



Indiana
Department
of
Health

Rabies, Bite Reporting, and Risk Assessment

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Rabies Epidemiologist



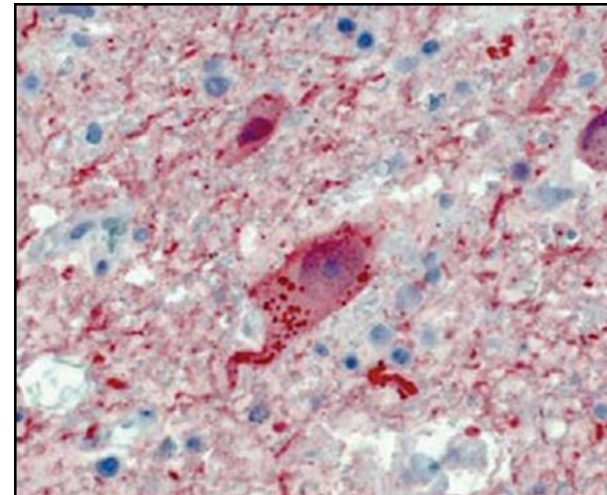
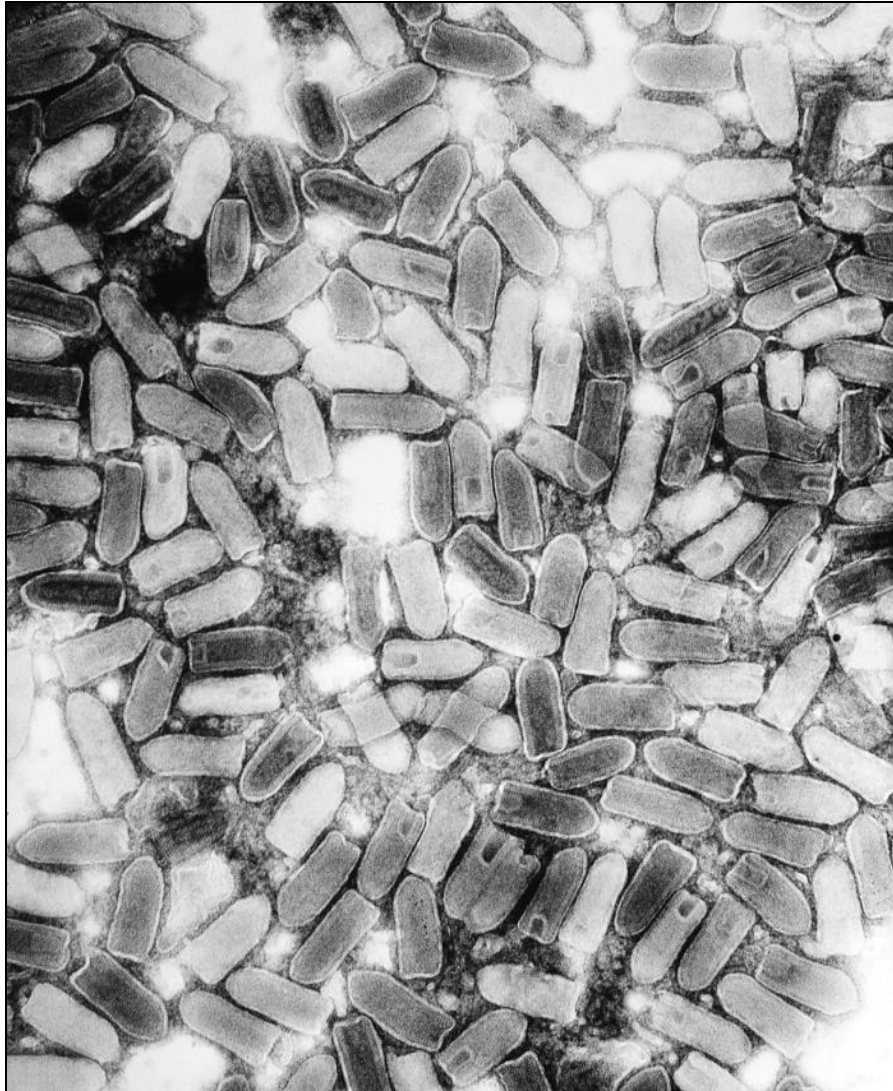
Photo by Travis Brown

Rabies



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Rabies is a viral infection that causes acute, rapidly progressive neurologic disease.



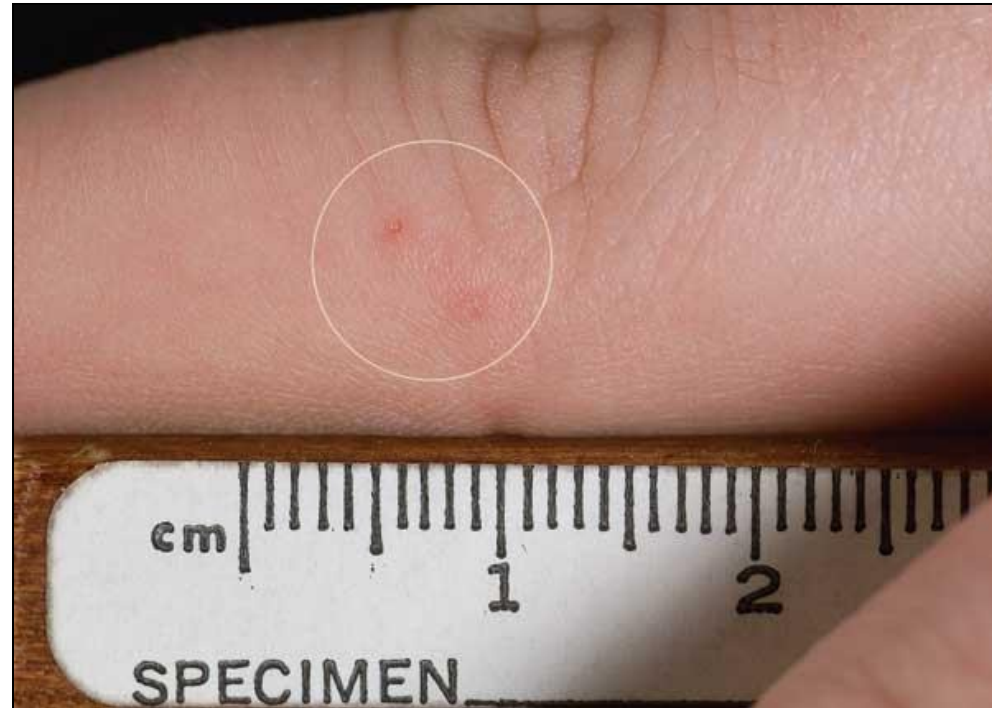
Bats, skunks, raccoons, and foxes are all considered high-risk species for rabies in Indiana.



Big brown bats: Connor Long, Wikimedia Commons; Striped skunk: CC0 Creative Commons; common raccoon: Dr. Lloyd Glenn Ingles © California Academy of Sciences; red fox: Gerald and Buff Corsi © California Academy of Sciences.

Bats are the primary reservoir for rabies in Indiana.

Bat bites inflict very limited injury, leading to underestimation of risk from bat exposures.

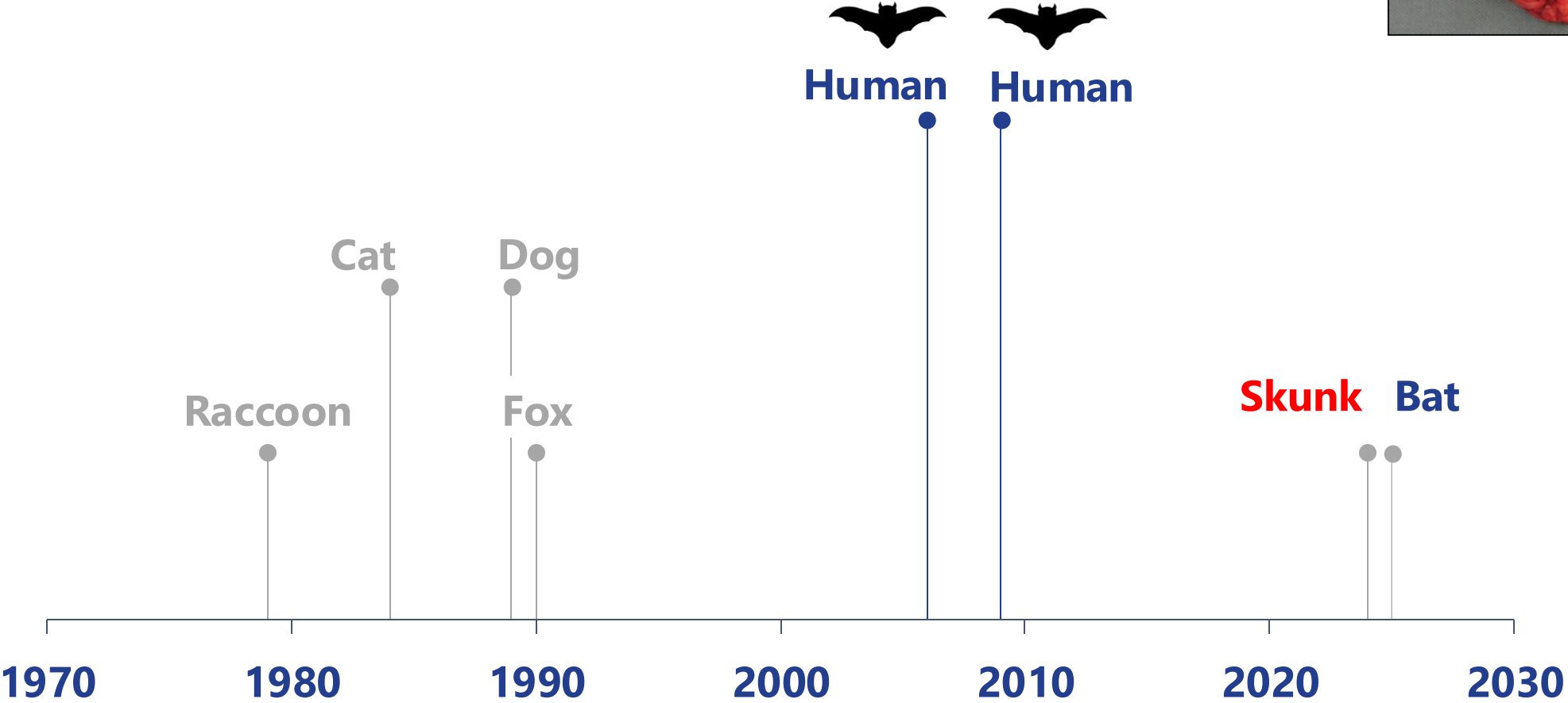
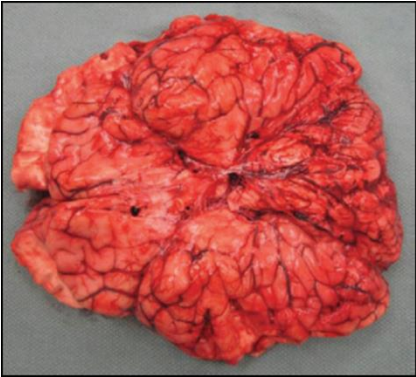


Wound inflicted by canine teeth of big brown bat.
Picture was taken on the same day as the bite.
Photo: CDC.

Big brown bat.
Dr. Lloyd Glenn Ingles © California Academy of Sciences.

The last rabies cases in Indiana in humans were in the 2000s.

Last detection of rabies in Indiana by species, 1960–2024



Skunk Rabies Detection

- In January 2024, a rabid skunk was found in Clark County
- CDC variant typing confirmed north-central skunk variant
- First rabid skunk detected in Indiana since 2004
- Active surveillance techniques ongoing
 - IDOH, BOAH, DNR
- Risk assessment changes in 4 counties
 - Clark, Floyd, Harrison, Washington

Preventing Rabies Transmission

1. Avoid contact with bats
2. Safely capture and test bats implicated in human exposures
3. Seek rapid evaluation for rPEP when direct bat contact occurs and rabies cannot be ruled out



Did sufficient contact occur to allow the transmission of rabies virus?

Bite exposure (any penetration of skin by an animal's teeth)

Non-bite exposure

- Open wound
- Mucous membrane

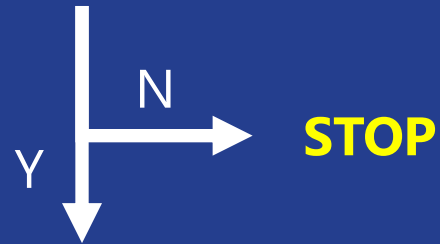
Bat exposure

- Direct contact where bite or scratch cannot be ruled out
- Bat found in same room with
 - Sleeping person
 - Person impaired by drugs or alcohol
 - Person with intellectual disability
 - Unattended child

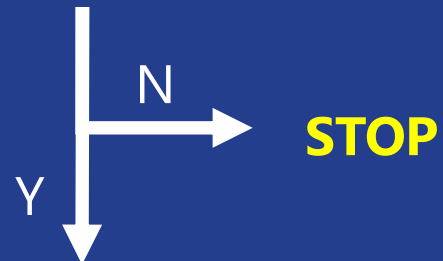


Risk assessment approach

Did sufficient contact occur to allow rabies virus transmission?



Was the animal rabid or potentially rabid?



Public health recommendation for rPEP

Sources of information

Animal bite report
Medical record
Patient and/or proxy interviews

10-day post-bite quarantine*
Rabies testing
Risk estimation

* Dogs, cats, and ferrets ONLY

Animal Bites (animal unavailable)

Lower Risk Incident (ALL are true)	Higher Risk Incident (ONE OR MORE is true)
Dog, cat, or ferret	Bat, skunk, raccoon, fox, or other wild carnivore*
Animal behaving normally	Animal behaving abnormally
Animal apparently healthy	Animal has neurologic signs
Provoked bite	Unprovoked bite

What needs to be completed?

Cases where rPEP is recommended or administered should have the following:

- Type of exposure
- Date of bite/exposure
- Country of exposure
- State of exposure
- Species of animal
- Animal status at time of bite/exposure
- Circumstances of bite/exposure
- Health status of animal
- rPEP recommendation, completion, rPEP type
- Date of animal bite report
- Reporting organization

Cases where rPEP is NOT recommended or administered should have the following:

- Type of exposure
- Species of animal
- rPEP information

For all Case Investigations

- Most cases should be marked as “confirmed” and have a notification created
 - “confirmed” in this context only means that the animal bite occurred, nothing to do with rPEP
 - It’s only “not a case” if the bite did not occur/out of state resident, or if there is a non-bite exposure (proximity bat exposure) that tests negative
- Cases need to be closed before a notification is created
- Fill out notes in the notes section under supplemental info if applicable
- Don’t be hesitant to reach out with questions!

Rabies post-exposure prophylaxis (rPEP)

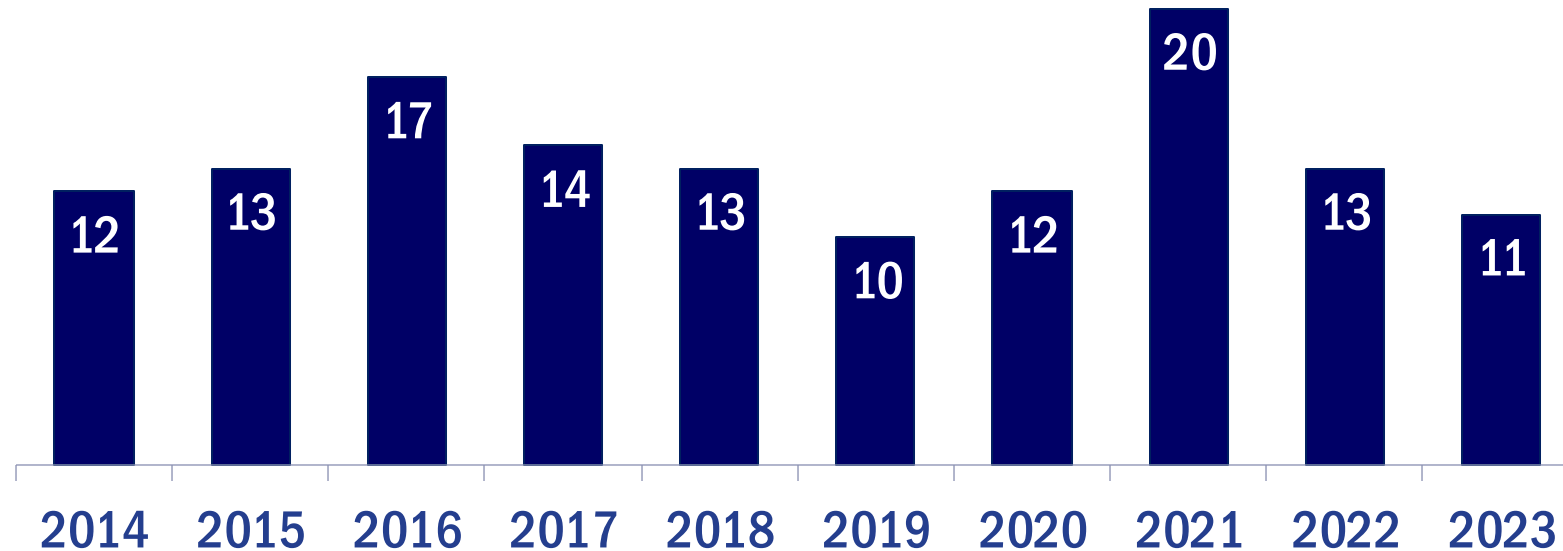
1. First aid and wound care
2. Rabies immune globulin
3. Rabies vaccine



Days post presentation	0	3	7	14	28
Where to go	Hospital ED	Hospital infusion clinic +/- PCP, pharmacy, LHD			
Unvaccinated Immune competent	RIG + Vaccine	Vaccine	Vaccine	Vaccine	
Unvaccinated Immune compromised	RIG + Vaccine	Vaccine	Vaccine	Vaccine	Vaccine
Previously vaccinated	Vaccine	Vaccine			

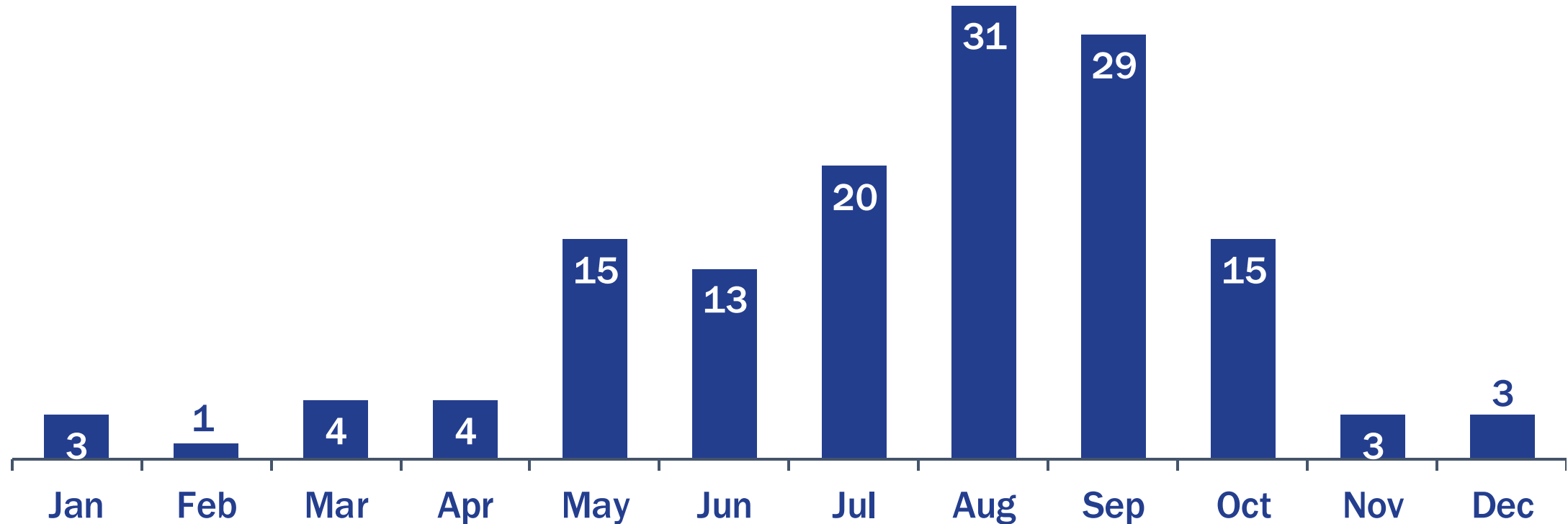
Approximately 10–20 rabid bats are detected in Indiana during a typical year.

Bat rabies case count, 2013–2023



Bat rabies cases peak in August in Indiana.

Number of rabid bats by month, 2012–2022 (N=121)



Only a small number of the 2,200 bats tested at the IDOH Laboratories during 2016–2023 were positive for rabies.

3.2%

Reporting

Why is this even reportable?

- Rabies poses a public health threat all over the world
- ~74,000 people die from rabies every year globally
- 5 Americans died from rabies in 2021
- Bite surveillance provides more insight than just rabies risk

Indiana Code

- Bite reporting is required by Indiana Code 410 IAC 1-2.5-80
 - This code states: Every case of a human bitten by a domestic or wild mammal shall be reported within 24 hours to the local health officer having jurisdiction
 - Each reported bite shall be investigated immediately by the local health officer

Animal Bite Reporting

- All animal bites/exposures require investigation by local health departments.
- Bites should be investigated by the jurisdiction of the **bite victim's residence**.
- All bites reported should be accompanied by a state bite report form.

Transferring Cases

- The local health department in **the county of the residence of the bite victim** is responsible for the investigation
- Please **do not** transfer the case if the bite victim is a resident of your county
- If the bite victim lives in a different county:
 - Update the address in the patient file
 - Transfer the morbidity report and/or case investigation
 - Notify the recipient county of the transfer

Indiana Code

This investigation shall be conducted with the purpose of determining the need for post-exposure prophylaxis (PEP) of the bite victim and either:

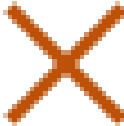
1. Imposing a 10-day observation period on the biting animal (dog, cat, or ferret only); OR
2. Testing the biting animal for rabies

What bites are reportable?

YES

- Humans bitten by mammals 
- Bat proximity/direct contact exposures

NO

- Humans bitten by non-mammals 
- Humans bitten by humans
- Animals bitten by animals

Who can report bites?

Many different stakeholders can report bites.

- Bitten persons
- Biting animal owners
- Hospitals and other healthcare facilities
- Local or state health departments
- Animal control
- Law enforcement

Common Reporting/Investigation Obstacles

- Awareness of reporting regulations
- Timeliness
- Established protocol for:
 - Reporting
 - Quarantines
 - Euthanasia/specimen submission
- Exotic pets
- Jurisdictional complexity

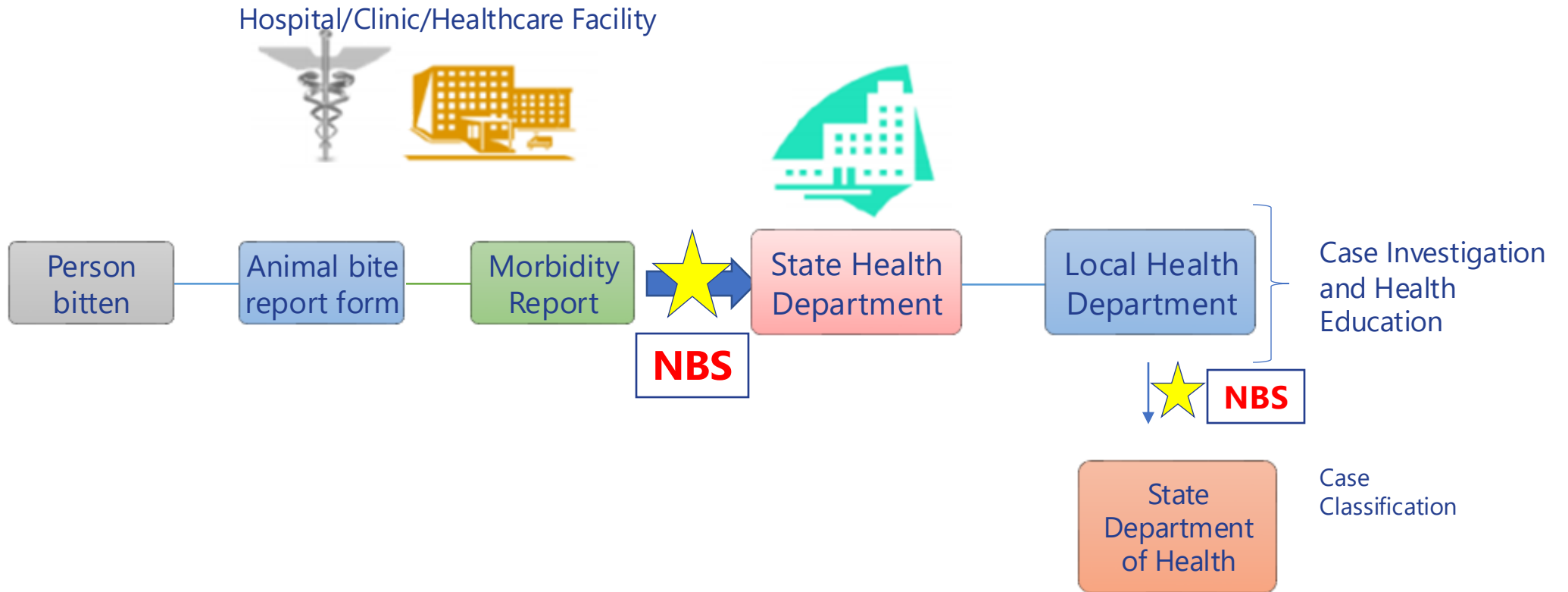
Jurisdictional Complexity

- Bite cases often cross over into multiple jurisdictions
- Jurisdiction of the residence of the bite victim investigates the case
- Coordination and cooperation is crucial in these cases

Exotic Pets

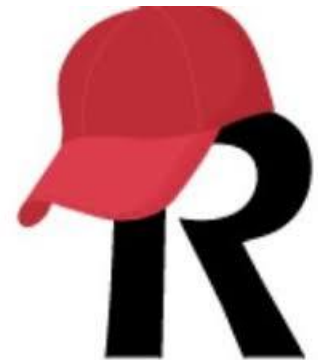
- Bite reporting still required for mammals
- Recommendations do not change for high-risk species
- Higher levels of non-compliance
 - Quarantines and testing
- Documentation is key in non-compliance situations
- BOAH for animal welfare concerns

Flow of Information

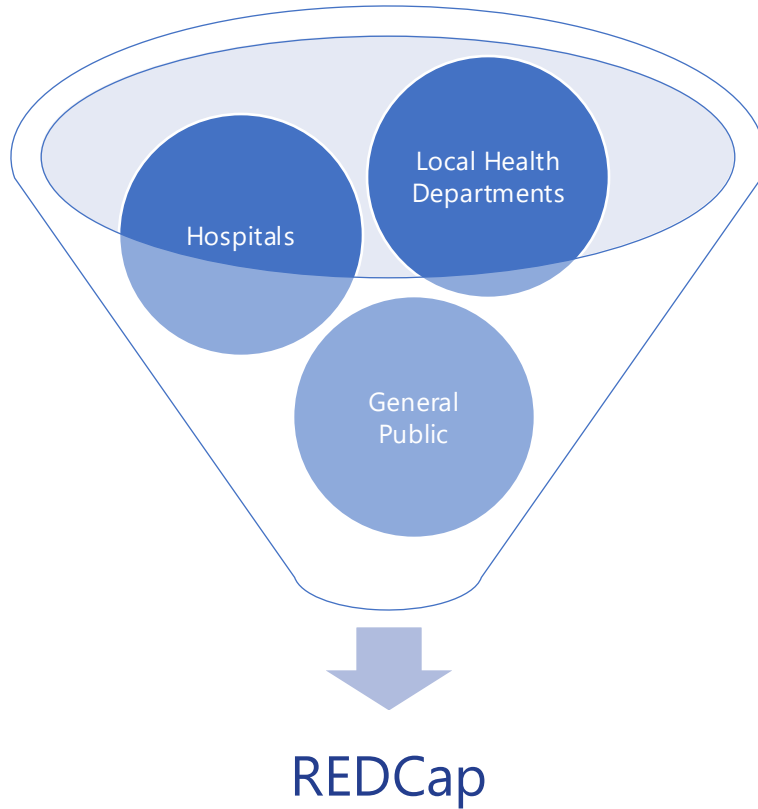


Upcoming Online Reporting

- Goal: digitize and simplify bite reporting and investigations
- Shifting to REDCap
- Streamline and modernize reporting processes
- Updated reporting expectations
 - Low-risk species bite reporting



Upcoming Flow of Information



The screenshot shows the 'Report of Animal Bite or Exposure' form from the Indiana Department of Health. The form includes the following elements:

- Header:** Indiana Department of Health logo and navigation links (Returning?, A A A, speaker, grid, close).
- Title:** Report of Animal Bite or Exposure
- Instructions:** Use this form to report cases of an animal biting or coming in contact with a person. It provides contact information for reporting animal-to-animal bites (317) 544-2400 and person-to-person bites (317) 233-7125.
- Assistance:** A list of links and phone numbers for further assistance.
- Disclaimer:** A yellow banner stating: "This completed form is the State's official record of your bite report. Please attempt to answer all questions as completely as possible."
- Form Fields:**
 - Today's date:** A date input field with a calendar icon, a 'Today' button, and 'M-D-Y' format. A red asterisk indicates it is a required field.
 - Are you the person who was bitten or exposed?:** Radio button options for 'Yes' (selected) and 'No'. A red asterisk indicates it is a required field. A 'reset' link is located at the bottom right of this section.
- Buttons:** 'Next Page >>' and 'Save & Return Later' buttons.

LimsNet

- LimsNet access is crucial to timely and easy rabies testing specimen submission
- While IDOH labs will still accept the paper requisition form for testing, we are urging submitters to shift to registering specimens online
- You can adjust the settings in your LimsNet profile to receive email notifications for results
- Self-service kiosk for drop offs

Specimen Submission Specifics

- The best source for specimen submission info is in.gov/rabies
- Documents detailing submission and LIMSnet access
- Online LIMSnet submission strongly recommended

Rabies

Animal Submission Guidelines



Required Materials



- Rabies animal specimen
- Leak proof container or sealable plastic bags
- Cold packs
- LIMSnet Cover Sheet (Help Desk 317-921-5807)
- Heavily insulated shipping box

Live animals cannot be accepted for safety reasons.

Packing Instructions

-   **1.** Place animal head or entire dead bat specimen(s) in a sealable container (zipper style bag). **Completely seal the bag.**
-   **2.** Double bag the specimen(s) to prevent leakage during transport. **Completely seal the second bag.** Place the LIMSnet Cover Sheet in a third, separate zipper style bag. **Completely seal the third bag.**
-   **3.** Place the specimen(s) on the cold pack(s) inside the insulated shipping box. (1 cold pack for bats. 2-3 cold packs for all other animals). **Please do not use ice or packing peanuts during shipping.**
-   **4.** Ship specimen(s) for overnight delivery to the IDOH Laboratory in an insulated shipping box within 24 hours of collection. **Ship in compliance with DOT and IATA shipping regulations for Category B packages.**

To **promote, protect, and improve** the health and safety of all Hoosiers

Indiana Department of Health Laboratory
550 West 10th Street, Suite B | Indianapolis, Indiana 46202 | 317-921-5500 | health.in.gov



All animal rabies testing in Indiana is conducted at the state health department.

Rabies testing requested through ADDL is referred to our lab.



Reporting sick or dead bats





Sick / Dead Wildlife Report

Thank you for reporting sick or dead wildlife in Indiana to the Department of Natural Resources.

Reports are sent to biologists in the Indiana DNR Division of Fish & Wildlife and will be reviewed by staff.

DNR State Form 56846 (R/8-20)
Indiana Department of Natural Resources



Observer Information 

DNR staff will only contact you if more information is needed.

First Name*

Last Name*

<https://www.in.gov/dnr/fish-and-wildlife/wildlife-resources/wildlife-diseases-in-indiana/sick-or-dead-wildlife-reporting>



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REMOVE A COLONY OF BATS

In general, there are three things you should know about removing a colony of bats:


- Bats are wild animals and many species are protected under federal law.
- Removing a colony of bats is not easy but can be accomplished by following several steps.
- Hiring professional bat removers (often called bat excluders) is also a good option in removing a colony of bats.

<https://www.batcon.org/about-bats/bats-in-homes-buildings>



Wildlife Control Operators

Use the search form below to find a wildlife control operator. Wildlife control operators can capture and remove wildlife that may be considered a nuisance because: (1) they damage or threaten to cause damage to property or (2) they pose a health or safety threat to a person or domestic animal. The captured animal will either be euthanized or released on property with permission from the landowner. The database does not include waterfowl control operators.


[Search Again](#)
[Download Data](#)

<u>Service Area</u>	<u>Business</u>	<u>Last Name</u>	<u>First Name</u>	<u>Telephone</u>	<u>County</u>	<u>Animals</u>	<u>Services</u>
Marion, Shelby, Johnson, Hancock, Hamilton, Hendricks	Admiral Wildlife Services	Neuner	Kirk A.	317-835-7444, 317-802-6220	Shelby	bat, beaver, chipmunk, coyote, fox, groundhog, mole, muskrat, opossum, raccoon, rodent (mouse, rat, vole), skunk, squirrel, weasel, starlings, house sparrows, pigeons,	dead animal removal, hand capture, minor exclusions, minor repairs, major exclusion, major repairs, precision sharp shooting, trap/removal, netting, Geese management: Nest and egg removal

<https://www.in.gov/dnr/fish-and-wildlife/wildlife-resources/living-with-wildlife/nuisance-wildlife-control-operators>



Resources

NASPHV's Compendium of Animal Rabies Prevention and Control

<http://www.nasphv.org/Documents/NASPHVRabiesCompendium.pdf>

IDOH's rabies page

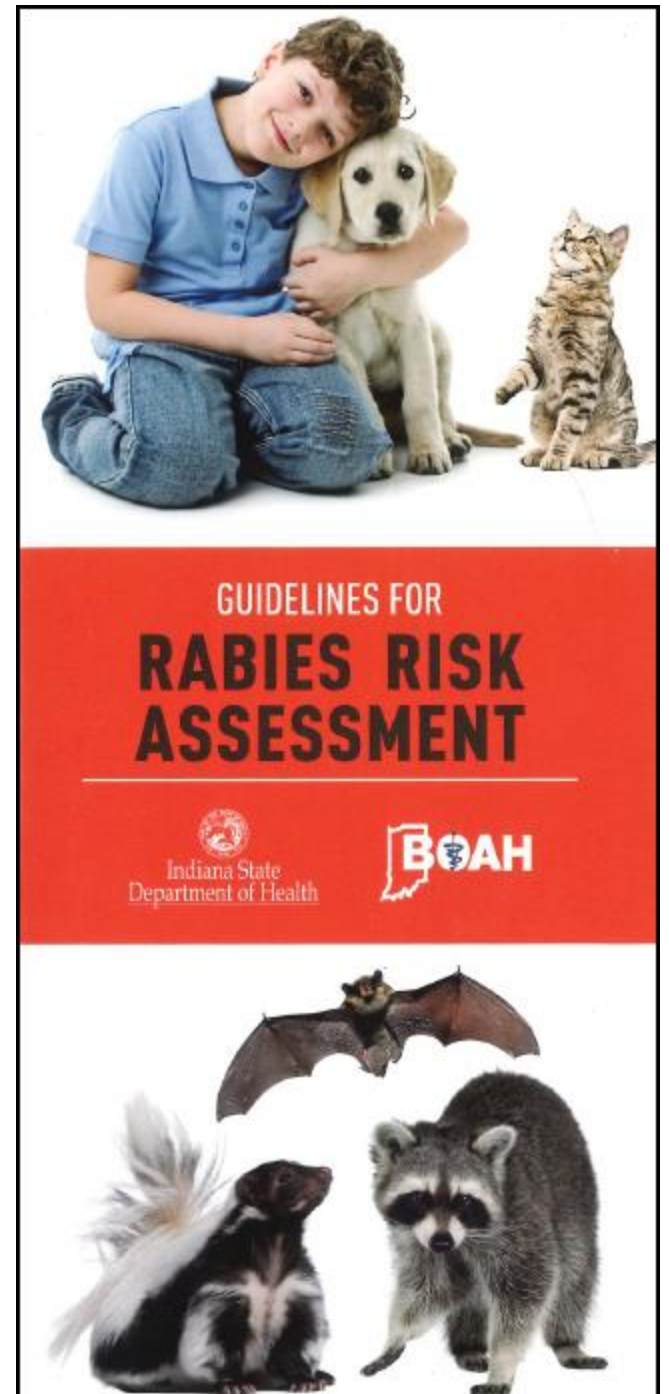
<https://www.in.gov/rabies/>

CDC's rabies page for veterinarians

https://www.cdc.gov/rabies/specific_groups/veterinarians/index.html

Indiana Department of Health: 317-233-1325

After hours: press "1" to speak with the epidemiologist on call



Contacts

Erik Ohannesian, Rabies Epidemiologist

erohannesian@health.in.gov

317-232-3084

IDOH main number: 317-233-1325

After hours: press "1" to speak with the epidemiologist on call

Acknowledgements

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Questions?

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