Rabies In Alabama: An Overview for Medical and Public Health Professionals

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Disclosure

The presenter has no relevant financial, non-financial relationships or commercial support of any kind to disclose. This content is intended for educational purposes only.

ALABAMA PUBLIC HEALTH

Objectives

- *Objective 1* Understanding epidemiology and pathophysiology of rabies in Alabama
- *Objective 2* Understanding reporting procedures
- *Objective 3* Understanding quarantine measures and testing protocols to assess the need for PEP
- *Objective 4* Understanding PEP Guidelines

Goal

Strengthen capabilities and knowledge on reporting and proper prevention strategies for rabies following animal bites/exposures.

Objective 1

Understanding epidemiology and pathophysiology of rabies in Alabama

- Lyssaviruses/Rabies Virus Nomenclature
- Statistics of rabies in animals in Alabama
- Historical changes in reservoirs
- Viral Pathophysiology/Incubation periods/clinical presentation

Genus *Lyssavirus*

Neurotropic, Single-Stranded, Negative-sense RNA virus

The Challenge of Lyssavirus Infections in Domestic and Other Animals: A Mix of Virological Confusion, Consternation, Chagrin, and Curiosity

by Charles E. Rupprecht [1,2,*], Aniruddha V. Belsare [1,2], Florence Cliquet [3], Philip P. Mshelbwala [4], Janine F. R. Seetahal [5] and Vaughn V. Wicker [6]

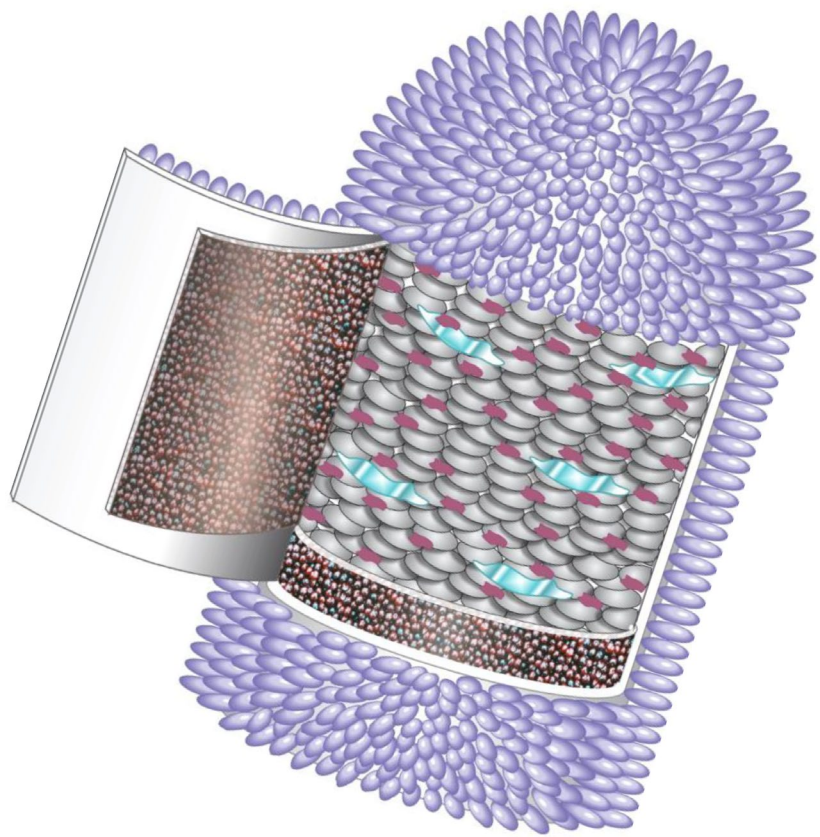

Figure 1. Conception of a generalized bullet-shaped lyssavirus virion, illustrating the outer G protein spikes (purple), extending through the host-cell derived membrane (white), with a cut-away view of the M protein (black and red beaded stippling) encasing the helical ribonucleoprotein core, consisting of the N protein (gray) encapsidated to the single strand of RNA, the P protein (magenta), and the L protein (teal), also known as the RNA-dependent RNA polymerase (Courtesy I. Kuzmin, University of Texas Medical Branch, Galveston, TX, USA).

Nomenclature/Characteristics

- Genus *Lyssavirus*
- Species *Rabies* *RABV* *"Rage or do violence"*
- *>20 recognized species of Lyssavirus classified into several phylogenetic groups.*

All lyssaviruses cause an acute, progressive encephalitis. The clinical signs are highly variable but essentially indistinguishable, regardless of viral species. All warm-blooded vertebrates can support a productive viral infection [**102**]. Birds are susceptible, but reports are rare, with no recent comparative surveys [**116**]. Among mammals, wildlife reservoirs, responsible for intraspecific perpetuation and interspecific spillover infections, reside within the Chiroptera, Carnivora, and Primates [**117**]. Other mammalian species serve as vectors or victims. In domestic mammals, the dog is unique, as the sole representative of lyssavirus reservoir, vector, and vi n. Felids are effective vectors, but not reservoirs, and are increasingly important in the epidemiology of the disease [**118**]. Today, unsupervised community dogs in lower- and middle-

(a) (b)

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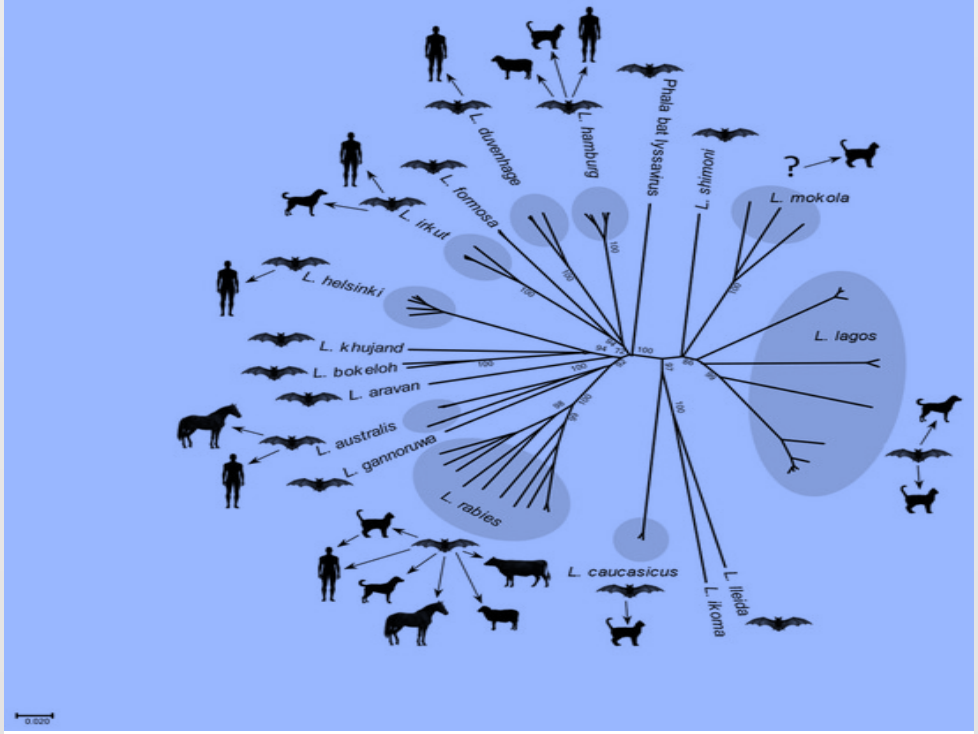


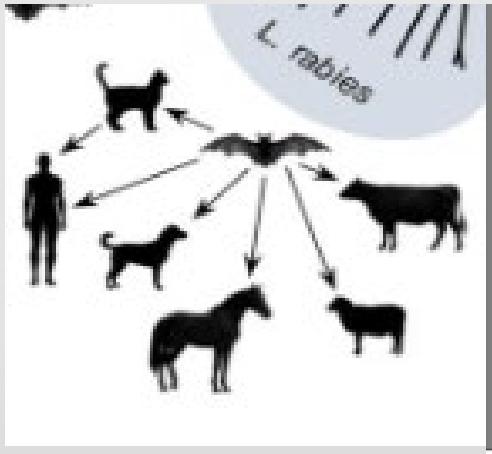
Figure 4. A phylogram of selected lyssavirus species, based upon known or presumed mammalian reservoirs and indications of spillover infections to other species (Courtesy L. Kuzmin, University of Texas Medical Branch, Galveston, TX, USA).

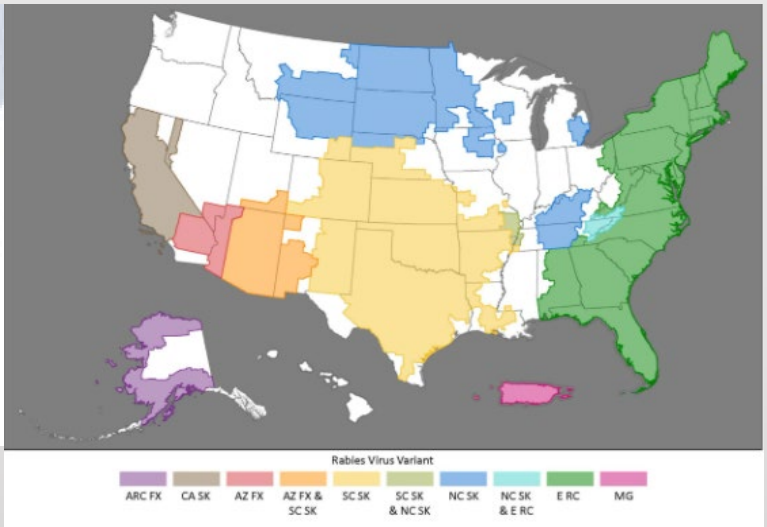
- Rabies-related lyssaviruses or non-rabies lyssaviruses, are maintained in bats and can cause illnesses identical to rabies.
- Spillover into humans and terrestrial mammals.
- Geopolitical effects vs. taxonomy approach
- Is a country free from rabies if it has a bat lyssavirus that is infecting other mammals?
- Underreporting of human deaths?
- Improved Post-exposure effectiveness in non-rabies lyssavirus exposures?

Rabies virus and related viruses have been classified into several phylogroups, based on their genetic relatedness. Phylogroup I contains rabies virus, Duvenhage virus, European bat lyssavirus (EBLV) 1, EBLV 2, Australian bat lyssavirus (ABLV) and Irkut virus, which are all known to affect humans and/or domestic animals; as well as some viruses, such as Bokeloh bat lyssavirus, Aravan virus, Gannoruwa bat lyssavirus, Khujand virus and Kotalahti bat lyssavirus, which have only been detected in bats, to date. Shimoni bat virus, Lagos bat virus and Mokola virus belong to phylogroup II, while West Caucasian bat virus, Ikoma virus and Lleida bat lyssavirus are classified in one or more additional phylogroups. Of the latter group of viruses, Lagos bat virus, Mokola virus and Ikoma virus have been reported from clinical cases in humans or animals other than bats. Additional rabies-related lyssaviruses (e.g., Matlo bat lyssavirus, Taiwan bat lyssavirus) have been proposed and there are probably viruses that have not yet been discovered.

Nomenclature/Characteristic

- Each viral variant is maintained in a particular reservoir host, and the name of this host is often part of the case description. For example, if a virus maintained in skunks caused rabies in a dog, it would be described as *"skunk rabies in a dog, rather than canine rabies".*





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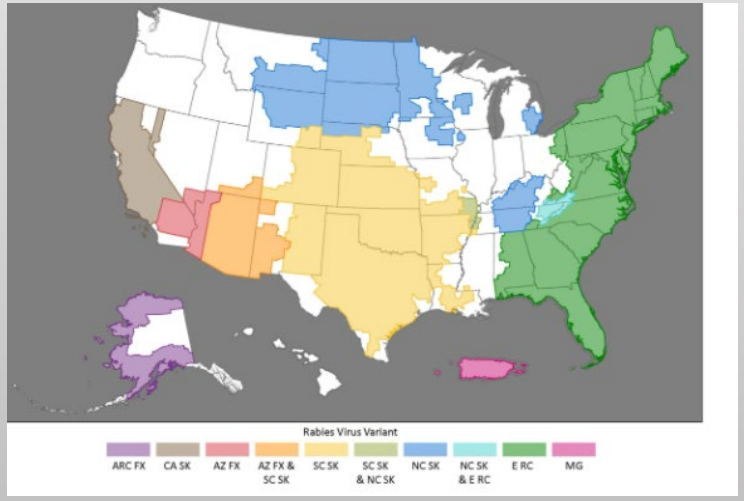
Generalized Statistics

- Majority of deaths occur in Asia & Africa (>50,000/yr Globally)
- Dogs = main reservoir worldwide
- U.S.: Human cases rare, mostly bat exposures or Travel-related

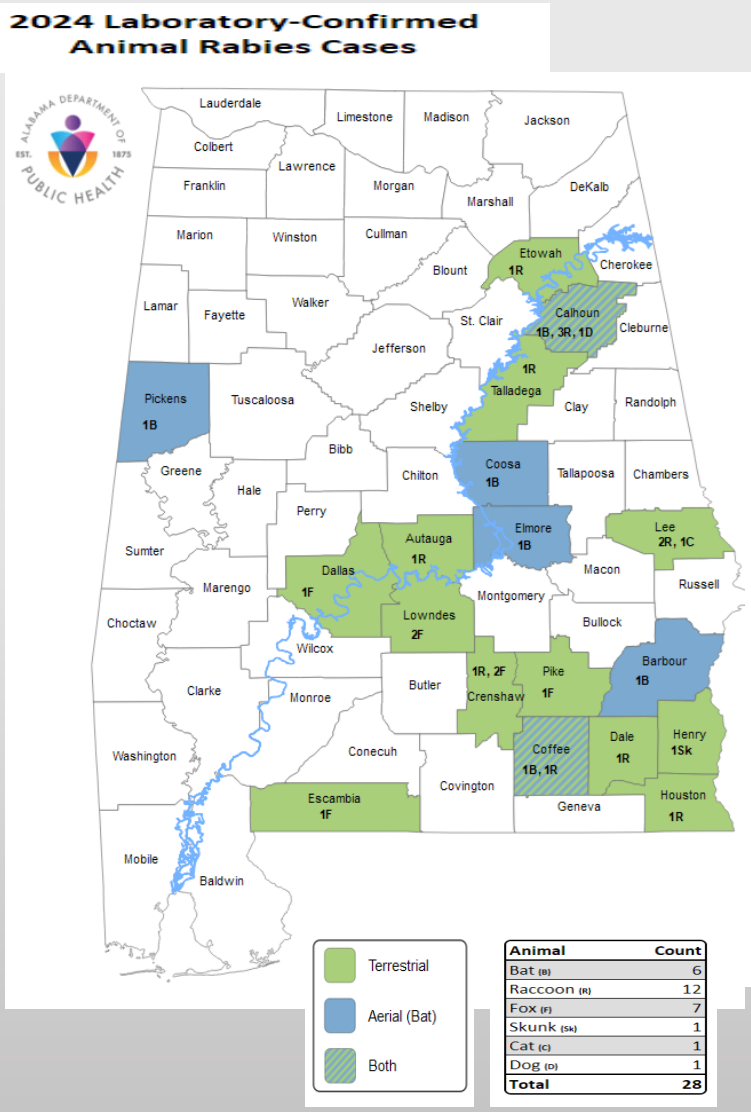
YEAR	Alpaca	Bat	Bobcat	Cat	Chipmunk	Cow	Coyote	Dog	Fox	Goat	Horse	Human	Llama	Mink	Mule	Opossum	Pig	Raccoon	Skunk	Squirrel	Weasel	Total
1950				8		43		152	120								2					325
1951				9		17		263	63	1		2					2					357
1952				19		46		400	69	1												535
1953				18		37		511	160	1	2	1					2					732
1954				14		28		307	106			1					1	1				458
1955				14		27		209	93	1							1		1			346
1956				8		19		268	91													386
1957				14	1			193	33	1								1	1			244
1958				3		3		202	15													223
1959				7		23		193	45			1					1					270
1960				3		9		66	11		1								1			91
1961		2		3		3		39	16									1	1			65
1962				3		2		18	5		1				1					1		31
1963		1		3		3		5	22			1							1			36
1964				1		2		5	24		1								3			36
1965		2		1				2	12										1			18
1966		3			1	1		4	8										5			22
1967		3		2		6		4	26										10	1		52
1968		2				3		2	19										3			29
1969		1		1		5		6	42										3			58
1970		6		2		4		7	29									1				49
1971		4				6		2	47	1								2	1			63
1972		1				4		6	60									5	6			82
1973		2		2		4		4	28									1	10			51
1974		3		2	1	4		3	12									4	19			48
1975		4		2				2	10									4	12			34
1976		5						3	1									6	3			18
1977		2						1	1									5	3		1	13
1978		4		4		1		5						1				30	6	1	1	53
1979		14		1				3	5		1							37	12			73
1980		8		3				1	2									23	19			56
1981		33		4				4	3									52	27			123
1982		66		3		1		2	3									47	24			146
1983		30				1		2	1									42	9			85
1984		38		3				1	1									42	13			98
1985		35		3				3	2	1	2							108	6			160

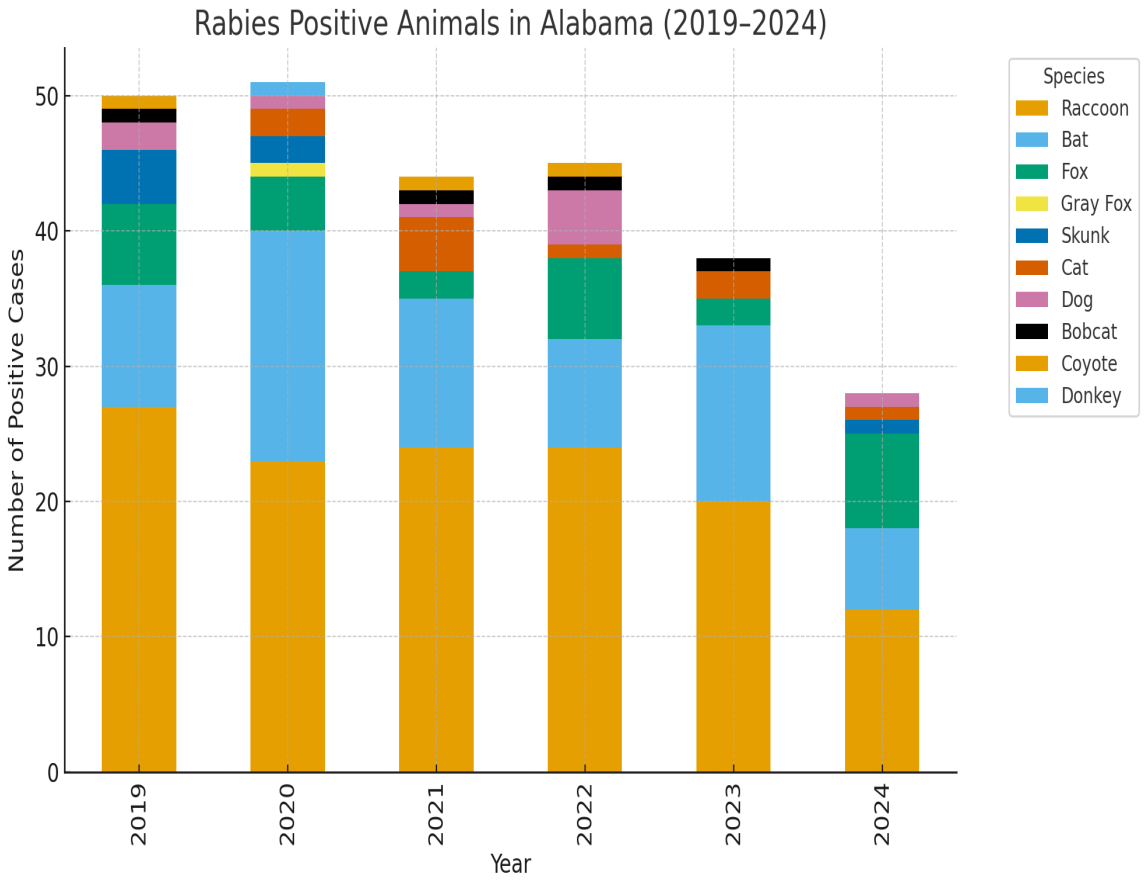
Raccoon Rabies and Bat Rabies Shift

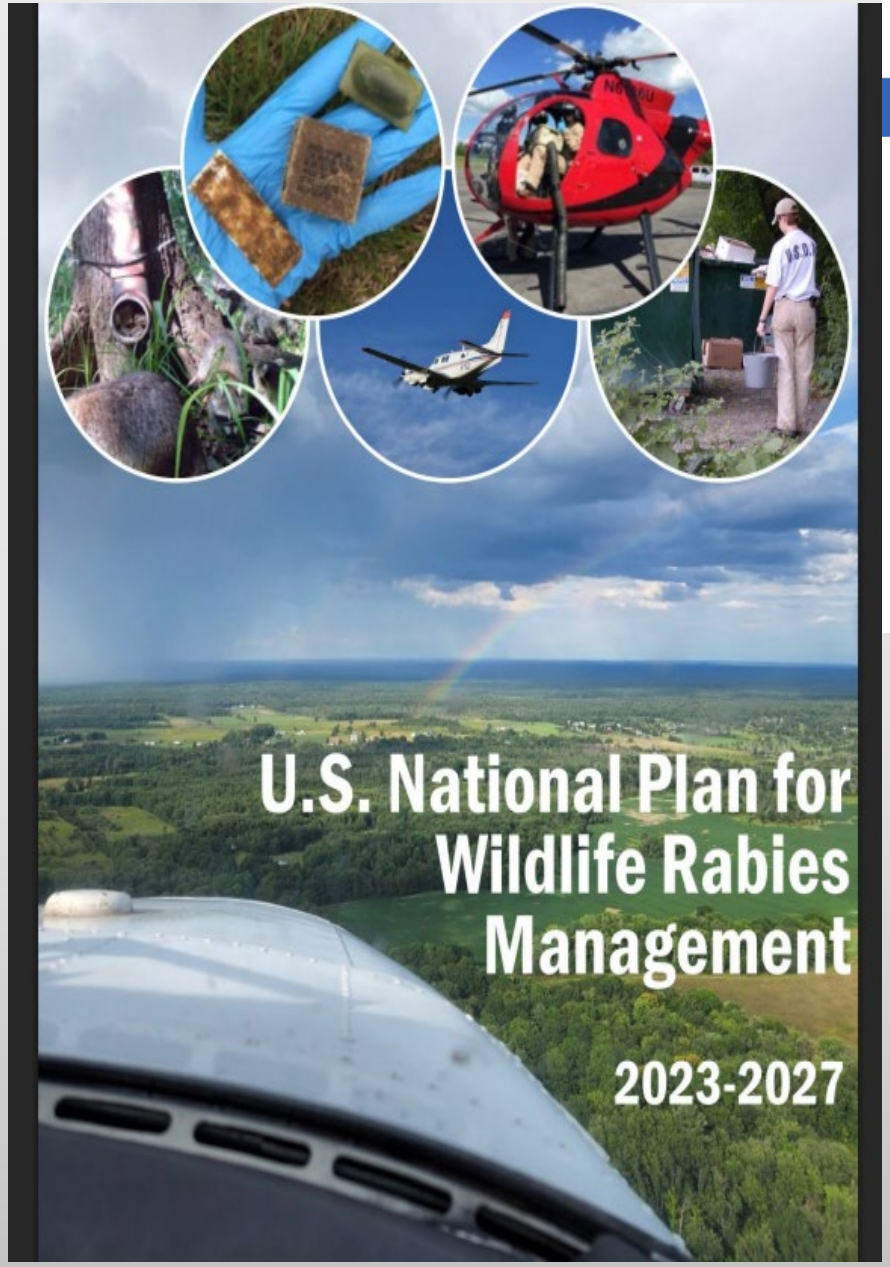
Why do we still require rabies vaccinations in dogs/cats/ferrets?



Epidemiology







National Rabies Management Program Overview

Last Modified: August 01, 2025

Rabies is caused by a virus that infects the central nervous system in mammals. It is almost always transmitted through the bite of a rabid animal. The majority of rabies cases in the United States occur in wildlife including raccoons, skunks, foxes and bats. Rabies is invariably fatal, however, effective vaccines are available to protect people, pets and livestock.

the table below to view ORV distribution summaries and maps (if available) by State.

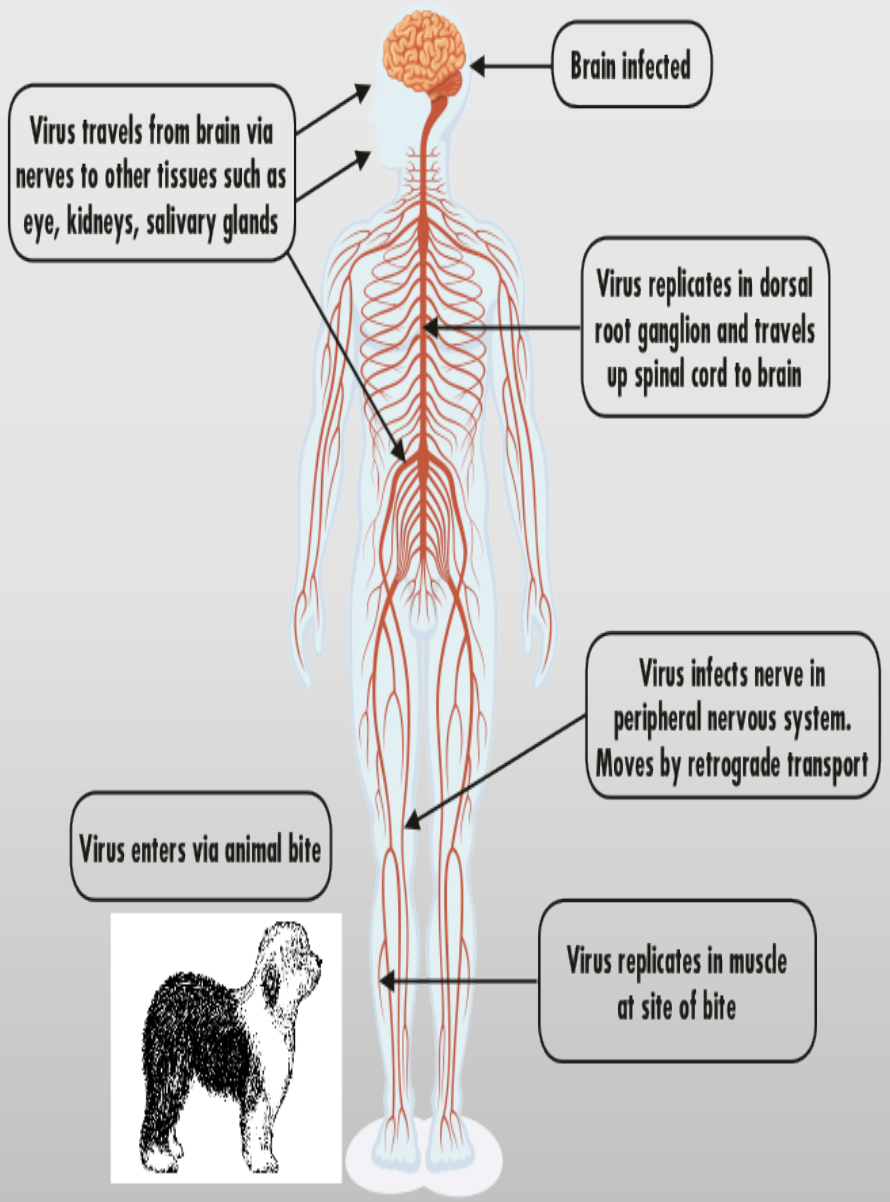
Email APHISWeb@usda.gov to request archived reports (2005-2018).

ORV Distribution by State

CSV Print Search:

fiscal Year	State	Map	Report
2024	NC		View Report
2024	ME		View Report
2024	MA		View Report
2024	GA		View Report
2024	AL		View Report
2024	US		View Report
2023	WV		View Report
2023	VT		View Report

Pathophysiology RABV



Incubation Factors

- Distance of bite from CNS (shorter if closer)
- Severity of wound
- Amount of virus inoculated
- Host immune status

Non-bite exposures

- Scratches
- Inhalation of aerosols
- Contamination of an open lesion, or mucosal contact with infectious materials, such as a lick from a rabid mammal excreting virus in its saliva to a fresh wound, or in direct contact with the nose, mouth, eyes

Virus Stability

- Virus is not very stable outside the body
- Sensitive to desiccation
- Sensitive to heat
- Sensitive to UV light

Rabies Virus Environmental Stability (°F)

Condition / Substrate	Temperature (°F)	Approx. Survival	Notes
Glass or plant leaf	68–70 °F	~24 hours	Virus active even after droplets looked dried
Metal sheet	68–70 °F	~48 hours	Survived longer on metal
Cool, dark substrate	41 °F	Up to 144 hrs (6 days)	Longest survival in cooler temps
With intense sunlight	86 °F + sun	1.5 hours	UV rapidly inactivated
Warm, shaded	86 °F, no sun	~20 hours	Longer survival without direct sun

Rabies Virus Incubation Periods

Host	Typical Range	Reported Extremes	Notes
Humans	1–3 months	5-7 days – 8 years	Median 20–90 days; shorter if bite is closer to CNS, Organ transplants
Dogs	2–3 weeks to 3 months	10 days – 6 months	Not to be confused w/shedding period/10-day quarantine
Cats	2–3 weeks to 3 months	10 days – 6 months	Similar to dogs; often clustered around 1–2 months
Cattle	2–6 weeks	15 days – >6 months	Highly variable; depends on exposure site
Horses	3–6 weeks	Several months	Less common but possible prolonged incubation
Wildlife (bats, foxes, raccoons, etc.)	2 weeks – 3 months	Rarely longer	Difficult to track; field data limited

Clinical Presentation of Rabies in Animals

Species	Key Clinical Signs (Prodromal → Excitative → Paralytic)
Dogs & Cats	Prodromal: anxiety, fever, subtle behavior changes (1-3 days) Furious: aggression, roaming, biting Paralytic: drooling, jaw paralysis Death in ~10 days
Cattle	Prodromal: nervousness, reduced appetite (1-3 days) Paralytic form common Hypersalivation, bellowing, ataxia → recumbency Death
Horses	Prodromal: irritability, anxiety (more difficult to recognize) May mimic colic (rolling, pain) Self-mutilation at bite site Hyperexcitability → paralysis Death
Sheep & Goats	Prodromal: subtle behavior changes Aggression or paralysis Intense pruritus at bite site Death
Wildlife	Prodromal often unnoticed Abnormal behavior Nocturnal animals active by day Loss of fear, aggression Death*

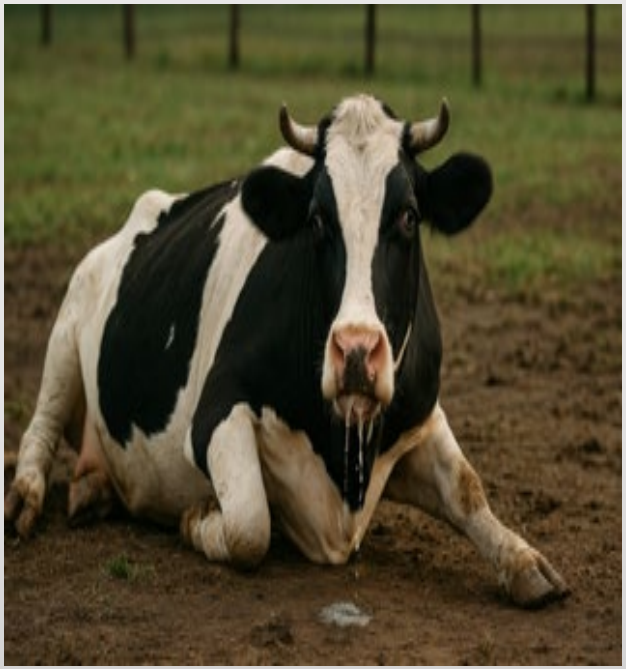
* Bats can have extended incubation periods and evidence of antibodies suggesting capability of clearing infections. This is not currently believed to be a carrier, which would suggest that bats shed the virus after recovery.

Rabies Clinical Signs in Animals

Furious form

- Aggression
- Hypersalivation
- Restlessness

Paralytic form



- Weakness
- Bellowing
- Off feed
- Paralysis
- Subtle signs

Rabies Clinical Signs in Humans

Stage	Time Frame / Nature	Key Signs & Symptoms	Notes / Comments
Incubation Stage	Variable, usually weeks to months (often 1–3 months)	No symptoms Pain, paresthesia, or itching at bite site	Depends on wound site, viral load, distance to CNS, age, immune status
Prodromal Stage	2 to 10 days	Flu-like: fever, headache, malaise, fatigue Tingling or pain at bite site Nausea, vomiting, anorexia Behavioral changes: anxiety, irritability, insomnia	Precedes neurologic symptoms Progresses to encephalitis within ~2 weeks

Human Clinical Presentation

KEY POINTS

- Rabies is an acute disease that typically causes death within four weeks of symptom onset.
- Initial symptoms of rabies are flu-like; advanced cases present with brain dysfunction.
- All patients with rabies present with encephalitis.
- Clinicians who suspect a patient has rabies should consult with their public health department to determine the need and procedures for diagnostic testing.

Pathognomonic features of rabies

Hydrophobia

Aerophobia

Painful spasms when attempting to drink water

Triggered by visual/auditory stimuli (airflow)

100% fatal virus once clinical symptoms appear
Preventable with timely post-exposure prophylaxis (PEP)
Prevention vs Treatment

Human surveillance

Human rabies surveillance in the U.S.

From 2015 to 2024, 17 cases of human rabies were documented, two of which were contracted outside of the United States.

Before the control and elimination of canine rabies, most human cases were due to rabid dogs. Today, hum cases in the US are rare, usually associated with bat RABV infections or due to imported cases exposed abro [526]. In 2019 and 2020, no human cases of rabies were reported, in contrast to the five deaths in 2021 [52 Thereafter, no human rabies deaths were reported in 2022 or 2023 [242]. Yet, in 2024, 5 cases were reported: suspected human rabies death in the Panhandle region of NE; a CA teacher bitten by a bat in her classroom; elderly woman in MN exposed to a bat; a person in KY believed to be exposed in the Caribbean; and an individu who died during December, serving as an organ donor for a transplant recipient in Michigan, who subsequen succumbed in 2025 [528,529,530,531,532]. Such a veritable epidemiological footnote reveals the biology of ra events in a highly developed, dog rabies-free country and the unpredictability of when, where, how, or why lyssavirus infection will present.

Highlights

- >100,000 PEP annually
- Bats
- Organ transplants
- Travel-associated cases

Human Cases by Year In U.S. and Exposure Source (2015-2025)

Year	State	Exposure Source
2015	Wyoming	Bat (silver-haired)
2017	Virginia	Dog (India)
2017	—	Bat
2018	Florida	Bat
2018	Utah	Bat
2018	Delaware	Unknown
2021	Minnesota	Bat
2021	Idaho, Illinois, Texas	Bats
2021	—	Dog (travel)
2024	Minnesota	Bat
2024	California	Bat
2024	Kentucky	Unknown/travel/Carribean
2025	Michigan	Organ transplant

Objective 2

Understanding Reporting Procedures

- Legalities
- Forms
- Points of Contact

Role of Public Health

Public Health Authority

- Effective April 2024, the Alabama Notifiable Disease Rules, Chapter 420-4-1 was updated and specifies the diseases and conditions requiring notification, and the time frame and methods for notification.
- ADPH is a public health authority as defined by the Health Insurance Portability and Accountability Act (HIPAA), Standards for Privacy of Individually Identifiable Health Information; Final Rule (Privacy Rule) [45 CFR §164.501] to collect or receive protected health information (PHI) for the purpose of surveillance, investigations, and interventions of notifiable diseases, without authorization of the patient. For more information, please see ADPH General Counsel HIPPA Letter and CDC's MMWR HIPAA Privacy Rule and Public H

Reportable Diseases/Conditions in Alabama

Who: Healthcare Providers (and other required reporters excluding laboratories)
When: Effective 4/14/2024
How: via the online REPORT Card redcap.link/REPORT2AL (if not a 4-hour condition) or via electronic clinical reports (eCR) directly from the electronic health record.
If 4-hour condition, contact: Infectious Diseases & Outbreaks Division 334-206-5971 or 1-800-338-8374 or Division of Immunization: 334-206-5023 or 1-800-469-4599 (Polio, paralytic)

What information is to be reported?

- the name of the disease or health condition
- the name, date of birth, sex, ethnicity, race, address, and phone number(s) of the person having said disease or health condition
- date of laboratory result and/or date of diagnosis of said disease or health condition
- name, phone number, and the facility affiliated with the reporter

within 4 hours of clinical suspicion | within 24 hours of presumptive diagnosis | within 3 days of diagnosis | within 30 days of diagnosis

- Cases of potential public health importance
- Cases related to nuclear, biological, or chemical terroristic agents
- Outbreaks of any kind
- Acute flaccid myelitis
- Anaplasmosis
- Animal bites
- Anthrax
- Arboviral disease
- Babesiosis
- Birth defects
- Botulism
- Brucellosis
- Campylobacteriosis
- Chancroid
- *Chlamydia trachomatis*
- Cholera
- Coccidioidomycosis
- COVID-19 infection in congregate living facilities
- Cryptosporidiosis
- Cyclosporiasis
- Dengue
- Diphtheria
- *E. coli*, shiga toxin producing (STEC)
- Ehrlichiosis
- Gonorrhea
- *Haemophilus influenzae*, invasive disease[1]
- Hansen's disease (Leprosy)
- Hemolytic uremic syndrome (HUS), post-diarrheal
- Hepatitis A, including ALT
- Hepatitis B, C, and D (Acute only and with associated ALTs)
- HIV infection (including asymptomatic infection)
- Influenza A, novel virus infection (i.e., potential new strain)
- Influenza-associated pediatric deaths
- Lead, all point-of-care blood results
- Legionellosis
- Listeriosis[1]
- Lyme disease
- Malaria
- Measles (rubeola)
- Meningococcal disease (*Neisseria meningitidis*)[1]
- Mumps
- Perinatal hepatitis B
- Perinatal hepatitis C
- Perinatal HIV Exposure (<18 months of age)
- Pertussis
- Plague
- Polio infection, nonparalytic
- Polio, paralytic
- Primary amebic meningoencephalitis
- Q Fever
- Rabies, human and animal
- Rubella
- Salmonellosis
- Severe Acute Respiratory Syndrome-associated Coronavirus (SARS-CoV) disease
- Shigellosis
- Smallpox
- Spotted Fever Rickettsiosis
- *Staphylococcus aureus*, Vancomycin-intermediate (VISA) and Vancomycin-resistant (VRSA)
- *Streptococcus pneumoniae*, invasive disease[1]
- Syphilis
- Tetanus
- Trichinellosis (Trichinosis)
- Tuberculosis disease (active)
- Tuberculosis infection (latent)
- Tularemia
- Typhoid fever
- Varicella
- Vibriosis
- Viral hemorrhagic fever
- Yellow fever
- Zika virus

[1]Detection of organism from a normally sterile body site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid)

DETECT | TEST | REPORT | ALABAMA PUBLIC HEALTH

Rabies, human and animal

within 24 hours of presumptive diagnosis

- Assist with risk assessment
- Animal quarantine/testing coordination
- Guidance on unusual exposures (e.g., organ transplant, aerosol)
- Legal reporting requirements

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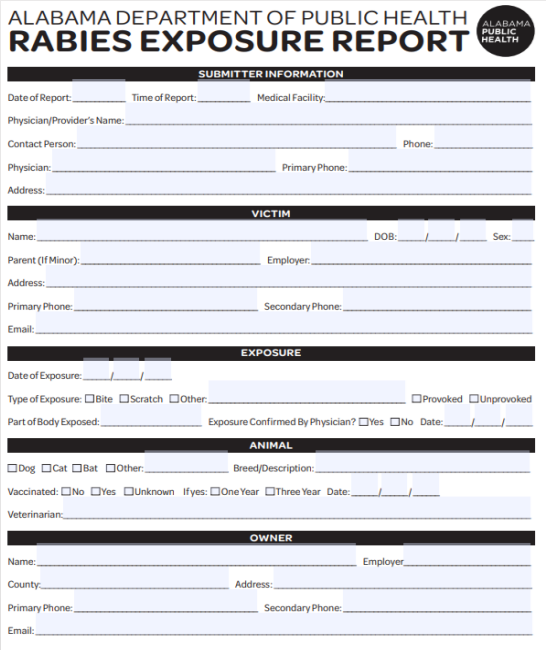
Exposure Reporting Forms/POC



ALABAMA DEPARTMENT OF PUBLIC HEALTH

RABIES EXPOSURE REPORT

SUBMITTER INFORMATION

Date of Report: _____ Time of Report: _____ Medical Facility: _____

Physician/Provider's Name: _____

Contact Person: _____ Phone: _____

Physician: _____ Primary Phone: _____

Address: _____

VICTIM

Name: _____ DOB: ____/____/____ Sex: ____

Parent (If Minor): _____ Employer: _____

Address: _____

Primary Phone: _____ Secondary Phone: _____

Email: _____

EXPOSURE

Date of Exposure: ____/____/____

Type of Exposure: ☐Bite ☐Scratch ☐Other: _____ ☐Provoked ☐Unprovoked

Part of Body Exposed: _____ Exposure Confirmed By Physician? ☐Yes ☐No Date: ____/____/____

ANIMAL

☐Dog ☐Cat ☐Bat ☐Other: _____ Breed/Description: _____

Vaccinated: ☐No ☐Yes ☐Unknown If yes: ☐One Year ☐Three Year Date: ____/____/____

Veterinarian: _____

OWNER

Name: _____ Employer: _____

County: _____ Address: _____

Primary Phone: _____ Secondary Phone: _____

Email: _____

ADDRESS & TELEPHONE ROSTER OF PUBLIC HEALTH DISTRICTS & COUNTY HEALTH DEPARTMENTS

EAST CENTRAL DISTRICT

COUNTY/NAME/TITLE	MAILING ADDRESS	PHONE	FAX	STREET ADDRESS
Olusunmisola Oyesiku, M.D., M.Sc, DABFM, FAAFP District Medical Officer	3060 Mobile Hwy., Montgomery 36108	334-451-2011	293-6410	3060 Mobile Hwy., Montgomery 36108
Tim Hatch, District Administrator	3060 Mobile Hwy., Montgomery 36108	334-293-6400	293-6402	3060 Mobile Hwy., Montgomery 36108
James Hardin, Assistant District Administrator	1801 Corporate Dr., Opelika 36801	334-745-5765	745-9830	1801 Corporate Dr., Opelika 36801
AUTAUGA				
Tim Hatch, District Administrator	219 N. Court St., Prattville 36067	334-361-3743	361-3718	219 N. Court St., Prattville 36067
Home Health Office	219 N. Court St., Prattville 36067	334-358-2002	361-3806	219 N. Court St., Prattville 36067
BULLOCK				
Tim Hatch, District Administrator	674 Hicks Industrial Blvd., Union Springs 36089	334-738-3030	738-3008	674 Hicks Industrial Blvd., Union Springs 36089
CHAMBERS				
James Hardin, Assistant District Administrator	5 North Medical Park Dr., Valley 36854	334-756-0758	756-0765	5 North Medical Park Dr., Valley 36854
COOSA				
Tim Hatch, District Administrator	9518-C US Hwy. 231 N, Rockford, AL 35136	256-377-1068	377-1067	9518-C US Hwy. 231 N, Rockford, AL 35136
ELMORE				
Tim Hatch, District Administrator	6501 Hwy. 231, Wetumpka 36092	334-567-1171	567-1186	6501 Hwy. 231, Wetumpka 36092
LEE				
James Hardin, Assistant District Administrator	1801 Corporate Dr., Opelika 36801	334-745-5765	745-9830	1801 Corporate Dr., Opelika 36801
Home Health Office	1801 Corporate Dr., Opelika 36801	334-737-2923	745-6843	1801 Corporate Dr., Opelika 36801
LOWNDES				
Tim Hatch, District Administrator	507 E. Tuskeena St., Hayneville 36040	334-548-2564	548-2566	507 E. Tuskeena St., Hayneville 36040
MACON				
Tim Hatch, District Administrator	812 Hospital Rd., Tuskegee 36083	334-727-1800	727-7100	812 Hospital Rd., Tuskegee 36083
MONTGOMERY				
Kevin Hicks, County Administrator	3060 Mobile Hwy., Montgomery 36108	334-293-6400	293-6410	3060 Mobile Hwy., Montgomery 36108
Environmental Office	3060 Mobile Hwy., Montgomery 36108	334-293-6452	293-6410	3060 Mobile Hwy., Montgomery 36108

Physician and Provider Resources

- The Rabies Prophylaxis Flyer can help determine what rabies treatment is recommended.
- To order vaccine, physicians can call Sanofi Pasteur at 1-800-822-2463 and complete the request form.
- To order HRIG, physicians can call most major distributors, Sanofi Pasteur at 1-800-822-2463 or Grifols and complete the request form.
- To report an exposure, complete the ADPH Rabies Exposure Report and fax the report to the local health department.
- Use of a Reduced (4-Dose) Vaccine Schedule for Postexposure Prophylaxis to Prevent Human Rabies, 2010
- More information on the Rabies Titer can be found on the Kansas Rabies Lab Website.
- For a quick and easy reference to basic rabies information and to determine if you need post-exposure prophylaxis, review or print the uploaded Rabies Flyer with Flow Charts.
- For rabies vaccination exemption, fill out the rabies vaccination exemption form and email the filled form to epidemiology@adph.state.al.us.

Objective 3

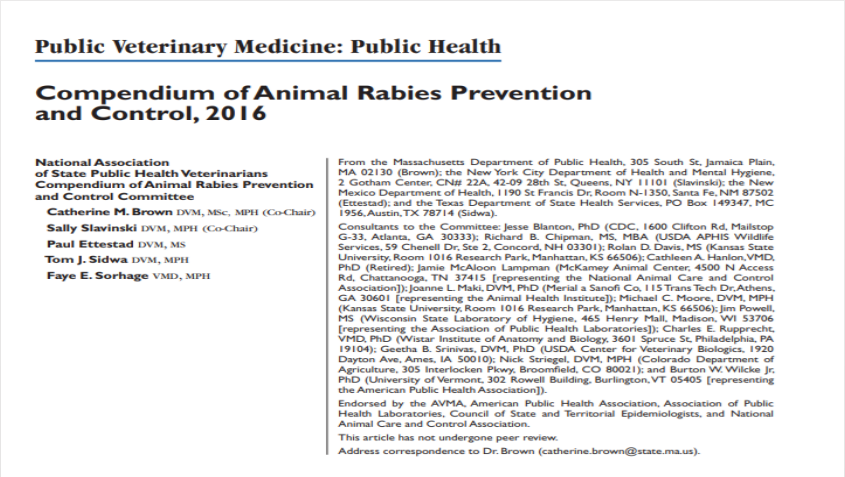
Understanding quarantine measures and testing protocols to assess the need for PEP

- ADPH response
- Quarantine orders
- Quarantine vs Shedding Periods
- Testing methodology

ADPH Response

- Bureau of Environmental Services (Investigation/quarantine orders/follow-up w/victim)
- County/District/State
- Bureau of Clinical Laboratories (Testing 24 hours M-F) Prattville and Mobile
- State Public Health Veterinarian
- Infectious Diseases and Outbreaks(ID&O)
- State Medical Officer

ADPH Response (Bureau Environmental Services)



Public Veterinary Medicine: Public Health

Compendium of Animal Rabies Prevention and Control, 2016

National Association of State Public Health Veterinarians Compendium of Animal Rabies Prevention and Control Committee

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Endorsed by the AVMA, American Public Health Association, Association of Public Health Laboratories, Council of State and Territorial Epidemiologists, and National Animal Care and Control Association.

This article has not undergone peer review.

Address correspondence to Dr. Brown (catherine.brown@state.ma.us).

- Investigation- County level (CHD)

Dog Bite database

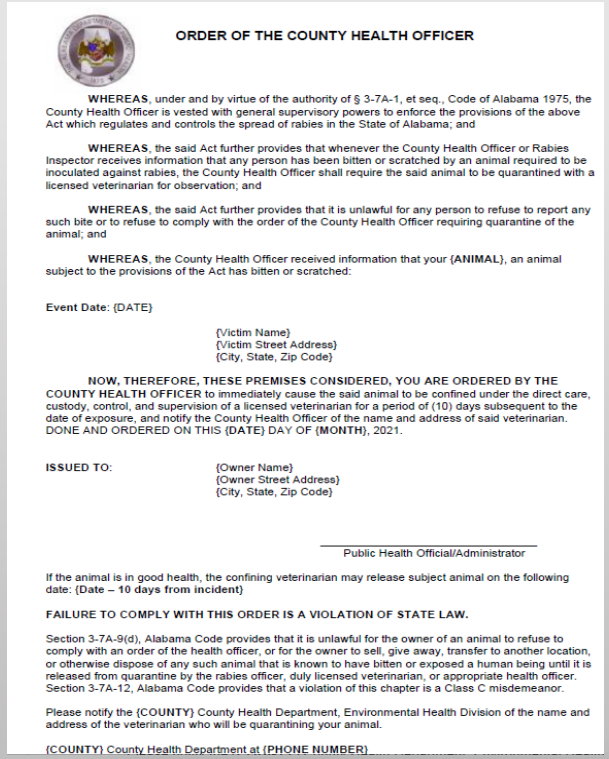
Issue quarantine notices

Direct victims for medical care (Rule for doctor confirming)

Animal owner compliance

Animal exposures (e.g. Dog attacked by a rabid raccoon)

- Quarantine order
- Legal order/failure to comply



ORDER OF THE COUNTY HEALTH OFFICER

WHEREAS, under and by virtue of the authority of § 3-7A-1, et seq., Code of Alabama 1975, the County Health Officer is vested with general supervisory powers to enforce the provisions of the above Act which regulates and controls the spread of rabies in the State of Alabama; and

WHEREAS, the said Act further provides that whenever the County Health Officer or Rabies Inspector receives information that any person has been bitten or scratched by an animal required to be inoculated against rabies, the County Health Officer shall require the said animal to be quarantined with a licensed veterinarian for observation; and

WHEREAS, the said Act further provides that it is unlawful for any person to refuse to report any such bite or to refuse to comply with the order of the County Health Officer requiring quarantine of the animal; and

WHEREAS, the County Health Officer received information that your **{ANIMAL}**, an animal subject to the provisions of the Act has bitten or scratched:

Event Date: {DATE}

{Victim Name}
{Victim Street Address}
{City, State, Zip Code}

NOW, THEREFORE, THESE PREMISES CONSIDERED, YOU ARE ORDERED BY THE COUNTY HEALTH OFFICER to immediately cause the said animal to be confined under the direct care, custody, control, and supervision of a licensed veterinarian for a period of (10) days subsequent to the date of exposure, and notify the County Health Officer of the name and address of said veterinarian. DONE AND ORDERED ON THIS **{DATE}** DAY OF **{MONTH}**, 2021.

ISSUED TO:

{Owner Name}
{Owner Street Address}
{City, State, Zip Code}

Public Health Official/Administrator

If the animal is in good health, the confining veterinarian may release subject animal on the following date: **{Date – 10 days from incident}**

FAILURE TO COMPLY WITH THIS ORDER IS A VIOLATION OF STATE LAW.

Section 3-7A-9(d), Alabama Code provides that it is unlawful for the owner of an animal to refuse to comply with an order of the health officer, or for the owner to sell, give away, transfer to another location, or otherwise dispose of any such animal that is known to have bitten or exposed a human being until it is released from quarantine by the rabies officer, duly licensed veterinarian, or appropriate health officer. Section 3-7A-12, Alabama Code provides that a violation of this chapter is a Class C misdemeanor.

Please notify the **{COUNTY}** County Health Department, Environmental Health Division of the name and address of the veterinarian who will be quarantining your animal.

{COUNTY} County Health Department at **{PHONE NUMBER}**

a. The animal is currently vaccinated against rabies.

b. The exposure was a result of a provoked incident. A provoked incident occurs when a person creates a situation such that an expected reaction of the animal is to bite or attack (e.g, feeding, grabbing, threatening, etc). An unprovoked incident occurs when an animal bites or attacks for no apparent reason.

c. The owner or person responsible for the animal agrees to have the animal examined by a licensed veterinarian 10 days following the exposure.

d. The animal is kept in an enclosed area (e.g., house, pen) in a designated confinement area (e.g., one room of a house or isolated kennel facility) to avoid interaction with people and animals other than a single caretaker.

e. If during the period of home quarantine the animal dies or exhibits clinical signs suggestive of rabies as determined by a licensed veterinarian, the owner or person responsible for the animal shall immediately contact the county health department. The health officer shall notify the person exposed and his/her physician so the physician can determine if post-exposure treatment is indicated.

f. The owner is responsible for securing the animal during the period of home quarantine. Should the animal expose a human or animal and/or if the animal escapes or disappears from home quarantine, the owner or person responsible for the animal shall immediately notify the county health department.

Your local county health department may have additional guidelines.

IF YOUR ANIMAL IS SHOWING NO CLINICAL SIGNS OF RABIES AT THE END OF THE 10-DAY QUARANTINE, IT WILL BE RELEASED TO YOU PROVIDED IT IS CURRENT ON RABIES VACCINE.

The 10-day confinement and observation period for dogs, cats, and ferrets that bite humans avoids the need to destroy the animal in order to test for the rabies virus.

For additional information, contact:
Alabama Department of Public Health
Bureau of Environmental Services
RSA Tower, Suite 1250, 201 Monroe Street
Montgomery, AL 36130

P. 334.206.5375
F. 334.206.5788

For more information on rabies, contact
Dee W. Jones, DVM
1.800.338.8374
Dee.Jones@adph.state.al.us

ADPH.ORG

ALABAMA PUBLIC HEALTH

ALABAMA DEPARTMENT OF PUBLIC HEALTH

RABIES PROGRAM
HOME QUARANTINE GUIDELINES

ADPH.ORG

ALABAMA PUBLIC HEALTH

Under state law, you are being required to quarantine your animal for 10 days. The quarantine period is necessary for observation of any clinical signs of rabies infection in your animal.

The Code of Alabama 1975, Section 3-7A-9 requires any dog, cat or ferret that has exposed a person to be quarantined under the supervision of a licensed veterinarian for a period of ten (10) days following the date of the incident. Exposure is defined as suspected or confirmed contact of saliva with a break in the skin or with any mucous membrane (e.g. eyes, mouth, nose, etc). Home quarantine may be permitted at the discretion of the health officer only if all of conditions (a-f) are met:

RABIES QUARANTINE FACT SHEET

My animal only scratched someone. Why do I have to quarantine?
Rabies is a viral infection transmitted from the saliva of an infected animal. The spread of rabies is usually through bite wounds, but may also occur through scratches or any salivary contact with a mucous membrane. Scratches are considered a risk because dogs, cats or ferrets may have licked their paws immeditately before the scratch.

My pet appears healthy. Why do I have to quarantine?
Behaviorial changes that could cause an animal to bite can be the first signs of rabies infections. Other apparent clinical signs of rabies infection may not develop for a few days.

Why is the quarantine 10 days?
As the rabies virus multiplies in the brain, it travels to the salivary glands of the animal. At this point, your pet is able to spread the disease. Research has shown that once the rabies virus is in the saliva of your pet, it will show signs of rabies or die within 10 days. Therefore if your animal remains entirely well for 10 days, the rabies virus was not in the saliva at the time of the bite or scratch. There would be no risk to the exposed party.

Why must my pet be tied, kenneled, or kept indoors?
Rabies in humans is 100% preventable if appropriate preventative treatment is given before the virus invades the central nervous system. The secure confinement must prevent escape and ensures that the animal can be readily observed so that any changes can be reported immediately to the health authorities.

My animal is vaccinated. Why do I have to quarantine?
Although a fully-vaccinated dog, cat, or ferret is unlikely to become infected with rabies, rare cases have been reported.

My cat is indoors all the time. Why do I have to vaccinate?
If your cat were to get loose, it may be exposed to rabies by another animal. Occasionally bats infected with rabies can make their way into the living spaces of houses. Also, state law requires that dogs, cats, and ferrets be vaccinated. In the United States, rabid cats have outnumbered rabid dogs in 8 out of the last 10 years. Additionally, a currently vaccinated animal may be eligible for home-quarantine should it bite, scratch, or otherwise potentially expose someone thus, saving the animal owner the expense of veterinary confinement.

What will the veterinarian exam involve?
There is no single symptom for rabies. Your veterinarian will look for many different signs, including bad behavior or neurological changes. **A CHANGE IN "EXPECTED" BEHAVIOR IS THE MOST CONSISTENT SIGN OF RABIES.**

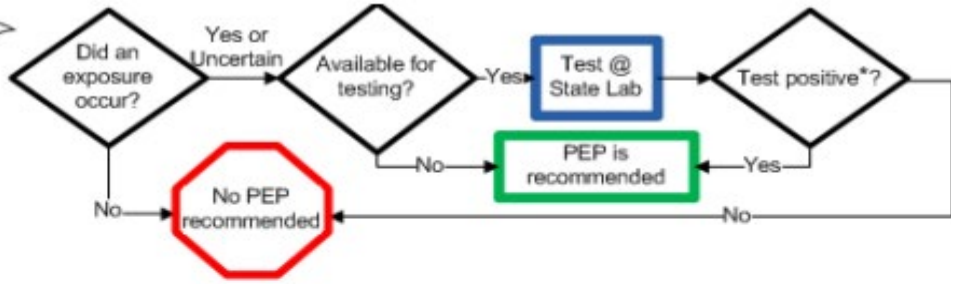
For Additional Information contact your local County Health Department

Which animals can be quarantine?

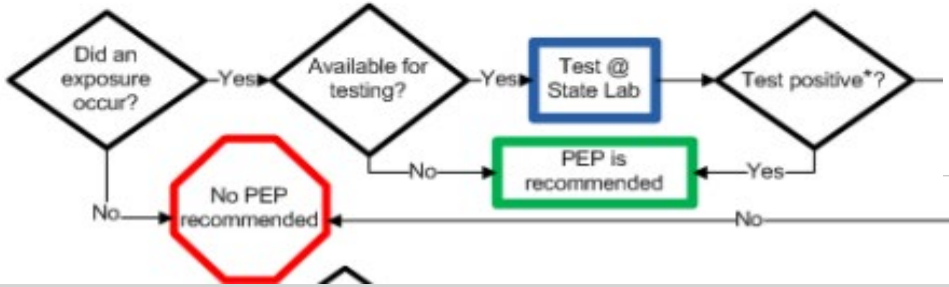
Need for vaccination
Home quarantine vs veterinary quarantine

Flowcharts For Determining Exposure/PEP

Bat



Raccoon and other wild carnivore



Definitions

Exposure is any contact with saliva or brain/nervous tissue through open cuts in the skin, scratches, or mucous membrane (mouth or eyes).

PEP is postexposure prophylaxis or treatment, which usually includes HRIG and 4-doses of rabies vaccine.

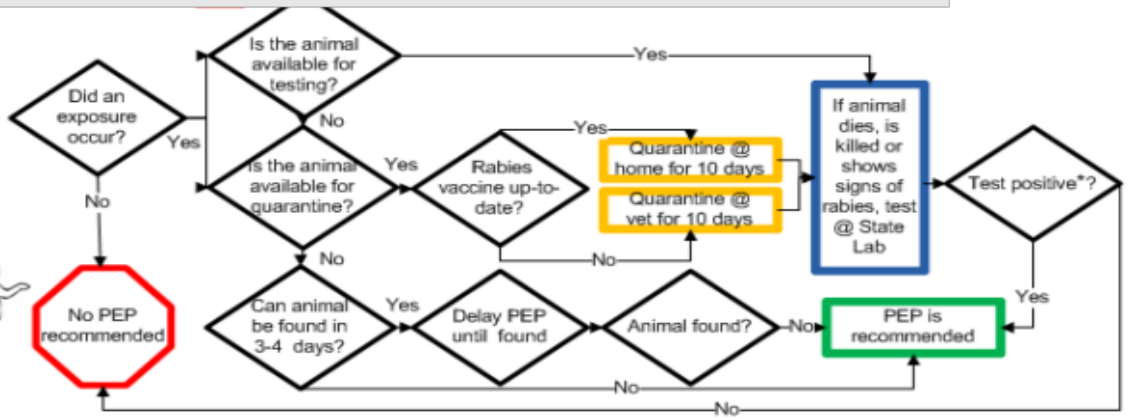
Provoked is an intentional act that causes the animal to react in a hostile manner.

Quarantine is separating suspected animal from other animals and people.

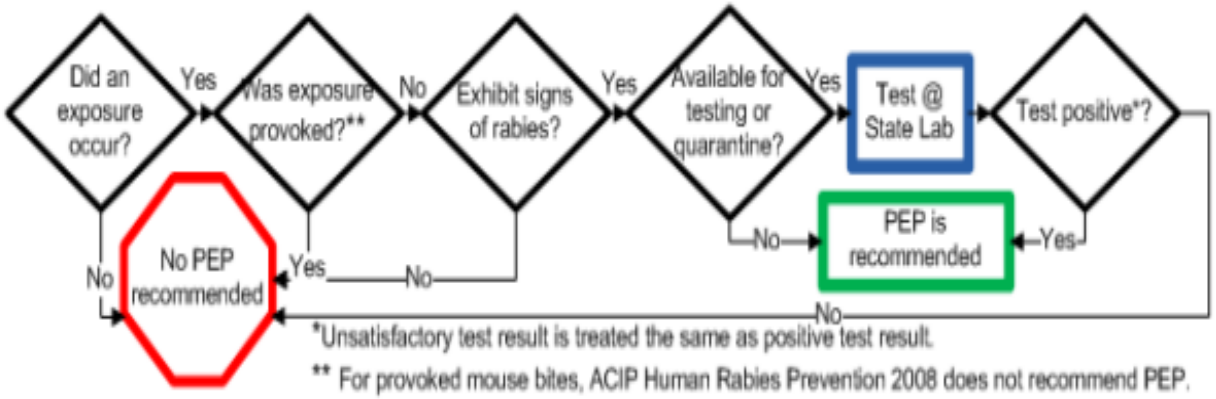
Signs of rabies include obvious changes in normal behavior, like aggression, attack without reason, foaming at mouth, no interest in food or water, stagger, tired, or paralysis. In wild animals, they may act very tame.

Uncertain exposure can occur with bats because they have small teeth and may leave marks that are not easily seen.

Flowcharts For Determining Exposure/PEP



Squirrel, rabbit & rodent



*Unsatisfactory test result is treated the same as positive test result.

** For provoked mouse bites, ACIP Human Rabies Prevention 2008 does not recommend PEP.

Definitions

Exposure is any contact with saliva or brain/nervous tissue through open cuts in the skin, scratches, or mucous membrane (mouth or eyes).

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Diagnostics

Bureau of Clinical Laboratories

Welcome to the Bureau of Clinical Laboratories (BCL), part of the Alabama Department of Public Health.

Our facility houses nine divisions and about 110 employees. The Bureau also includes a regional laboratory located in Mobile. The lab receives approximately one million specimens per year and performs more than two million laboratory tests in support of our 67 county health departments around the state, as well as private citizens and private health care providers.

Vision: To lead the state, through both laboratory science and service, in improving and protecting the public's health from current and future diseases and disasters.

Mission: The mission of the BCL is to give laboratory support for public health programs and policy decisions that protect and promote the health of the citizens of Alabama.

Mobile Laboratory

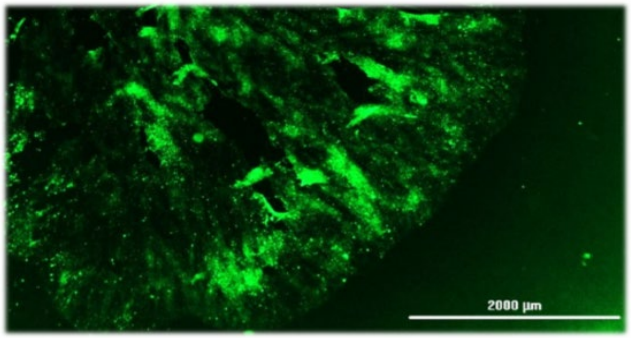
Welcome to the Mobile Division Laboratory, a Division of the Bureau of Clinical Laboratories (BCL), Alabama Department of Public Health (ADPH). We are located at 757 Museum Drive, Mobile, Alabama 36608.

Our laboratory staff lends support to several public health programs through analytical services and instruction to county health departments, environmental agency partners, private citizens, and healthcare providers.

The Mobile facility houses two branches (Clinical Branch and Environmental Branch), each organized into testing sections. The Clinical Branch performs testing of maternity patients and sexually transmitted diseases (STD) specimens using the same methods and processes as the STD Division in Prattville. In addition to testing for drinking water and rabies performed at the Prattville Laboratory, the Environmental Branch works with the Alabama Department of Environmental Management (ADEM) to perform analysis of public recreational water monitoring sites along the Gulf of Mexico. Shellfish growing waters and products for the market are tested in coordination with the ADPH Seafood Branch. Both branches function with other counterparts to advance the health of the citizens of Alabama.

Directions to the Mobile Division Laboratory

Figure 7. Positive result of a direct fluorescent antibody test performed upon a brain impression of a naturally infected rabid cat (Courtesy R. Davis, Kansas State Veterinary Diagnostic Laboratory, Manhattan, KS, USA).



Diagnostics

Rabies	RFLT Rabies requisition form LIMS RABIES	**No live animals are accepted.** Small animal • Less than 15 lbs. and 19 inches long • Dead, whole animal Medium animal • More than 15 lbs. and 19 inches long • Decapitated with skull intact. Large animal • Bovine, equine, etc. • Send to a veterinary lab for brain removal	• Do not club or shoot animal in the head. • Specimens that are decomposed or infested with fleas or maggots will not be accepted. • Specimens in formalin not accepted. • Animals needing other tests should be sent to a veterinary diagnostic lab first.	• Shipment: Frozen cold packs or ice, double bagged and in a leakproof container, 2-37°C • Delayed shipment: 36 - 48 hours Refrigerate and ship on frozen cold packs at 2-8°C. • If shipment cannot occur within 4 days of collection, freeze at ≤ -20°C and ship on dry ice at ≤ -20°C. **Label outside package "Rabies Specimen"**	DFA	N/A	1-2 days	All providers & private citizens	Microbiology Prattville, Mobile

- Post-mortem: Direct Fluorescent Antibody (DFA) on animal brain tissue

- Required samples
- Shipping guidelines
- Overnight courier from CHD
- Results the next day
- ALNBS
- Livestock (cows, hogs, horses)- State veterinary diagnostic lab

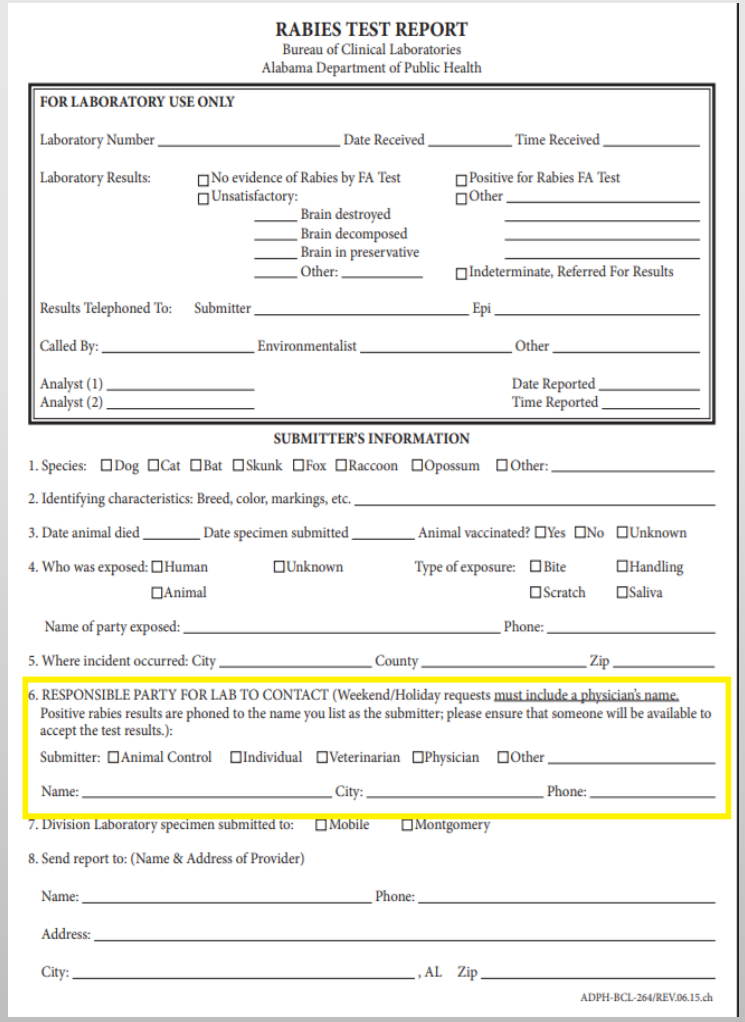
If you are submitting only the brain of an animal, be sure to remove and submit the **entire brain. Reliable rabies diagnosis requires full cross-sections of the brainstem and cerebellum. Cross-sections from both hippocampi may be substituted for cerebellum when the latter is unavailable.** Dorsal (figure 1) and ventral (figure 2) views of gross brain anatomy are provided as a starting reference. Brain extraction should only be performed by veterinary staff who have completed a review of a neuro-anatomy reference or already have detailed knowledge of the gross anatomy of the brain.

Additional Testing Methodologies

Method	Type	Specimen	Notes / Application
Direct Fluorescent Antibody (DFA)	Antigen detection	Brain tissue (post-mortem)	Gold standard; CDC reference test
Direct Rapid Immunohistochemical Test (dRIT)	Antigen detection	Brain tissue (post-mortem)	Field-deployable; light microscopy
RT-PCR / qRT-PCR	RNA detection	Brain, saliva, CSF, skin biopsies	Sensitive; antemortem use; supports sequencing
Viral isolation (cell culture / mouse inoculation)	Virus isolation	Brain, saliva	Rarely used; slow; requires BSL-3
Serology (RFFIT, FAVN, ELISA)	Antibody detection	Serum, CSF	For vaccine response / antemortem support; not diagnostic alone
Histopathology (Negri bodies)	Microscopy	Brain tissue	Historic method; low sensitivity; not recommended alone

Submission Forms

Before testing



RABIES TEST REPORT
Bureau of Clinical Laboratories
Alabama Department of Public Health

FOR LABORATORY USE ONLY

Laboratory Number _____ Date Received _____ Time Received _____

Laboratory Results: ☐ No evidence of Rabies by FA Test ☐ Positive for Rabies FA Test
☐ Unsatisfactory: ☐ Other _____
_____ Brain destroyed
_____ Brain decomposed
_____ Brain in preservative
_____ Other: _____ ☐ Indeterminate, Referred For Results

Results Telephoned To: Submitter _____ Epi _____

Called By: _____ Environmentalist _____ Other _____

Analyst (1) _____ Date Reported _____
Analyst (2) _____ Time Reported _____

SUBMITTER'S INFORMATION

1. Species: ☐ Dog ☐ Cat ☐ Bat ☐ Skunk ☐ Fox ☐ Raccoon ☐ Opossum ☐ Other: _____

2. Identifying characteristics: Breed, color, markings, etc. _____

3. Date animal died _____ Date specimen submitted _____ Animal vaccinated? ☐ Yes ☐ No ☐ Unknown

4. Who was exposed: ☐ Human ☐ Unknown Type of exposure: ☐ Bite ☐ Handling
☐ Animal ☐ Scratch ☐ Saliva

Name of party exposed: _____ Phone: _____

5. Where incident occurred: City _____ County _____ Zip _____

6. RESPONSIBLE PARTY FOR LAB TO CONTACT (Weekend/Holiday requests must include a physician's name. Positive rabies results are phoned to the name you list as the submitter; please ensure that someone will be available to accept the test results.):

Submitter: ☐ Animal Control ☐ Individual ☐ Veterinarian ☐ Physician ☐ Other _____

Name: _____ City: _____ Phone: _____

7. Division Laboratory specimen submitted to: ☐ Mobile ☐ Montgomery

8. Send report to: (Name & Address of Provider)

Name: _____ Phone: _____

Address: _____

City: _____, AL Zip _____

ADPH-BCL-264/REV.06.15.ch

After testing

BCL notifications following testing:

- *All* POSITIVE cases by phone and email to SPHV, CHD, PERSON EXPOSED and submitter.

- *All* UNSATISFACTORY* tests by phone and email to SPHV, CHD, PERSON Exposed, and submitter.

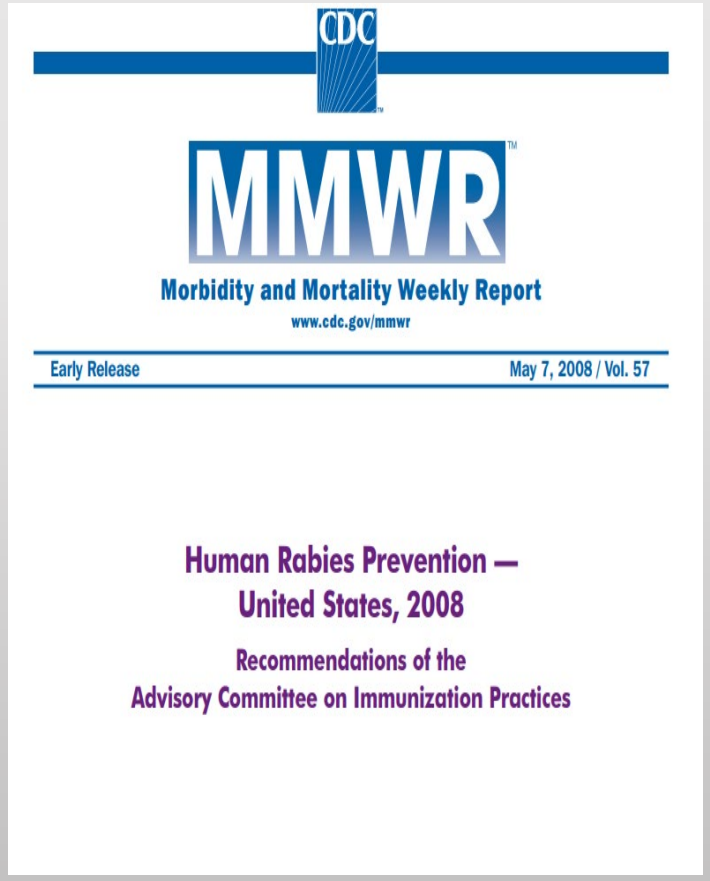
Objective 4

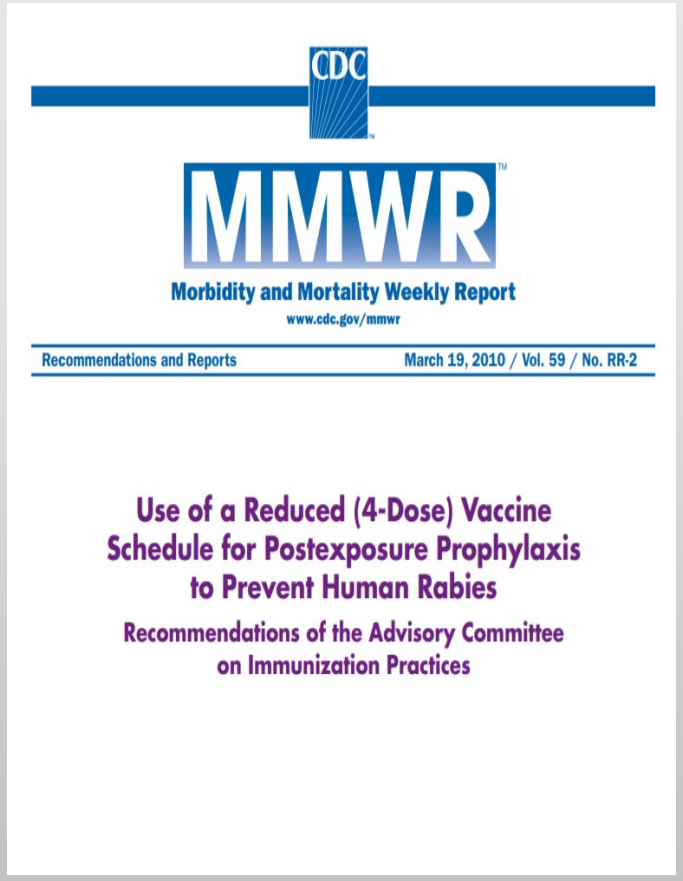
Understanding PEP Guidelines

- CDC/ACIP Guidelines
- Understanding stepwise approach following a potential exposure (wound care, HRIG, and vaccine
- Managing previously vaccinated patients
- Apply protocol to common clinical scenarios

Guidelines

- *Human rabies prevention---United States 2008*





- Horse in Coffee County is confirmed positive for rabies (09/24/25)
- Precautions are advised as a fox confirmed positive for rabies has bitten an Atmore resident (08/08/25)
- Dog in Pike County tests positive for rabies (04/11/25)
- Fox in Burkville community confirmed positive for rabies; precautions advised (03/21/25)

Physician and Provider Resources

- The Rabies Prophylaxis Flyer can help determine what rabies treatment is recommended.
- To order vaccine, physicians can call Sanofi Pasteur at 1-800-822-2463 and complete the request form.
- To order HRIG, physicians can call most major distributors, Sanofi Pasteur at 1-800-822-2463 or Grifols and complete the request form.
- To report an exposure, complete the ADPH Rabies Exposure Report and fax the report to the local health department.
- Use of a Reduced (4-Dose) Vaccine Schedule for Postexposure Prophylaxis to Prevent Human Rabies, 2010
- More information on the Rabies Titer can be found on the Kansas Rabies Lab Website.
- For a quick and easy reference to basic rabies information and to determine if you need post-exposure prophylaxis, review or print the uploaded Rabies Flyer with Flow Charts.
- For rabies vaccination exemption, fill out the rabies vaccination exemption form and email the filled form to epidemiology@adph.state.al.us.

Rabies Specimen Testing

- To submit a specimen for testing, please use Mobile or Prattville laboratories.
- Read the submission instructions to test a sample for rabies.
- For more information on collecting samples, see CDC's Ante Mortem Testing.
- Please fill out a Rabies Test Report to submit along with your specimen.

Quick Facts about Rabies in Alabama

- Raccoons make up the majority of all Rabies cases every year.
- Each year, Alabama participates in an Oral Rabies Vaccine (ORV) Program to control the spread of Rabies in wildlife. For more information, see our Frequently Asked Questions about the ORV Program.
- Rabies - Frequently Asked Questions (USDA)
- Maps of confirmed cases in Alabama in 2024, 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2012, 2011, 2010, 2009.
- Laboratory-confirmed Rabies cases in Alabama from 1950 - 2014.

Medical Steps After an Exposure Incident

First-aid or at home

- Wash bite/scratch wounds and saliva exposures immediately
- Flush with soap and running water for at least 15 minutes
- Use povidone-iodine or other virucidal agents if available
- Local cleansing significantly reduces viral load

History is critical for Risk Bite Assessment

- Type of animal/domestic or Wildlife
- Owned vs stray
- Vaccination status of animal (if known)
- Circumstances: provoked vs unprovoked
- Geographic location of bite

Definitions

Exposure is any contact with saliva or brain/nervous tissue through open cuts in the skin, scratches, or mucous membrane (mouth or eyes).

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Signs of rabies include obvious changes in normal behavior, like aggression, attack without reason, foaming at mouth, no interest in food or water, stagger, tired, or paralysis. In wild animals, they may act very tame.

Uncertain exposure can occur with bats because they have small teeth and may leave marks that are not easily seen.

Animal Bite Risk Assessment

TABLE 3. Rabies postexposure prophylaxis guide — United States, 2008

Animal type	Evaluation and disposition of animal	Postexposure prophylaxis recommendations
Dogs, cats, and ferrets	Healthy and available for 10 days observation	Persons should not begin prophylaxis unless animal develops clinical signs of rabies.*
	Rabid or suspected rabid	Immediately begin prophylaxis.
	Unknown (e.g., escaped)	Consult public health officials.
Skunks, raccoons, foxes, and most other carnivores; bats†	Regarded as rabid unless animal proven negative by laboratory tests§	Consider immediate prophylaxis.
Livestock, small rodents (rabbits and hares), large rodents (woodchucks and beavers), and other mammals	Consider individually	Consult public health officials. Bites from squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, mice, other small rodents, rabbits, and hares almost never require antirabies postexposure prophylaxis.

* During the 10-day observation period, begin postexposure prophylaxis at the first sign of rabies in a dog, cat, or ferret that has bitten someone. If the animal exhibits clinical signs of rabies, it should be euthanized immediately and tested.

† Postexposure prophylaxis should be initiated as soon as possible following exposure to such wildlife unless the animal is available for testing and public health authorities are facilitating expeditious laboratory testing or it is already known that brain material from the animal has tested negative. Other factors that might influence the urgency of decision-making regarding initiation of postexposure prophylaxis before diagnostic results are known include the species of the animal, the general appearance and behavior of the animal, whether the encounter was provoked by the presence of a human, and the severity and location of bites. Discontinue vaccine if appropriate laboratory diagnostic test (i.e., the direct fluorescent antibody test) is negative.

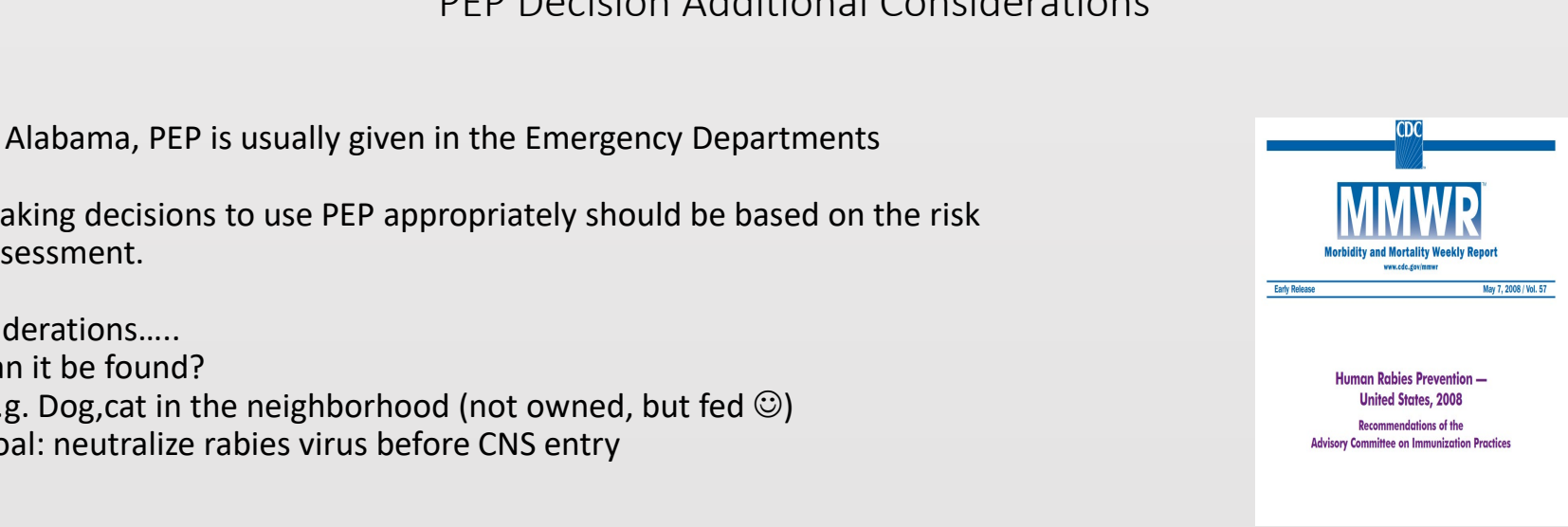
§ The animal should be euthanized and tested as soon as possible. Holding for observation is not recommended.

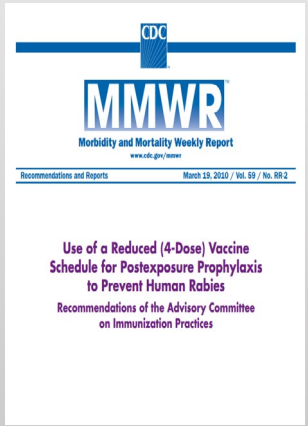
- High risk: Wildlife (raccoon, fox, *skunk*, coyote, bobcats), bats
- Lower: Dogs, cats, ferrets: observe for 10 days if healthy- Alabama allows a home quarantine followed by a vet exam on the 10th day if currently vaccinated)
- Livestock
- (Lowest) Rodents, rodents, rabbits, squirrels E.g. mice in traps, pet hamsters
- Primates ("*Monkey wrench*") Lots of variations of origins/species/B Virus

PEP Decision Additional Considerations

- In Alabama, PEP is usually given in the Emergency Departments
- Making decisions to use PEP appropriately should be based on the risk assessment.

Considerations…..
- Can it be found?
- e.g. Dog,cat in the neighborhood (not owned, but fed ☺)
- Goal: neutralize rabies virus before CNS entry





Rabies Immune Globulin (HRIG): Products & Administration

Product	Concentration	Dose	Administration Notes
HyperRAB®	300 IU/mL	20 IU/kg on Day 0	Infiltrate wound(s); remainder IM; NOT same site as vaccine; avoid gluteal
KEDRAB®	150 IU/mL	20 IU/kg on Day 0	Infiltrate wound(s); remainder IM; NOT same site as vaccine; avoid gluteal
Imogam® Rabies-HT	150 IU/mL	20 IU/kg on Day 0	Infiltrate wound(s); remainder IM; NOT same site as vaccine; avoid gluteal

Rabies Vaccines: Products & Injection Criteria

Product	Type / Manufacturer	Dose & Route	Approved Site	PEP Schedule
RabAvert®	PCECV (Bavarian Nordic)	1.0 mL IM	Deltoid; child thigh OK; NOT gluteal	PEP: Days 0, 3, 7, 14*
IMOVAX® Rabies	HDCV (Sanofi)	1.0 mL IM	Deltoid; child thigh OK; NOT gluteal	PEP: Days 0, 3, 7, 14*

* CDC PEP is 4 doses (0, 3, 7, 14); add day 28 if immunocompromised.

Additional Considerations

- Immunocompromised: 5-dose schedule + serology
- Pregnancy: not a contraindication
- Children: same dosing and schedule as adults

Population	Approved Site(s)	Notes
Adults	Deltoid muscle (preferred)	Never gluteal – risk of sciatic injury & reduced efficacy
Children (older)	Deltoid muscle (preferred)	Thigh acceptable if deltoid not developed
Infants / small children	Anterolateral thigh (preferred)	Avoid gluteal; deltoid not reliable at this age

- Previously Vaccinated
  No HRIG required
  Vaccine only: 1.0 mL IM on Days 0 and 3
  Applies to those with prior PrEP or completed PEP

Rabies PEP Protocol Summary

- Unvaccinated: HRIG + vaccine Days 0, 3, 7, 14
- Previously vaccinated: Vaccine Days 0 and 3 only
- Immunocompromised: HRIG + 5-dose schedule + rabies titer check

Common Pitfalls

- HRIG not given or not infiltrated into wound
- HRIG and vaccine given in same site
- Vaccine given
- Vaccine series not completed
- Delayed initiation of PEP

Ancillary Treatments

- Tetanus prophylaxis per CDC guidelines
- Antibiotics: amoxicillin-clavulanate for high-risk wounds
- Avoid routine antibiotics unless indicated
- Vaccine series not completed

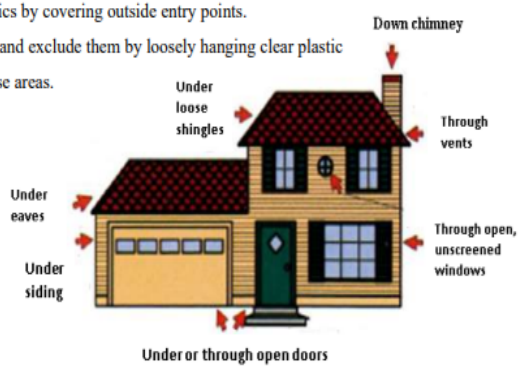
Rabies & Bat Exposures

What should I know about bats?

- Bats are beneficial and play a key role in the ecosystems throughout Alabama by eating insects, including agricultural pests.
- Unfortunately, bats can carry the rabies virus and infect humans.
- Teach children never to handle wild animals. "Love your own, leave other animals alone" is a good lesson for children to learn.
- Bats will roost in homes, churches, schools, and other similar areas.

How can I "bat-proof" my home?

- Bats should always be prevented from entering the home.
- It is best to "bat-proof" from May through August, because most bats leave in the fall or winter to hibernate.
- For assistance with "bat-proofing" your home, contact your county animal control or wildlife conservation agency.
- If you "bat-proof" your home, here are some suggestions:
  - Examine your home for holes that allow bat entry.
  - Any opening larger than a ¼ by ½ inch should be caulked.
  - Use window screens, chimney caps, and draft-guards. Fill electrical and plumbing holes with steel wool or caulk, and ensure all doors to outside close tightly.
  - Prevent bats from roosting in attics by covering outside entry points.
  - Observe where bats exit at dusk and exclude them by loosely hanging clear plastic sheeting or bird netting over these areas.



DETECT TEST REPORT

Alabama Department of Public Health
Infectious Diseases & Outbreaks Division, 201 Monroe St, Montgomery, AL 36104
alabamapublichealth.gov/infectiousdiseases

p Bats Out rev. 5/26/2022

- Bats are the most common rabies reservoir in the U.S.
- Any direct contact with a bat is considered a potential exposure, especially where a bite/scratch/salivary exposure can't be ruled out.
- Bat bites may be small and go unnoticed
- Bat found in room with a sleeping person, unattended child, intoxicated or mentally impaired individual
- If the bat is captured, submit for rabies testing before starting PEP if results can be obtained quickly
- Euthanasia is required prior to submitting to ADPH BCL
- Majority of human rabies cases in the U.S. are linked to bats

Key Takeaways....

- Wash wounds thoroughly and immediately
- Always assess exposure risk
- HRIG is one-time dose only, first visit (Day 0)
- Vaccine series completes protection
- Consult public health if questions

Ante-mortem Testing for Humans

Health Care Providers
AUG. 5, 2025

WHAT TO KNOW

- Submitters must follow specific steps to request, collect, package, and ship specimens to be tested for rabies.
- Consult local and state public health officials before collecting samples for human rabies diagnosis.
- Antemortem samples required to rule out human rabies are nuchal skin biopsy, saliva, cerebrospinal fluid, and blood serum.

Physician and Provider Resources

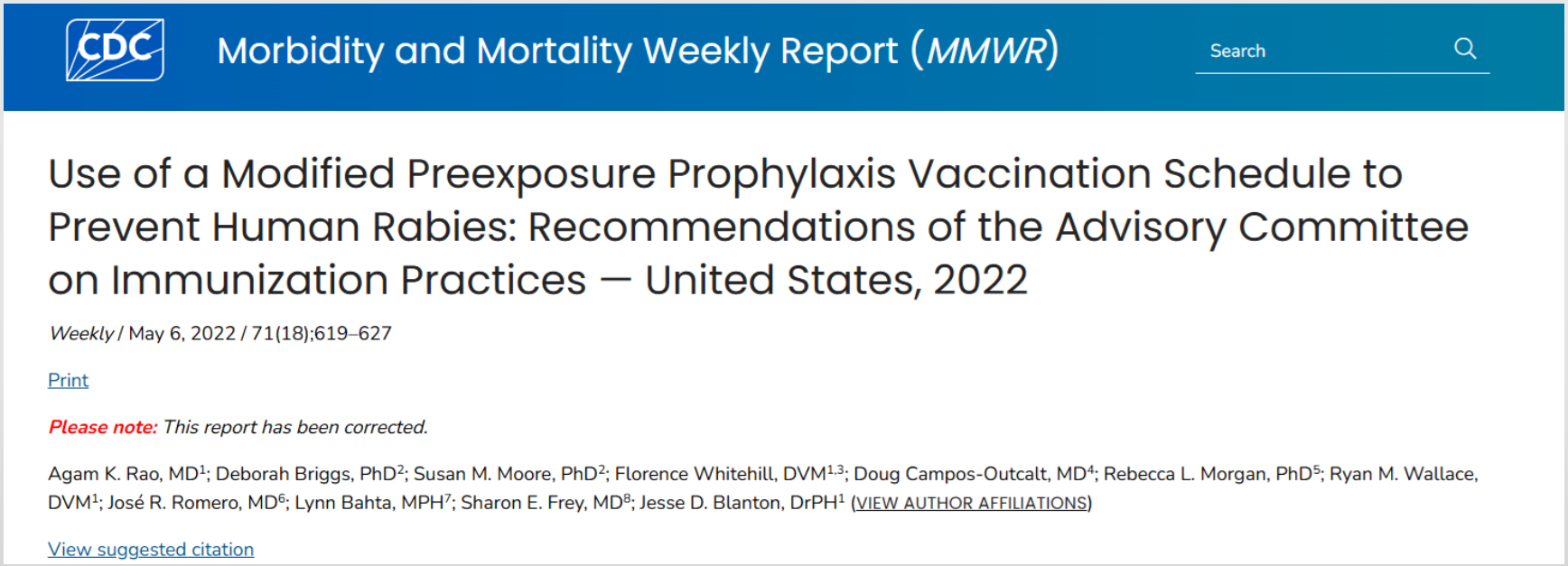
Rabies Specimen Testing

- To submit a specimen for testing, please use Mobile or Prattville laboratories.
- Read the submission instructions to test a sample for rabies.
- For more information on collecting samples, see CDC's Ante Mortem Testing.
- Please fill out a Rabies Test Report to submit along with your specimen.

Key Points:

- Approval from ADPH/BCL
- Sample list/transport
- Approval from CDC

PRE-Exposure Vaccination (PreP)



Morbidity and Mortality Weekly Report (*MMWR*)

Search

Use of a Modified Preexposure Prophylaxis Vaccination Schedule to Prevent Human Rabies: Recommendations of the Advisory Committee on Immunization Practices — United States, 2022

Weekly / May 6, 2022 / 71(18);619–627

Print

Please note: *This report has been corrected.*

Agam K. Rao, MD[1]; Deborah Briggs, PhD[2]; Susan M. Moore, PhD[2]; Florence Whitehill, DVM[1,3]; Doug Campos-Outcalt, MD[4]; Rebecca L. Morgan, PhD[5]; Ryan M. Wallace, DVM[1]; José R. Romero, MD[6]; Lynn Bahta, MPH[7]; Sharon E. Frey, MD[8]; Jesse D. Blanton, DrPH[1] (VIEW AUTHOR AFFILIATIONS)

View suggested citation

Veterinarians
Laboratorians
Animal control officers
Researchers
Spelunkers/ bat enthusiasts

PRE-Exposure Vaccination (PreP)

CDC Morbidity and Mortality Weekly Report (*MMWR*) Search

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Risk category	Who this typically* affects	Recommendations
Risk category 1 *Highest risk*	People who work with live or concentrated rabies virus in laboratories	• 2 doses, days 0 and 7 • Check titer every 6 months
Risk category 2	People who frequently do at least one of the following: handle bats, have contact with bats, enter high-density bat environments like caves, or perform animal necropsies	• 2 doses, days 0 and 7 • Check titer every 2 years
Risk category 3	People who interact with, or are at higher risk to interact, with mammals other than bats that could be rabid, for a period longer than three years after they receive PrEP. This group includes: • Most veterinarians, veterinary technicians, animal control officers, wildlife biologists, rehabilitators, trappers, and spelunkers (cave explorers) • Certain travelers to regions outside of the United States where rabies in dogs is commonly found	2 doses, days 0 and 7, plus: • Either a one-time titer check after 1 year and up to 3 years followin the first 2-dose vaccination Or • 1-dose booster between 3 weeks and 3 years following the first vaccine in the 2-dose vaccination
Risk category 4	Same population as risk category 3, but at a higher risk for ≤ three years after they receive PrEP	2 doses, days 0 and 7
Risk category 5 *Lowest risk*	General U.S. population	None

Bite-Case Examples

Case Example 1: Dog Bite

- 8-year-old bitten on hand by a vaccinated neighbor's dog
- Steps: irrigation, antibiotics, tetanus, public health notification.

Case Example 2: Bat Exposure

- Patient wakes up with bat in bedroom
- Unrecognized bite possible
- PEP recommended even without visible wound

Case Example 3: Traveler

- Adult bitten by stray dog in India
- No prior rabies vaccination
- Immediate HRIG + vaccine series required

Case Example 4: Vaccinated Vet

- Veterinarian previously vaccinated, bitten by unvaccinated cat
- PEP: 2-dose vaccine, no HRIG
- Wound care and public health consult

Q1. Since 2015, what has been the most common source of human rabies cases in the U.S.?

- A. Dog bites (domestic)
- B. Bat exposures
- C. Organ transplants
- D. Cat bites

Answer: B. Bat exposures

Q2. Which animal can be observed for 10 days following a bite before deciding on PEP?

- A. Bat
- B. Skunk
- C. Dog, cat, or ferret
- D. Raccoon

Answer: C. Dog, cat, or ferret

Q3. For unvaccinated patients, which PEP regimen is correct?

- A. HRIG only, no vaccine
- B. Vaccine on days 0, 3, 7, 14 + HRIG on Day 0
- C. Vaccine on days 0 and 3 only
- D. Vaccine on days 0, 3, 7, 14, 28 (always 5 doses)

Answer: B. Vaccine on days 0, 3, 7, 14 + HRIG on Day 0

Q4. Where should rabies vaccine NOT be administered?

- A. Deltoid muscle
- B. Anterolateral thigh (children/infants)
- C. Gluteal muscle

Answer: C. Gluteal muscle

Q5. Which HRIG product is more concentrated (300 IU/mL)?

- A. KEDRAB®
- B. Imogam® Rabies-HT
- C. HyperRAB®

Answer: C. HyperRAB®

Q6. True or False: Rabies is almost always fatal once symptoms appear.

- True
- False

Answer: True

Q7. True or False: HRIG and rabies vaccine can be given in the same syringe.

- True
- False

Answer: False

Q8. True or False: In immunocompromised patients, a 5th rabies vaccine dose (day 28) is recommended.

- True
- False

Answer: True

Q9. Case: A 45-year-old hiker wakes up to find a bat in his cabin. The bat flew away and is not available for testing. What is the next step?

- Discussion/Short Answer

Answer: Begin rabies PEP immediately.

Q10. Case: A 6-year-old bitten by a healthy, vaccinated dog that is available for observation. What is the correct approach?

- Discussion/Short Answer

Answer: Observe the dog for 10 days; start PEP only if the dog develops clinical signs or tests positive.

Sources:

The Challenge of Lyssavirus Infections in Domestic and Other Animals: A Mix of Virological Confusion, Consternation, Chagrin, and Curiosity

by Charles E. Rupprecht [1,2,*], Aniruddha V. Belsare [1,2], Florence Cliquet [3], Philip P. Mshelbwala [4], Janine F. R. Seetahal [5] and Vaughn V. Wicker [6]

CDC

CDC MMWR Morbidity and Mortality Weekly Report
www.cdc.gov/mmwr
Early Release — May 7, 2008 / Vol. 57

Human Rabies Prevention — United States, 2008

Recommendations of the Advisory Committee on Immunization Practices

CDC MMWR Morbidity and Mortality Weekly Report
www.cdc.gov/mmwr
Recommendations and Reports — March 19, 2010 / Vol. 59 / No. RR-2

Use of a Reduced (4-Dose) Vaccine Schedule for Postexposure Prophylaxis to Prevent Human Rabies

Recommendations of the Advisory Committee on Immunization Practices

CDC Morbidity and Mortality Weekly Report (*MMWR*) Search

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Home > Animals > Wildlife > Wildlife Services National Programs > National Rabies Management Program Overview

National Rabies Management Program Overview

Last Modified: August 01, 2025

Rabies is caused by a virus that infects the central nervous system in mammals. It is almost always transmitted through the bite of a rabid animal. The majority of rabies cases in the United States occur in wildlife including raccoons, skunks, foxes and bats. Rabies is invariably fatal, however, effective vaccines are available to protect people, pets and livestock.

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Thank you!

Questions/Feedback

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