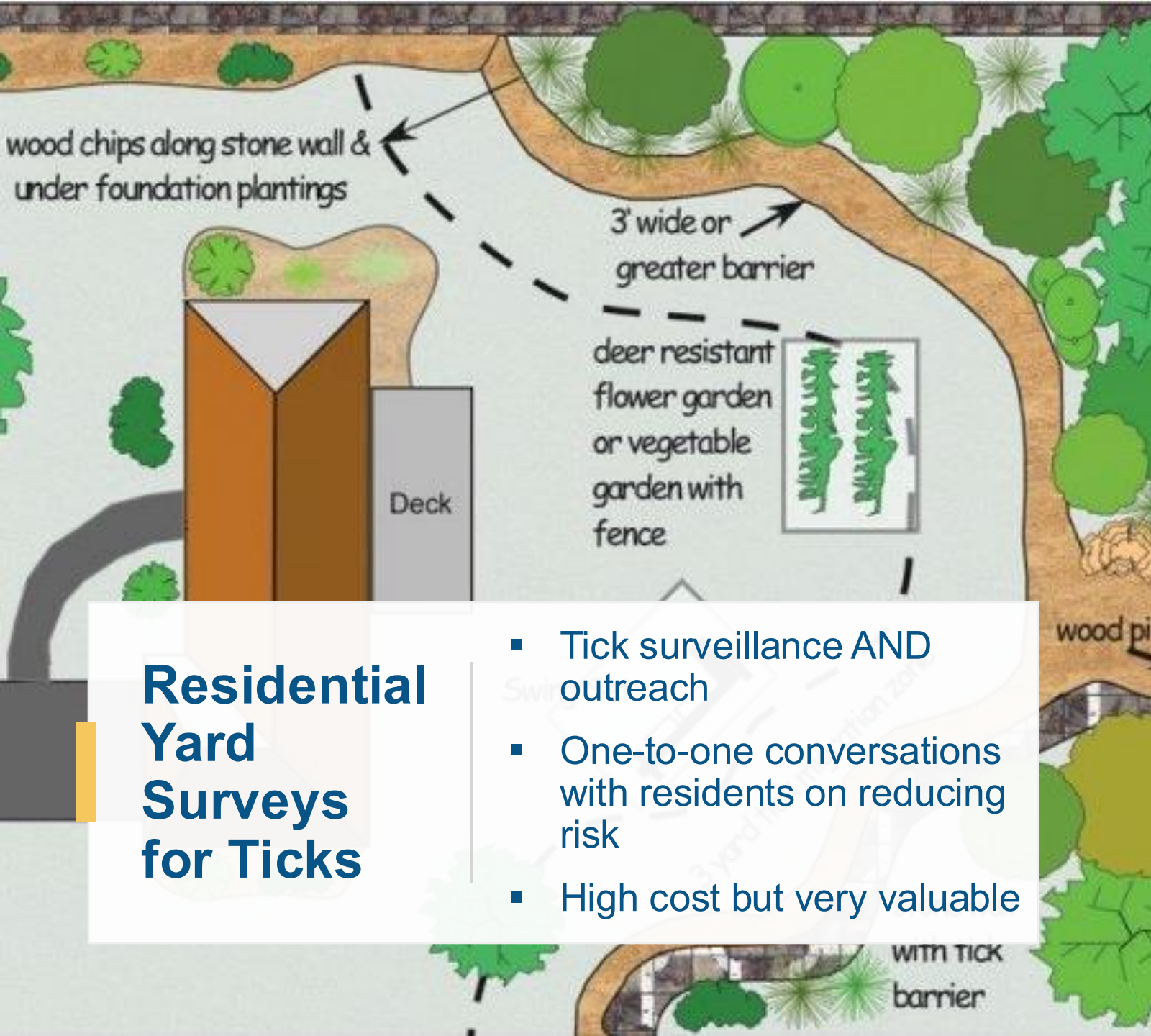
Goal 5:

Develop a community-endorsed strategic plan to reduce tickborne conditions in our community



Evidence Informed, Community Driven

Goal 1:	Prevent tick bites
Goal 2:	Increase awareness and accurate information among public, providers, leaders, schools, etc
Goal 3:	Support those currently suffering.
Goal 4:	Investigate & add to the science; surveillance efforts & attracting experts to study AGS here.
Goal 5:	Develop a community-endorsed strategic plan to reduce tickborne conditions in our community



Residential Yard Surveys for Ticks

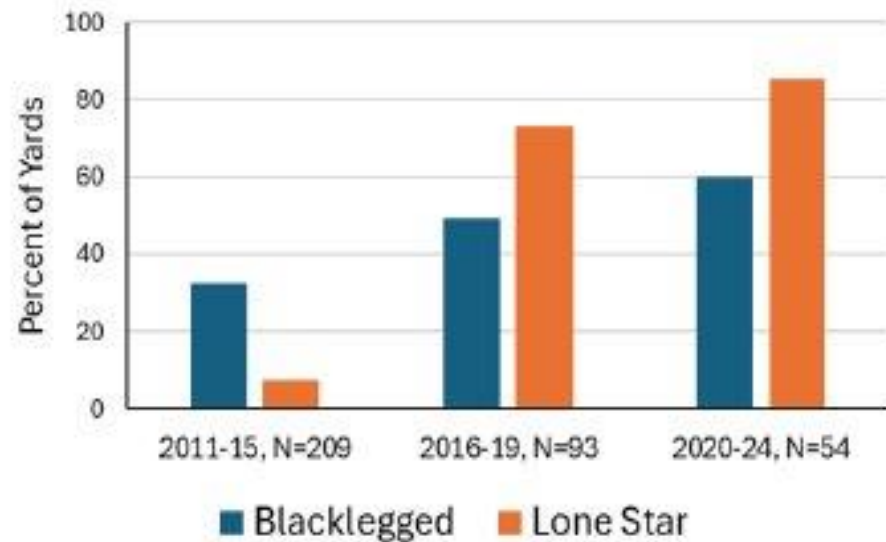
- Tick surveillance AND outreach
- One-to-one conversations with residents on reducing risk
- High cost but very valuable



Lone Star Ticks: A tale of relentless expansion



A. Chappaquiddick



B. Chilmark

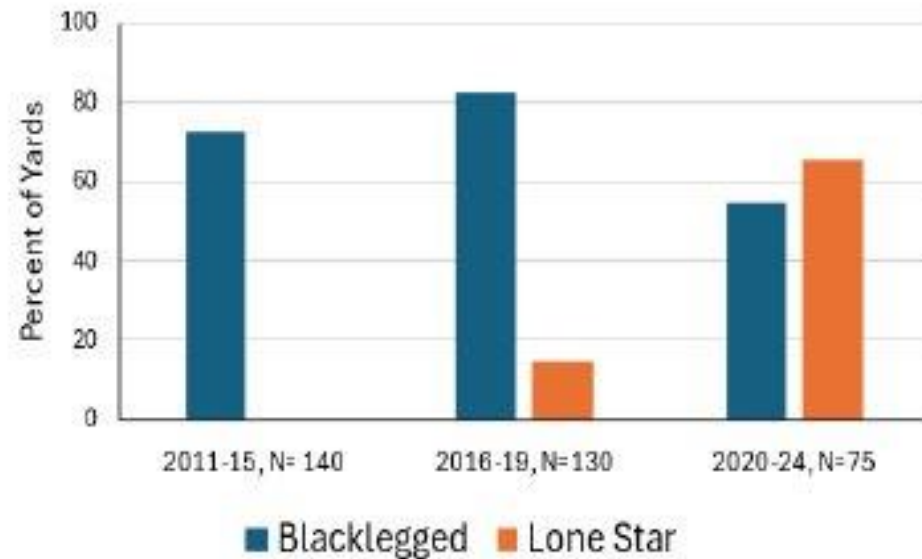
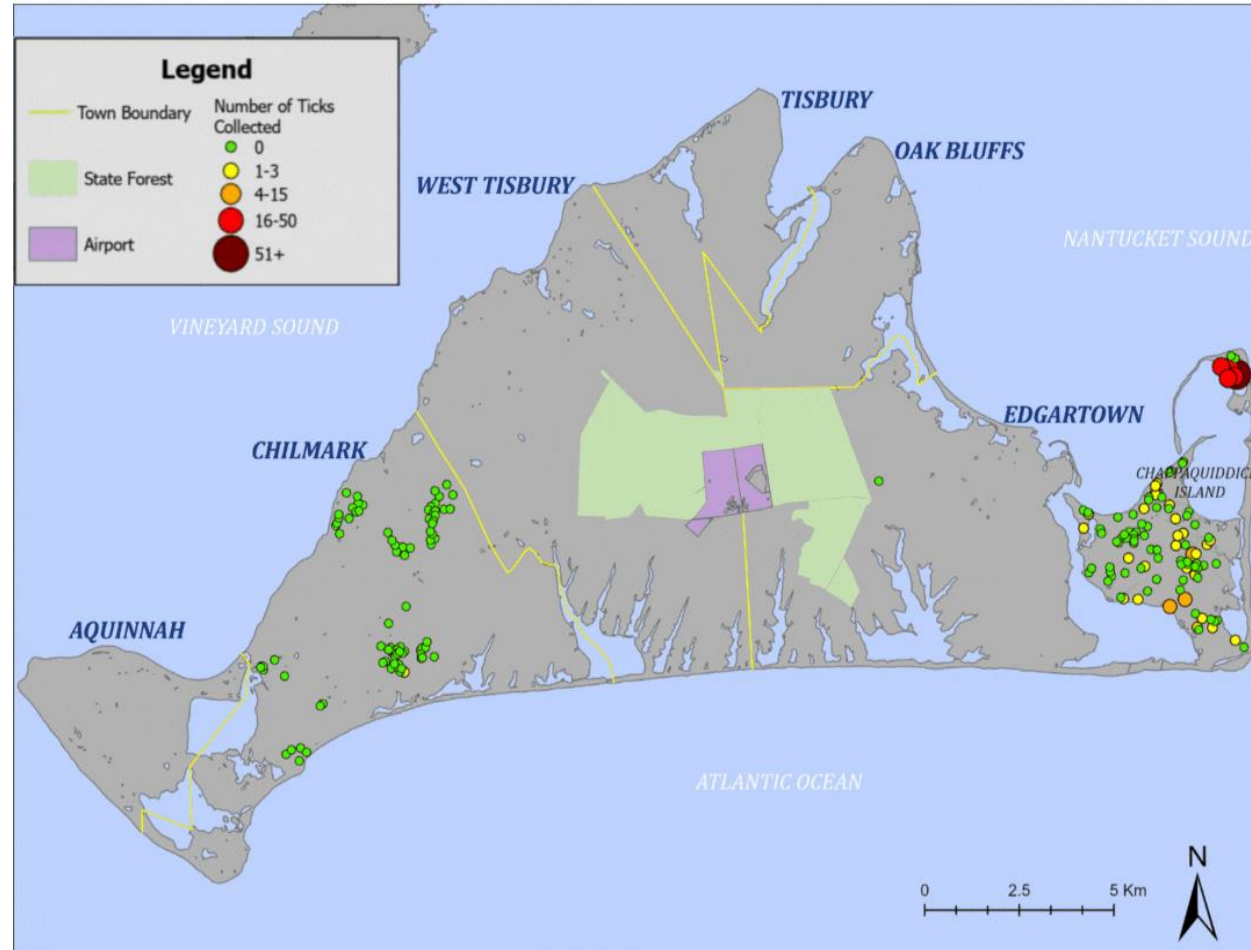


Figure 3. Percent of yards in Chappaquiddick and Chilmark with at least 3 individuals of each tick species, blacklegged ticks (*Ixodes scapularis*) and lone star ticks (*Amblyomma americanum*), in 2011–2024. Sample sizes show the total number of surveys conducted for each period.

Lone Star Ticks: A tale of relentless expansion



2011-2015



Lone Star ticks found in Residential Yard Surveys

[Johnson, Roden-Reynolds,
Snow, & Rich, 2024](#)

DEER TICK

FEMALE

MALE



DEER TICK
NYMPH

LARVAE

DOG TICK
FEMALE



LONE STAR TICK

FEMALE

MALE



LONE STAR
NYMPH

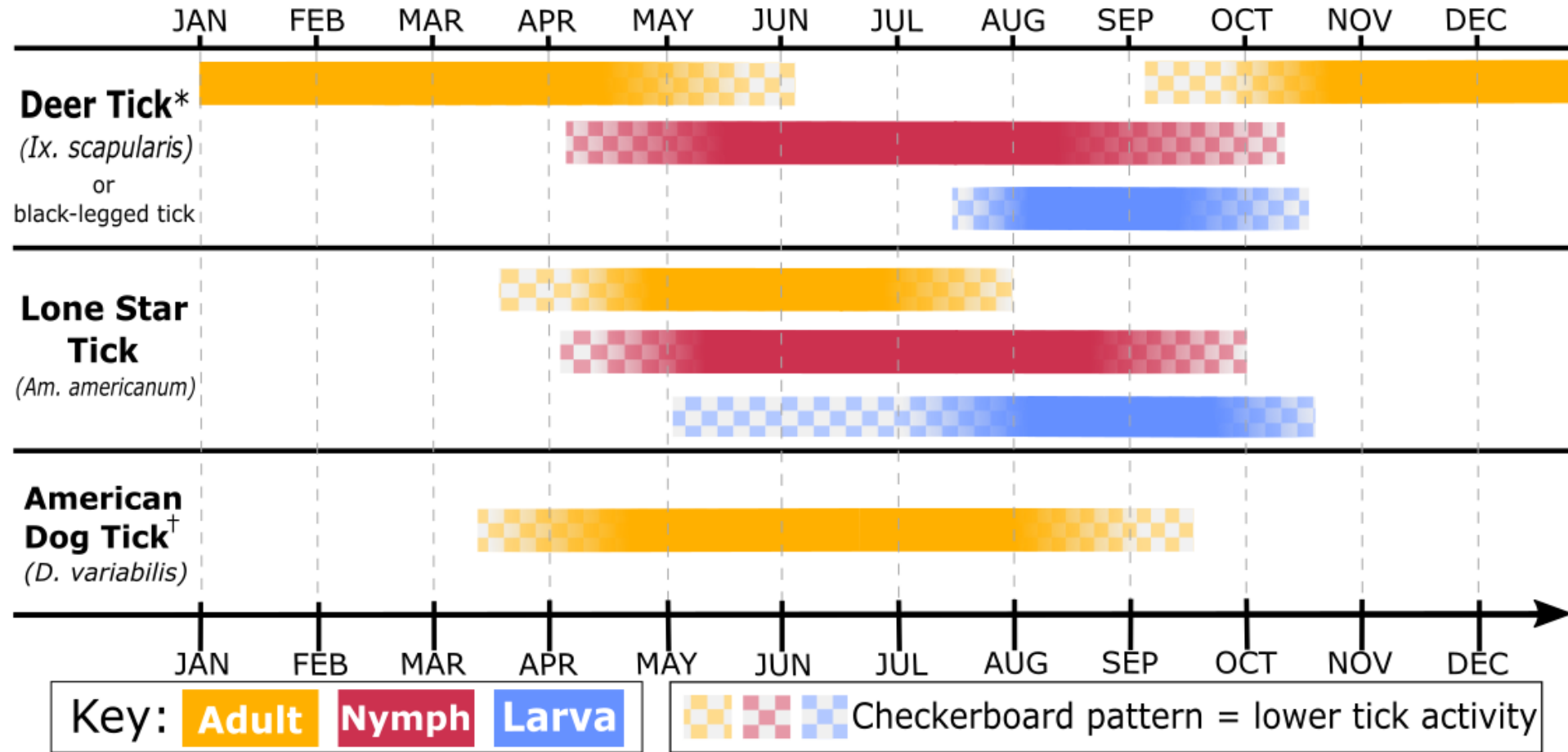
LARVAE

DOG TICK
MALE



Longhorn tick - *Haemaphysalis longicornis*

Tick bite risk is year-round, but highest in spring to fall

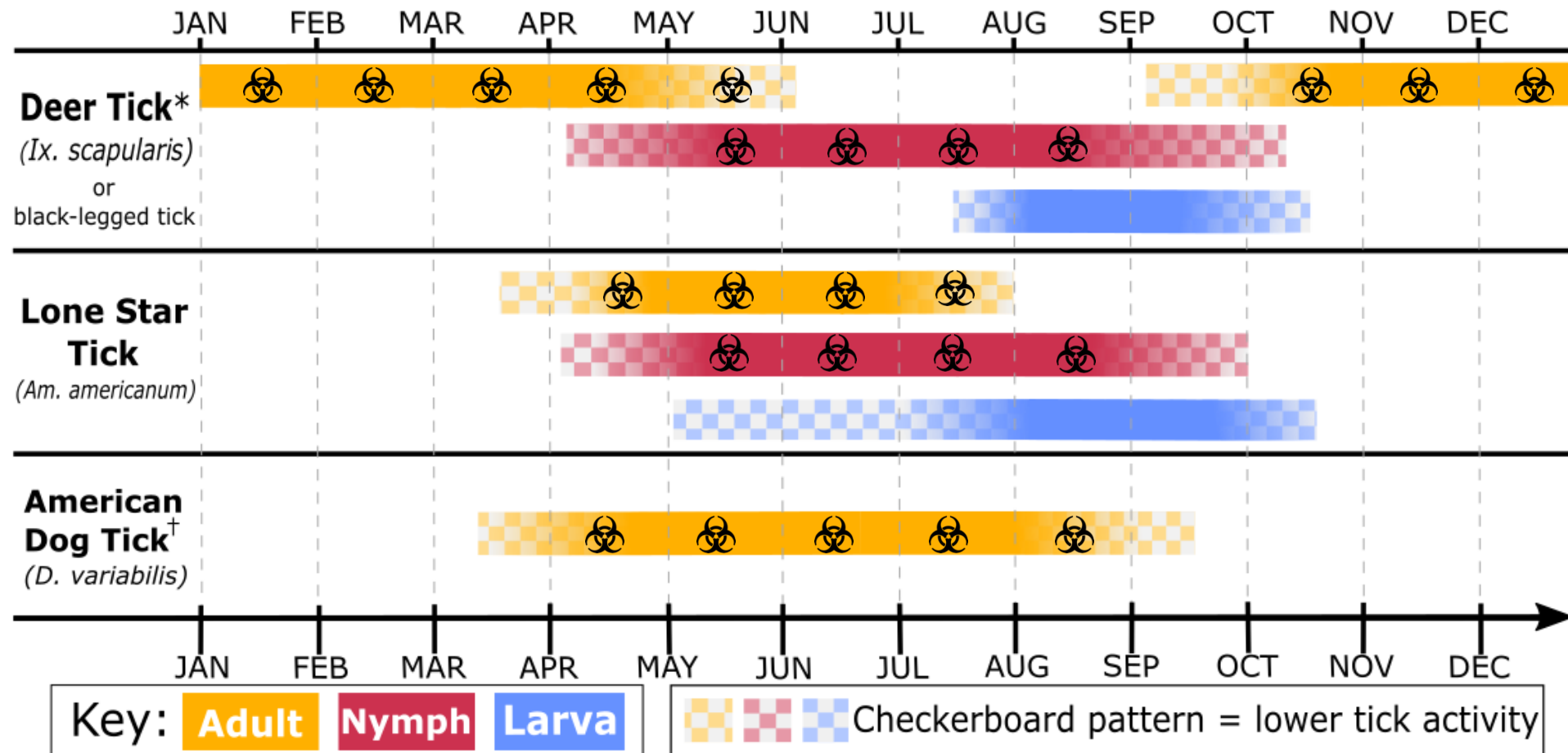


*Deer tick adults will be active when temperatures are above 40°F.

†Only the adult life stage of the American Dog Tick is known to bite humans.



Infectious disease risk is year-round, but highest in spring to fall

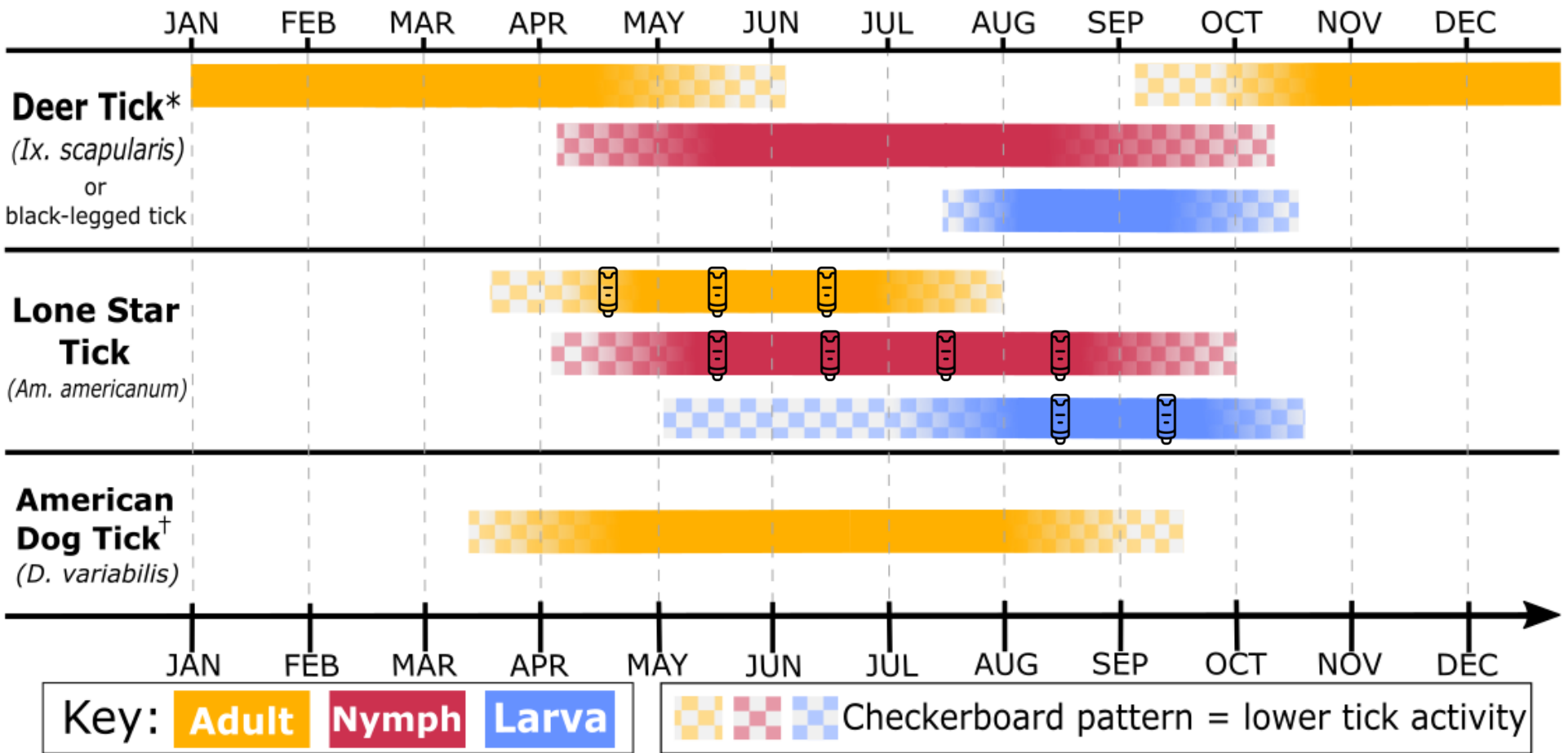


*Deer tick adults will be active when temperatures are above 40°F.

†Only the adult life stage of the American Dog Tick is known to bite humans.



Allergy (Alpha Gal Syndrome) risk is spring to fall



*Deer tick adults will be active when temperatures are above 40°F.
†Only the adult life stage of the American Dog Tick is known to bite humans.



Lone Star Tick Larvae aka "Tick Bombs"



MV Tick Program



Dr. Sam Telford on Tuckernuck Island
He's safe! These pants are **permethrin-treated!**



Lone Star larval bites can be miserable, itchy, pustule

Bites can last for weeks

Confused with chiggers

Often on the lower extremities but ticks can crawl up

NO diseases (you're their first meal). But can cause **Alpha Gal Syndrome**, an allergy to mammal meat

Tick Habitat





insect  shield[®]

GET 15% OFF

Use **MARTHASV2025** at checkout



Photo: G. Bellebuono

PREVENT THE BITE

1. **WEAR** permethrin treated clothing, shoes, and gear
 - DIY at home
 - "Professional" Treatment from Insect Shield
2. **DRESS** tick-smart
 - Cover Exposed Skin
 - Tuck in clothing at waist and pant leg
3. **REPELL** ticks with EPA-registered repellents
4. **PREPARE** for ticks with a Tick Kit (Lint rollers, tape, tweezers, magnifying glass, alcohol wipes)
5. **CHANGE** clothes upon coming home
6. **CHECK** for ticks daily
7. **IDENTIFY** your tick. Send in a photo to TickSpotters
8. **TEST** your tick if you are concerned at [TickReport.com](https://www.TickReport.com)



PREVENT THE BITE

Our #1 TIP:
WEAR permethrin treated
clothing, shoes, and gear

3 Options:

- DIY at home
- Pre-treated
- Send in your clothes for long term treatment →

Workwear Men Women

insect shield®

GET 15% OFF

Use **MARTHASV2025** at checkout

Pets Gear & Accessories Boys Girls

Guess which sock was **permethrin treated**?



Photo by Dr. Sam Telford



Evidence Informed, Community Driven

Goal 1:	Prevent tick bites
Goal 2:	Increase awareness and accurate information among public, providers, leaders, schools, etc
Goal 3:	Support those currently suffering.
Goal 4:	Investigate & add to the science; surveillance efforts & attracting experts to study AGS here.
Goal 5:	Develop a community-endorsed strategic plan to reduce tickborne conditions in our community

Being Present in the Community

- High cost, high return
- People WANT to talk to public health about ticks & this is high value public health ambassadorship
- Talks with libraries, school groups, clubs, HOA's
- Outreach at health fairs, Ag fair, Grand Rounds, expert panels
- Social media – low cost but far reach



Virtual Programming

- Mid-cost, high return
- Opportunities to feature more experts
- Increased access for audience
- Creates a resource library



Vineyard Haven Public Library



Check out our
Video Showcase!

Wednesday, Feb 5th @6pm



Virtual: How to Talk to Your Doctor about Alpha-Gal Syndrome

Learn how to effectively discuss alpha-gal syndrome with your healthcare provider. Gain insights into preparing for appointments, understanding necessary tests, and communicating symptoms. Don't miss this opportunity to empower yourself with knowledge and take control of your health! In collaboration with the Martha's Vineyard Tick Program.



Candice Matthis and Debbie Nichols, founders of Two Alpha Gals and the Alpha-gal Foundation, are dedicated to helping individuals navigate life with alpha-gal syndrome without sacrificing joy.

Sharon Forsyth is the co-founder of the Alpha-gal Alliance and the Alpha-Gal Alliance Action Fund. She organized the Alpha-gal Syndrome Awareness Campaign and created AlphaGalInformation.org.

Register on event calendar at www.vhlibrary.com

Vineyard Haven Library
200 Main Street | Vineyard Haven
www.vhlibrary.org | 508.696.4211




Monday, October 28th @ 6pm on Zoom

Alpha-gal syndrome: the tick bite-induced epidemic of severe allergic reactions



Top alpha-gal expert, Dr. Scott Commins, will explain the basic science and translational work that went into describing the alpha-gal mammalian meat allergy. He will present research related to defining both the cause and the mechanism of alpha-gal IgE response, the role of tick bites in AGS, and the epidemiology of AGS in the US and globally. A question and answer period to follow talk.

Scott Commins is the Dr. William J. Yount Distinguished Professor at The University of North Carolina at Chapel Hill, where he serves as Section Chief for Allergy and Immunology in the Department of Medicine. Dr. Commins maintains an active clinical practice and research program with a focus on food allergy, including the alpha-gal syndrome (AGS) and eosinophilic esophagitis.

58:32

Alpha-gal syndrome: the tick bi...

 vhlibrary

The Vineyard Haven Library, in collaboration with the Inter-Island Public Health Excellence...

Wednesday, October 9th @ 3:30 pm

Tickborne Diseases with the MV Tick Program



Join Epidemiologist Lea Hamner and Biologist Patrick Roden-Reynolds for the second presentation in this two-part series. In Part One, Patrick focused on basics of tick ecology and behavior, including the most important tactics to prevent tick bites. In Part Two, Lea will discuss tickborne diseases found on Martha's Vineyard and the new kid on the block: Alpha Gal Syndrome or red meat allergy. Question and answer period to follow talk.

Patrick Roden-Reynolds is Public Health Biologist for the Inter-Island Public Health Excellence Collaborative and Director of the Martha's Vineyard Tick Program. His work focuses on education and surveillance of vector-borne diseases and their vector populations. Lea Hamner is an Epidemiologist for the Inter-Island Public Health Excellence Collaborative. She focuses on infectious diseases of public health significance and promotes data-informed decision-making to support healthier communities.

1:29:26 www.vhlibrary.org

Tickborne Diseases with the M...

 vhlibrary

This is the second in a two-part series on tick ecology and tickborne diseases with Lea Hamner...

Wed, Oct 9th @ 3:30 pm

Tick Ecology and Tickborne Diseases Part Two on Zoom!



Join Epidemiologist Lea Hamner and Biologist Patrick Roden-Reynolds of the Inter-Island Public Health Excellence Collaborative for the second presentation in this two-part series. In Part One, Patrick focused on basics of tick ecology and behavior, including the most important tactics to prevent tick bites. In Part Two, Lea will discuss tickborne diseases found on Martha's Vineyard and the new kid on the block: Alpha Gal Syndrome or red meat allergy. Question and answer period to follow talk.

Register on event calendar at www.vhlibrary.org

 **Vineyard Haven Library**
200 Main Street | Vineyard Haven
www.vhlibrary.org | 508.696.4211



Information → Communication

 The New York Times

Why Is Martha's Vineyard Going Vegan? It's All About Tick Bites.

Aug 12 • By Pete Wells



 CBS News

Meat, dairy allergies from tick bites "skyrocketing" on Martha's Vineyard, expert says

Aug 15 • By Kristina Rex



 Martha's Vineyard Magazine

An Island Epidemic

Jun 6 • By Ethan Genter



 Barnstable County (.gov)

Cape Cod Healthcare: Alpha-gal is Spreading Fast on Cape Cod and the Islands

May 5 • By Laurie Higgins

 the-scientist.com

The Alpha-Gal Syndrome Story: How Researchers Traced a Red-Meat Allergy to Ticks

May 26 • By Danielle M Gerhard



 Psychology Today

Alpha-gal syndrome is increasing as Lone Star ticks spread across the United States.

Sep 16



 The Times

'We can no longer eat burgers or ice cream — all because of a tick bite'

Aug 20 • By Samuel Lovett



 New York Post

Tick bites on Martha's Vineyard are forcing residents to go vegan because of alpha-gal syndrome

Aug 20 • By natalie o'neill



Feedback from the Community:

“Without the MV Tick Program the island would be awash in misinformation and rumors.”

“I have dealt with wildlife biologist Patrick Roden-Reynolds for 3 years and can't say enough GREAT things about him. He has tick-surveyed my property for the past 3 years and his reports have guided my tick prevention. I hope he will be available for years to come.”

“The more education on Alpha-Gal Syndrome, the better. There are still so many who don't even know about it.”

“Because of the MV Tick Program's education efforts, I knew what was happening when I had my first Alpha-Gal reaction. I knew what to do, when to call 911, and didn't panic. That knowledge kept me safe.”

"As a clinician and patient affected by AGS, I wholeheartedly support your team's effort and leadership in responding to this crisis."



Evidence Informed, Community Driven

Goal 1:

Prevent tick bites

Goal 2:

Increase awareness and accurate information among public, providers, leaders, schools, etc

Goal 3:

Support those currently suffering.

Goal 4:

Investigate & add to the science; surveillance efforts & attracting experts to study AGS here.

Goal 5:

Develop a community-endorsed strategic plan to reduce tickborne conditions in our community

Information → Communication → Action

Advocacy

Tick & Host Control

Research

Prevention

**STRATEGIC
PLAN**

Equity

**Community
Engagement &
Feedback**

Education

Health Care



Next Ideas:

- Healthcare provider AGS Project ECHO
 - Virtual case study submission and review to a panel of experts for group learning
- Tick Academy
 - Community leader training on tick science, prevention and control
- InnovaTICK Competition
 - Community hackathon to create new solutions to personal protection and tick mitigation
- Occupation-based outreach to landscaping, gardening, nursery companies





In the meantime...

**Nothing good ever
came from a tick bite**

Prevent the bite!

Questions?

Patrick Roden-Reynolds

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Visit our website!
IslandsPublicHealth.com



Tick Resources

- Tickology Video Series by Larry Dapsis
- MV Tick Program: <https://islandspublichealth.com/tick-borne-illness/alpha-gal-syndrome/>
 - Tick Ecology and Tickborne Diseases on Vimeo
- TickReport.com
- Tick Encounter from University of Rhode Island
- New England Vector Borne Disease Center for Excellence (NEWVEC)
- National Pesticide Information Center – Permethrin Fact Sheet
- Videos of Lone Star larvae tick bomb:
 - <https://youtu.be/-3LjA56Mmsc?si=NkPRImZTajM7UCDy>
 - https://www.instagram.com/reel/CwgCZySpkt9/?utm_source=ig_web_copy_link