Collaborative Local Public Health Initiatives: Epidemiology within a Team @ MHOA 2024

1. **Massachusetts Epidemiology Collaborative: Empowering local public health to make data informed decisions**
   by Manizeh Afridi & Pooja Shelke
2. **Cross-Sector Collaboration: Pertussis outbreak on the north shore**
   by Laura Nash
3. **Local Solutions for the Opioid Crisis: Community Naloxone Program**
   by Isabella Caruso
4. **Alpha Gal Syndrome: Tracking & tackling a new tick epidemic on Martha's Vineyard**
   by Lea Hamner
5. **Data Informed Decision Making in Public Health Practice**
   by Pooja Shelke

MASSACHUSETTS EPIDEMIOLOGY COLLABORATIVE

Empowering Local Public Health to Make Data Informed Decisions

Manizeh Afridi, MPH
Pooja Shelke, MPH

Overview:

- Understand and care for our communities
- Massachusetts Local Public Health Data
- The creation of the MA Local/Regional Epidemiology Working Group
- The importance of actionable data at the local level

Background of Journey:

January, 2022

- Hired under: Public Health Excellence grant & Contact Tracing/Case Investigation grant
- 2022 during largest COVID-19 surge in MA
- At this time: The majority of Health Departments were understaffed

March, 2022

- As surge declined by end of March…
- NO guidance for local/regional epidemiologists
- How do local health departments utilize an Epidemiologist when they've never had one before COVID?

Switching Gears:

We wanted to know…

- What data was available?
- What was happening outside of COVID-19?
- What issues had been exacerbated?
- Who was being the most affected?

What we found…

The Data available was:

- Outdated
- Not town-specific enough
- Incomplete
- Not reflective of our communities

Key Questions:

How can we move forward and effectively serve our municipalities with lack of up to date data?

How do we improve the health & well being of our communities if we cannot accurately measure anything?

How could Regional Epi's be of value to our health departments without relevant, accurate data?

What actions can we take to address the issues at hand?

Are we the only ones facing these issues?

The Regional Epidemiologist Working Group

Where we started

- End of March 2022
- 7 Members
- Identifying/sharing common barriers via email

What we have grown into

40+ Members

Representing over 150 municipalities

Expanded Channels of Communication

- Discord channel
- Shared Google Drive
- Weekly Zoom Meeting

Collaborating with MDPH State Epis

Involvement/ collaboration at a higher level

Expanding to more Regions

Serving about 20 regions across MA

Guest Speakers

Notable guest speakers from different health backgrounds

Collaborative Support Network

Cross municipal information exchange and support for shared services regional epidemiologist

Together we have learned:

★ Better understanding of the populations we serve
★ Resources and data available
★ How local public health works
★ How we can be of value to serve our health departments and communities
★ Areas of improvement

What can your local Epi do?

Like a state Epidemiologist, local Epi's can provide population level clinical guidance and support!

Your Epi's can provide…

- ➢ MAVEN coverage/communicable disease investigation
- ➢ Data analysis
- ➢ Data visualization
- ➢ Health communication and education
- ➢ Community Health Assessments
- ➢ Survey creation
- ➢ Data collection
- ➢ Leading research
- ➢ Assist with immunization clinics and provide support with COLOR +MIIS
- ➢ Identify, apply, and provide research support for securing grants
- ➢ Provide expertise on disease transmission and prevention

An Epi's Understanding of Your Community:

Takes a holistic approach to know what kind of data exists in every sector so that we can better understand

- ➢ WHO is in our communities
- ➢ WHAT the issues are
- ➢ WHO is being affected most

We do this so that we can provide ACTIONABLE solutions using data!

Data:

Importance of Actionable Data:

Utilization of Local/Regional Epis

+

Local level data collection & usage

=

Ability to collect relevant data that is community specific and therefore take data driven action to effectively and efficiently address community needs

Examples of Local Level Actionable Data Projects:

- ✓ Pulling communicable disease reports from MAVEN
- ✓ Utilizing CIMS data for opioid mapping
- ✓ Data collection for how to utilize opioid abatement funds
- ✓ Vaccine surveys
- ✓ Regional Youth Health Survey (i.e. local YRBSS)
- ✓ Support with migrant shelters/emergency assistance
- ✓ Community Health Assessments

Next Presentations:

Laura Nash: Cross Sector Collaboration: A Pertussis Outbreak in the North Shore

Isabella Caruso: Local Solutions for the Opioid Crisis: Community Naloxone Program

Lea Hamner: Alpha Gal Syndrome:Tracking & Tackling a New Tick Epidemic on Martha's Vineyard

Pooja Shelke: Data Informed Decision Making in Public Health Practice

What does a local Epidemiologist do?

FAQ's

What can your local Epidemiologist do for you?

Like a state Epidemiologist, local Epi's can provide population level clinical guidance and support!

Your Epidemiologist can provide...

- MAVEN coverage (i.e. case investigation/contact tracing)
- Data analysis (i.e. creating reports from MAVEN or other town specific resources)
- Data visualization (i.e. creating infographics)
- Health communication and education
- Community Health Assessments
- Survey creation
- Data collection
- Leading research
- Assist with immunization clinics and provide support with COLOR + MIIS
- Identify, apply, and provide research support for securing grants
- Provide expertise on disease transmission and prevention

How do I contact my local Epi?

- If your city/town is part of an SSA, please contact your coordinator to connect you with the epidemiologist in your region.

When should I work with an Epidemiologist?

- When you are away and need assistance with MAVEN coverage
- If you have a heavy caseload and need assistance with MAVEN investigations that do not require a healthcare licensure
- If you are in need of any reports that require research

Regional Epidemiologists:
Manizeh Afridi: mafridi@townofhudson.org
Pooja Shelke: pshelke@townofhudson.org

Thank you!
Questions?

Cross-Sector Collaboration: A Pertussis Outbreak in the North Shore

Laura Nash, MPH
Regional Epidemiologist
North Shore Public Health Collaborative

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

- NSPHC is comprised of 8 different communities in the North Shore
  - Beverly
  - Danvers
  - Lynn
  - Marblehead
  - Nahant
  - Peabody
  - Salem
  - Swampscott

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Who We Are

- **Hannah Laffer**, *Regional Sanitarian*
- **Hayden Fitch**, *Regional Sanitarian*
- **Jeanne Butler**, *Regional Public Health Nurse*
- **Kendra Harris**, *Regional Public Health Social Worker*
- **Laura Nash**, *Regional Epidemiologist*
- **Meg Dlusniewski**, *Regional Public Health Coordinator*
- **Stephen Casey**, *Regional Trainer - Housing*
- **Steven Kahn**, *Regional Training Hub Coordinator*
- **Terry Kennedy**, *Regional Trainer - Food*

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Cross-Sector Collaboration:
A Pertussis Outbreak in the North Shore

A look back at causes, trends, and local public health's actions

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

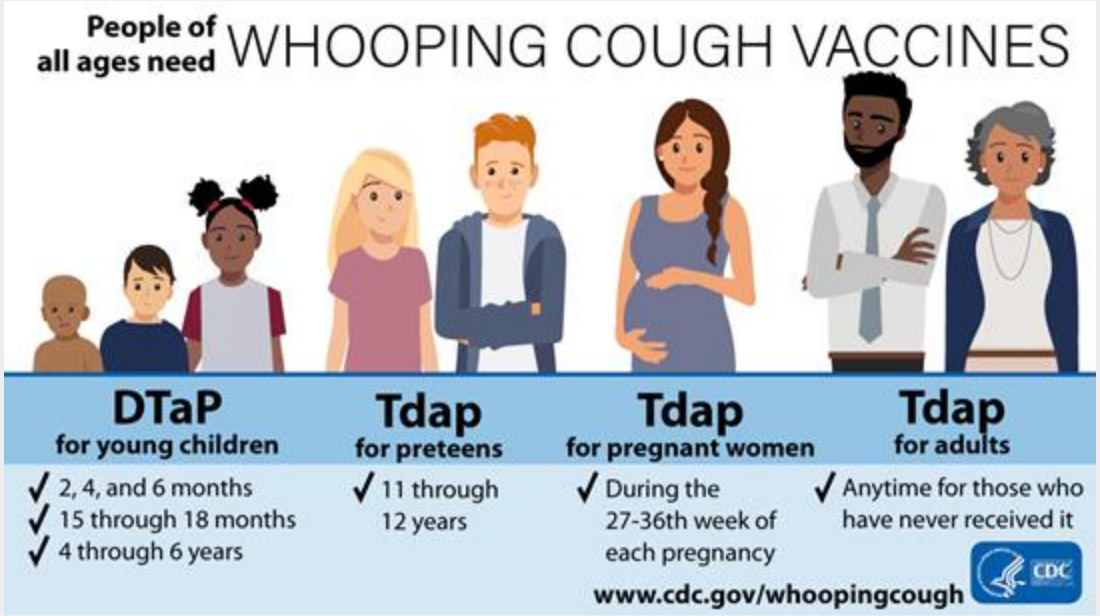
Pertussis (Whooping Cough)
A.K.A., the "100-day cough"

- Pertussis caused by bacteria that is easily spread from person to person; usually mild in older children and adults, but it often causes serious problems for young children
- Pertussis symptoms have three stages
  - 1st: begins like a cold with a runny nose, sneezing, and cough. The cough slowly worsens for a week or two
  - 2nd: uncontrollable coughing spells, vomiting after coughing, and sometimes getting a whooping noise you can hear when breathing in. Lasts for around 2 to 6 weeks
  - 3rd: when symptoms begin to gradually lessen. The person may still have have a cough for months

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Pertussis (Whooping Cough)
A.K.A., the "100-day cough"

- Pertussis lives in the nose, mouth, and throat and is sprayed into the air when an infected person sneezes, coughs, or talks
    - Symptoms normally arise 7 to 10 days after a person is exposed



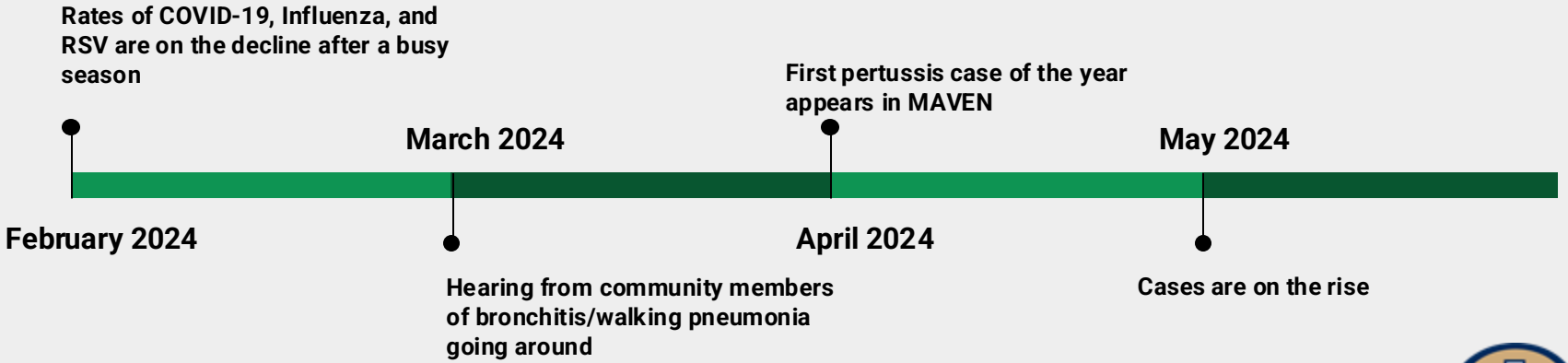
Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Pertussis (Whooping Cough)
A.K.A., the "100-day cough"

- If diagnosed with pertussis, current recommendations advise that one must isolate for 5 days after receiving antibiotics
    - One is considered to be infectious 7 days before cough onset through 3 weeks after cough onset
- Close contacts, even if vaccinated, are urged to receive post-exposure prophylaxis (PEP). This includes:
    - Household contacts
    - People at high-risk of developing a severe pertussis infection
    - Those who have contact with people at high-risk of developing a severe pertussis infection

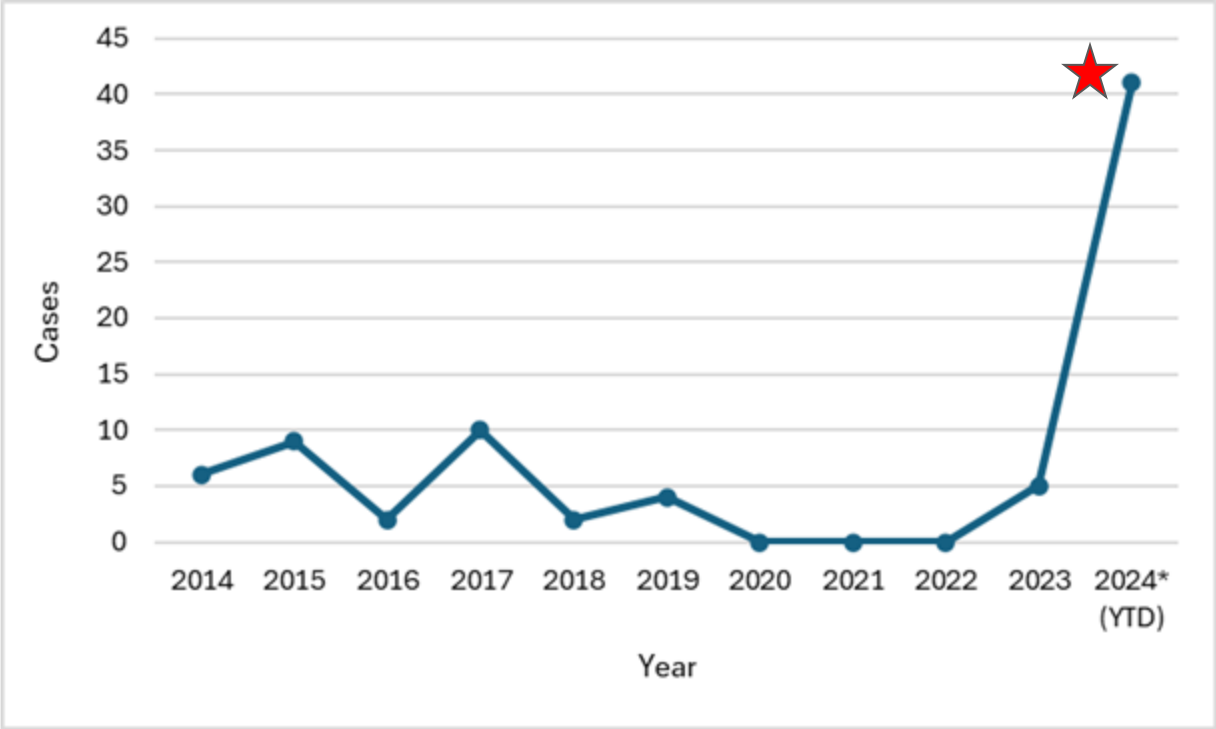
Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Timeline of Cases



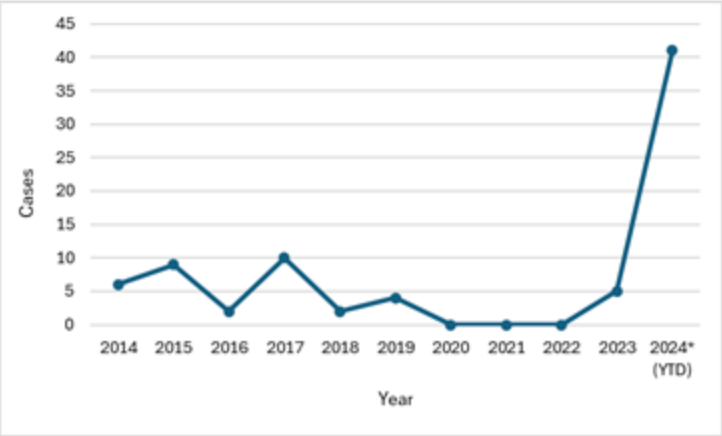
Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

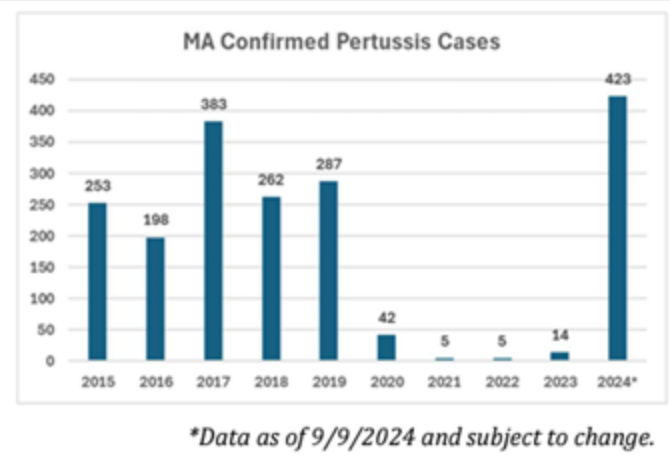
Pertussis Trends, NSPHC*, 2014 - 2024 (YTD)



Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Pertussis Trends, YTD*

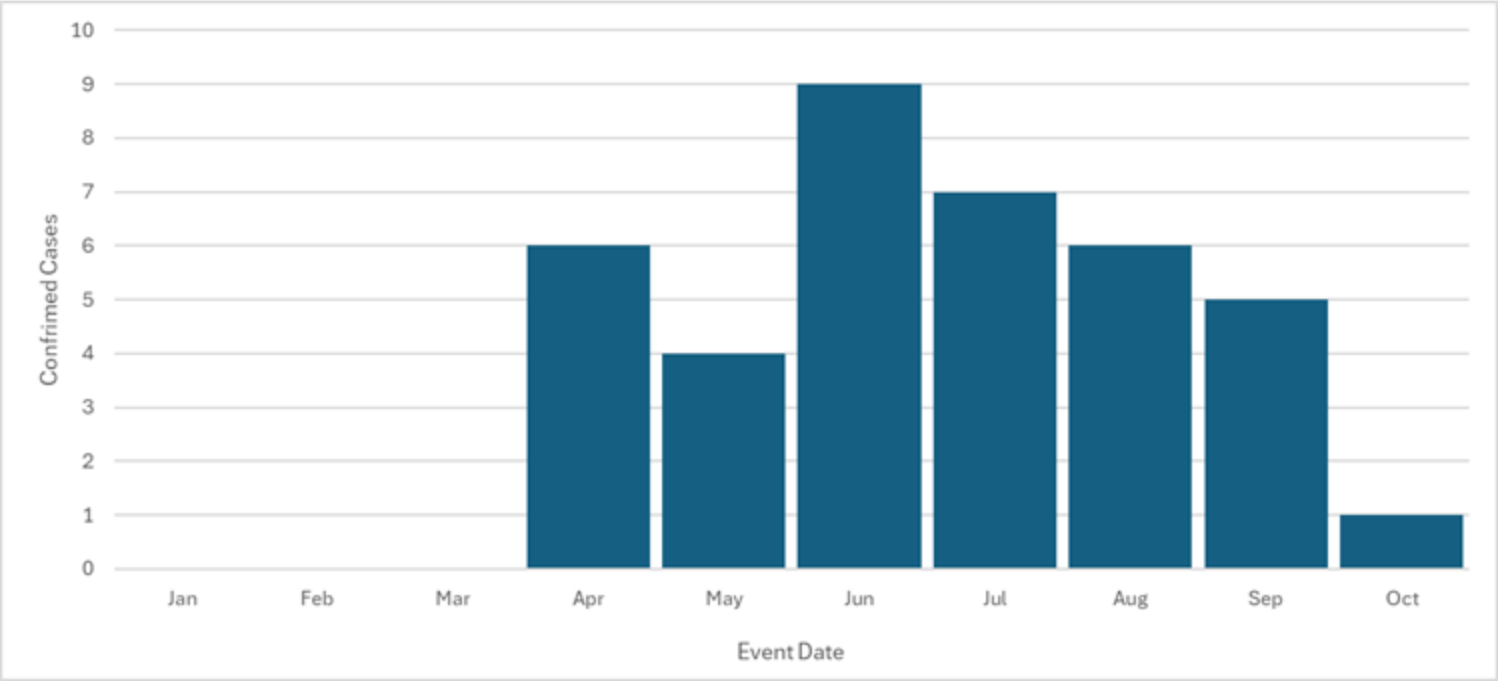




Taken from the Massachusetts Department of Public Health's [MAVEN Webinar, 9/10/24]

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Epi Curve



Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Characteristics of Cases

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

- Average age of cases was around 15.4 years - *middle/high school aged students*

Figure 1. Self-described race among cases

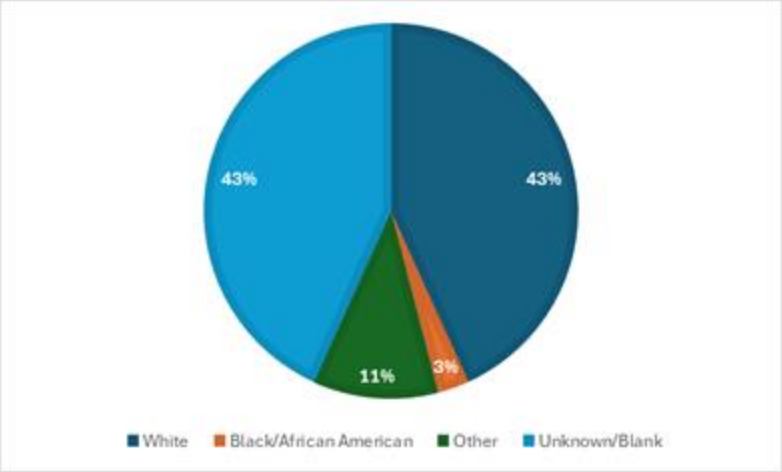
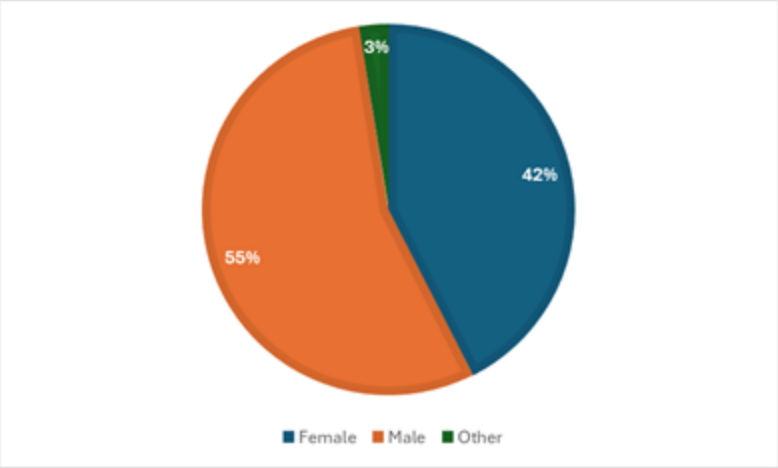


Figure 2. Self-described gender among cases



Reflecting on Information

- What gaps exist?
  - Patients unaware of diagnosis
  - Close contacts unaware of exposure
  - Conflicting information being disseminated from providers
  - Lack of testing among suspect cases
  - General public unaware
    - Common belief: "*isn't that something just babies get?*"

Key Collaborators

Public Health Nurse (PHN)

- MAVEN case investigation
- Communicate with providers
- Direct point of contact with schools
- Guidance on precautions for school setting

Epidemiologist

- MAVEN case investigation
- Communicate with cases to conduct interviews, identify close contacts
- Data collection on cases: *"What does our population look like?"*

School Nurse

- Direct point of contact with parents, students, and local boards of health
- Tracks the number of students calling out sick
- Guidance on precautions for school setting

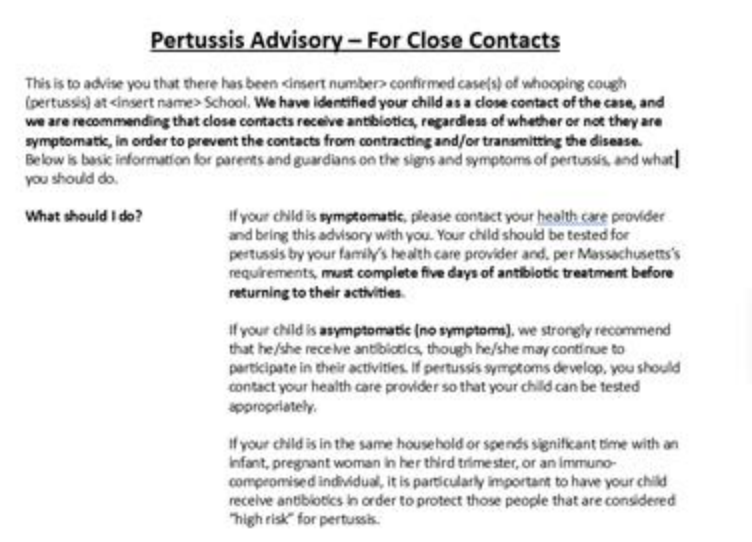
Local Public Health's Actions

- ***<u>Advisories and close contact letters sent out to schools</u>***
- Websites updated accordingly
- Educational materials made available in different languages
- Improving communication with urgent care centers and primary care providers
    - Consulted with providers on advised on best practices
- Revisiting what we could have done better

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021



Pertussis Advisory – For Close Contacts

This is to advise you that there has been <insert number> confirmed case(s) of whooping cough (pertussis) at <insert name> School. **We have identified your child as a close contact of the case, and we are recommending that close contacts receive antibiotics, regardless of whether or not they are symptomatic, in order to prevent the contacts from contracting and/or transmitting the disease.** Below is basic information for parents and guardians on the signs and symptoms of pertussis, and what you should do.

What should I do?

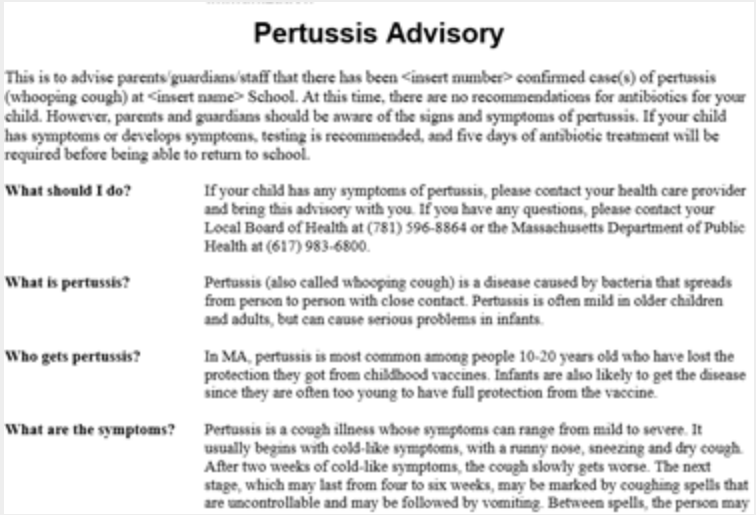
If your child is **symptomatic**, please contact your health care provider and bring this advisory with you. Your child should be tested for pertussis by your family's health care provider and, per Massachusetts's requirements, **must complete five days of antibiotic treatment before returning to their activities**.

If your child is **asymptomatic (no symptoms)**, we strongly recommend that he/she receive antibiotics, though he/she may continue to participate in their activities. If pertussis symptoms develop, you should contact your health care provider so that your child can be tested appropriately.

If your child is in the same household or spends significant time with an infant, pregnant woman in her third trimester, or an immuno-compromised individual, it is particularly important to have your child receive antibiotics in order to protect those people that are considered "high risk" for pertussis.

Sample close contact letter

Sample advisory letter



Pertussis Advisory

This is to advise parents/guardians/staff that there has been <insert number> confirmed case(s) of pertussis (whooping cough) at <insert name> School. At this time, there are no recommendations for antibiotics for your child. However, parents and guardians should be aware of the signs and symptoms of pertussis. If your child has symptoms or develops symptoms, testing is recommended, and five days of antibiotic treatment will be required before being able to return to school.

What should I do?

If your child has any symptoms of pertussis, please contact your health care provider and bring this advisory with you. If you have any questions, please contact your Local Board of Health at (781) 596-8864 or the Massachusetts Department of Public Health at (617) 983-6800.

What is pertussis?

Pertussis (also called whooping cough) is a disease caused by bacteria that spreads from person to person with close contact. Pertussis is often mild in older children and adults, but can cause serious problems in infants.

Who gets pertussis?

In MA, pertussis is most common among people 10-20 years old who have lost the protection they got from childhood vaccines. Infants are also likely to get the disease since they are often too young to have full protection from the vaccine.

What are the symptoms?

Pertussis is a cough illness whose symptoms can range from mild to severe. It usually begins with cold-like symptoms, with a runny nose, sneezing and dry cough. After two weeks of cold-like symptoms, the cough slowly gets worse. The next stage, which may last from four to six weeks, may be marked by coughing spells that are uncontrollable and may be followed by vomiting. Between spells, the person may

Local Public Health's Actions

- Advisories and close contact letters sent out to schools
- ***Websites updated accordingly***
- Educational materials made available in different languages
- Improving communication with urgent care centers and primary care providers
    - Consulted with providers on advised on best practices
- Revisiting what we could have done better

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

North Shore Public Health Collaborative

Home About Health Topics Training Hubs News Contact

EN

Search...

<Infectious Diseases

Pertussis (Whooping Cough)

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Local Public Health's Actions

- Advisories and close contact letters sent out to schools
- Websites updated accordingly
- ***Educational materials made available in different languages***
- Improving communication with urgent care centers and primary care providers
    - Consulted with providers on advised on best practices
- Revisiting what we could have done better

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

WHOOPING COUGH

What is pertussis (Whooping Cough)?

Pertussis (also called whooping cough) is a disease caused by bacteria that spreads from person to person with close contact. Pertussis is often mild in older children and adults,but can cause serious problems in infants.

Who gets pertussis ?

In MA, pertussis is most common among people 10-20 years old who have lost the protection they got from ch[illegible] to get the disease since they are oft[illegible] from the vaccine.

TOSSE COMPRIDA

O que é a coqueluche (ou 'tosse comprida')?

A coqueluche (também chamada de 'tosse comprida') é uma doença causada por bactérias, que é transmitida de pessoa para pessoa pelo contato próximo. Geralmente, a coqueluche é mais leve em crianças mais velhas e adultos, mas ela pode causar problemas sérios em crianças pequenas.

Quem pode pegar a coqueluche?

No estado de Massachusetts, a coqueluche é mais comum entre pessoas dos 10 aos 20 anos, que perderam a proteção que receberam quando foram vacinadas na infância. As crianças pequenas também têm um grande risco de contrair a doença, já que são muito novas para desenvolverem toda a

TOSFERINA

¿Qué es la tosferina?

La tosferina es una enfermedad provocada por una bacteria que se trasmite de una persona a otra a través del contacto cercano. Habitualmente la tosferina es leve en los niños grandes y los adultos, pero puede ocasionar serios problemas en los lactantes.

¿A quiénes les da tosferina?

En MA, la tosferina es más común entre las personas de 10 a 20 años de edad que han perdido la protección que obtuvieron de las vacunas infantiles.

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Local Public Health's Actions

- Advisories and close contact letters sent out to schools
- Websites updated accordingly
- Educational materials made available in different languages
- ***Improving communication with urgent care centers and primary care providers***
    - ***Consulted with providers on advised on best practices***
- Revisiting what we could have done better

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Local Public Health's Actions

- Advisories and close contact letters sent out to schools
- Websites updated accordingly
- Educational materials made available in different languages
- Improving communication with urgent care centers and primary care providers
    - Consulted with providers on advised on best practices
- ***Revisiting what we could have done better***

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Moving Forward

- Considerations
  - Delayed labs may leave more people at risk of developing the disease
  - Difficult to understand why some providers declined to test for pertussis
  - Region undergoing staffing changes; difficult to complete follow-up in a timely manner
    - Coverage is inconsistent

Moving Forward

- Reflect
  - How could we made this more of a concerted effort regionally?
  - What could the local-level done differently in terms of education and outreach?
  - What other key partners could have been involved?
  - Could we have a more streamlined process for outbreaks?

Public Health
Prevent. Promote. Protect.
North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

Thank you!

Email: lnash@salem.com

Public Health
Prevent. Promote. Protect.

North Shore Public Health Collaborative
Beverly • Danvers • Lynn • Marblehead
Nahant • Peabody • Salem • Swampscott
Est. 2021

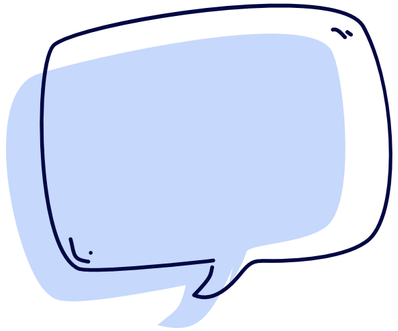
Local Solutions for the Opioid Crisis: Community Naloxone Program

Isabella Caruso, MPH
Health and Human Services Director
Town of Northborough
508-504-1812
icaruso@town.northborough.ma.us

Health & Human Services
Northborough

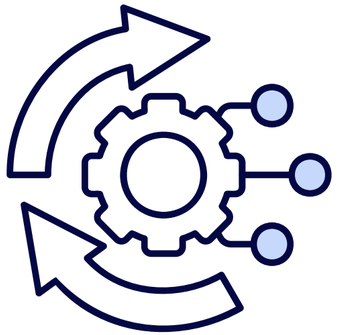
Greater Boroughs Partnership for Health

Agenda

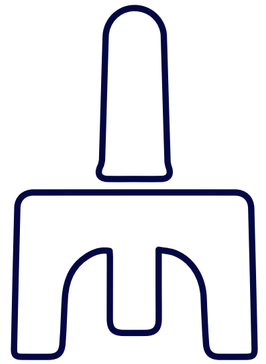


Introduction

Opioid Crisis Background



Application of the Strategic Prevention Framework

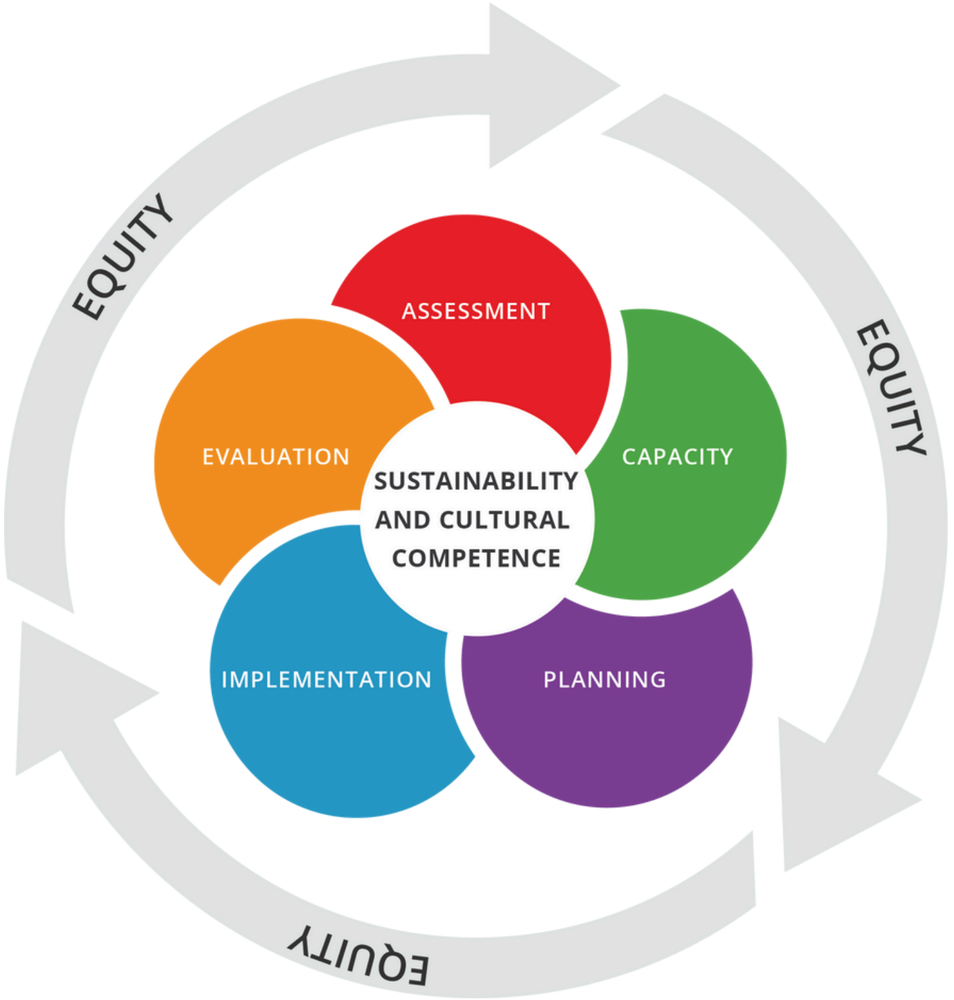


Community Naloxone Program (CNP)

Greater Boroughs Partnership for Health

GBPH provides public health services for the communities of Boylston, Northborough, Southborough, and Westborough. Our services are supported by the Public Health Excellence Grant from the Massachusetts Department of Public Health.

Regional staff include a Public Health Nurse, Epidemiologist, Shared Service Coordinator, and Health Agent.



SAMHSA Strategic Prevention Framework

Epidemiologists can support at each phase of the project!

01 Assessment

Examine data. Collect local data. Who? What? Where? When? Why?

02 Capacity

Build local resources and community partnerships.

03 Planning

Plan prevention program to meet needs of the community.

04 Implementation

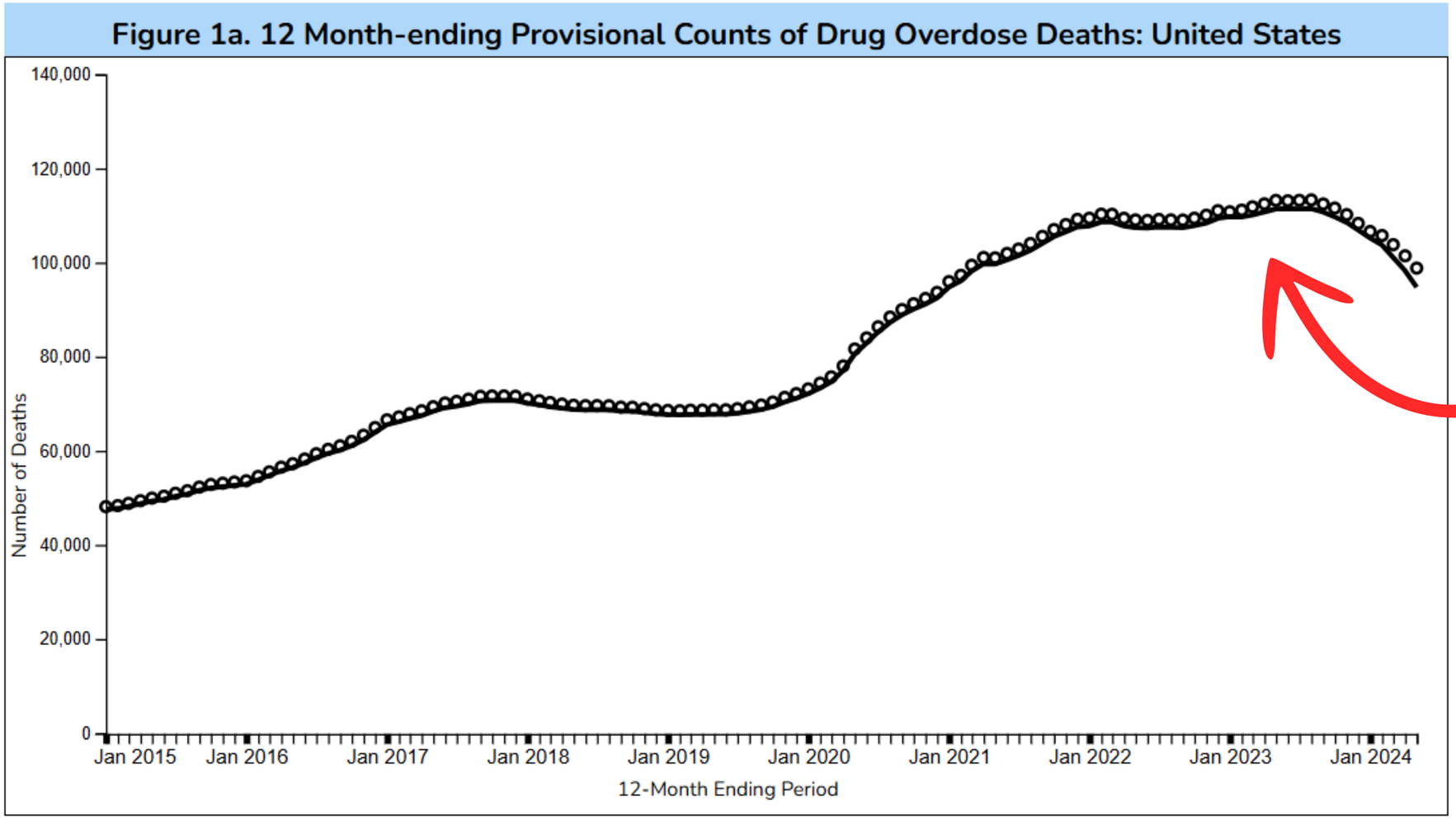
Deliver evidence-based program.

05 Evaluation

Examine the outcomes of the program.

Country-Level Data

Based on data available for analysis on: October 6, 2024

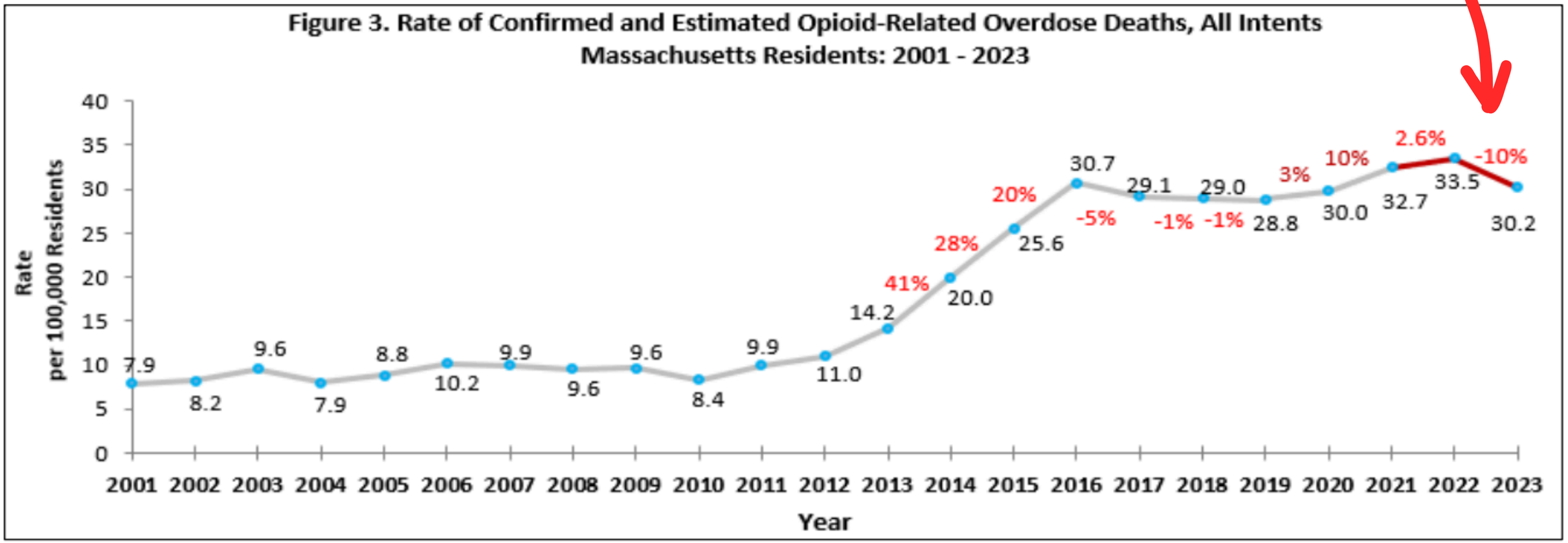


3% decrease!

Source: Ahmad FB, Cisewski JA, Rossen LM, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2024.

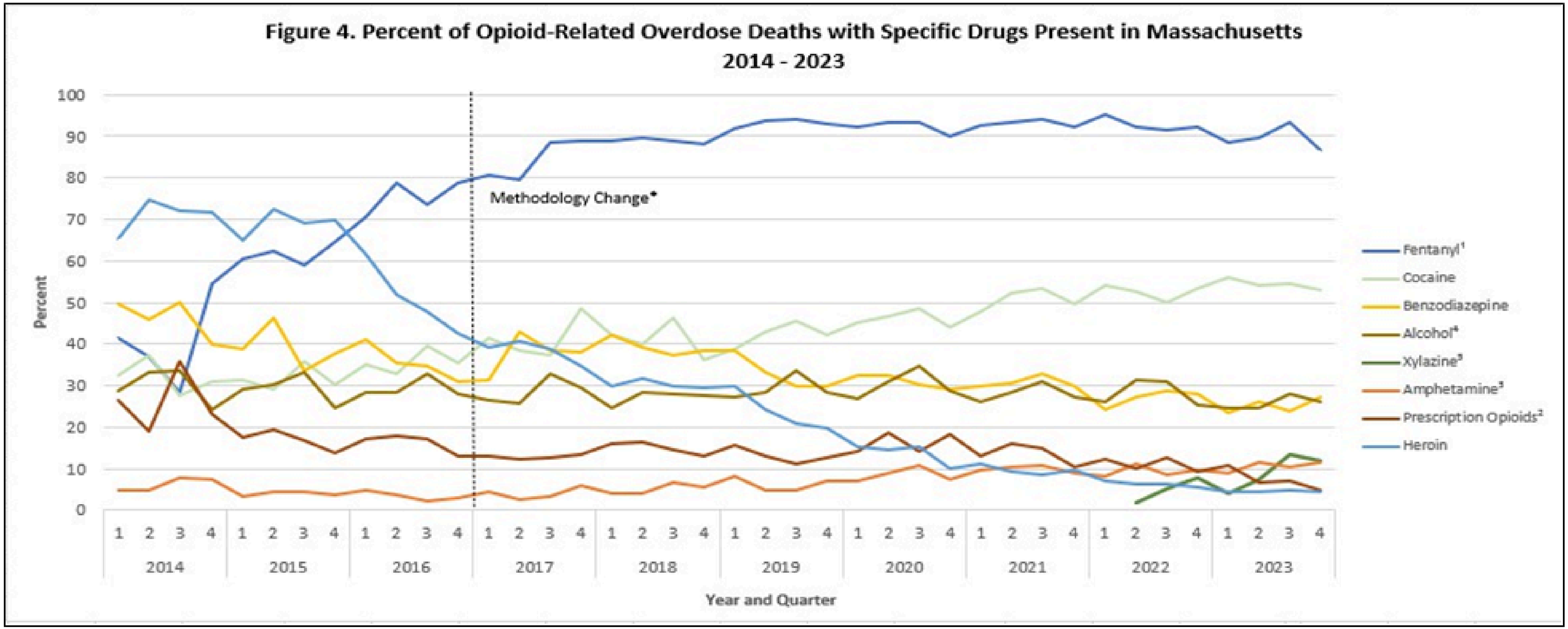
State-Level Data

10% decrease!



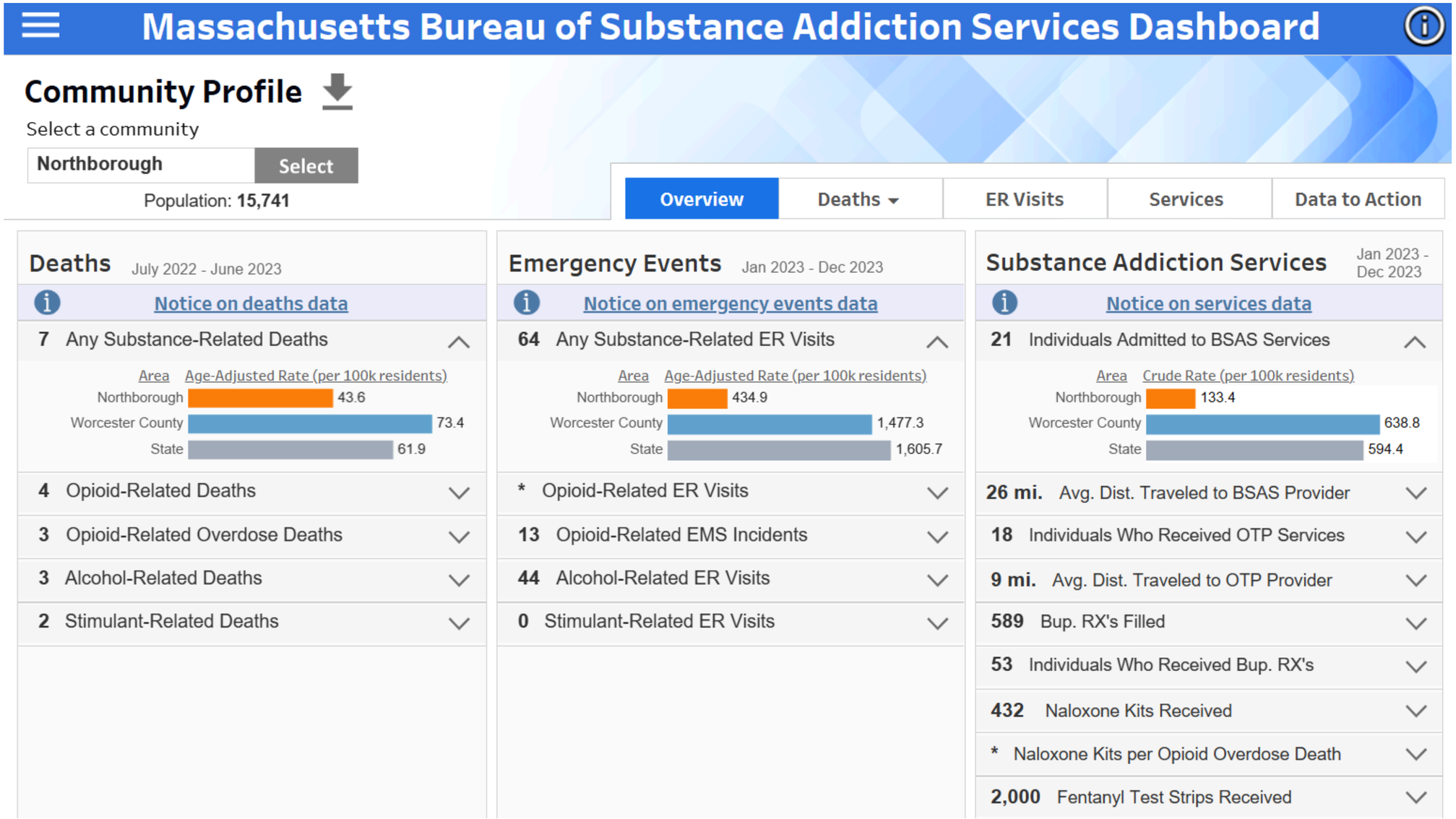
Source: Data Brief: Opioid-Related Overdose Deaths among Massachusetts Resident, Massachusetts Department of Public Health, July 2024.

State-Level Data



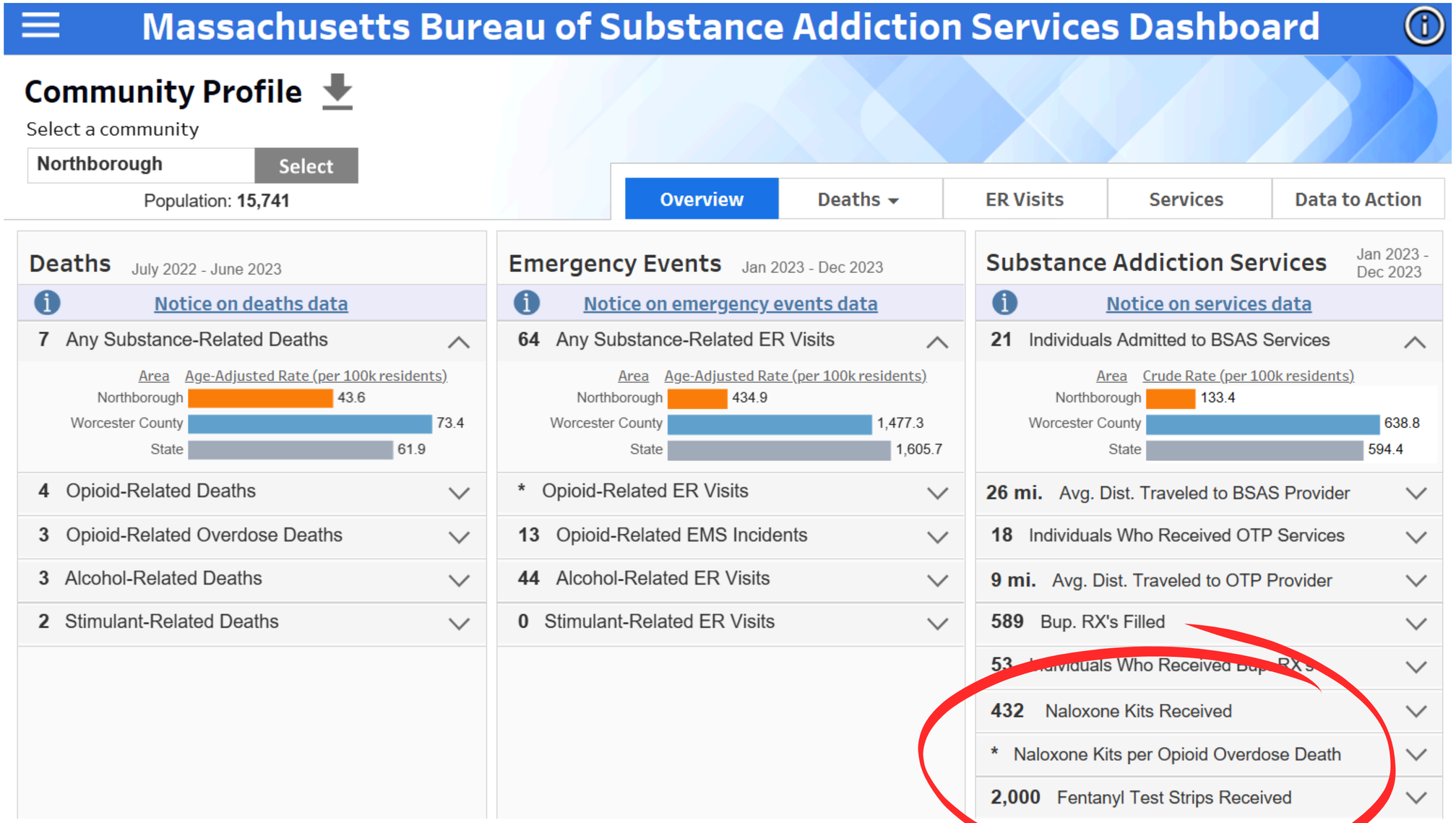
Source: Data Brief: Opioid-Related Overdose Deaths among Massachusetts Resident, Massachusetts Department of Public Health, July 2024.

Town-Level Data



Source: www.mass.gov/info-details/bureau-of-substance-addiction-services-bsas-dashboard

Town-Level Data



Source: www.mass.gov/info-details/bureau-of-substance-addiction-services-bsas-dashboard

Community Naloxone Program (CNP)

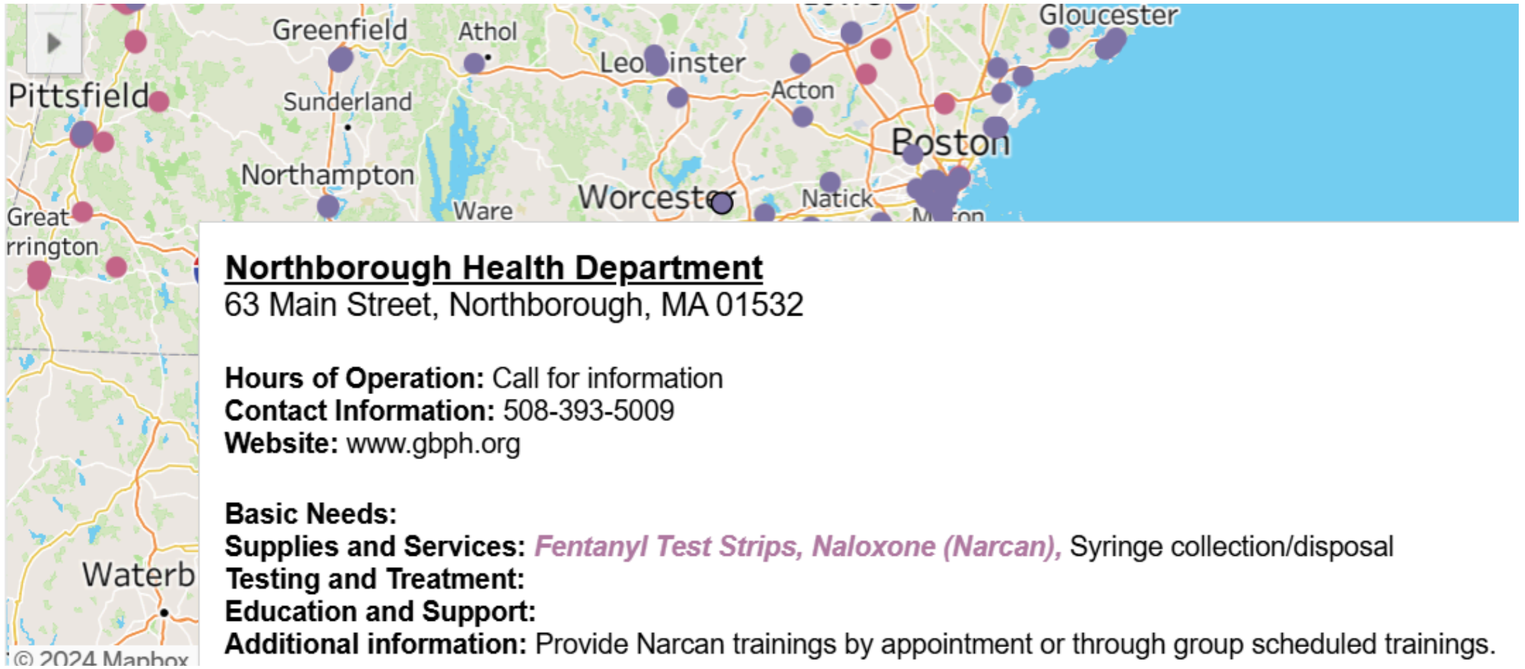
Goal: The goal of the CNP is to prevent death from opioid overdose by increasing distribution of free naloxone to community bystanders across Massachusetts.

The CNP allows many eligible programs to obtain Narcan™ brand naloxone through the State Office of Pharmacy.

Harm Reduction Program Locator

The map below shows the location addresses, services provided, hours of operation, and contact information of harm reduction programs in MA....

Mass.gov



Northborough Health Department
63 Main Street, Northborough, MA 01532

Hours of Operation: Call for information
Contact Information: 508-393-5009
Website: www.gbph.org

Basic Needs:
Supplies and Services: *Fentanyl Test Strips, Naloxone (Narcan),* Syringe collection/disposal
Testing and Treatment:
Education and Support:
Additional information: Provide Narcan trainings by appointment or through group scheduled trainings.

www.mass.gov/info-details/harm-reduction-program-locator

Data Requirements

- Number of naloxone doses distrubuted.
- Number of naloxone distribution encounters.
- Number of overdose reversals reported back to program.

Affiliate programs must designate a staff member as the CNP Coordinator.
This person will be the main point of contact with DPH and will take responsibility for required program activities and documentation, and data tracking and reporting.

www.mass.gov/info-details/community-naloxone-program-cnp

GBPH Narcan Trainings

Offers 30-minute trainings in Boylston, Northborough, Southborough, and Westborough.

- Monthly group trainings hosted at the libraries in each communities,
- Individual trainings upon request.
- Businesses and local organizations trainings upon request.

Training Agenda

- What are opioids?
- What is fenantyl?
- What is Narcan?
- What are risk factors of an overdose?
- How to recognize an overdose?
- How to administer Narcan?

GBPH

Narcan Trainings

All participants receive a free kit with the following:

- 2 doses of Narcan
- Instructions on Narcan administration
- Fentanyl test strips with instructions
- Face shield for rescue breaths
- Local recovery resource guide

GBPH

Community Impact

1,276

Doses of Narcan distributed in Boylston, Northborough, Southborough, and Westborough.

500+

Residents in Boylston, Northborough, Southborough, and Westborough trained on how to recognize and reverse an overdose.

Qualitative Evaluation

"The training was informative, sufficient, and the clients really enjoyed the training. It was helpful and we look forward to doing more in the future!"

-Recovery Center

"Expanding to offer training in the high school health classes might be one idea or as part of 12th grade fitness class as they get ready to graduate."

-School Key Stakeholder

Key Collaborators

Health Director/Shared Service Coordinator

- Community Naloxone Program (CNP) application.
- Maintain Controlled Substance Registration for Municipality.

Public Health Nurse/ Prevention Coordinator

- Creates and keeps presentation up-to-date.
- Presents 30-minute presentation for community members.
- Orders naloxone as needed and creates kits with fentanyl test strips and resource guides.

Epidemiologist

- Tracks and report naloxone data to DPH monthly.
- Reviews substance use data from MetroWest Health Foundation, DPH, CDC.
- Use data to inform Narcan trainings and future substance prevention work.

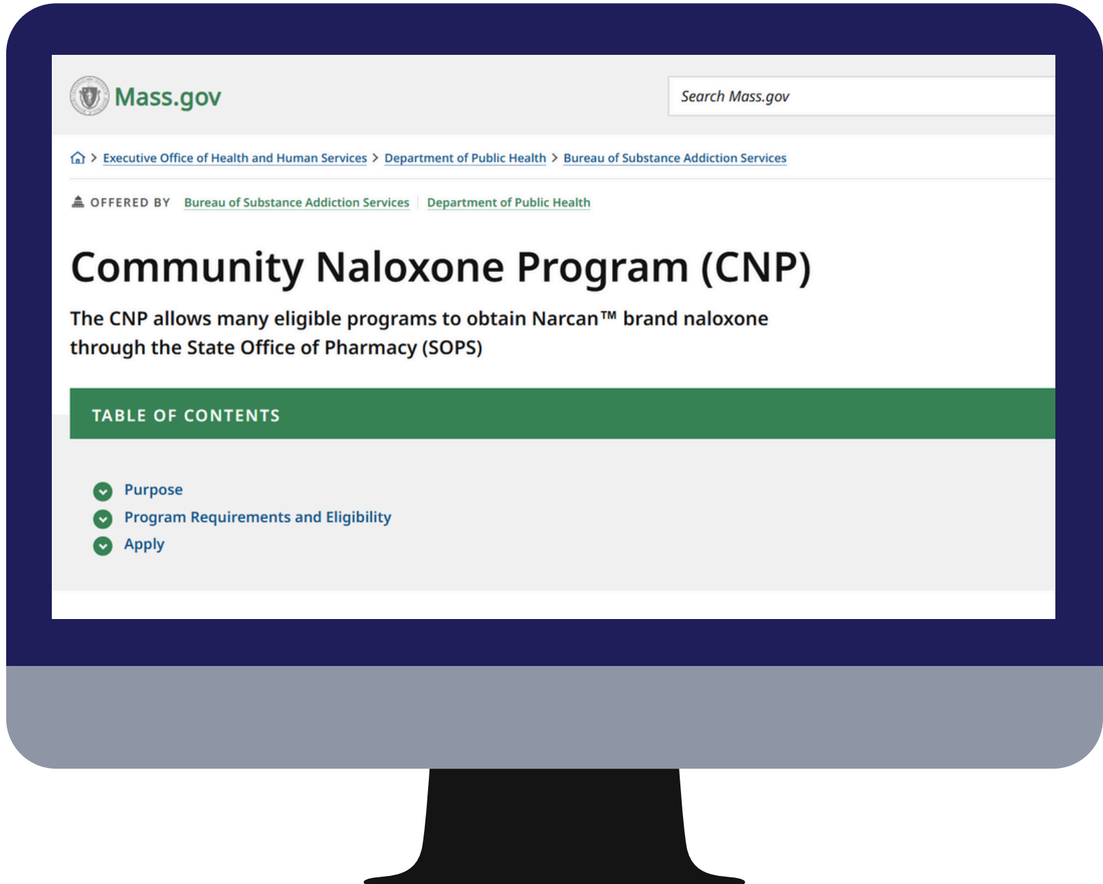
Community outreach and engagement to increase visibility and reach of naloxone trainings.

CNP Information

How to apply?

- Online application:
  - www.mass.gov/info-details/community-naloxone-program-cnp

- Reach out to **naloxone@mass.gov** with questions about the program



MA Substance Use Resources

You Can: www.youcan.info

- A web resource, created by HRIA and funded by DPH, that goes over the basics of overdose response and rescue breathing.

SafeSpot: www.safe-spot.me

- MA Overdose Prevention Line offers virtual monitoring of those who are using drugs alone.

MA Substance Use Helpline: www.helplinema.org

- Statewide resource for finding substance use harm reduction, treatment, recovery, and problem gambling services.

Massachusetts Health Promotion Clearinghouse:
www.massclearinghouse.ehs.state.ma.us

- Free health promotion materials for MA residents and health and social services providers.

Thank you!

Reach out with any questions!

Isabella Caruso, MPH
Health and Human Services Director
Town of Northborough
508-504-1812
icaruso@town.northborough.ma.us

Health & Human Services
Northborough

Greater Boroughs Partnership for Health

Alpha Gal Syndrome:

Tracking & Tackling a New Tick Epidemic on Martha's Vineyard

Massachusetts Health Officer Association Conference

November 13, 2024

Lea Hamner, MPH

Contract Epidemiologist, Cape & Islands

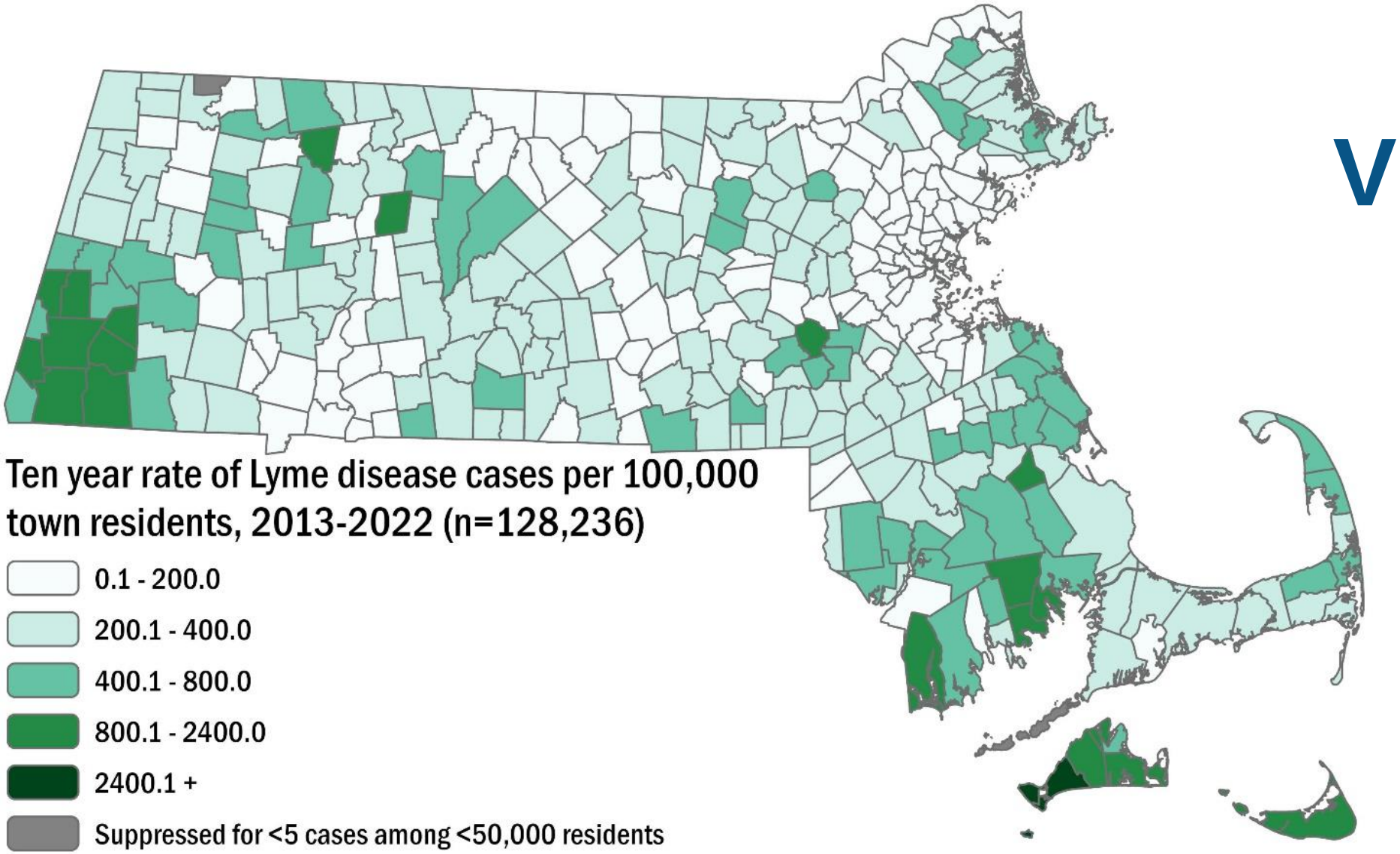
Patrick Roden-Reynolds

Director & Biologist, Martha's Vineyard Tick Program

Roadmap

1. The Ticks
2. The Allergy
3. The Data

Martha's Vineyards Tick Problem



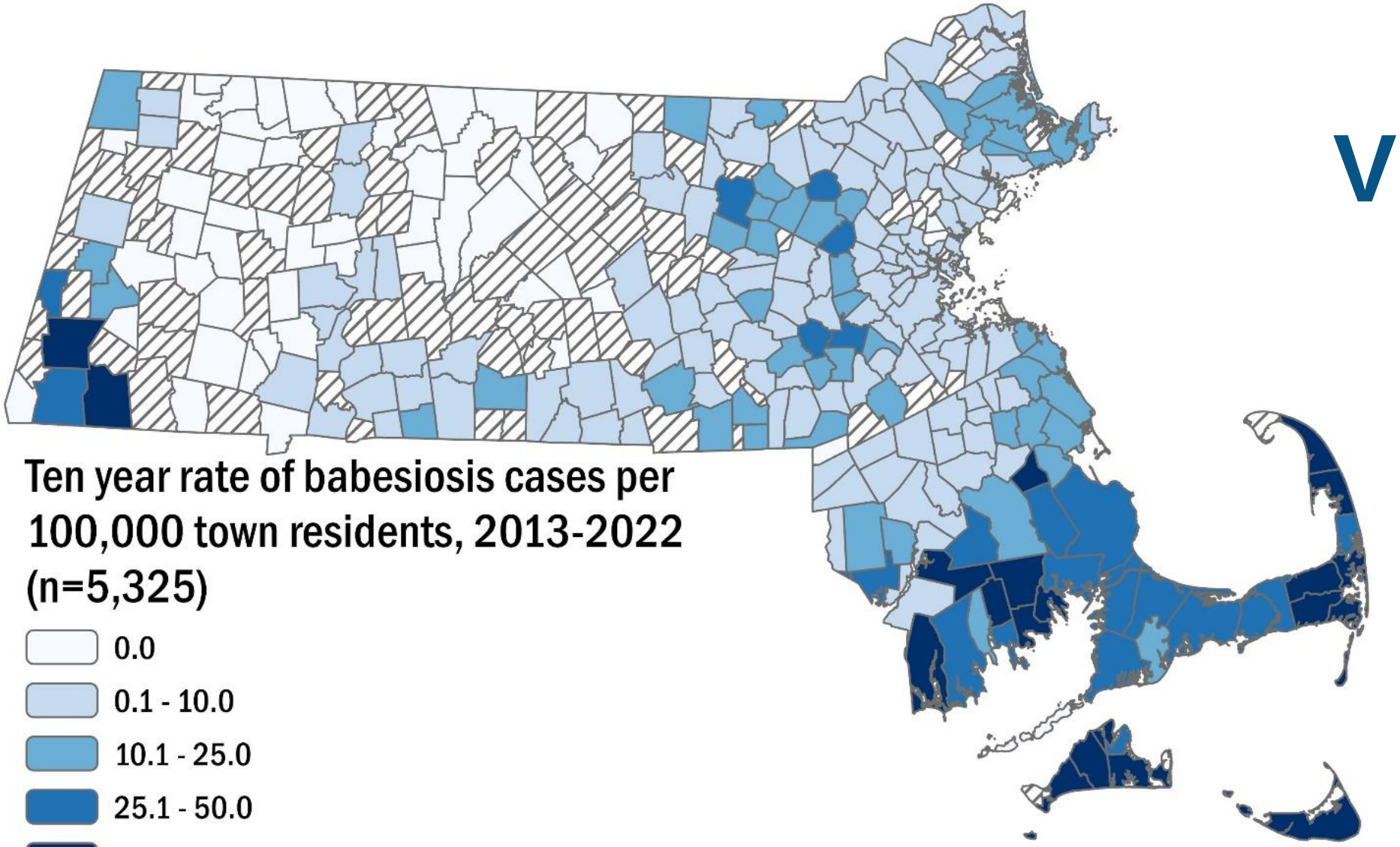
Ten year rate of Lyme disease cases per 100,000 town residents, 2013-2022 (n=128,236)

- 0.1 - 200.0
- 200.1 - 400.0
- 400.1 - 800.0
- 800.1 - 2400.0
- 2400.1 +
- Suppressed for <5 cases among <50,000 residents

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



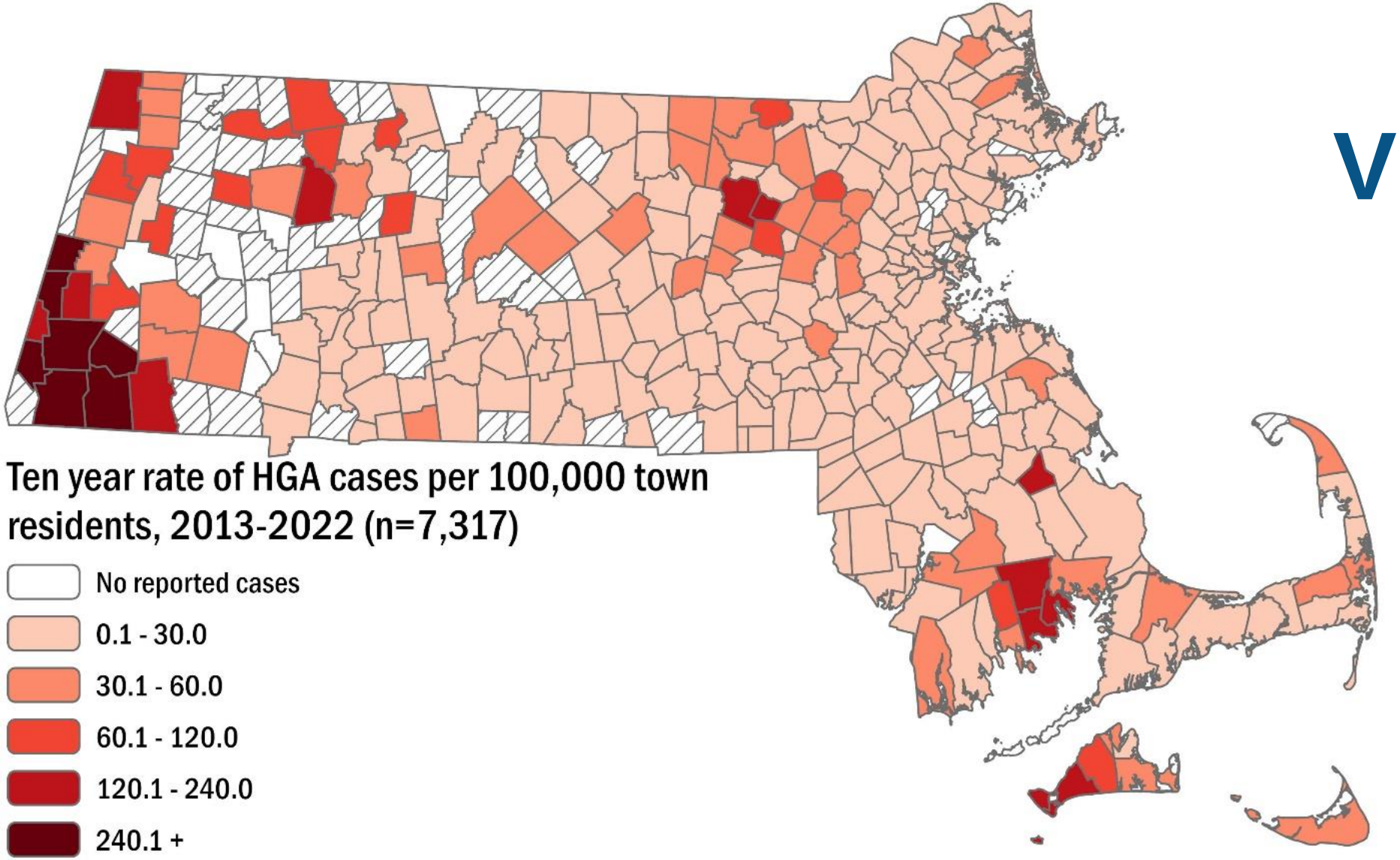
Ten year rate of babesiosis cases per 100,000 town residents, 2013-2022 (n=5,325)

- 0.0
- 0.1 - 10.0
- 10.1 - 25.0
- 25.1 - 50.0
- 50.1 +
- 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 Vineyards Tick Problem



Ten year rate of HGA cases per 100,000 town residents, 2013-2022 (n=7,317)

- No reported cases
- 0.1 - 30.0
- 30.1 - 60.0
- 60.1 - 120.0
- 120.1 - 240.0
- 240.1 +
- Suppressed for <5 cases among <50,000 residents

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

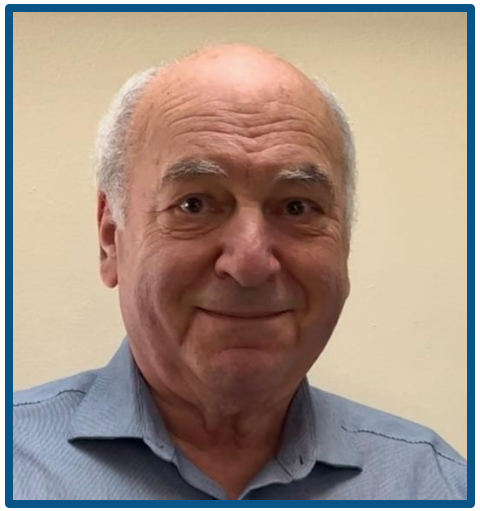
The Team

Patrick Roden-Reynolds
Biologist
IIPHEC Staff

Amelia Hambrecht
Public Health Nurse
Contracted

Betsy VanLandingham
Case Investigation Coordinator
Contracted

Lea Hamner
Epidemiologist
Contracted



Mike Hugo
Shared Service Coordinator
Contracted

+

8 Town Health Agents & Directors
in IIPHEC

Enter a New Tick:
Lone Star (*Amblyomma Americanum*)

Survey by Patrick Roden-Reynolds; photo by Lea Hamner

Martha's Vineyard Tick Program

Residential Yard Survey

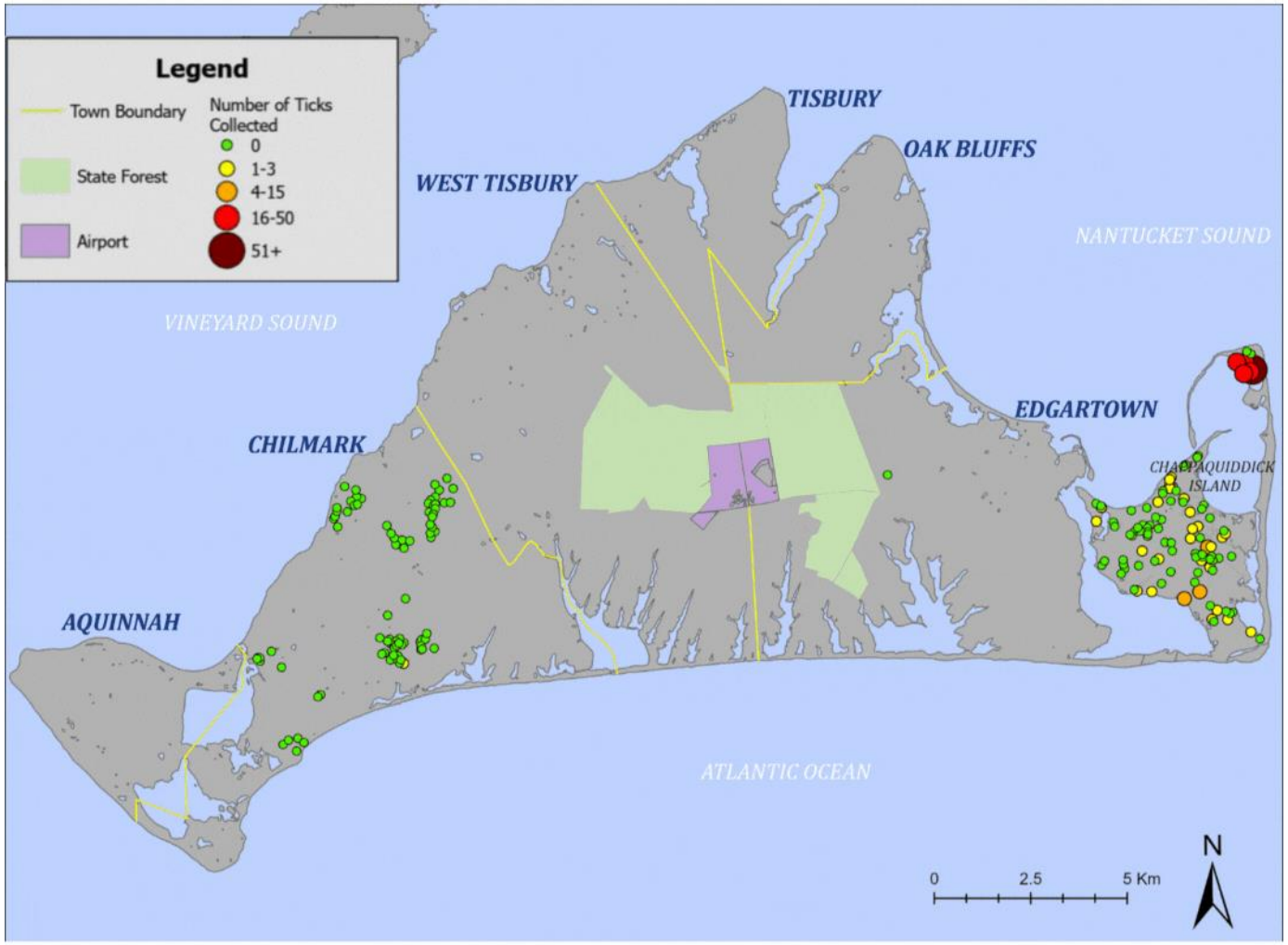
May 31, 2024 in Chilmark, MA

Lea's yard

Lone Star Ticks: A tale of relentless expansion

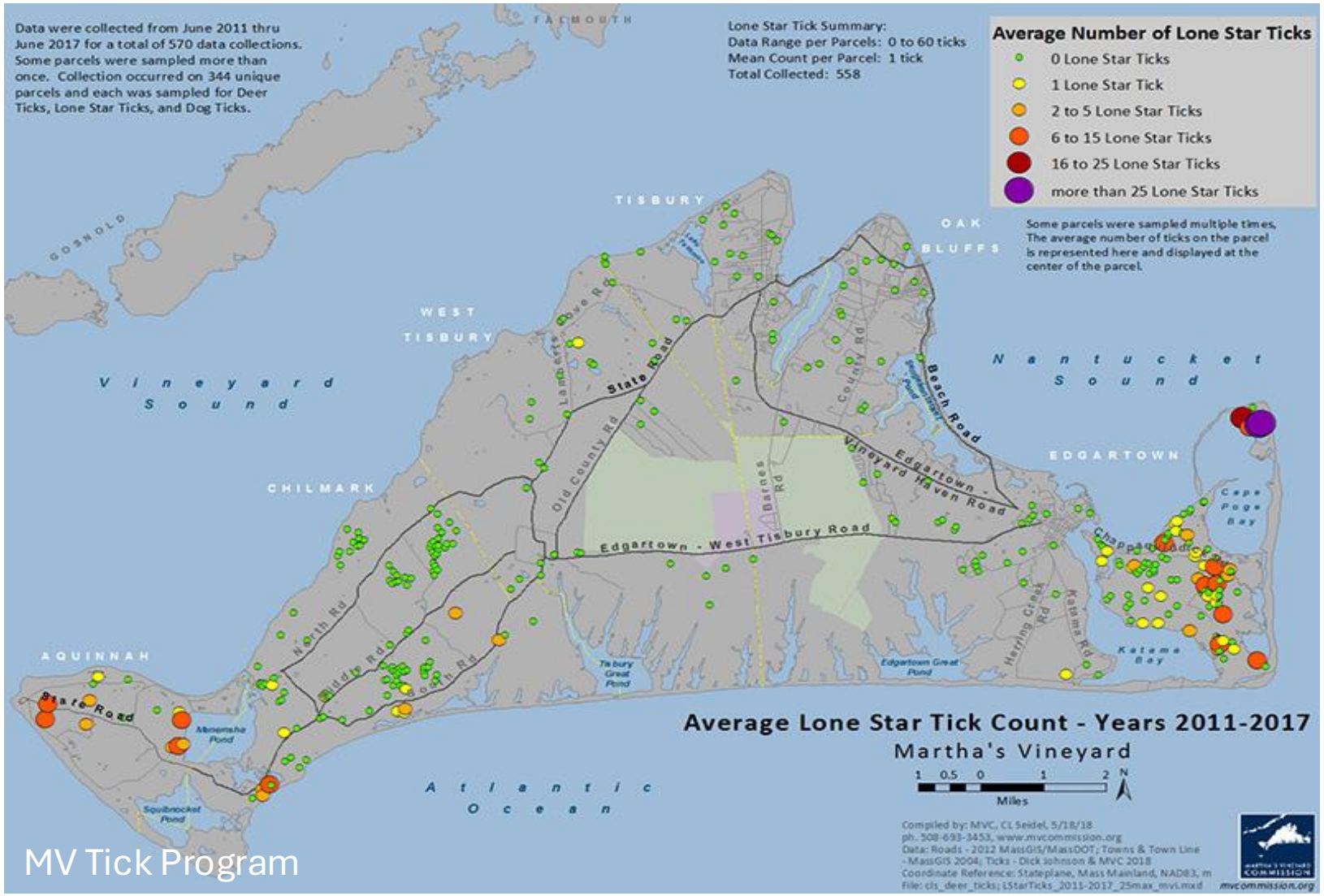
Check us out in the poster hall!

2011-2015



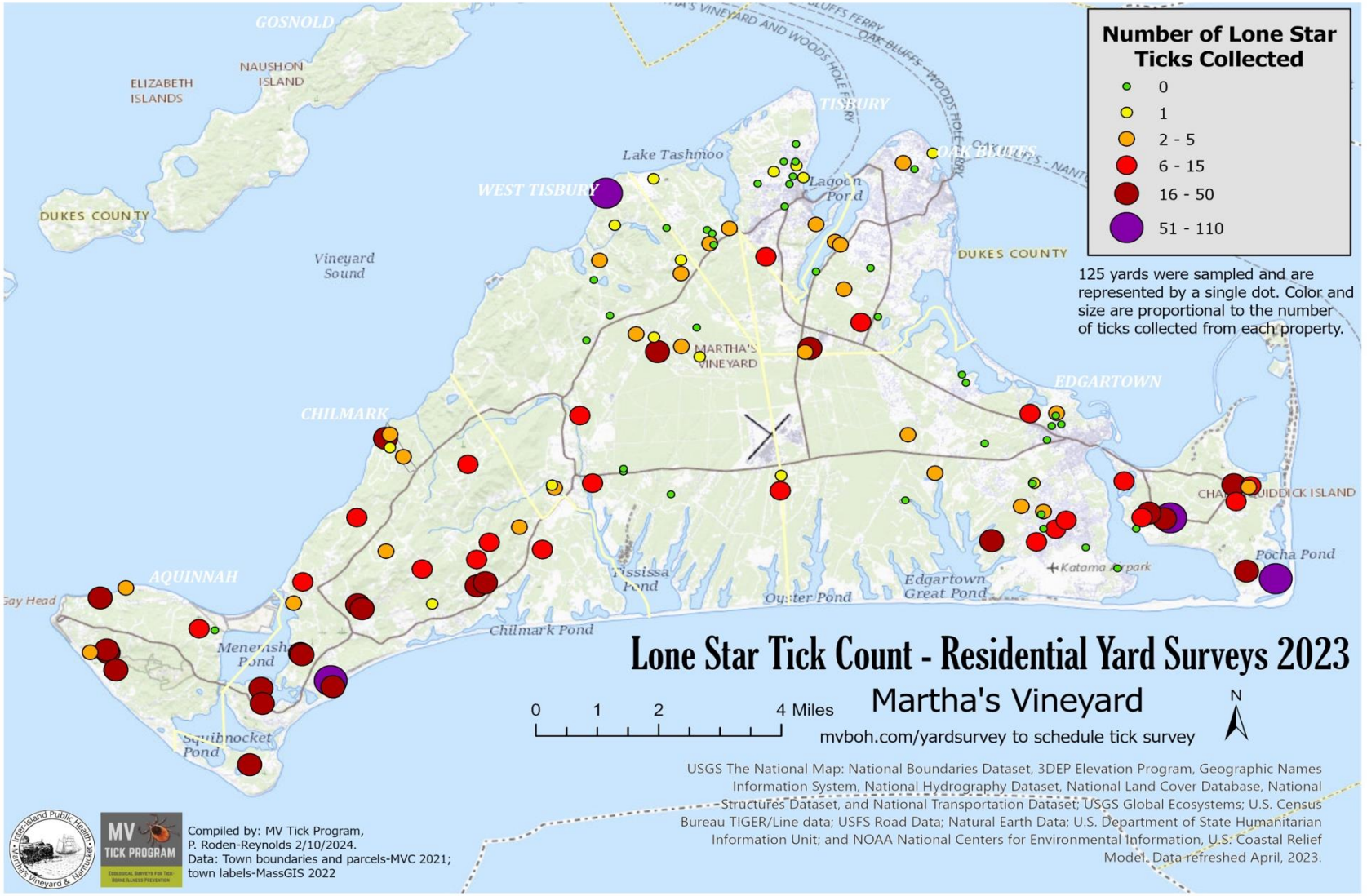
Lone Star ticks found in Residential Yard Surveys

Lone Star Ticks:
A tale of relentless expansion



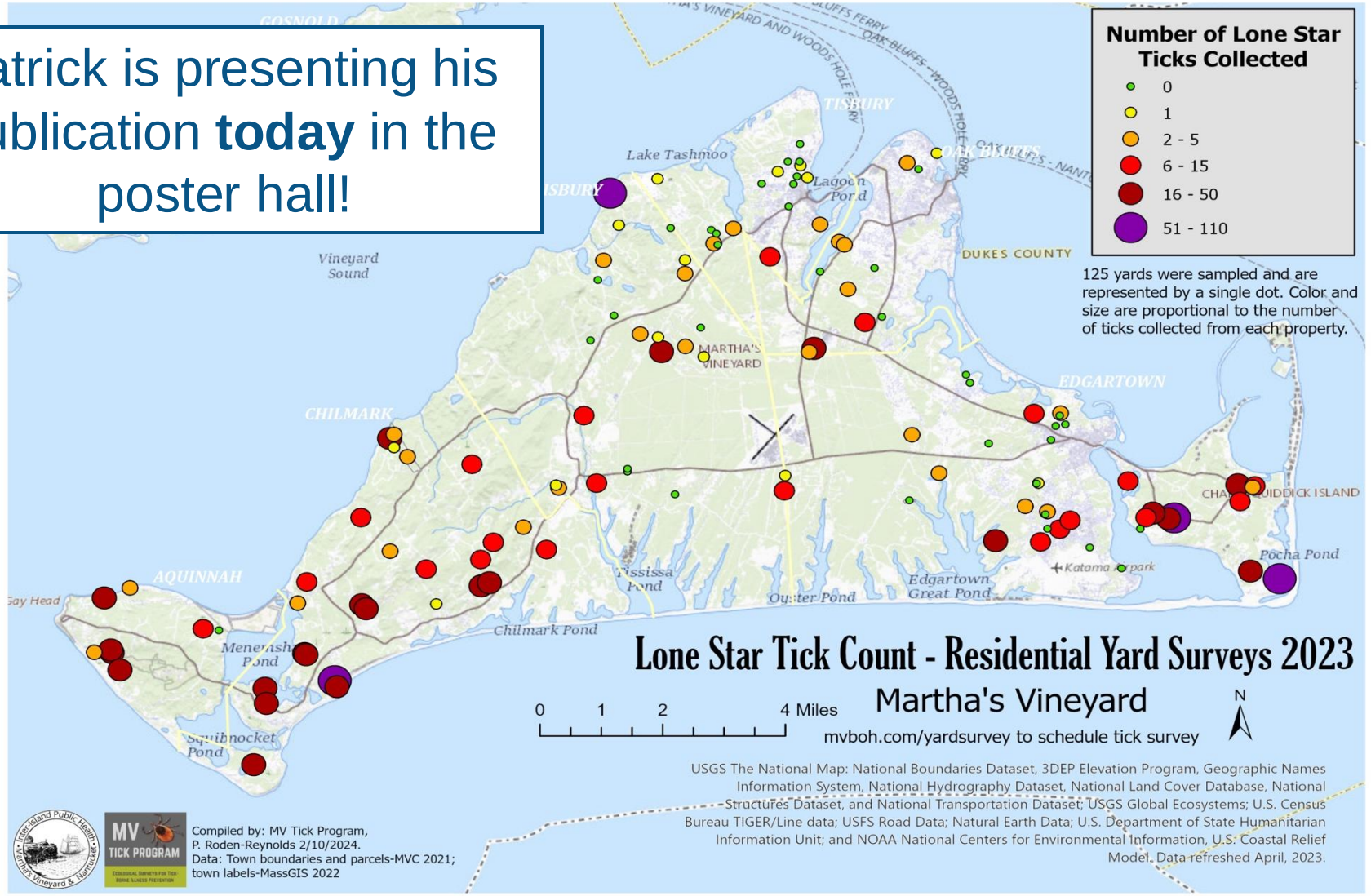
MV Tick Program

Lone Star Ticks:
A tale of relentless expansion

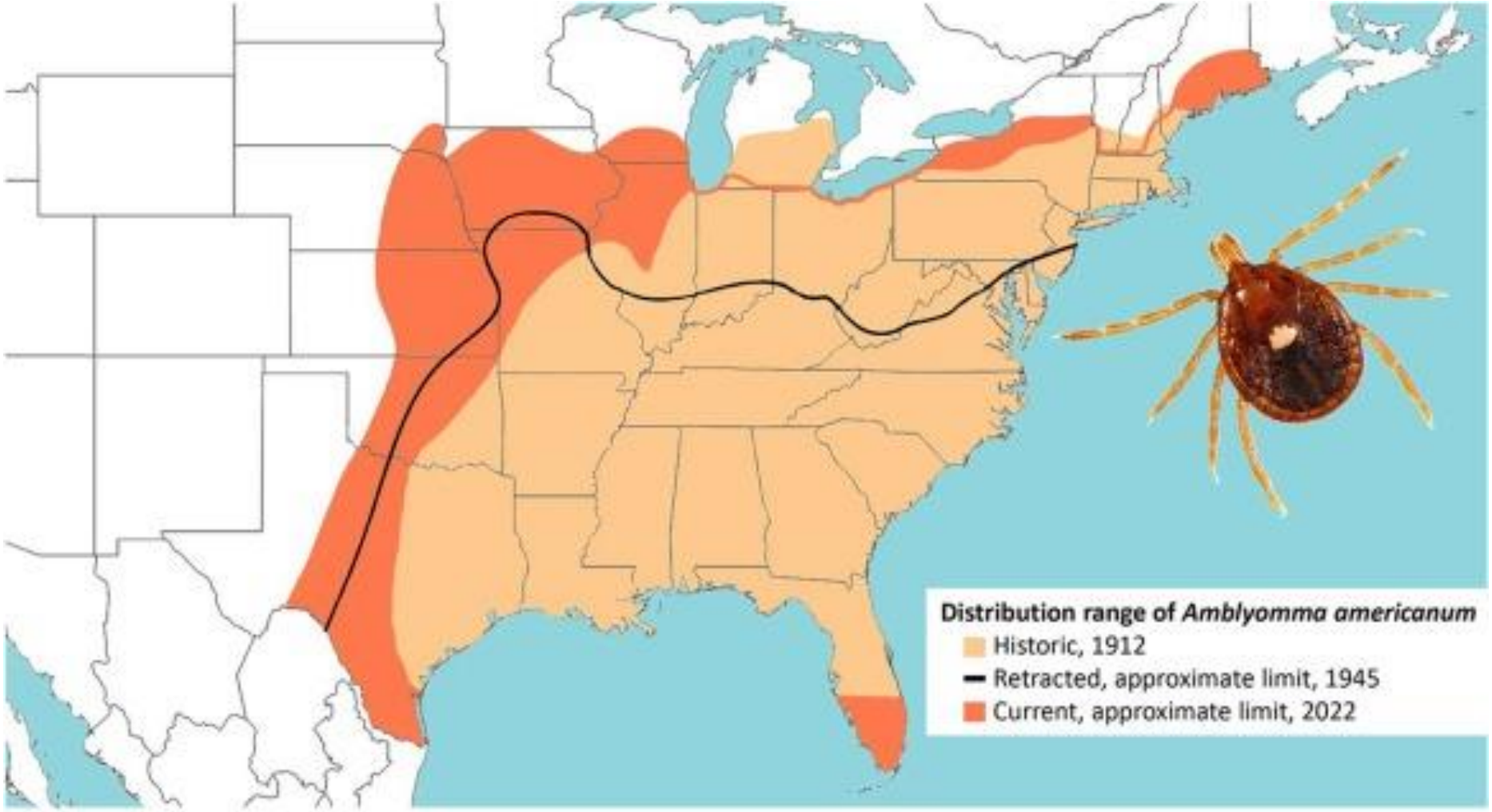


Lone Star Ticks:
A tale of relentless expansion

Patrick is presenting his publication **today** in the poster hall!



Lone Star Tick Distribution



McClung KL and Little SE, 2023

Trends in Parasitology

AGI
Alpha-gal Information™

AlphaGalInformation.org

ALPHA-GAL INFORMATION

A PROJECT OF ALPHA-GAL ALLIANCE

ALPHA-GAL SYNDROME

The Epidemic You Never Heard of

LEARN MORE

Epi at Work:

Communicating the Science

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.

Vineyard Haven Library
200 Main Street | Vineyard Haven
www.vhlibrary.org | 508.696.42

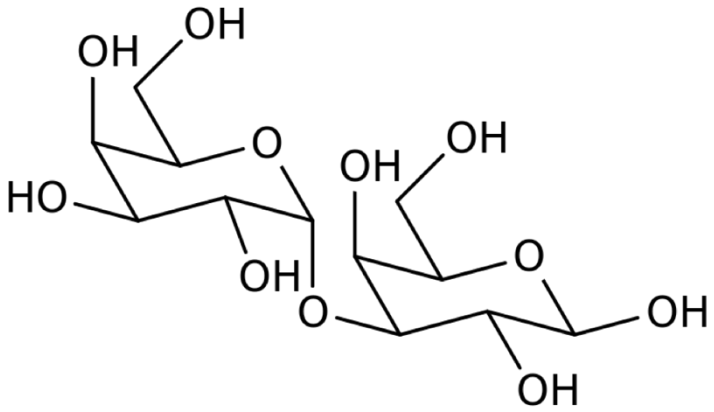
58:32

Link

An extremely abbreviated version:

Alpha Gal Syndrome

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

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

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.

Management of Alpha Gal Syndrome

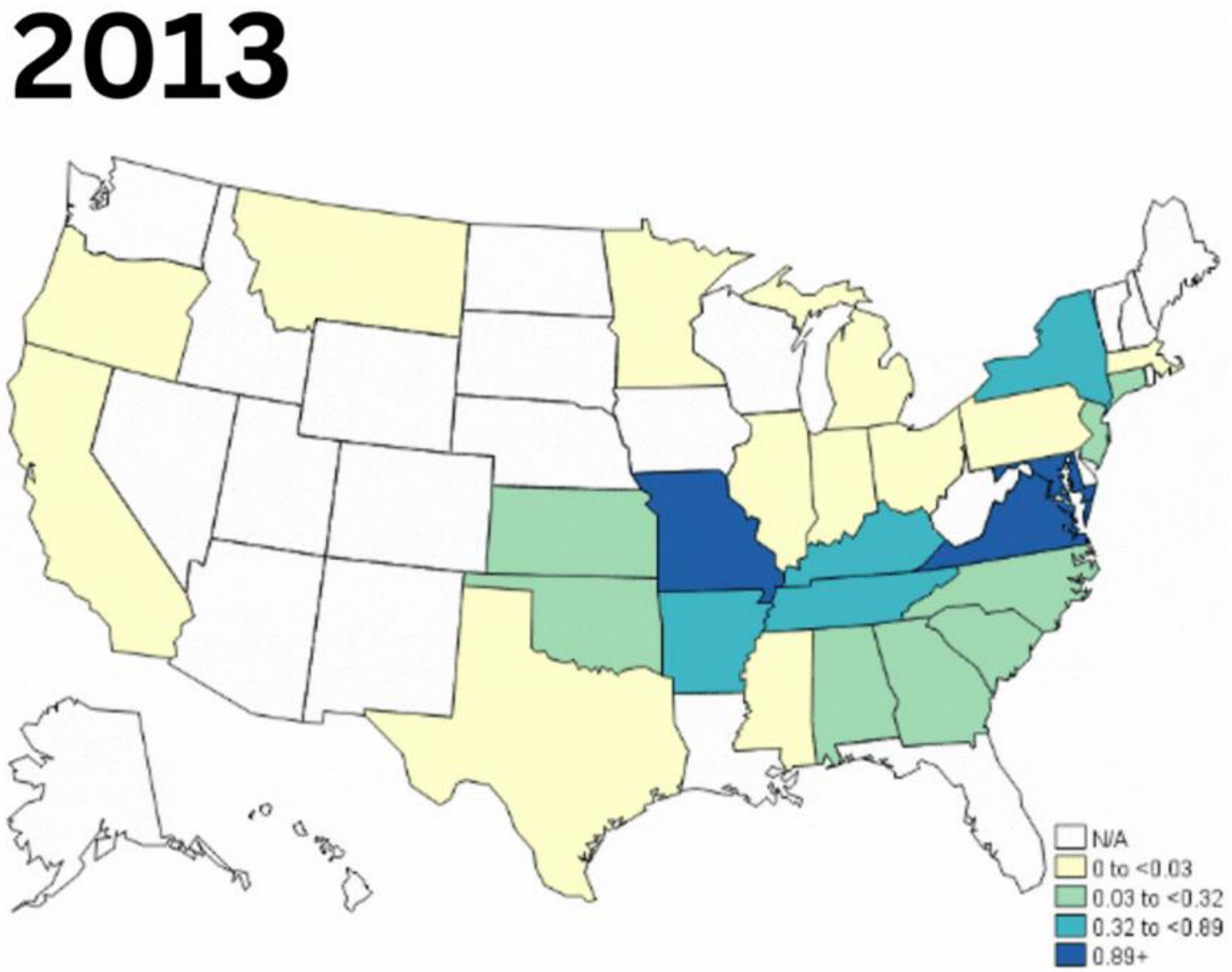
- Referral to allergist
- Diet and lifestyle changes depending on triggers
- No cure, BUT…
  - **Allergy can go away for some patients** (usually years)
  - **Allergy can come back if re-exposed to Lone Star ticks**

Prevention is the cure.
PREVENT TICK BITES.

An Allergy Epidemic

Persons positive per 100,000 population

Article: Binder, Commins, et al 2021



UNC SCHOOL OF MEDICINE

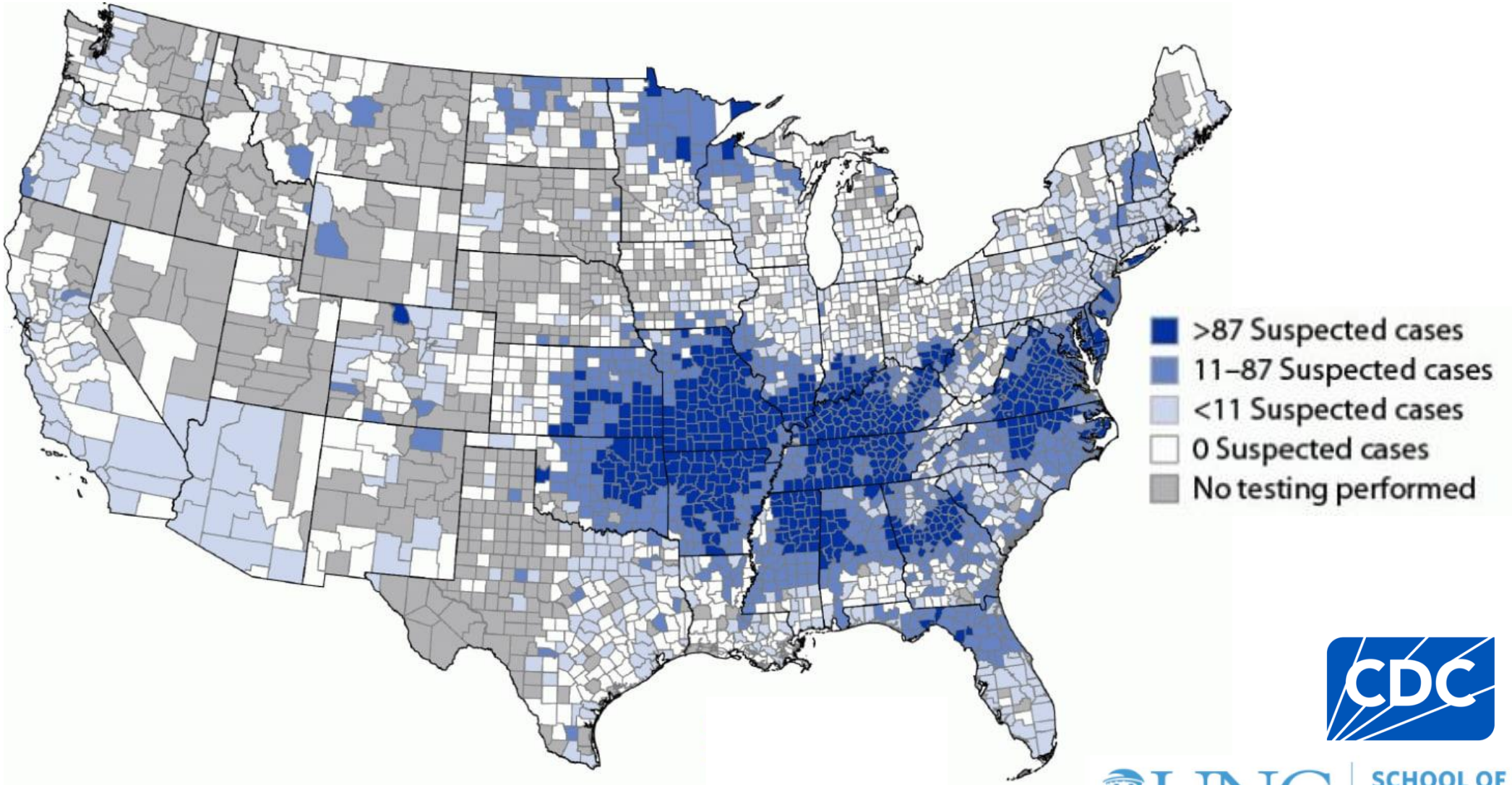
CDC

Most Recent Map per Lab Surveillance

2017-2022

Persons positive per 1,000,000 population

Article: Thompson et al, 2023



CDC

UNC SCHOOL OF MEDICINE

CDC Reports Shocking Increase in Cases and a Lack of Physician Awareness

450,000

Up to 450,000 Americans are now estimated to have alpha-gal syndrome.

10th Most Common Food Allergen

The CDC's estimate makes alpha-gal syndrome the 10th most common food allergy in the U.S.

78%

78% of healthcare providers know little to nothing about alpha-gal syndrome.

Only 5%

Only 5% of healthcare providers feel very confident in diagnosing and managing alpha-gal syndrome.

You're telling me…

there is a recently discovered allergy caused by tick bite,

and these Lone Star ticks are rapidly expanding their territory,

and doctors don't know how to recognize the allergy or manage it,

and patients don't know what is causing their symptoms,

and foods & products aren't labeled for the allergen,

and the allergy can go away but come back if you get more bites?

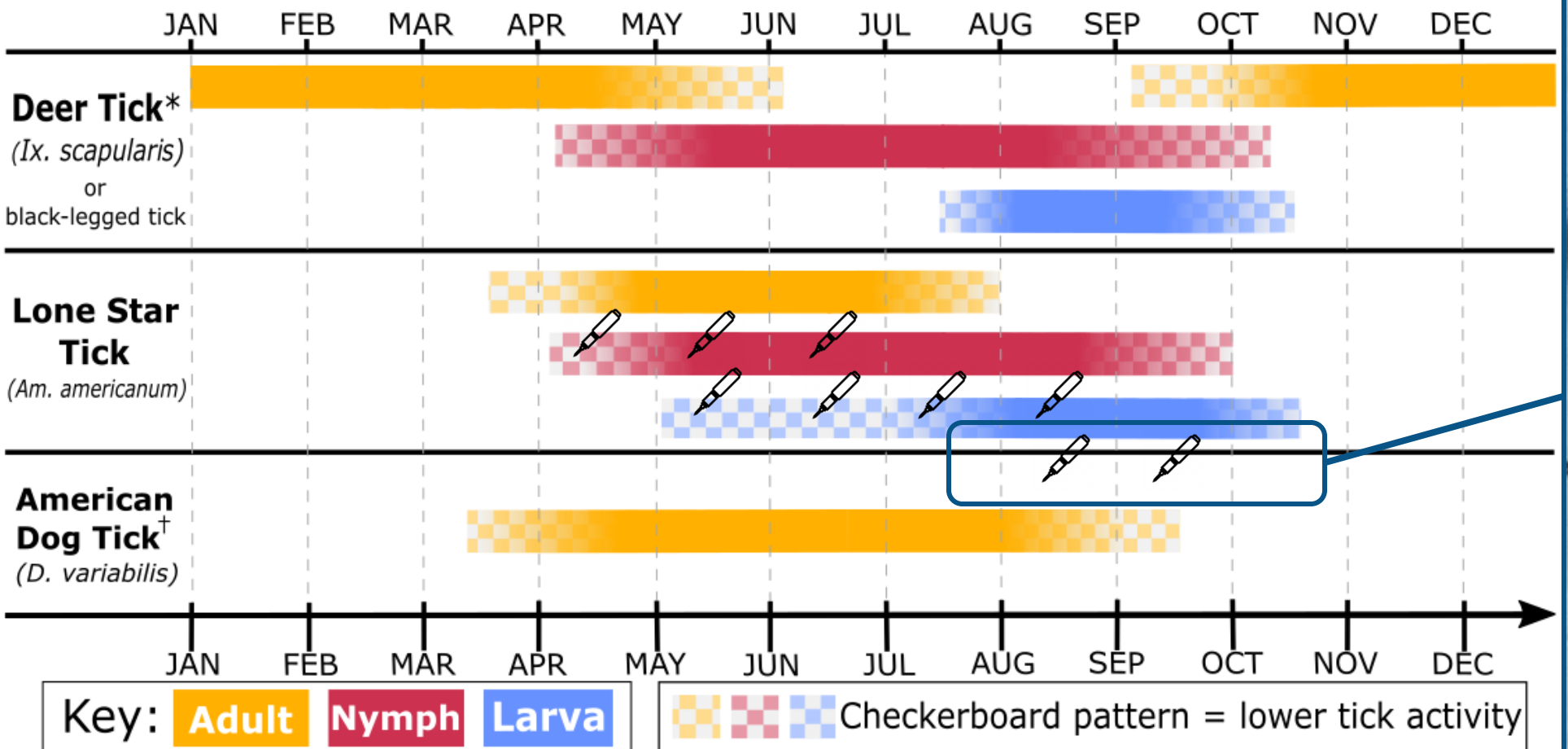
Yes. Yes, we are.

Data 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**; attract experts to study AGS here.

Photo of the first Alpha Gal Support Group meeting, led by our Public Health Nurse

Exposure Risk is 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.

Compiled by P. Roden-Reynolds for IIPHEC & MV Tick Program 02/2024
Adapted from "Ticks and Tick-borne Diseases of Virginia" flyer. Virginia Department of Health

MV TICK PROGRAM

Inter-Island Public Health · Martha's Vineyard & Nantucket ·

Link to graphic

Epi at Work:

Measuring the Problem

Alpha Gal is NOT a Reportable Disease in MA

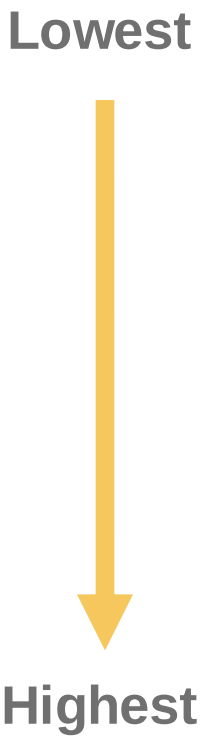
MAVEN Electronic D… …iance System(EDSS)

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)

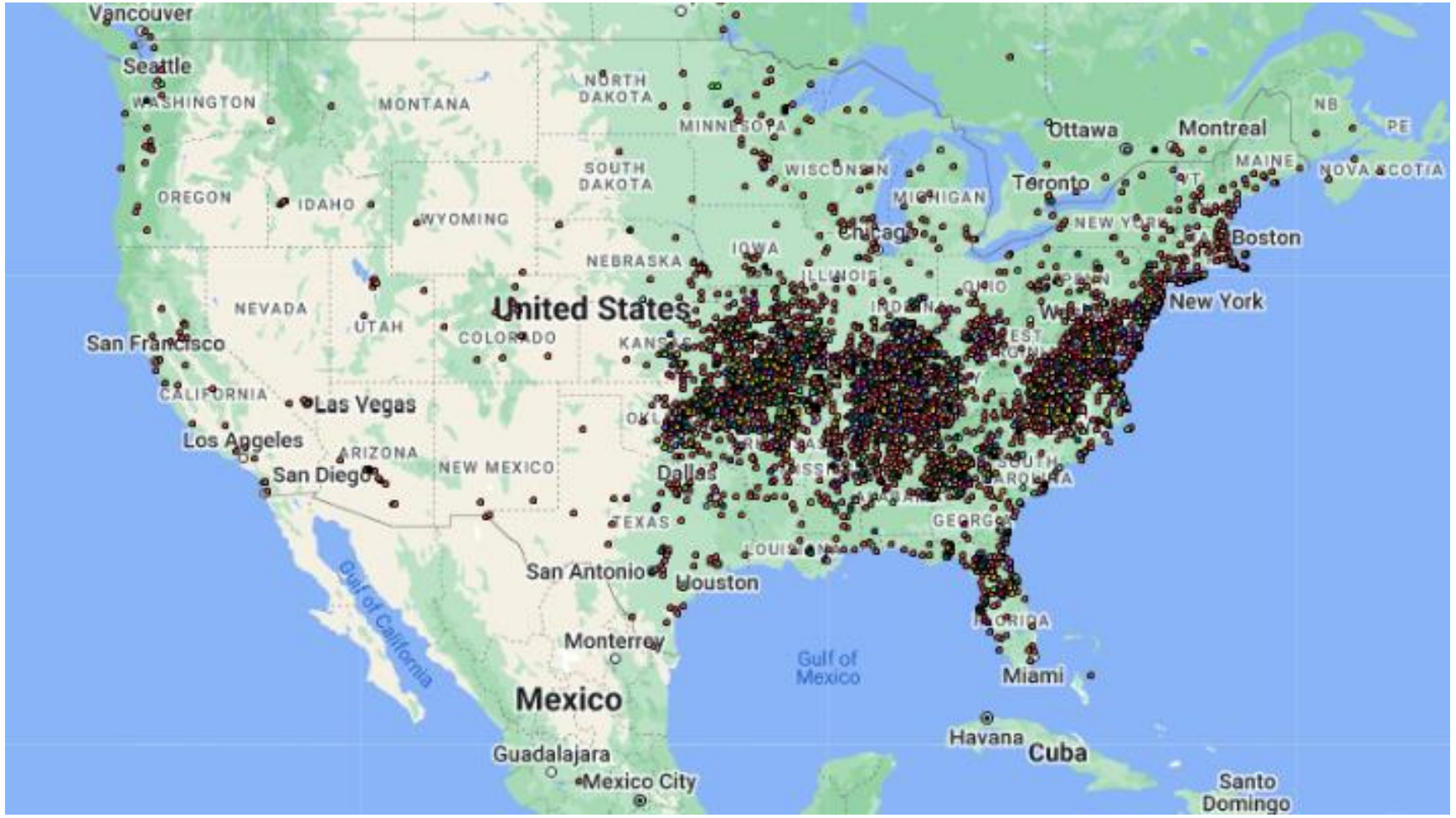
Surveillance: What Data Can We Get with the Resources We Have

Scale of **Effort & Resources** Needed From LPH



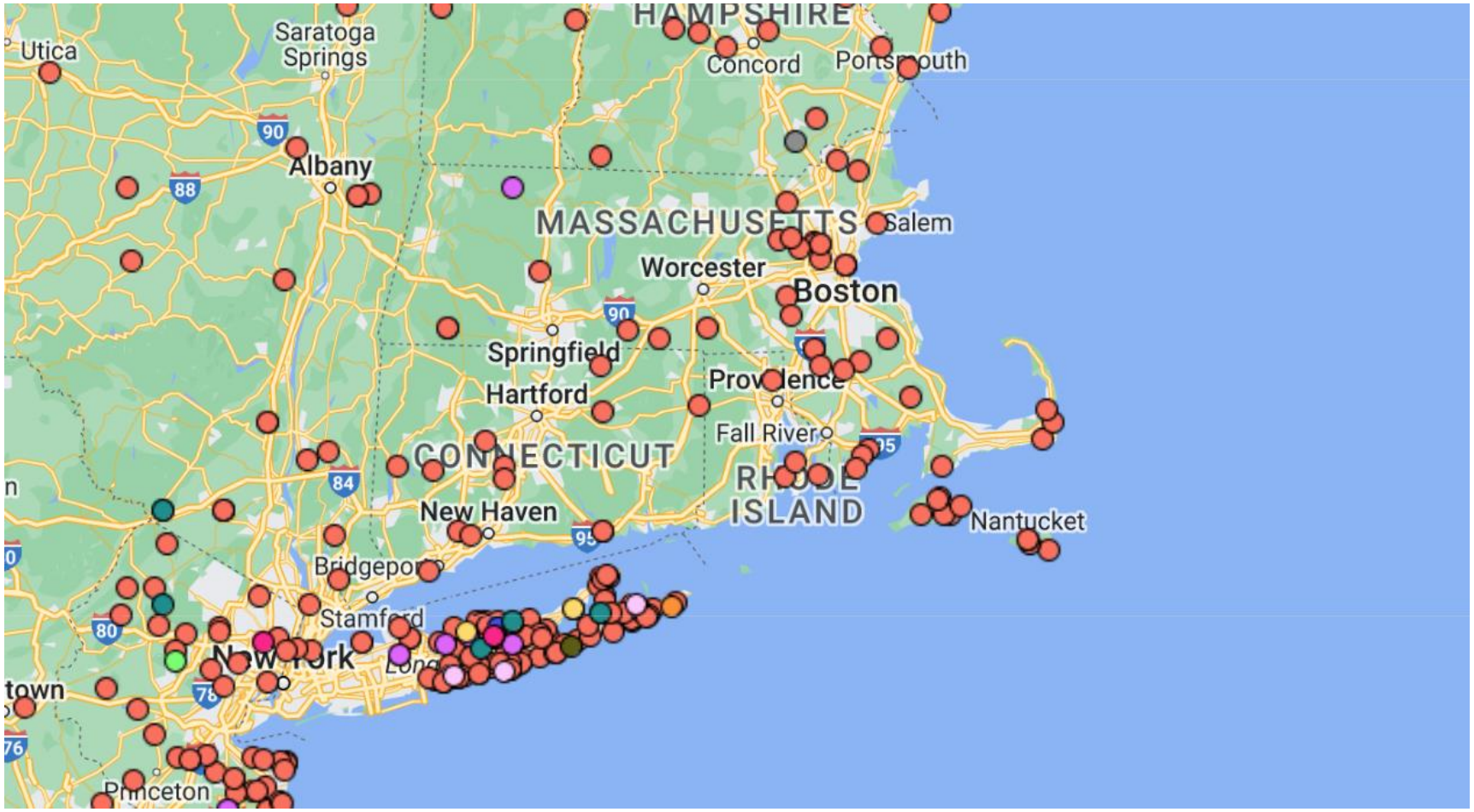
1. Self-report
2. **Aggregate laboratory data**
3. Aggregate healthcare provider data
4. **Line-level hospital data analysis**
5. Syndromic surveillance
6. **Make legally reportable & investigate cases (MAVEN)**

Option #1: Self-Report



Where is AGS? - Alpha-gal Information (alphagalinformation.org), screenshot taken 8/8/2024

Option #1: Self-Report



Where is AGS? - Alpha-gal Information (alphagalinformation.org), screenshot taken 8/8/2024

Option #2:
Aggregate Lab Surveillance

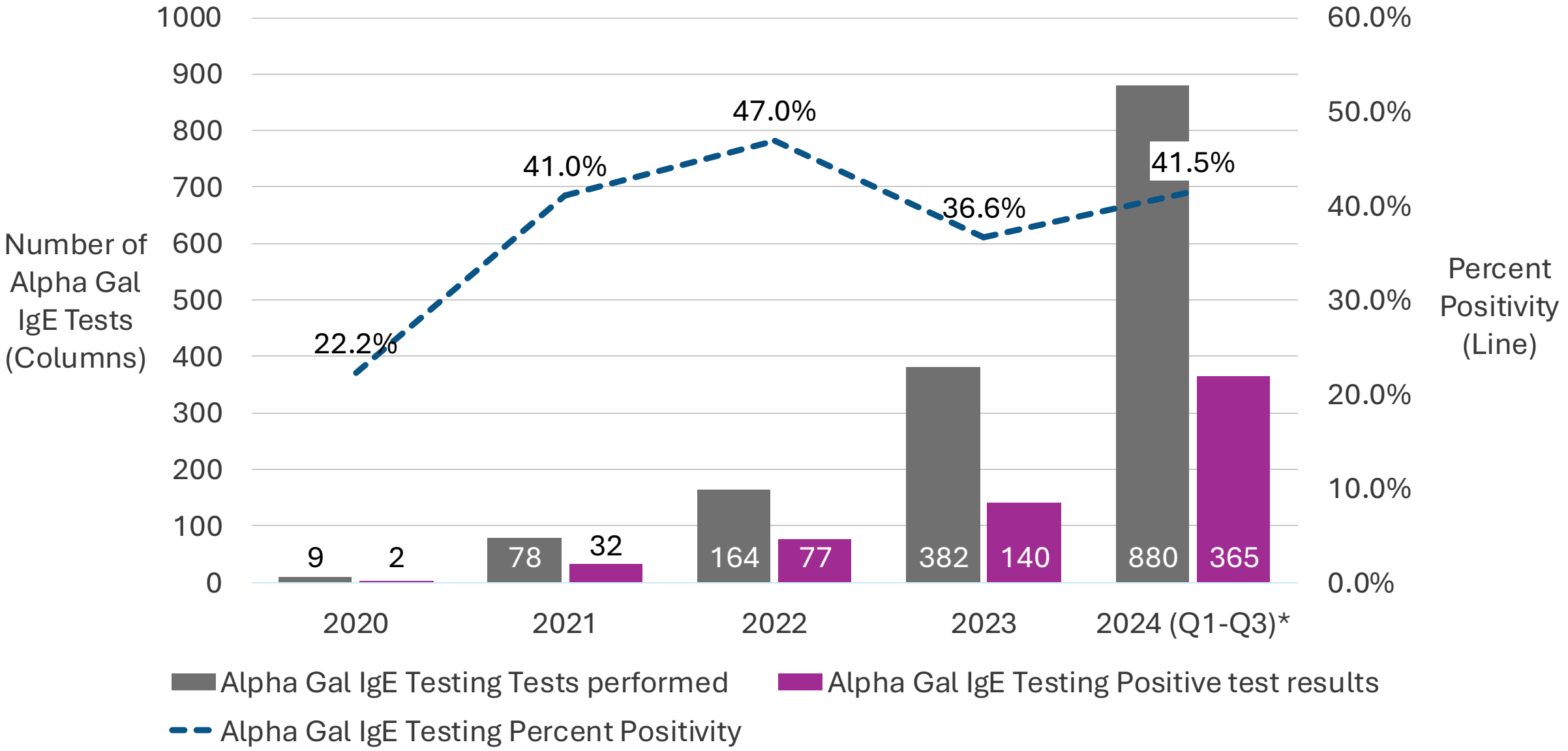
Small island is an advantage (sometimes)

- **1 lab**
- Seasonal & tourists use it too
- Easy to pull out of Epic

Limitation:

- Maintenance testing 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

Alpha Gal Testing at Martha's Vineyard Hospital Lab



For more information, contact Lea Hamner lhamner@oakbluffsma.gov

Option #3:
Aggregate Healthcare Surveillance

Small island is an advantage (sometimes)

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

Limitation:

- Improving but generally poor HCP understanding of AGS
- Many patients seek care off-island
- Access to care challenges
- Seasonal and tourists aren’t getting primary care here

Option #3:
Aggregate Healthcare Surveillance

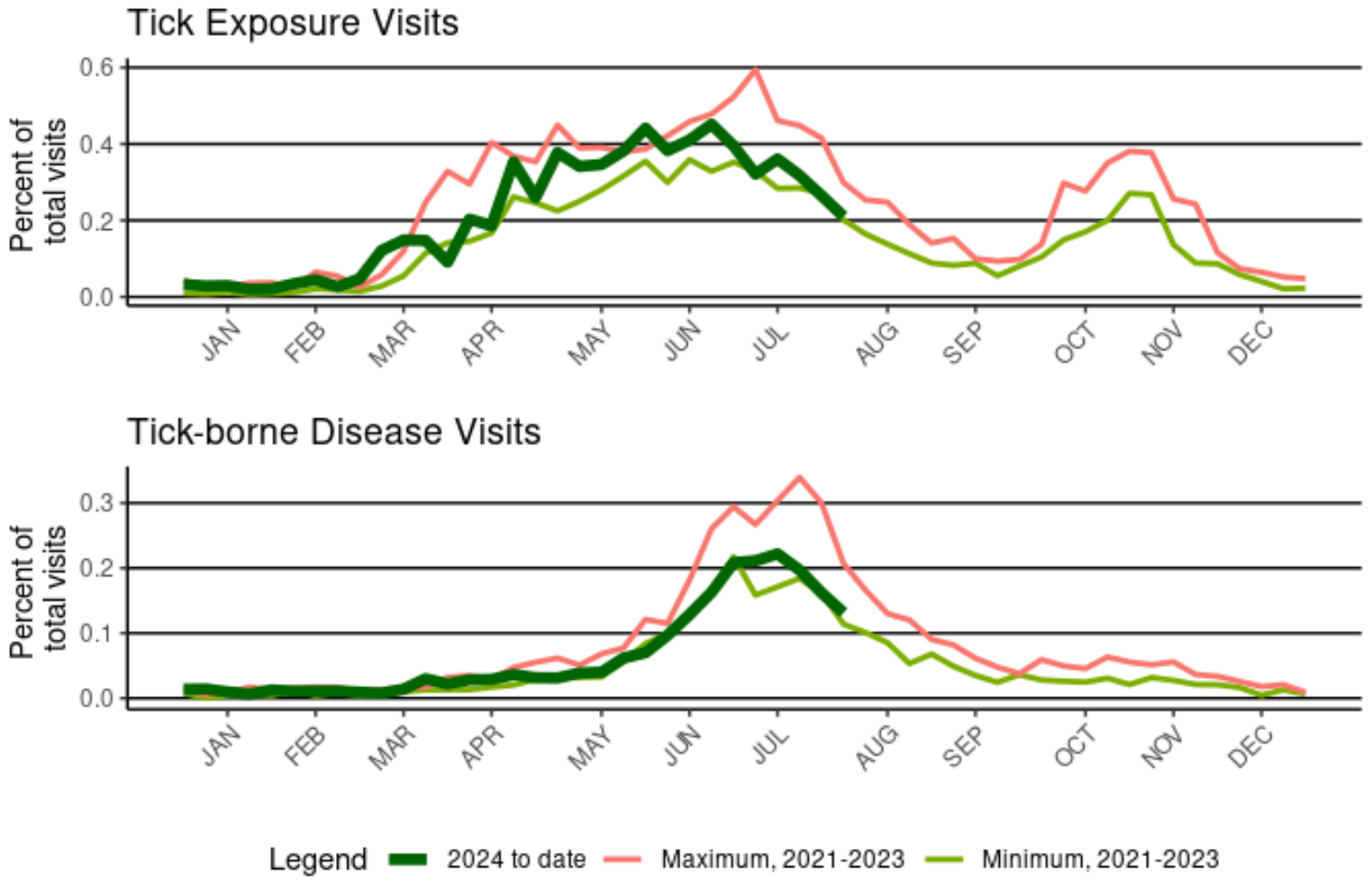
Small island is an advantage (sometimes)

- **1 allergy clinic** → Reports **250** active patients with AGS
  (Compared to <50 in 20 previous years of practice)
- 1 hospital
- 4 healthcare provider groups

Limitation:

- Improving but generally poor HCP understanding of AGS
- Many patients seek care off-island
- Access to care challenges
- Seasonal and tourists aren’t getting primary care here

Option #5:
Syndromic Surveillance (ED Visits)



www.mass.gov/lists/monthly-tick-borne-disease-reports

Option #6: Make it Reportable

Labs could flow into MAVEN for investigation. But based on other tickborne diseases, we already have a problem…

Option #6: Make it Reportable

Labs could flow into MAVEN for investigation. But based on other tickborne diseases, we already have a problem…

10x population shift

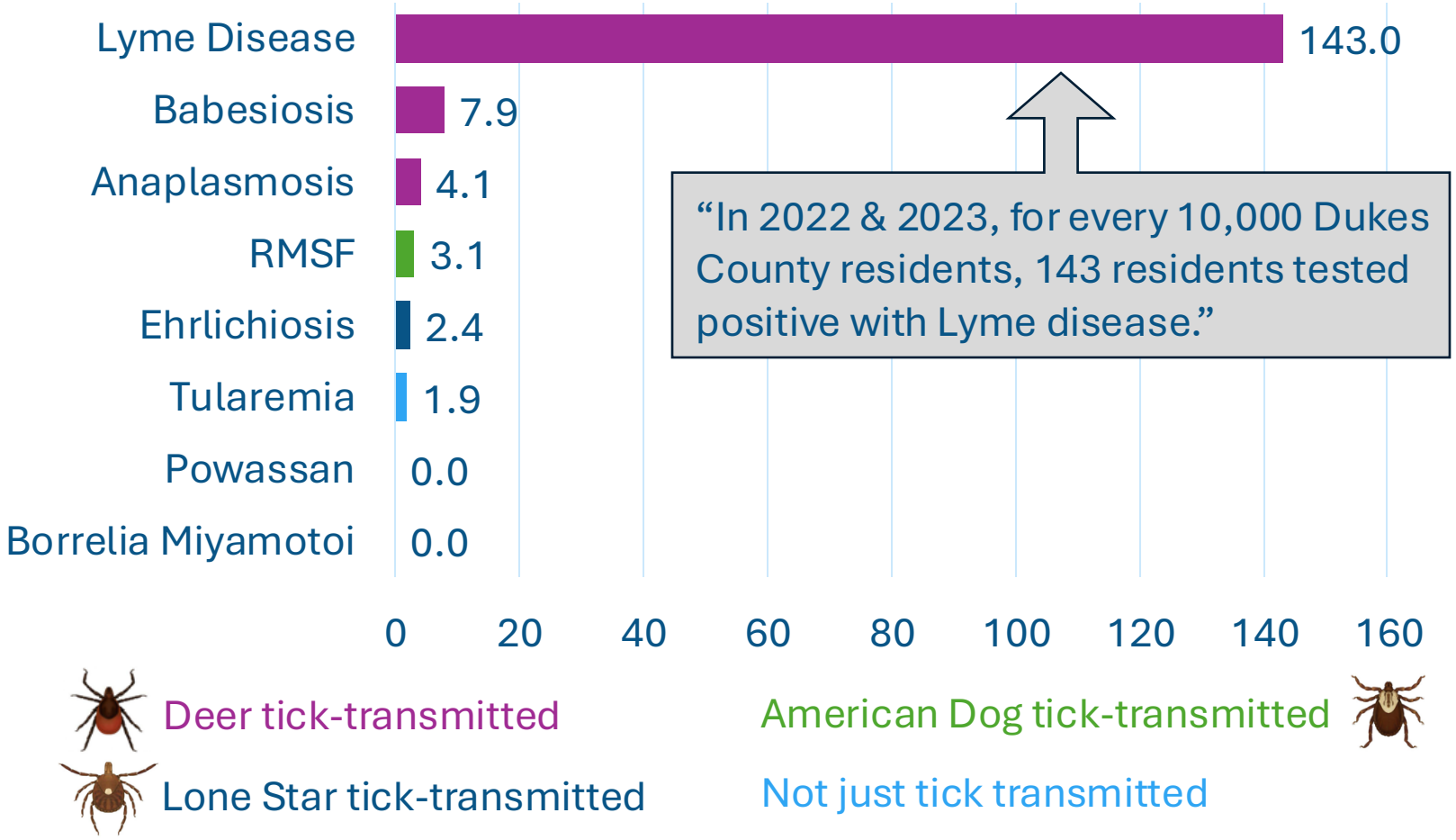
Winter population = 22,000

Summer population = 200,000

All reportable diseases in the US are assigned **to their home residence**, where they live most of the year. So, they might get exposed on MV, but they'll go home to your towns.

Compared to the Other Reportable TBDs, Where Do I Estimate AGS Falls?

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

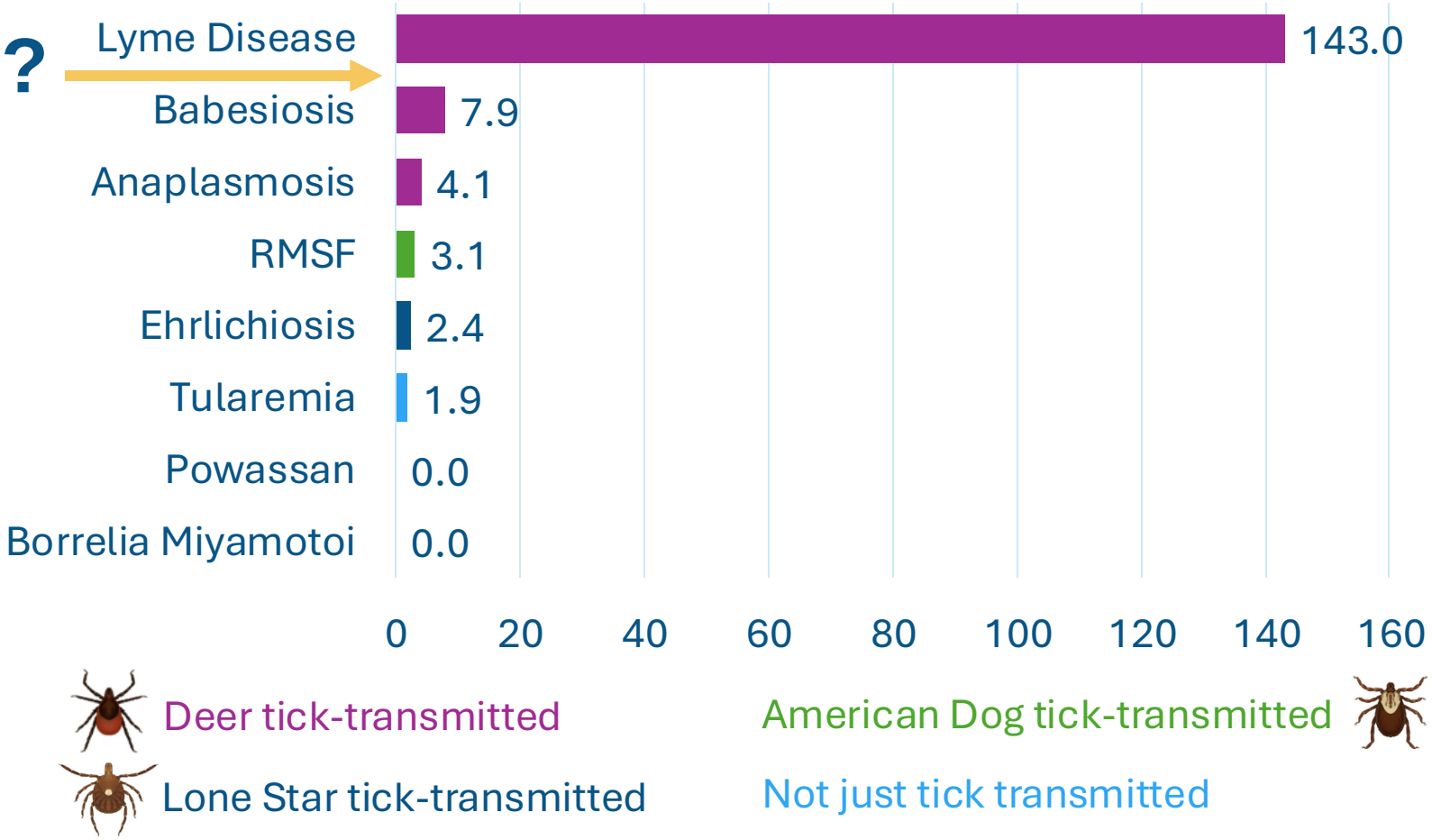


Reference: MAVEN, analyzed by Lea Hamner, June 2024

Compared to the Other Reportable TBDs, Where Do I Estimate AGS Falls?

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

AGS @ #2?

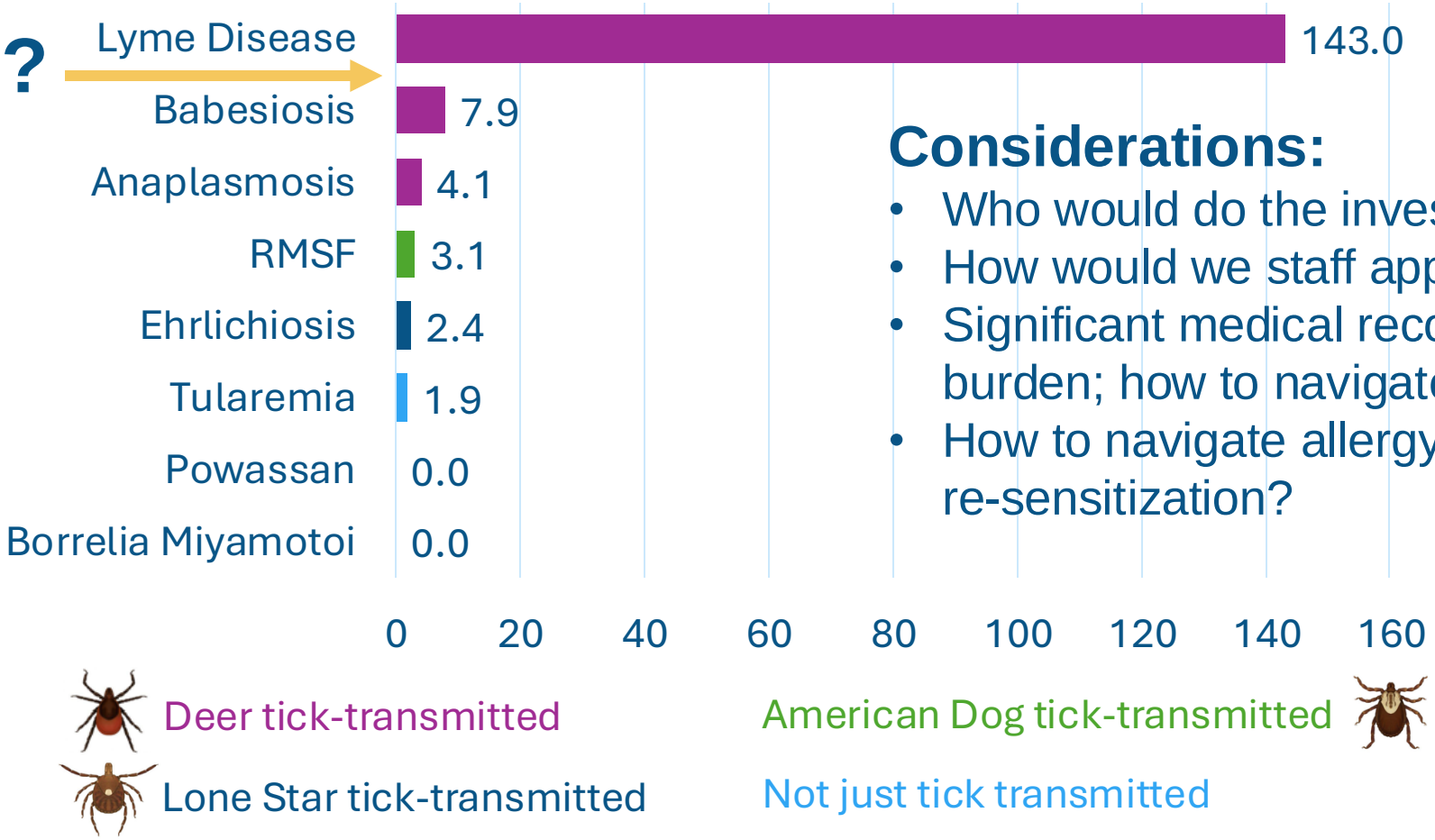


Reference: MAVEN, analyzed by Lea Hamner, June 2024

Compared to the Other Reportable TBDs, Where Do I Estimate AGS Falls?

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

AGS @ #2?

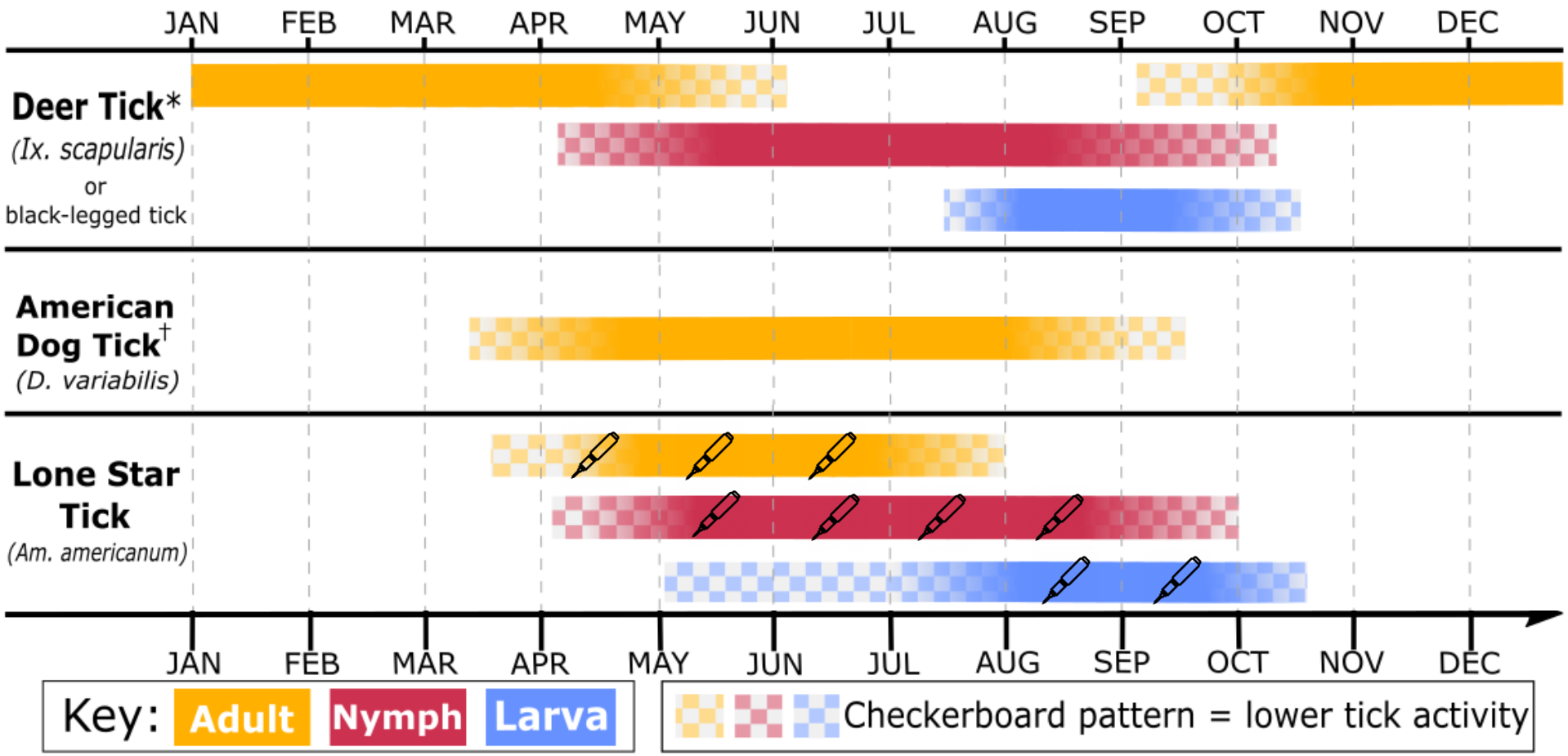


Considerations:

- Who would do the investigation?
- How would we staff appropriately?
- Significant medical record review burden; how to navigate that?
- How to navigate allergy resolution and re-sensitization?

Reference: MAVEN, analyzed by Lea Hamner, June 2024

Exposure Risk is 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.

MV TICK PROGRAM

Martha's Vineyard & Nantucket • Inter-Island Public Health •

Compiled by P. Roden-Reynolds for IIPHEC & MV Tick Program 02/2024
Adapted from "Ticks and Tick-borne Diseases of Virginia" flyer. Virginia Department of Health

Key Collaborators: Who Does What on Ticks

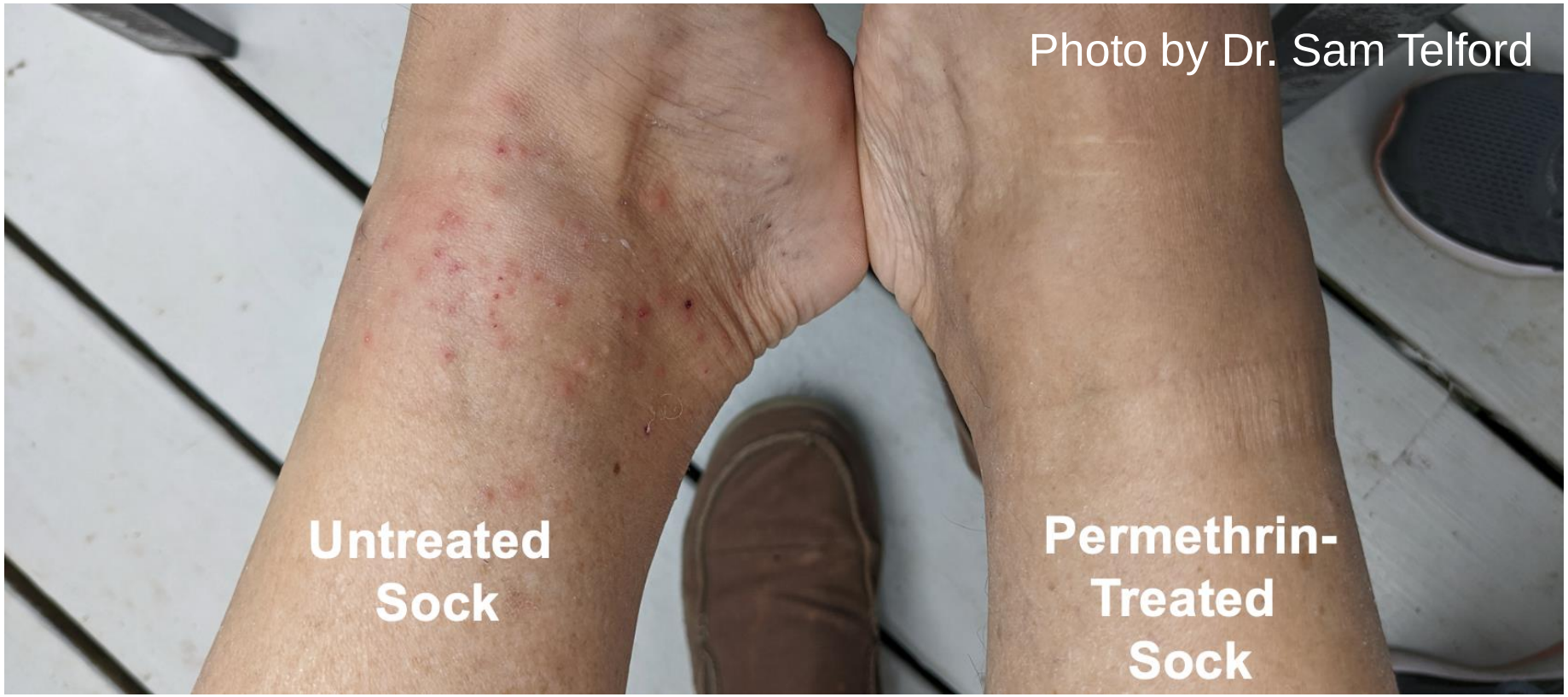
	Biologist	Epidemiologist	Case Investigators	Public Health Nurse
Surveillance	Tick distribution, density, & activity	Disease trends Data collection, analysis, interpretation MAVEN case investigation	MAVEN case investigation	Health care provider & lab relationship building
Outreach & Education	Tick bite prevention education Ecological interventions Attracting experts	Inform decision-making with evidence Public & provider engagement, outreach & education	Provider engagement, outreach & education	Health education Support groups Provider engagement, outreach & education
Partnerships	Public Health (local, state, regional) Scientists & researchers Public-Private	Public Health (local, state, regional, federal) Scientists & researchers Health care & labs Public-Private	Public Health (local & state) Health care & labs	Public Health (local) Health care & labs
Prevention	Landscaper occupational intervention Homeowner education Tick-bite prevention Permethrin clothing	Landscaper occupational intervention Permethrin clothing	Patient education during interviews	Health screenings Home visits

Key Collaborators: Who Does What on Ticks

	Biologist	Epidemiologist	Case Investigators	Public Health Nurse
Surveillance	Tick distribution, density, & activity	**Disease trends** **Data collection, analysis, interpretation** MAVEN case investigation	MAVEN case investigation	Health care provider & lab relationship building
Outreach & Education	Tick bite prevention education Ecological interventions Attracting experts	**Inform decision-making with evidence** **Public & provider engagement, outreach & education**	Provider engagement, outreach & education	Health education Support groups Provider engagement, outreach & education
Partnerships	Public Health (local, state, regional) Scientists & researchers Public-Private	Public Health (local, state, regional, federal) Scientists & researchers Health care & labs Public-Private	Public Health (local & state) Health care & labs	Public Health (local) Health care & labs
Prevention	Landscaper occupational intervention Homeowner education Tick-bite prevention Permethrin clothing	Landscaper occupational intervention Permethrin clothing	Patient education during interviews	Health screenings Home visits

PREVENT Tick Bites!
Wear Permethrin-Treated Clothing

Thank you. Stay tick-safe!



Lea Hamner, MPH

Contract Epidemiologist, Cape & Islands

lhamner@oakbluffsma.gov

lea.hamner-contractor@capecod.gov

Resources

- **Educational websites**
  - MV Tick Program - www.mvboh.com/tickborneillness
  - AlphaGalInformation.org – evidence informed resource
- **Presentations and in-depth information**
  - MV Tick Program's recent Tick Ecology, Disease, and Allergy Series
  - Tickborne Conditions United Alpha Gal Symposium
  - Spread of Lone Star Ticks on Martha's Vineyard published in Insects
- **Food Is Good (FIG) app** for allergen identification (alpha-gal is crowd sourced)
- **Media articles**
  - NY Magazine What the Mystery of the Tick-Borne Meat Allergy Could Reveal
  - Vineyard Gazette (read the comments to see what patient experiences, perceptions, information looks like)
    - Alpha-Gal Cases Skyrocket as Lone Star Ticks Dig in
    - Tick-Borne Alpha Gal Syndrome Continues to Soar
    - Lone Star Ticks Continue to Make Inroads around Islands

Data Informed Decision Making in Public Health Practice

Pooja Shelke, MPH, MS
Regional Epidemiologist
MetroWest Shared Public Health Services

(Ashland.Framingham.Hopkinton.Hudson.Maynard.Medway.Milford.Milis.Natick)

Introduction

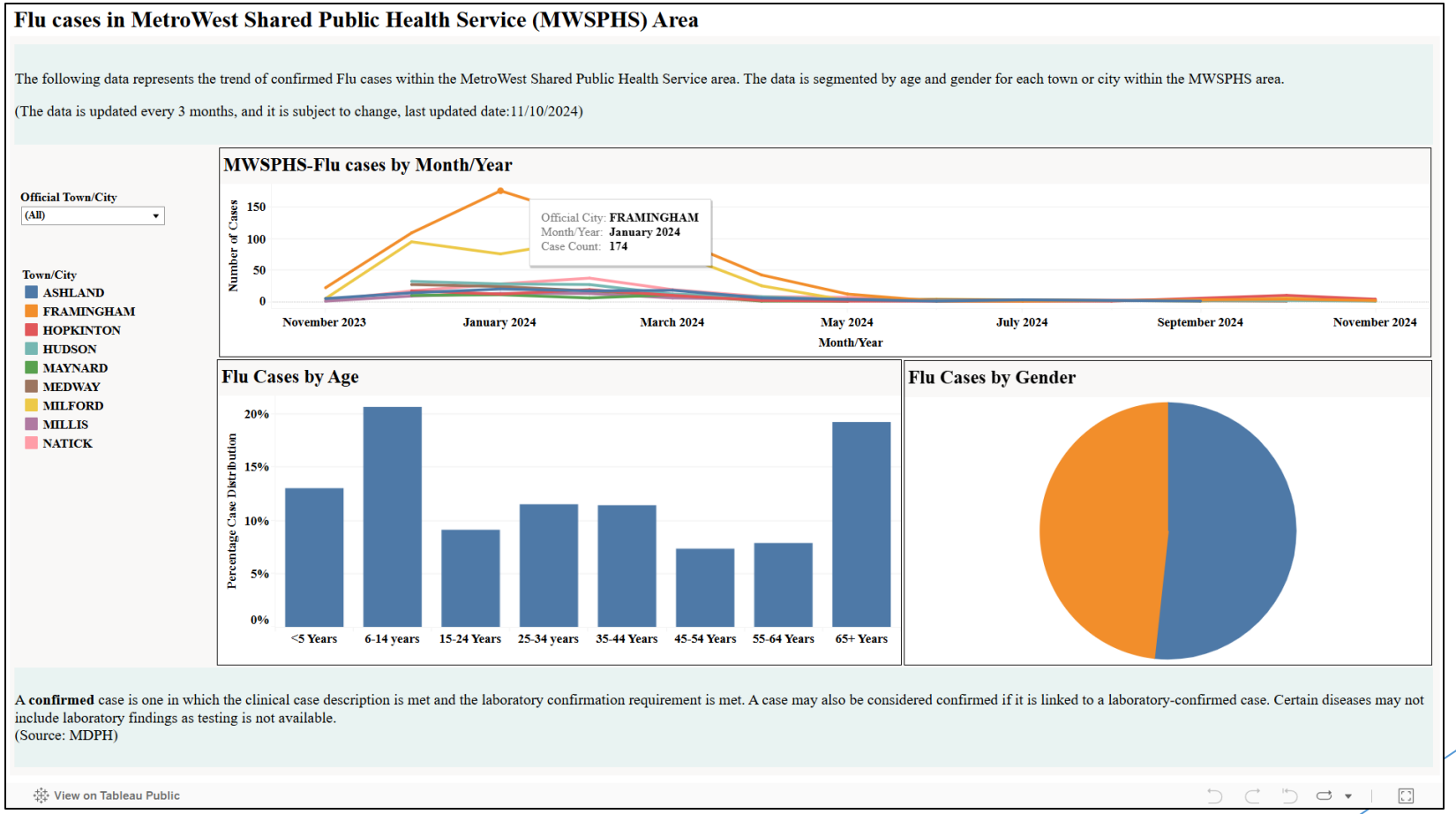
- During this presentation, we will be discussing 3 public health topics/issues: **Influenza, Substance Use/Opioid Overdoses and Tick-Borne Diseases.**
- Each topic/issue will address the following questions:
  - *What type of data is available and what is the best way to present it?*
  - *How do we transform this data into action?*
  - *Who are the key collaborators?*

Public Health Topic #1: Influenza

- **What is the public health issue?** Flu Season
- **What type of data is available?** MAVEN Data
- **What is the best way to present it?** Interactive Disease Dashboard

Interactive Disease Dashboard

- **An interactive dashboard** is a data visualization tool that allows users to engage with the data in real time, often through filtering, drilling down, and exploring various data points to uncover insights



[Flu Tab — MetroWest Shared Public Health Services (squarespace.com)]

Data-Informed Decisions

- Disease Surveillance
- Resource Allocation
- Testing & Vaccination
- Public Health Education
- Disease Forecasting

Key Collaborators

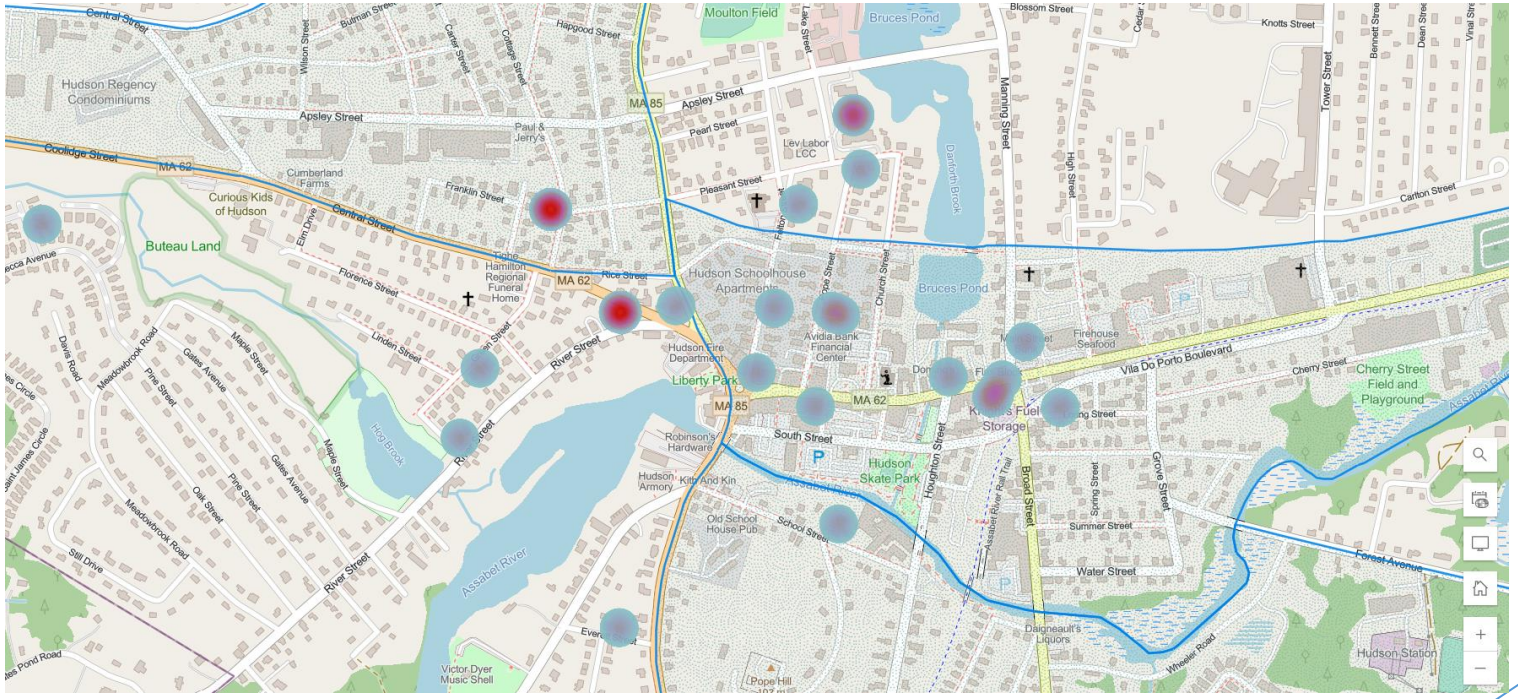
Epidemiologist	Public Health Nurse	Health Director/Shared Services Coordinator
• Monitor MAVEN DATA • Assist with Case Investigation • Analyze Data • Data Reporting and Updating Dashboards • Disease Forecasting • Evidence-based Recommendations	• Disease Case Investigation • Support Disease Surveillance • Engage with community members • Public Health Education • Vaccination	• Oversee response strategies • Allocate budget and resources • Co-ordinate interagency collaborations • Communications with the State

Public Health Topic #2: Substance Use/Opioid Overdoses

- **What is the public health issue?** Increased overdose incidents
- **What type of data is available?** CIMS/EMS/BSAS
- **What is the best way to present it?** GIS Mapping

Geographic Information Systems Mapping

- **Geographic Information Systems Mapping or GIS Mapping** is a technology used to capture, store, analyze, manage, and visualize data related to geographic locations.



Data-Informed Decisions

- Identifying Hot Spots
- Narcan Training
- Narcan Distribution
- Community Outreach and Education
- Emergency Response Optimization

Key Collaborators

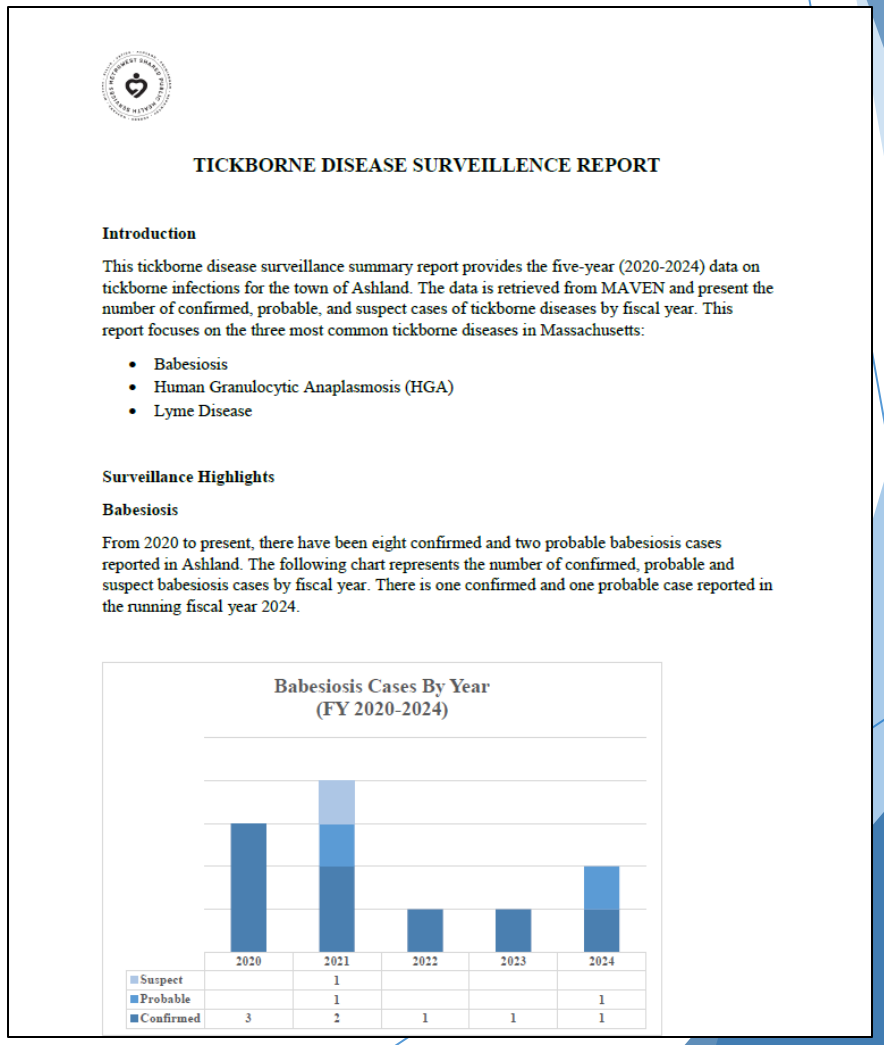
Epidemiologist/Public Health Nurse	Health Director/Program Coordinator	Law Enforcement and EMS
• Analyze Data • Identify Trends • Heat maps to identify hot spots • Provide evidence-based recommendations • **Public Health Nurse** • Community outreach and education • Narcan training	• Oversee public health strategies • Collaborate with other stakeholders, agencies • Allocate resources • Community outreach and education	• Frontline Responders • Naloxone administration • Data Collection • Intervention and Prevention Efforts

Public Health Topic #3: Tick-Borne Diseases

- **What is the public health issue?** Tick-Borne Disease
- **What type of data is available?** MAVEN Data
- **What is the best way to present it?** Surveillance Report

Public Health Topic #3:Quarterly/Yearly Disease Surveillance Report

- A **surveillance report** is a structured document that provides an overview of data collected through a surveillance system, typically to monitor public health indicators such as disease incidence, risk factors, or health outcomes.



TICKBORNE DISEASE SURVEILLENCE REPORT

Introduction

This tickborne disease surveillance summary report provides the five-year (2020-2024) data on tickborne infections for the town of Ashland. The data is retrieved from MAVEN and present the number of confirmed, probable, and suspect cases of tickborne diseases by fiscal year. This report focuses on the three most common tickborne diseases in Massachusetts:

- Babesiosis
- Human Granulocytic Anaplasmosis (HGA)
- Lyme Disease

Surveillance Highlights

Babesiosis

From 2020 to present, there have been eight confirmed and two probable babesiosis cases reported in Ashland. The following chart represents the number of confirmed, probable and suspect babesiosis cases by fiscal year. There is one confirmed and one probable case reported in the running fiscal year 2024.

Babesiosis Cases By Year
(FY 2020-2024)

	2020	2021	2022	2023	2024
Suspect		1			
Probable		1			1
Confirmed	3	2	1	1	1

Data-Informed Decisions

- Monitor Seasonal Trends
- Identify High-Risk Areas
- Target Interventions
- Resource Allocations
- Policy and Prevention efforts

Key Collaborators

Epidemiologist	Public Health Nurse	Public Health Communication Specialist	Health Director/Shared Services Coordinator
• Monitor MAVEN DATA • Assist with Case Investigation • Analyze Data • Data Reporting • Evidence-based Recommendations	• Disease Case Investigation • Support Disease Surveillance • Engage with community members • Public Health Education • Vaccination	• Create Communication Materials • Community Outreach • Public Health Education Campaign	• Oversee response strategies • Allocate budget and resources • Co-ordinate interagency collaborations • Communications with the State

Key Takeaways

- Data as a foundation for public health
- **Right data right time to the right people**
- Communicating data using right platforms
- **Translate data into meaningful actions**
- Drive impact through data-informed decisions
- Value of having an epidemiologist on the team
- **Collaboration is the key**

(978) 875-2748

Thank you!
Questions?

Contact Information:
Pooja Shelke
pshelke@townofhudson.org
(978)875-2748