



Applied Practical Experience

By: Mary Trapp



APE site: Seventy-First Animal Hospital, Fayetteville, North Carolina.

Duration: September 1, 2022-
April 1, 2023

About

Focus: Zoonotic Tick-borne disease

My APE consisted of creating educational material on tick-borne diseases for Seventy-First Animal Hospital staff and clients.

What are ticks?

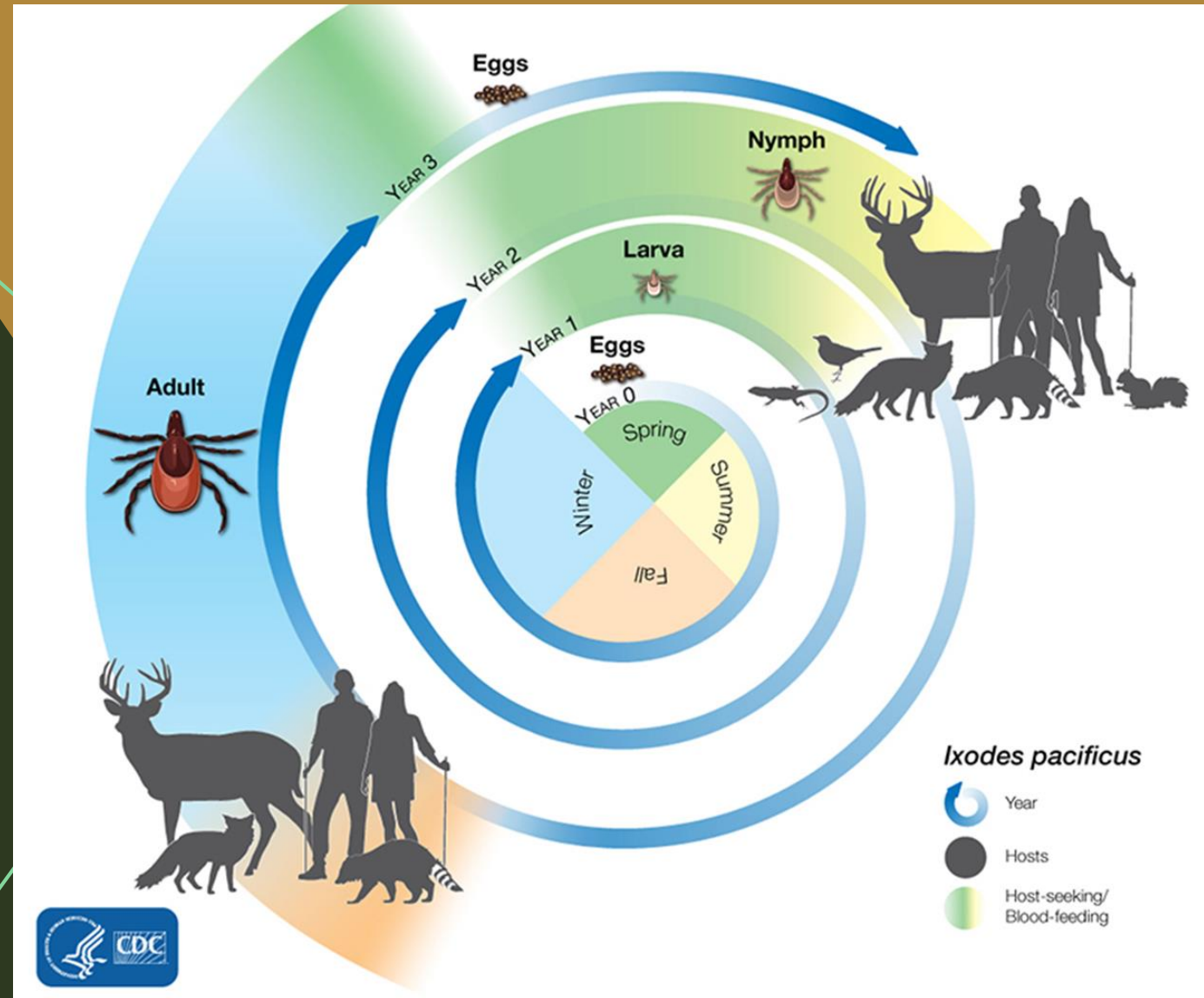
- Blood-sucking arthropods.
- More than 900 species found worldwide
 - 1st family- Ixodidae (Hard Ticks)
 - Family most responsible for spreading pathogens
 - 2nd and 3rd family- Argasidae and Nuttallielidae (Soft Ticks)

(Sonenshine et al. 2013a)

Why do we care about ticks?

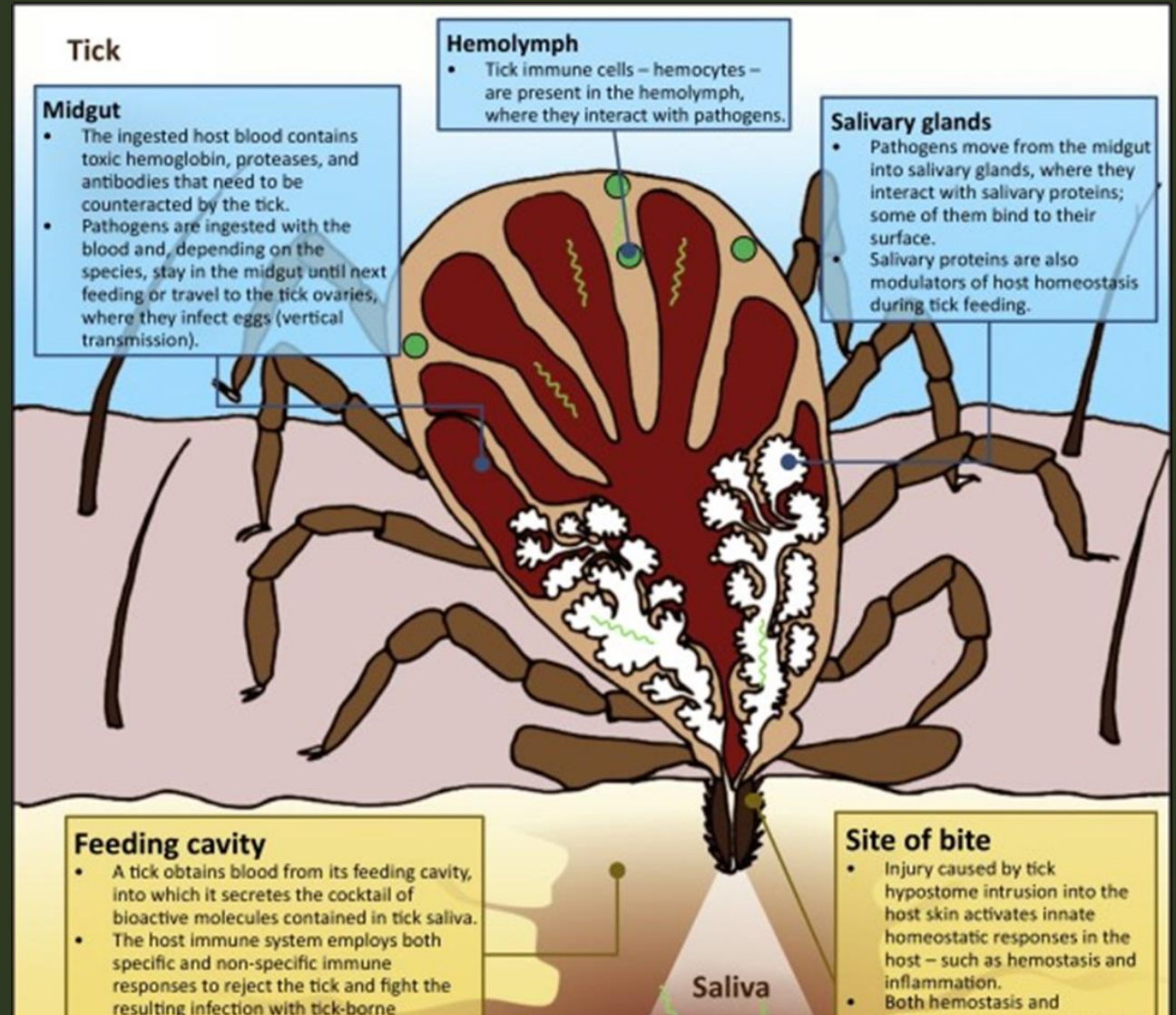
- Handful of tick species carry zoonotic diseases, including:
 - Rocky Mountain Spotted Fever
 - Lyme Disease
 - Ehrlichiosis
 - Anaplasmosis

The life cycle of ticks



(CDC, 2021)

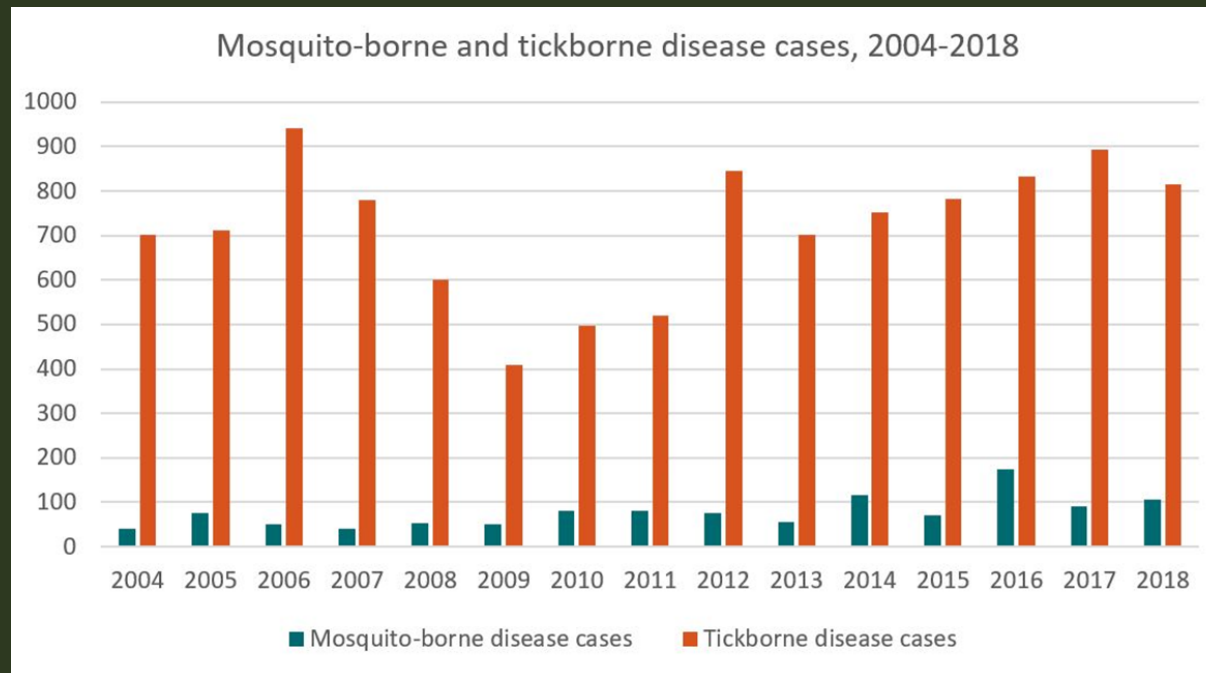
Transmission of tick-borne diseases



(Chmelař et al., 2015)

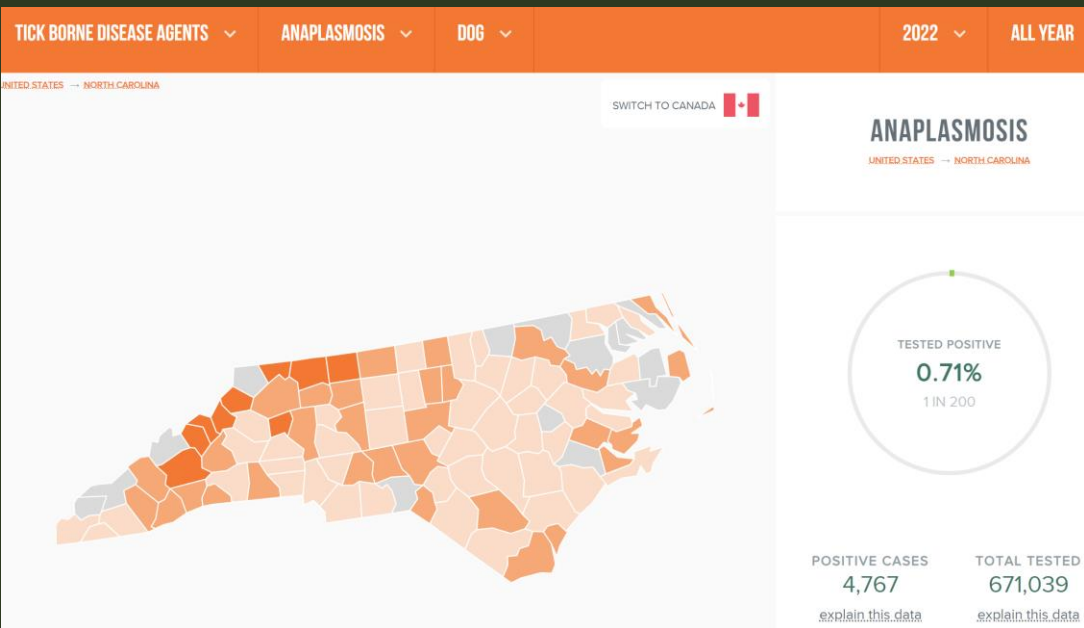
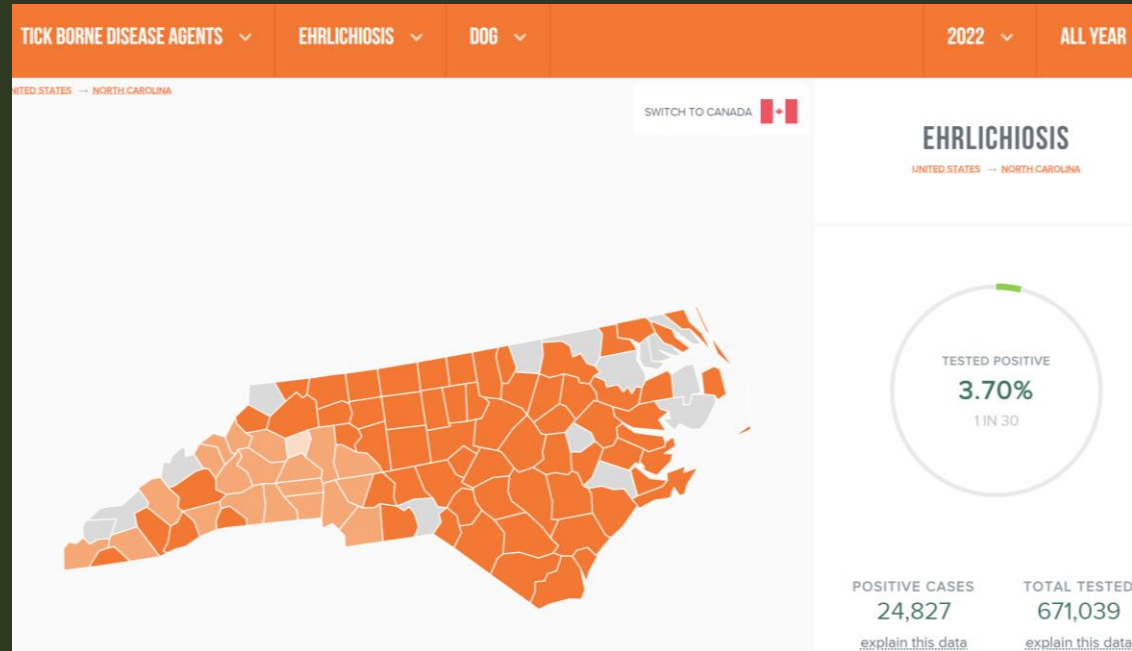
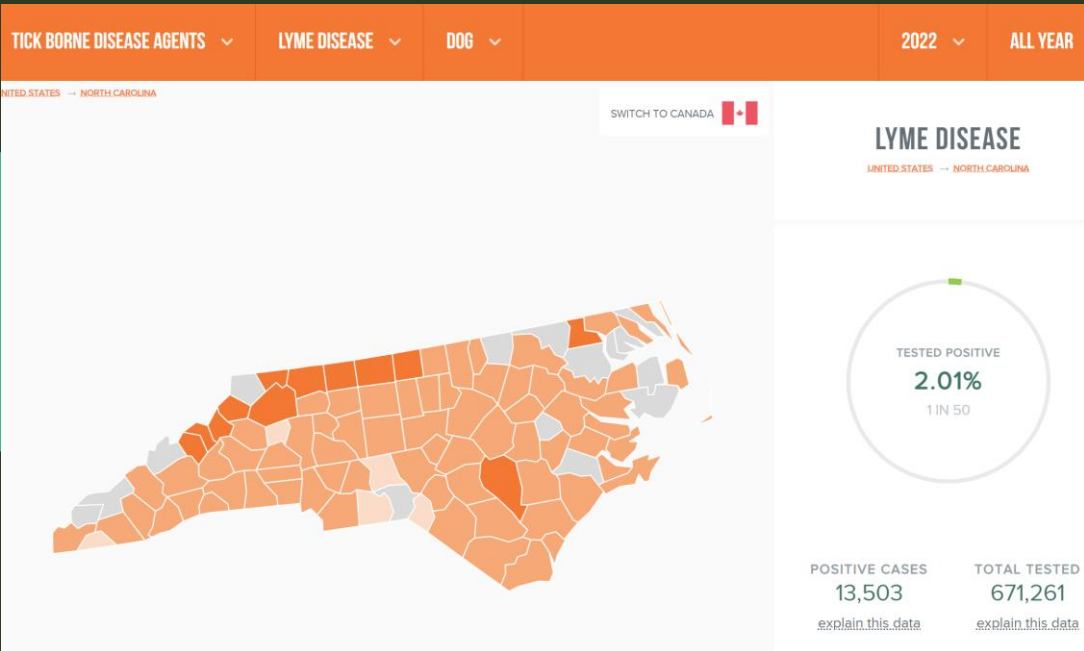
Tick-Borne Disease Threat in North Carolina

- Humid subtropical environment and mild winters



Now think this is only data on human cases!

(Centers for Disease Control and prevention, 2020)



Tick-Borne Threat in
North Carolina cont.....

(CACP, 2022)

Most common ticks found in North Carolina



Blacklegged (Deer Tick)



American Dog Tick



Brown Dog Tick

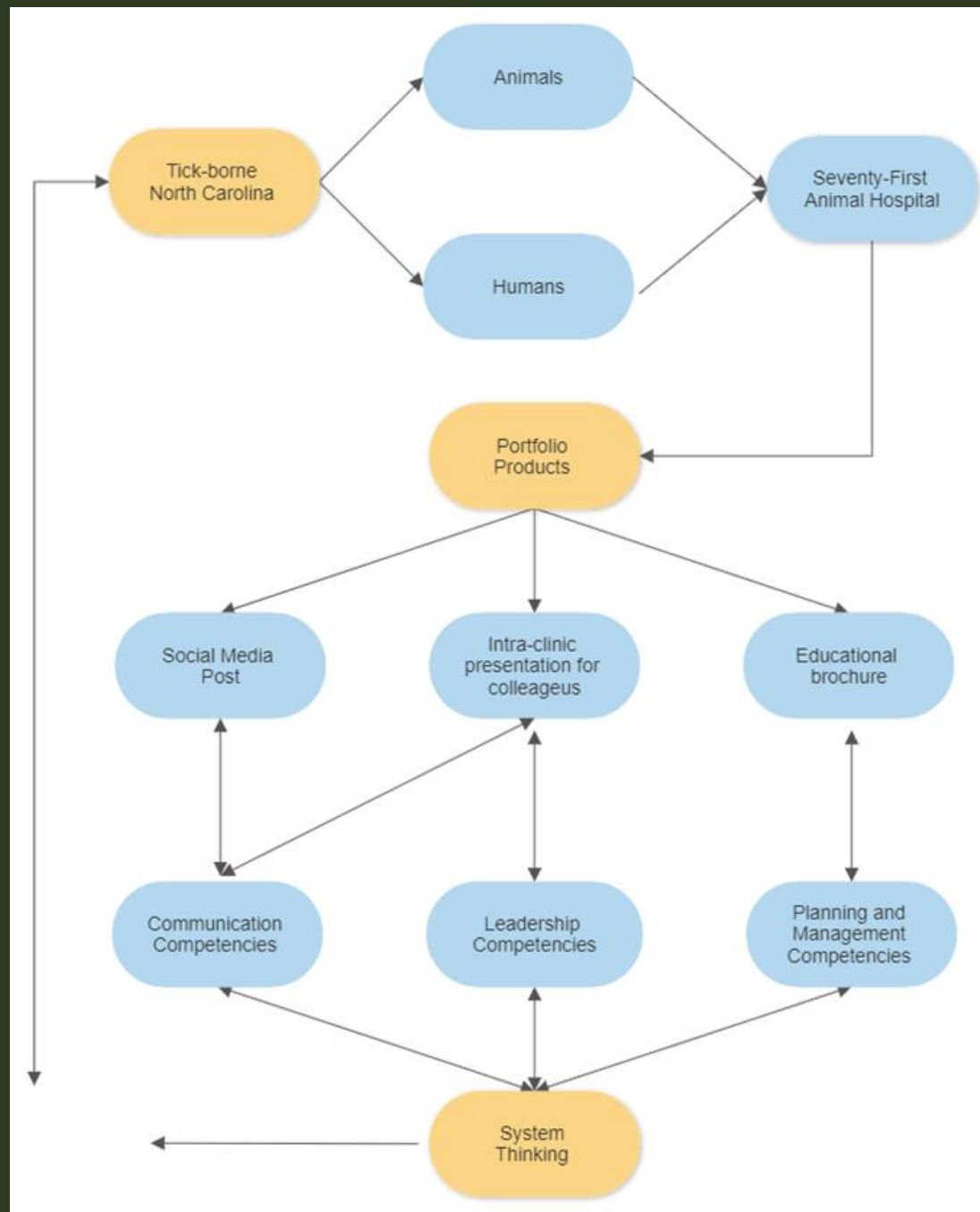


Lone Star Tick



Asian Long-horned Tick

(National Pest Management
Association, 2022)




Using system thinking I created a flow chart to enable me to map my field experience at Seventy-First Animal Hospital. This allowed me to stay on task and identify inefficient steps.




Educational Material

Portfolio Products created:

- Social Media Post
 - Intra-Clinic Presentation for colleagues
 - Educational Brochure
- 

Seventy First Animal Hospital
Dec 1, 2022 · 🌐

Let's Talk about Ticks!
Do you know North Carolina is home to many types of ticks, such as the: American Dog Tick, Brown... See more

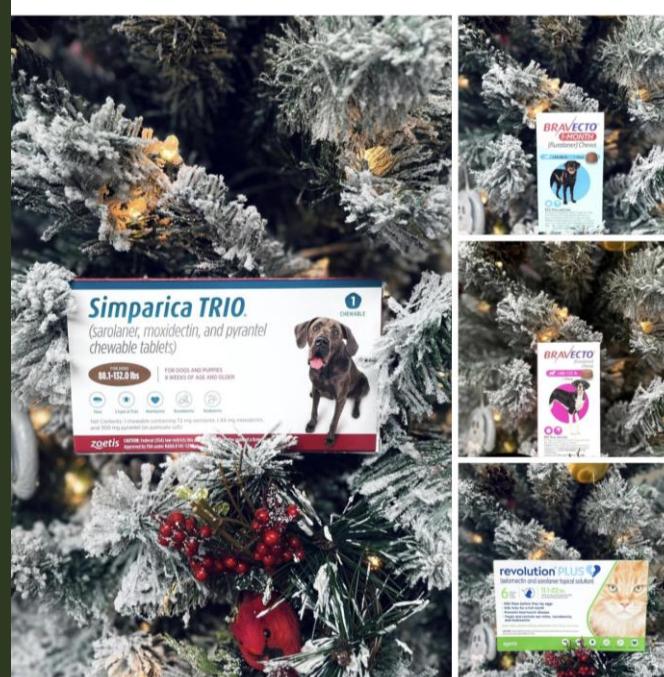


1 Like 1 share

Like Comment Share

Seventy First Animal Hospital
Jan 10 · 🌐

We may be in Winter, but that does not mean our pet's are safe from tick-borne diseases. Check out the many options we have available at Seventy First An... See more



Kathy Baker and 2 others 3 shares

Like Comment Share

Seventy First Animal Hospital
Jan 21 · 🌐

Seventy-First Clients, do you know how to remove a tick safely?
Routinely checking you and your animal's bo... See more

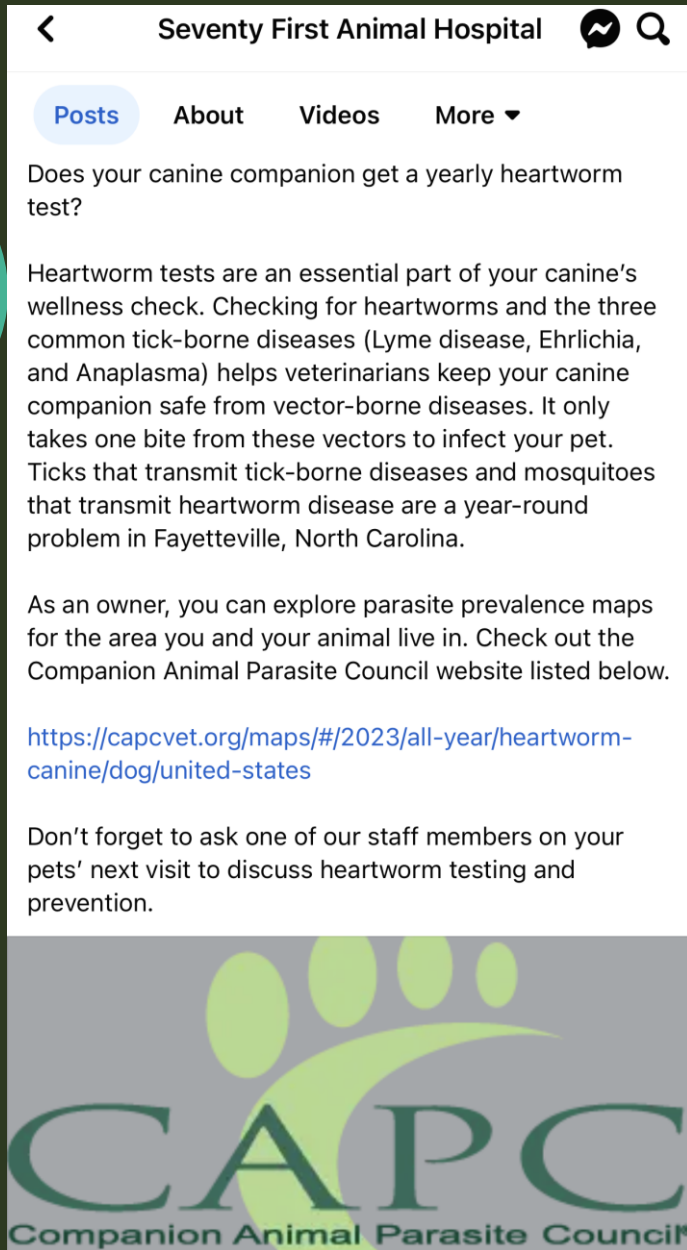


cdc.gov
Tick removal | CDC

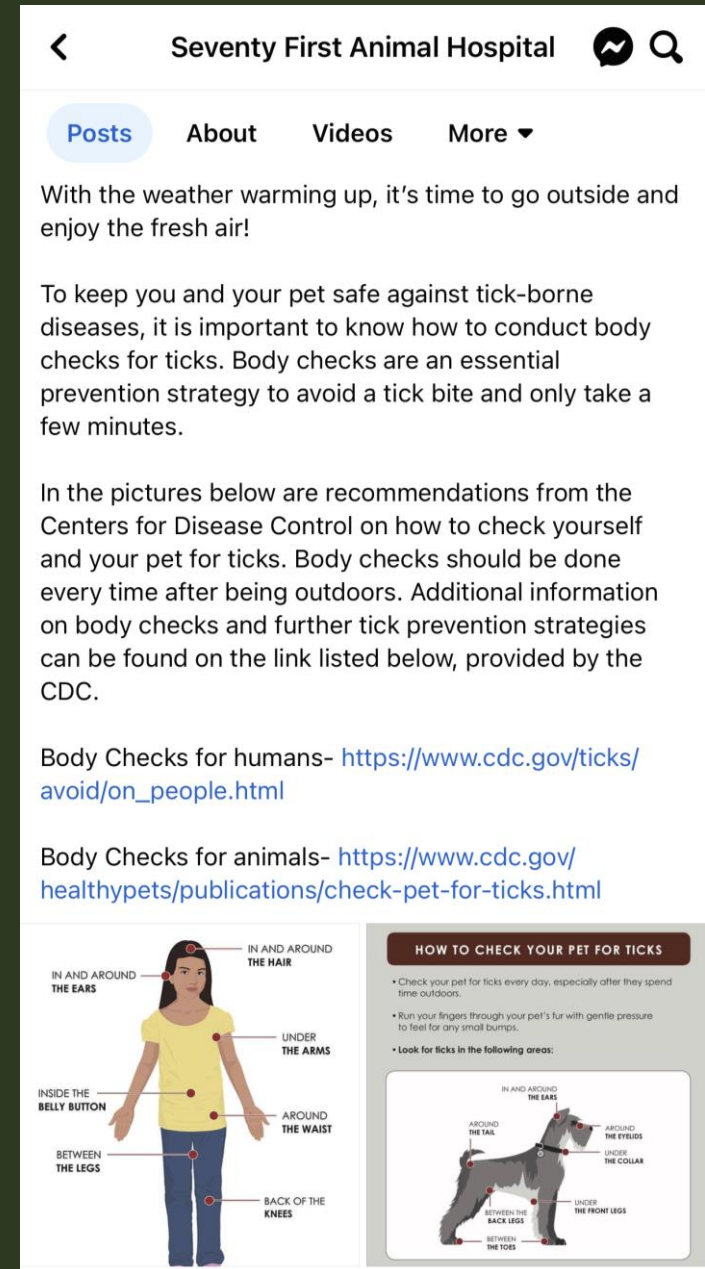
You 2 shares

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Social Media Post



Social Media Post



Intra-Clinic Presentation for colleagues

Presentation to empower the staff at Seventy-First Animal Hospital with the knowledge to effectively communicate to owners about the threat of tick-borne diseases.

Important Things to Know About Ticks

- ▶ There are 850 Species of ticks found worldwide.
- ▶ The most common ticks found in North Carolina



Blacklegged (Deer) Tick



American Dog Tick



Brown Dog Tick



Lone Star Tick



Asian Long-horned Tick

(National Pest Management Association, 2022)

Our Job in Public Health

- ▶ Being an educator to our community about why we protect our animals from ticks.
- ▶ Record keeping.
- ▶ Making sure our patients are on preventives.
- ▶ Encourage regular tick-borne disease testing.

Know which preventatives cover ticks?



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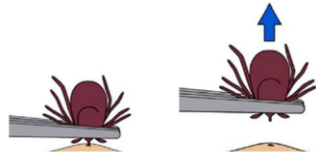


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Don't forget to tell clients about our online store!!!!

Brochure

Properly Removing a Tick



The Centers for Disease Control recommends the following steps to become a master tick remover.

1. Use clean, fine-tipped tweezers to grasp the tick as close to the skin's surface as possible.
2. Pull upward with steady, even pressure. Don't twist or jerk the tick; this can cause the mouth parts to break off and remain in the skin. If this happens, remove the mouth parts with tweezers. If you cannot remove the mouth easily with tweezers, leave it alone and let the skin heal.
3. After removing the tick, thoroughly clean the bite area and your hands with rubbing alcohol or soap and water.
4. Never crush a tick with your fingers. Dispose of a live tick by

- Putting it in alcohol,
- Placing it in a sealed bag/container,
- Wrapping it tightly in tape, or
- Flushing it down the toilet.

Preventative Measure That Can Be Taken Against Ticks.

Preventive strategies to avoid a tick bite include the following.

1. Awareness – Be aware of your surroundings, and if going into an area that ticks inhabit, take protective measures.
2. Protection- Wear protective clothing or tick repellents in high-tick areas. Make sure your pet is on tick prevention
3. Body Checks- Routinely check your and your animal's body for ticks. It only takes a few minutes!
4. Know how to remove a tick- Being able to remove a tick properly can help prevent a tick from transmitting dangerous pathogens.
5. Report- If bitten by a tick, notify your doctor and monitor the tick bite location. If a tick is found on the animal, notify your local veterinarian.

Note: Make sure to consult your local veterinarian about the correct flea and tick prevention for your pet at their next visit.

Resources:
Centers for Disease Control, 2022, <https://www.cdc.gov/ticks/index.html>
Lethargic Dog Image, <https://www.dutch.com/blogs/dogs/dog-lethargy>
NC Tick ID Card, <https://epi.dph.ncdhhs.gov/cd/diseases/ticks.html>
Rash Image, <https://physicianneurogentcare.com/blog/lyme-disease-bullseye-rash-what-is-it-and-when-does-it-appear/>
Tick Images, <https://content.ces.ncsu.edu/ticks-and-tick-borne-diseases>
Life Cycle: <https://ticksafety.com/lyme-disease-tick-testing/>



Welcome to Tick-Borne North Carolina

Tick Threat in North Carolina

North Carolina is home to numerous ticks that carry zoonotic tick-borne diseases. In recent years, the burden of tick-borne diseases in North Carolina has increased significantly. Tick-borne diseases pose significant health risks for humans and animals. Awareness is critical; thus, you can take preventative steps to protect yourself and your pet from the dangers of ticks.

Understanding the Nature of Ticks

Ticks are primarily found in warm, moist environments, which makes all parts of North Carolina a perfect breeding ground for ticks. While ticks are found everywhere, the preferred habitat is wooded areas, tall grass, and bushes. Increased time outdoors, especially in the areas listed above, increases a human or animal's chance of encountering a tick.

How Ticks Spread Diseases

Ticks spread diseases by biting a host for a blood meal. There are four life stages of a tick: egg, larva, nymph, and adult. Once a tick hatches, it must get a blood meal to survive through each life stage, thus it will seek many different hosts over a three-year lifespan. A host may not realize it has been bitten by a tick because the saliva contains an anesthetic property and thus the host does not feel the bite. Therefore, even though it can take several hours for a tick to transmit a pathogen, many humans and animals that are bitten may not remove the tick in time to prevent an infection.

What are Common Tick-Borne diseases in North Carolina?

- Lyme Disease
- Ehrlichiosis
- Anaplasmosis
- Rocky Mountain Fever

Note: Humans and animals can be potentially affected by one of these diseases from just one tick bit.

Common Ticks in North Carolina



Deer (Blacklegged) Tick



American Dog Tick



Brown Dog Tick



Lone Star Tick

Life Cycle of Ticks



Symptoms of Tick-Borne Diseases.

Common human symptoms include Fever, rash, headache, fatigue, muscle aches, and joint pain.



Lyme Disease Bullseye Rash

Common animal symptoms include Fever, swelling around joints, lameness, lethargy, and vomiting.



Lethargic Dog

Diagnosing Tick-Borne Disease

If you believe you or your pet may have contracted a tick-borne disease, immediately contact your doctor or pet's veterinarian. A doctor or veterinarian can test for tick disease and recommend the right treatment.

Addressing Competencies



Planning and
Management to
Promote Health



Leadership



Communication

Assessing the needs of the community to design appropriate prevention strategies

- Environment
- Community
- Material already available



Empowering the clients and staff at Seventy- First Animal Hospital



- Education
- Decision-making
- Employees' role in Public Health

Communicating in different ways to reach a diverse audience

- Reaching diverse audiences
- Health content through an oral presentation and writing



Food Safety and Biosecurity Five Emphasis Area Competencies

1. Food Safety and Biosecurity
2. Threat to the Food System
3. Food safety laws and regulations
4. Food safety policy and the global food system
5. Multidisciplinary Leadership



Course Work I Found Helpful with my APE

- **MPH 818 Social and Behavioral Sciences**

- Learned to recognize how environmental and social factors contribute to community health problems.

- **DMP 844 Global Health**

- Learned the importance of collaboration with others.

- **FDSCI 731 Food Protection and Defense**

- Acquired knowledge on how to research and develop preventive strategies.

- **DMP 815 Multidisciplinary Thought and Presentation**

- Essential to understanding critical thinking, writing, and speaking on different public health topics.

Conclusion

Completing my APE allowed me to put into practice the fundamental principles and values learned throughout my MPH courses. Applying these values at Seventy-First Animal Hospital, I was able to give back to my community as a Veterinary Assistant at the hospital.

Future



ROSS UNIVERSITY
SCHOOL OF VETERINARY MEDICINE



Questions?



References

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