



Massachusetts Department of Public Health

Overview of Potential Rabies Exposure Situations

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Overview

- Overview of Rabies
 - Transmission
- Who does what?!
 - Role of different players
- Reporting Requirements
- Review Steps after a potential exposure
 - Testing vs. Quarantine
- Review of Surveillance Data
- Questions & Answers





Overview of Rabies

What is rabies?

- Rabies is a **fatal but preventable** viral disease that affects the brain and spinal cord of mammals (ex. bats, raccoons, skunks, foxes, domestic animals, humans);
- Primarily a disease of animals, but can spread from an infected animal to a person;
- Rabies virus is present in the saliva and central nervous system (CNS) tissue of infected animals.
- The animals that most commonly carry rabies in Massachusetts are raccoons, skunks, and bats.

How is rabies transmitted?

- The rabies virus is transmitted via direct contact with saliva – mostly commonly through a bite or a scratch.
 - A bite is by far the most efficient transmission mechanism.
- Saliva or brain/nervous system tissue entering a fresh open wound or mucous membrane (eyes, nose, mouth).



Interesting Facts about Rabies

- Blood, urine, feces, skunk spray, and fur of animals do not harbor the rabies virus and are not infectious.
- Birds, fish, reptiles (such as snakes, turtles and lizards), amphibians (such as frogs and salamanders) and insects (bugs) cannot get or spread rabies.
- Outside the animal, rabies virus does not survive long.
- Rabies virus does not survive long in dead animals.

Interesting Facts about Rabies

- It is very rare for people to get rabies in the United States
- Of the 55,000 people who die of rabies every year around the world, only one or two of those deaths occur in the United States.
- The last death from rabies acquired in Massachusetts occurred in 2011 and was caused by exposure to a bat.



Rabies Prevention Work in MA

- Although rabies is fatal, it is **preventable**.
- Prompt medical attention (post-exposure prophylaxis or PEP) for humans following a suspected rabies exposure is critical.
 - The majority of the Division of Epidemiology's work around rabies prevention encompasses helping people assess their risk for rabies following animal encounters and determining if PEP is recommended.
 - Testing and surveillance for rabies occurs in the identified animals, and results help to determine if an exposed human is at risk and should receive PEP.



Massachusetts Department of Public Health

Role of MDPH, MDAR, and LBOHs in Rabies Exposure Investigations



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Prevent. Promote. Protect.

Key Acronyms & Players

- **ACO:** Animal Control Officer
- **AI:** Animal Inspector
- **MDAR:** Massachusetts Department of Agricultural Resources
- **DPH Epi:** MDPH Division of Epidemiology staff
- **PEP:** Post-Exposure Prophylaxis
- **MA SPHL:** MA State Public Health Laboratory



Who's Involved in Rabies Prevention?



LBOH/Animal Control



MDPH Epidemiologist



MA SPHL Rabies Lab



Local Animal Inspector



Potentially
Exposed Person



Hospital Emergency Room

Role of MDPH

- **Rabies Lab (At MA State Public Health Laboratory):**
 - Tests **animal** specimens for virus (only lab in state).
- **Division of Epidemiology (EPI)**
 - Conducts human risk assessments and makes recommendations around 10-day quarantines for animals, specimen submission, and need for post-exposure prophylaxis (PEP).
 - Reports positive and unsatisfactory results and makes appropriate recommendations.
 - Responds to inquiries from the public, healthcare providers, veterinarians, Animal Control Officers (ACOs), and Animal Inspectors (AIs) about possible exposures.



Rabies & MAVEN

- DPH Epis provide frequent guidance and recommendations for different potential animal contact/exposure scenarios and internally document any recommendations (ex. testing, quarantine, PEP etc.).
 - These are not suspect human rabies events, so you will not see these situations in MAVEN.
 - LBOHs are not responsible for conducting follow-up in these scenarios.
- Suspect Human Rabies events are incredibly rare but would be available in MAVEN if this situation occurred, and local health would be immediately notified.

Role of Animal Inspector (AI)

- The primary local health authority with responsibility for rabies control in their jurisdiction is the Animal Inspector (AI).
 - Each town/city has an AI appointed by MDAR.
 - The role of AI and ACO may be held by the same individual.
- AIs have the Regulatory Authority
 - Responsible for implementing quarantines for domestic animals.
 - Ensure exposing domestic animals are submitted for rabies testing if necessary.

Role of Local Jurisdiction (LBOH/ACO)

- ACOs are overseen by the LBOH and are responsible for general animal matters (ex. capturing strays, responding to rabid animals etc.)
- ACOs work to identify and capture exposing animals that bit or scratched residents in their jurisdiction.
 - The local level should provide assistance with animal submission for rabies testing.
 - Best Practice: Develop and maintain relationship(s) with local veterinarians who can assist with euthanasia and specimen submission

When will the DPH Epi involve LBOH/ACO/AI?

- DPH Epi will reach out to AIs when a domestic animal needs to be quarantined.
- DPH Epi will reach out to LBOHs if assistance is required to make contact with an exposed resident.
- If public notification is being considered due to more widespread exposures.
 - Ex. a stray cat that tested positive for rabies and potentially exposed multiple unknown parties.

Who should LBOHs call when help is needed?

- **MDPH Epidemiology Line (24/7): (617) 983-6800**
 - For coordination of animal rabies testing, rabies risk assessments and questions related to human/animal contact and exposures to rabies.
- **Local Animal Inspector (AI)/Animal Control Officer (ACO)**
 - Municipal AI and ACOs: [Mass.gov | Routinely Updated Contact Lists](https://www.mass.gov/info-details/routinely-updated-contact-lists)
 - For help with animal submission for rabies testing, quarantines or other local animal matters.
- **MA Department of Agricultural Resources (MDAR):**
 - Ashley Kraft, Rabies Program Coordinator (617) 626-1810
 - Michael Cahill, Director, Animal Health **(617) 626-1794**
 - For questions related to animal health.
 - Residents having difficulty contacting ACO/AI in their jurisdiction.

Teamwork required between MDPH, LBOH/ACO, AI and MDAR

- **Shared Goals:**

- Identify animals that need to be tested or quarantined;
- Assess risk of exposures;
- Ensure specimens requiring testing arrive at MA SPHL;
- Avoid unnecessary PEP for residents.



Reporting Requirements

Reporting Requirements: Bites by Domestic Animals

- Healthcare providers are required to report any animal bite by a domestic animal (dog, cat, ferret, or livestock) to the Animal Inspector (AI) of the city or town where the bite occurred within 24 hours.
- Reporting ensures that a 10-day quarantine, when appropriate, can be initiated promptly to prevent the need for rabies post-exposure prophylaxis (PEP).
- Massachusetts Department of Agriculture Resources (MDAR) has the regulatory authority and reporting requirements are outlined in [330 CMR 10.00](#).



<https://www.mass.gov/doc/information-about-reporting-animal-bites/download>

What about wildlife bites?

- All animal bites by wildlife should be managed by calling the 24/7 MDPH Epidemiology Line **(617) 983-6800** for a thorough rabies risk assessment.
 - And if appropriate, coordination of the animal for rabies testing at the Massachusetts State Public Health Laboratory (MASPHL).
- There are no quarantine options for wildlife exposures.
 - Animal quarantine is only a potential option for some domestic animals.



Next Steps following Potential Rabies Exposures in Humans

What are the appropriate steps after a human's potential exposure to rabies?

- Identify the exposing animal (exposures via bites, scratches, saliva, etc.)
 - If the exposing animal is a dog, cat, ferret or cow, implement 10-day quarantine.
 - If the animal is alive and well at the end of the 10-day quarantine period – there is NO risk of rabies and NO need for PEP.
 - If the exposing animal is a high-risk wild animal, submit for testing. (No quarantine option available.)
- Depending on results of testing or quarantine in the exposing animal, post-exposure prophylaxis (PEP) may be recommended for the exposed human(s).

Which animals should be tested for rabies?

- This table explains the risk level of rabies in different species and the corresponding testing recommendation.
- While risk level for some animals is straightforward, often a risk assessment with an Epidemiologist is needed.
- Be sure to call/refer calls to **617-983-6800 for MDPH Epi Consult.**

Category 1	Category 2	Category 3	Category 4
Bat Bear Beaver Bobcat Coyote Fisher Fox Otter Raccoon Skunk Woodchuck	Cat Cow Dog Ferret	Alpaca/llama Chinchilla Deer Domestic/pet rabbit Goat Guinea pig Horse Mink Moose Muskrat Opossum Pig Porcupine Sheep Squirrel Weasel	Chipmunk Gerbil Hamster Mole Mouse Rat Shrew Vole Wild rabbit/Cottontail
YES Always test if a human or pet is exposed.	SOMETIMES Test following human or pet exposure if 10-day quarantine is not possible or not appropriate (for example, the animal is already sick).	RARELY These are handled case by case and require Department of Public Health or Department of Agriculture approval before testing.	NO Rabies testing is not needed.
These animals are either known rabies carriers or are considered likely to have the potential to spread rabies.	These animals can only spread rabies up to 10 days before showing symptoms.	These animals are occasionally found to have rabies but bites from these animals have never resulted in a human case of rabies in the US.	These animals are almost never found to have rabies and bites from these animals have never resulted in a human case of rabies in the US.

Dog Bites

- Required to be reported;
- Dogs should be quarantined if available;
- MDPH no longer automatically recommends PEP for provoked bites from clearly owned dogs in Massachusetts for the following reasons:
 - A very high vaccination rate among dogs;
 - The last dog testing positive for rabies occurred in 2008.
 - A complete risk assessment of individual circumstances should be assessed by EPI.
 - Low risk but NOT no risk




Bats

- Important to assess for exposures (in human or in domestic pets) to determine whether or not testing is warranted
 - Resident should call **MDPH Epi Program 24/7 (617) 983-6800** to discuss.
- [What to do if you find a bat in your home](#)
 - Helpful resource for residents



Massachusetts Department of Public Health, updated 2024

What to Do if You Find a Bat In Your Home



In Massachusetts, bats may be found in houses or apartments, particularly during the late summer. If any person or pet may have had contact with the bat, it will be necessary to capture the bat and have it tested for rabies.

Bats sometimes carry rabies and may spread it to people or animals if they bite or scratch them. Fortunately, if a person is exposed to rabies, they can be treated to prevent them from getting the disease. Most of the time, treatment is not necessary **when the bat is available for testing.**

Rabies Surveillance Data

Surveillance For Rabies

- Human rabies in the US is incredibly rare largely due to comprehensive animal control, surveillance and response efforts.
- Thus, rabies surveillance occurs through testing animals submitted to the MA State Public Health Laboratory (MA SPHL) to contextualize risk to humans and monitor changes in the spread of rabies.
 - Annual surveillance reports summarizing data collected on animal specimens from Massachusetts sent to the MA SPHL for rabies testing are available online.
 - <https://www.mass.gov/lists/annual-rabies-surveillance-reports>
- In the US, surveillance and control efforts save over \$1 billion in healthcare cost annually by accurately assessing risk and preventing unnecessary medical costs.

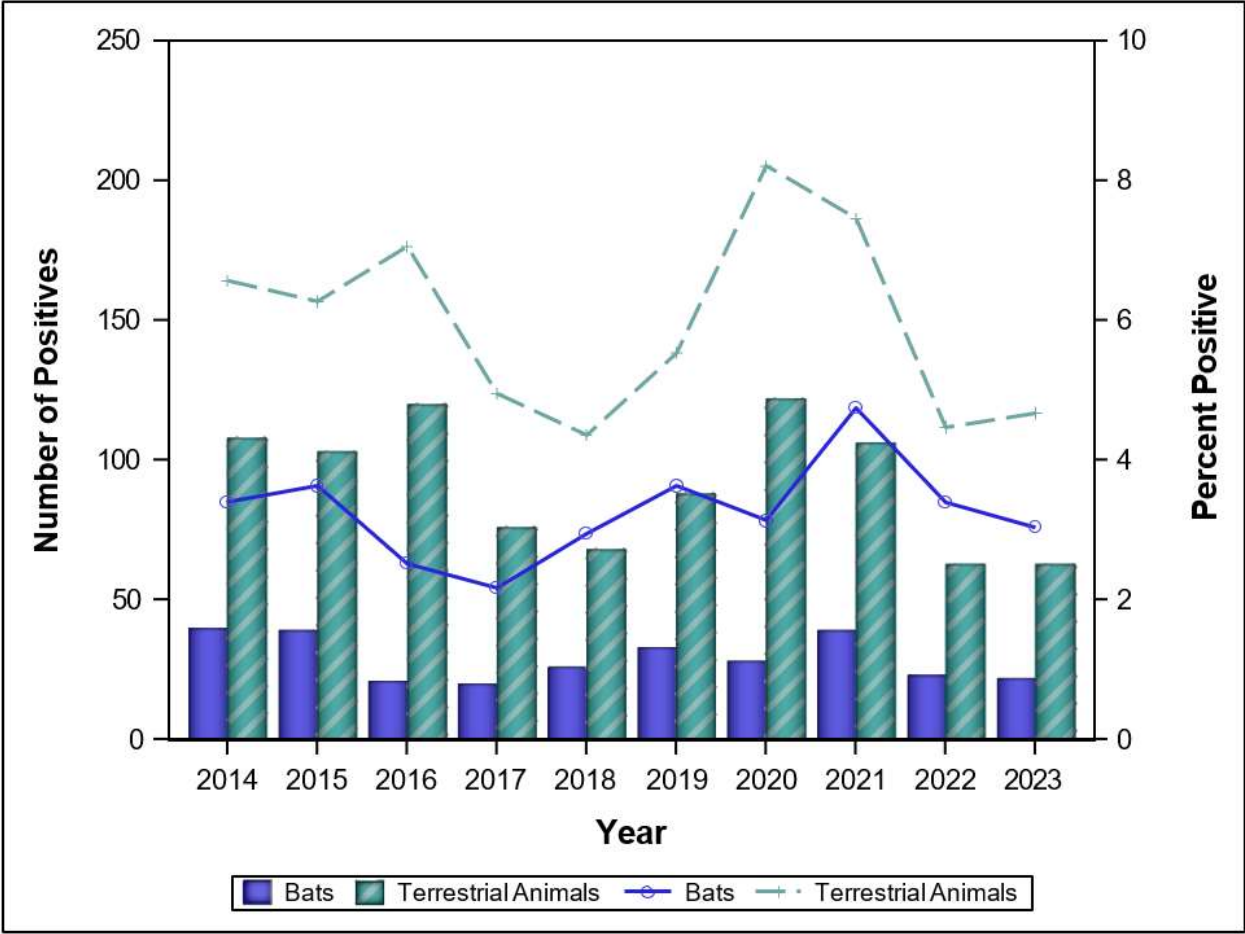
2023 Rabies Surveillance by Animal Submission

Number of Animals Positive for Rabies/Animals Submitted (%), 2023			
	# Positive	# Submitted	% Positive
Raccoon	38	113	33.6
Bat	22	732	3.0
Skunk	15	57	26.3
Fox	4	9	44.4
Woodchuck	2	73	2.7
Cat	2	501	0.4
Coyote	1	7	14.3
Other*	1 (Beaver)	68	1.5
Dog	0	532	0.0

**includes cows, beavers (1 positive) ferrets, flying squirrels, goats, horses, opossums, pigs, rabbits, and squirrels.*

<https://www.mass.gov/lists/annual-rabies-surveillance-reports>

Number of Animals Positive for Rabies and Percent Positive by Year: Massachusetts, 2014-2023



Summary

- DPH Epi Program conducts risk assessments for potential rabies exposures in humans:
24/7 Epidemiology line (617) 983-6800.
 - Determine if animal testing is warranted.
 - Determine if animal quarantine is appropriate and refer to AI.
- LBOHs should refer callers to DPH Epi Program for rabies risk assessments.
- LBOHs can support residents in specimen submission when approved by DPH Epi Program.

Resources

- **MDPH**
 - <https://www.mass.gov/rabies>
 - <https://www.mass.gov/lists/rabies-information-for-the-general-public>
 - **Surveillance Reports:** <https://www.mass.gov/lists/annual-rabies-surveillance-reports>
 - **Laws and Regulations:** <https://www.mass.gov/lists/rabies-laws-and-regulations>
- **CDC**
 - <https://www.cdc.gov/rabies/about/index.html>

