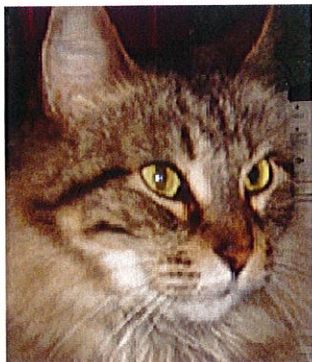


2016 - 2020



**RABIES PLAN
FOR
WARREN COUNTY**



WARREN COUNTY

RABIES PLAN **2016-2020**

***Revised May 2017**



Dear Town and City Supervisors,

There has been a Warren County Rabies Plan since 1994, when the first rabid animal was identified in Warren County. This plan includes applicable NYS laws and guidelines along with local procedures to protect humans and pets from the rabies virus and identifies key agencies to assist with prevention and control efforts. Rabies is 100% preventable in human and pets if appropriate follow up is ensured!

The plan has been updated and covers 2016-2020. Animal bites and exposures are mandated to be reported to the victim's county of residence by any person with knowledge (law enforcement, animal/dog control officer, vet, nurse etc). There have been four recent changes in rabies legislation and control guidelines since the last rabies plan.

Overall, Warren County has a strong rabies prevention team! Glens Falls Hospital, Urgent Care, Public Health, Medical Providers, Law Enforcement, Public Health, and Town/City Animal/Dog Control Officers have been working together. Recently Warren County SPCA has become a partner. Public Health would like to share recommendations to strengthen and improve response in Warren County.

1. Adding broad rabies follow up to Animal/Dog Control Job Descriptions and Contracts:

Although the Rabies Plan is adopted by Warren County Resolution and distributed to towns and other partners, some towns have a dog control officer verses the broader scope of the animal control officer. Dog Control officers are reluctant to assist with cat bite incidents, which are covered by the public health law for mandated follow up. It would be helpful for all towns to officially adopt by resolution the Warren County Rabies Plan and include "collaborate with Warren County Rabies Control Program on rabies related issues" in the dog/animal control staff job description. This would allow the animal/dog control officer to assist in locating a cat, ferret, horse, or wildlife involved in an exposure. Typically Warren County SPCA manages feral cat issues and DEC provides follow up in wildlife concerns. It is helpful to allow the ACO/DCO some responsibility to help bridge the gap so incidents do not fall through cracks between agency roles. This role may be providing direction and reinforcing safety measures until the correct agency responds. Some towns have chosen to contract with Warren County SPCA, who should provide these services.

2. Providing Rabies Pre Exposure Prophylaxis to Animal/Dog Control Staff:

It is recommended to provide the 3 dose rabies pre- exposure prophylaxis series to animal/dog control staff to provide protection in the event of an exposure. Please note in the event of an exposure 2 boosters (days 0 and 3) would be required to ensure adequate protection. The post exposure booster doses would be covered by Workman's Compensation or insurance. Warren County Public Health would pay costs not covered by insurance. The post exposure series is much more expensive if the person has not had pre exposure. The pre exposure series is recommended because ACO/DCO staff has an occupational risk of rabies exposure.

3. Provide Animal/Control Training: There are animal control officer trainings available which provides crucial information on the laws being enforced by dog/animal control officers, diplomatic interventions to mitigate and resolve disputes, safe techniques on capture/transporting, wildlife concerns, and other applicable topics to ensure your staff is trained on how to minimize his/her risk of getting hurt or contracting rabies during routine responsibilities. Warren County Public Health will be happy to meet with any ACO to review the plan and provide rabies information.

4. **Ensure a working back up plan:**

When your Animal/Dog control staff is off (i.e. after hours, weekends, holidays, sick, and vacations), most towns utilize law enforcement as back up. Some towns may choose to contract with neighboring ACOs/DCOs. Whatever the plan, communication must occur with the covering entity and the public. An added convenience would be a courtesy call to inform Public Health in the event of an animal bite, so time is not wasted waiting for a call back. The public could be informed with a recording on the ACO/DCO contact # as to who to call while the ACO/DCO is out.

5. **Ensure Animal/Control Officers are Responding to Bite/Exposure Reports within 24 hours and Reporting Back After Confinement.**

To be in accordance with the law, domestic animals that are involved in potential rabies exposure must be confined for 10 days to ensure the animal is still alive.

Owners are sometimes uninformed and fearful of consequences and may give the animal away, turn it loose, or have it destroyed prior to the end of the 10-day confinement period, requiring victim to receive the costly rabies post exposure treatment series. Public Health pays the amount insurance does not cover.

Tourist- related incidents also create the need for quick response to ensure all the appropriate and applicable local and permanent information is obtained prior to leaving Warren County.

Warren County sends a letter to the owner in all exposure incidents. It is understood many of the Animal/Dog Control officers work part time/have other jobs and families are sometimes difficult to contact. It is crucial to determine vaccination status so the animal can be located and confined in accordance with the law, otherwise victims must go through the unnecessary and costly post exposure treatment. License databases might help with dogs. Home visits/ telephone contact may be necessary to determine the vet or place of vaccination for cats, other animals and unlicensed dogs.

Public Health is happy to assist your town with the above issues. With your support, Public Health can provide an annual meeting for animal/dog control officers to provide rabies information and reinforce NYSDOH guidelines and local procedures. Public Health can also provide the pre exposure series, 3 injections given on days 0, 7, and 21, for \$335/injection (or current price) by appointment (761-6580).

Thank you for your time and consideration. Rabies is preventable and we need your help to ensure your town/contracted animal/dog control officers are informed, protected, and trained to appropriately respond! Please call Public Health at 761-6580 if you have any additional questions or concerns.

Sincerely,
Patricia Auer
Director

Warren County Board of Supervisors

RESOLUTION NO. 187 OF 2017

RESOLUTION INTRODUCED BY SUPERVISORS FRASIER, MACDONALD, VANSELOW, MONTESI, BRAYMER, MCDEVITT AND LEGGETT

AMENDING THE WARREN COUNTY RABIES PLAN FOR 2016-2020 FOR THE HEALTH SERVICES DEPARTMENT

WHEREAS, pursuant to Resolution No. 55 of 2017, the Warren County Board of Supervisors adopted the Rabies Plan for 2016-2020 prepared by the Health Services Department to identify responsibility for the control and identification of rabies in Warren County, and

WHEREAS, the Director of Public Health/Patient Services has requested an amendment to the plan to indicate that the Warren County Health Services Department will assume all responsibility for following up on animal bites, now, therefore, be it

RESOLVED, that the Warren County Board of Supervisors hereby approves the amendment to the Warren County Rabies Plan for 2016-2020 as outlined above.

RABIES PLAN FOR WARREN COUNTY

TABLE OF CONTENTS

Purpose and Goals	5
Reporting Rabid Animals and Domestic Animal Bites	6
First Aid For Bite	7
Animal Bite Report	8
Procedure For Managing Animal Bites To Humans	9-10
Sample Confinement Letter	11
County Approval For Rabies Post Exposure	12
10 Day Confinement Procedure For Domestic Animals	13
Specimens To Lab For Rabies Testing	14
Domestic Animal Exposure	15
Procedure For Domestic Animals Exposed To Rabies	16
Wild Life Calls	17
Appendix A ~ Rabies Law	18-42
Appendix B ~ Resources For Physicians	43-69
Appendix C ~ Resources For Animal/Dog Control	70-98
Appendix D ~ Resources For Veterinarians	99-118
Appendix E ~ Rabies Information	119-135
Appendix F ~ Reference Names and Numbers in Warren County	136-144
Town Offices	136
Resources	137-140
Nuisance and Wildlife Control	141
County Health Agencies	142
Animal/Dog Control Officer Quick List	143
Warren County Public Health Rabies Clinic Information	144

PURPOSE AND GOALS

Purpose:

- To prevent, monitor, identify, and control rabies in Warren County

Goals:

- To reduce incidence of rabies in Warren County
- To educate and inform Warren County residents on rabies prevention
- To prevent spread of rabies from wildlife to the domestic animal population
- To monitor and manage human exposures to rabies
- To communicate and coordinate activities with other collaborating agencies

Functions:

- Provide outreach and education to the community
- Rabies vaccination clinics for animals
- Rabies pre and post exposure vaccination for humans
- Authorize and facilitate quarantine and/or rabies testing of suspect animals to rule out potential exposures
- Receive and manage animal bite reports and possible rabies exposures

FIRST AID FOR A BITE

Upon initial intake, wound management recommendations shall be reviewed with the victim or parent/guardian as follows:

1. Wash wound or exposed area thoroughly with soap and water.
2. Seek medical attention if professional care is needed for wound – ER or urgent care if after MD office hours.
3. Advise family to notify MD of bite/exposure for follow-up, Tetanus booster, antibiotic therapy and/or rabies prophylaxis treatment. If it has been more than 5 years since last tetanus shot was given, a booster is indicated. Tetanus immunization is also available at Public Health Monday through Friday. Call 761-6580 for an appointment. *Rabies post exposure treatment requires Public Health approval.
4. Advise owners not to handle their dog or cat immediately after an encounter with a wild animal, without adequate protection (i.e. gloves).
5. Avoid letting other pets or children handle exposed domestic animal for several hours after exposure has occurred.

WARREN COUNTY HEALTH SERVICES
DIVISION OF PUBLIC HEALTH
1340 State Route 9, Lake George NY 12845
TEL#: (518)-761-6580 ~ FAX#: (518)-761-6422
Email: healthservices@warrencountyny.gov

ANIMAL BITE REPORT

Date of Incident: _____

Description of Incident

Name of Individual Bitten: _____

Address: _____ Telephone: (H) _____

(W) _____

Was Medical Attention Sought? Yes No

If Yes, Where? _____

Medical Provider Seen: _____

Treatment Rendered _____ Last TD (date) _____

Informed of S&S _____ Initials _____

Infection: _____

Name Of Animal Owner: _____ Telephone: (H) _____

Address: _____ (W) _____

Type of Animal Involved: _____ Description: _____

Rabies Vaccination Date: _____ Type: 1yr 3yr Tag#: _____

Reported By: _____ Date: _____

Telephone Number: _____

**Warren County Public Health
PROCEDURE FOR MANAGING ANIMAL BITES TO HUMANS**

Warren County Public Health must receive all animal bite/exposure reports.

Domestic animal bites/exposures

1. When Public Health (PH) is notified of a bite /exposure, Public Health will check vaccination status and assist with locating animal/ evoking confinement with the owner unless otherwise indicated.

- Vaccinated: Contact owner and determine if owner is going to keep pet. Initiate confinement and set up an appointment with the owner for a check after 10 day confinement is up. PH will mail a letter to the owner reinforcing the confinement instructions. Unless otherwise noted, a copy of the letter will be provided to the victim, animal/dog control officer, and town/city clerk. If the owner wants the pet euthanized, Public Health will facilitate rabies testing.
- Unvaccinated: Same as for vaccinated animals (above) unless it is a high risk incident, uncooperative owner, animal/owner history, or owner is unable to confine pet. Typically animal can remain at home for confinement. Public Health will encourage vaccination after confinement.
- Vaccinated/Unvaccinated: PH has the authority to require confinement at an approved facility at the owner's expense if there are validated concerns from incident reporter, victim, animal/dog control, or public health that indicates a more formal confinement is necessary.
- Dangerous dog: The Town ACO/DCO will advise all victims of their right to file a Dangerous Dog complaint and the directions on how to file a complaint. If the victim chooses to file a "Dangerous Dog" complaint, the town ACO/DCO will be responsible for follow-up. The dog can be seized by the town ACO/DCO until the threat status is determined by Judge. If the pet is at large, off the owner's property, the pet should be seized, based on routine town ACO/DCO responsibilities. The goal is to prevent rabies and utilize the resources we have to ensure the safety of those in our community.
- Strays:
 - If the victim is familiar with the animal, it can be taken to Glens Falls Animal Hospital for confinement. If it is an animal that typically hangs around (i.e. comes every evening at 5pm), an informal confinement can take place. An informal confinement consists of the victim watching for the animal and reporting to PH if the animal is not seen 10 days after the bite.
 - If the victim feels he/she can identify the animal, the Warren County SPCA will be contacted to assist with locating and capturing the stray animal.

- Rabies Testing: Rabies testing must be pre-approved by Warren County Public Health. If the animal is wild it must be tested if there was potential exposure. If the owner of a domestic animal wants the animal destroyed rabies testing must also be arranged. The owner is responsible for euthanasia and specimen preparation charges. If an animal becomes sick or dies during confinement, testing is also necessary. Refer to Specimen to Lab for Rabies Testing and the Procedure for Submission.
- Rabies Post Exposure Prophylaxis Treatment: If animal is unknown or cannot be located or identified, Public Health will approve Rabies Post Exposure Treatment through Glens Falls Hospital.

2. Public Health will contact a Warren County ACO and request follow-up after confinement to verify health status of animals with different owner/victim address or as needed.

Sample Confinement Letter

Date

Owner Name
Address

Dear Owner Name,

I am writing in response to a potential exposure incident that occurred on **Date** involving your pet and **Victim Name** of Town. Your pet's confinement period will be through **Date**, to ensure that he/she was not exposed to the rabies virus. I sincerely appreciate your anticipated compliance.

NYS Public Health Law (Title IV) mandates animals including cats, dogs, and ferrets to be vaccinated against Rabies by four months of age. Warren County Public Health offers at least two clinics a month. Please call 761-6580 or refer to Warren County Public Health's website, www.warrencountyny.gov for clinic information. Vaccination is free, although a \$10 donation is requested if it does not pose a financial hardship.

In addition, the law mandates all pets involved in exposure incidents (bites) be observed for 10 days.

__ Your pet is up to date with its Rabies Vaccination; this confinement period can be facilitated at your home. During the confinement period, the animal must not be allowed to run at large. The animal must be confined to a leash, chain, cage, fenced yard, or in the home. The animal can be seized, if the owner fails to comply with the quarantine, and taken to a veterinary hospital for the remainder of confinement at your expense.

Animal/ Dog Control will contact you at the end of the confinement to check your pet. Please notify Public Health immediately if your pet is displaying symptoms of rabies including, loss of appetite, change in behavior/disposition, paralysis, or other signs of illness. In addition, please notify Public Health immediately if your animal runs away or dies before the end of confinement.

__ Your pet is not up to date with its Rabies Vaccination; this confinement period can be facilitated at your home. During the confinement period, the animal must not be allowed to run at large. The animal must be confined to a leash, chain, cage, fenced yard, or in the home. The animal can be seized, if the owner fails to comply with the quarantine, and taken to a veterinary hospital for the remainder of confinement at your expense.

Animal/ Dog Control will contact you at the end of the confinement to check your pet. Please notify Public Health immediately if your pet is displaying symptoms of rabies including, loss of appetite, change in behavior/disposition, paralysis, or other signs of illness. In addition, please notify Public Health immediately if your animal runs away or dies before the end of confinement. A rabies vaccination is required at the end of quarantine. If your pet is already vaccinated, please call Warren County Health Services @ 761-6580 to update.

__ Your pet is not vaccinated secondary to his age. *Pets must be vaccinated by 4 months of age, enclosed you will find a rabies clinic schedule. Your pet's confinement period can be facilitated at your home as above.

If you decide to have your pet destroyed before the end of confinement, the animal must be submitted for rabies testing through Glens Falls Animal Hospital at the owner's expense. Warren County Public Health (761-6580) must be notified so testing can be facilitated.

Please call if you have any questions or concerns.

Sincerely,

Public Health Staff
Rabies Program

cc: Name, Animal/Dog Control Officer
Name, Town Clerk
Name, Victim

***Public Health will follow-up on same owner/victim address**

COUNTY APPROVAL FOR RABIES POST EXPOSURE

Approval has been given for Rabies Post Exposure Prophylaxis for the following:

Name: _____ DOB: _____ Weight: _____

Address: _____

Phone Number: Home: _____ Work: _____ *Insurance Company: _____

Exposure: _____

Will receive all Pep at: _____

*If not insured, will return to _____ County Public Health for the remaining 4 doses.

Encourage patient to call _____ to schedule appointments if needed.

Signature: _____ Date: _____

County: _____

Glens Falls Hospital Express Care

Telephone: 926-3130

Fax: 926-3110

Glens Falls Hospital Billing

Fax: 926-5199

Saratoga Hospital

Telephone: 587-3222

Fax: 583-8323

10 DAY CONFINEMENT PROCEDURE FOR DOMESTIC ANIMALS

Animals to be confined are dogs, cats, ferrets, and domestic livestock i.e. sheep, horses, cattle, goats. Bats and all other animals suspected of being rabid would not be observed but rather destroyed and submitted to NYS Rabies Lab for testing.

The purpose of confinement is to determine if a human has been exposed to an animal displaying the clinical illness of rabies. The animal's owner will be notified of the need for confinement.

The confinement will guarantee that the animal will not escape. The animal must be confined in the house and can only be taken out on a leash, chain or fenced in yard, under the control of the owner - never allowing animal to run loose. No additional contact with other humans or animals should be allowed during this observation time.

The animal will be observed daily for signs of rabies. The animal will be evaluated by a veterinarian at the first sign of illness or death during confinement. Any illness or death should be reported immediately to Public Health so rabies testing can be arranged and those exposed, notified and treated accordingly.

If noncompliance occurs, the animal can be seized by the Warren County animal/dog control officer and brought to one of the designated veterinary hospitals for the remainder of the confinement period at owner's expense. If the animal becomes ill however, it will be tested to rule out rabies.

Following the 10 day confinement unvaccinated animals must be vaccinated.

SPECIMENS FOR RABIES TESTING

Public Health authorizes and coordinates **all** specimen submissions to the rabies lab at NYS DOH and reports positives back to involved personnel and complainants. Only animals in contact with humans and unvaccinated pets are approved for testing. Vaccinated animals can receive a booster dose of rabies vaccine for exposure to suspected rabid animals and wildlife, therefore testing is not necessary.

Public Health receives notification of potential exposure and determines if testing is appropriate. Public Health calls veterinarian with information and approval. Glens Falls Animal Hospital or an approved facility will make arrangements to send specimen to NYS Lab for testing. Specimens will not be mailed on Fridays, weekends, or holidays unless emergency testing is indicated.

Procedure for Specimen Submission

- Call is referred to Public Health, who completes a report of potential rabies exposure. If animal is owned, owner is responsible for costs associated with preparation and shipping. If wild animal or stray, Public Health will assume financial responsibility if testing has been authorized
- PH contacts the complainant to determine exposure risk and if testing is indicated. PH explains procedure as follows:
 - Specimen is transported to contract vet for preparation and shipping by owner or caller. Animal/Dog Control, Law Enforcement, and DEC may provide assistance with transport to vet if needed.
 - PH will contact vet to approve testing and enter the specimen on NYSDOH Health Commerce System via the Remote Entry application and fax a copy to the vet to include with the specimen package.
 - The vet prepares the specimen for testing. The veterinary staff calls a shipping vender (i.e. UPS) and prepares the specimen for shipping. *PH must provide approval for same day or exclusive shipping if needed.
 - Results are emailed to the PH agency typically within 2 to 3 days. Results are relayed to complainant and other involved parties. If positive, PH will notify all involved agencies (i.e. vet) to ensure there were no additional exposures during response, preparation and shipping.
 - Based on the results, rabies post exposure treatment is facilitated for humans with exposures.
Public Health will contact family to discuss confinement of an animal bitten or exposed if animal has not been vaccinated. If unvaccinated animals were exposed, euthanasia or a 6- month quarantine is put in place with assistance and support of Animal/Dog Control.
If animal is to be confined due to exposure to a rabid animal, a 6-month confinement will be authorized by Public Health.
- For currently vaccinated animals exposed to a rabid animal, a rabies booster should be given within 5 days if the animal was previously vaccinated.

DOMESTIC ANIMAL EXPOSURE

The strongest evidence for exposure is the observation of direct contact between a rabid or suspect rabid animal and the domestic animal, with or without an inflicted wound consistent with a bite or mucous membrane exposure from the rabid animal. Circumstantial evidence alone could be questioned. The strongest circumstantial would be an observation (or sound) of a rabid or suspect animal in the vicinity of the domestic animal, and a subsequent lesion on the domestic animal, that in the professional opinion of a veterinarian, is compatible with a bite from the suspect animal.

SUSPECT RABID ANIMAL

Animals with rabies may act differently than healthy animals. Wild animals may move slowly or act tame. Also, some wild animals, like foxes, raccoons, and skunks, that normally avoid porcupines, may receive a face full of quills if they become rabid and try to bite these prickly rodents. A pet that is usually friendly may snap at you and try to bite.

There are two common types of rabies. One type is "furious" rabies. Animals with this type are hostile, may bite at objects, and have an increase in saliva. In the movies and in books, rabid animals foam at the mouth. In real life, rabid animals look like they have foam in their mouth because they have more saliva.

The second and more common form is known as paralytic or "dumb" rabies. An animal with "dumb" rabies is timid and shy. It often rejects food and has paralysis of the lower jaw and muscles.

Signs of rabies in animals include:

- changes in an animal's behavior
- general sickness
- problems swallowing
- an increase in drool or saliva
- wild animals that appear abnormally tame or sick
- animals that may bite at everything if excited
- difficulty moving or paralysis
- death

Animals in the early stages of rabies may not have any signs, although they can still infect you if they bite you. The incubation period is the time from the animal bite to when signs appear. In rabies, it is usually 1-2 months. But the incubation period can last as long as several years. Once the virus reaches the brain or spinal cord, signs of the disease usually appear.

A suspect rabid animal consists of a rabies vector species, or any mammal with clinical signs compatible with rabies.

Some characteristic clinical signs of rabies are listed below, but these are neither comprehensive nor exclusive to rabies. All of these clinical presentations, if due to rabies, would occur over an acute time course of hours to days, ultimately ending in death.

Cat:	unusual aggression, facial asymmetry, ataxia, difficulty swallowing, paresis (weakness) or paralysis
Dog:	unusual aggression, unusual passiveness, ascending paralysis, difficulty swallowing, snapping at the air
Cattle:	bellowing, difficulty swallowing (i.e. choking, excessive salivation), posterior weakness, ataxia (not showing coordination), circling, head pressing
Other livestock:	ataxia, difficulty swallowing, paresis or paralysis, facial asymmetry
Raccoon:	"Drunken Sailor" gait, juvenile vocalization, self-mutilation
Bat:	on the ground, not able to fly

PROCEDURE FOR DOMESTIC ANIMALS EXPOSED TO RABIES

Confirmation of an up-to-date rabies vaccine is attempted. If this cannot be verified, the animal is considered unvaccinated. If an animal has had known contact with a positive rabid animal the following will be recommended:

When the vaccination status is up-to-date, a booster rabies vaccine is recommended within 5 days of contact/exposure. The owner is advised of this recommendation

When vaccination is not up-to-date there are 2 options: 1) Euthanize animal or 2) confine and observe for symptoms for 6-months.

If owner decides to have animal euthanized, the owners will arrange and pay through a veterinarian.

If 6 month confinement is requested, Public Health will determine an appropriate plan. In addition, exposure to pet must be limited to one or two caregivers in the event the animal becomes sick and infectious.

WILD LIFE CALLS

Wild animal bites/exposures shall be referred to Public Health who will determine further follow-up. **Law enforcement or DEC will respond if there is an exposure.**

Prevention Measures:

- Advise caller how to keep pets and family members safe until help arrives
 - Encourage callers to seek shelter for pets and family members
 - Encourage callers not to capture live animals
 - Advise those exposed to wash areas with soap and water
 - Advise to not handle pets involved in wild animal attacks for at least 2 hrs unless gloves are worn to prevent secondary exposure
- Contact law enforcement or DEC for exposures to humans and unvaccinated pets to assist in destroying animal if rabies testing is necessary.

Miscellaneous Wildlife Calls:

Nuisance- Animals destroying or bothering property- Encourage caller to keep family members and pets away from the area until animal leaves. Do not leave pets or children unsupervised. Unless there is an extenuating circumstance, typically this situation requires education on preventing contact with animals and pet vaccination, **not** official response from official agencies (DEC, Law Enforcement, PH, or Animal/Dog Control. If appropriate, callers can be referred to a nuisance control officer at their expense. Sometimes DEC can provide free advice. Owners of unvaccinated pets should be encouraged to vaccinate to protect their pets! PH offers clinics which are listed on the website.

Animals Acting Strangely: Encourage caller to keep pets and family members away from area until animal wanders off. In the event an aggressive animal is preventing someone from entering/leaving house or car, instruct caller to contact law enforcement. As long as humans and unvaccinated pets have not had any contact, rabies testing is not needed. Vaccinated animals can receive a booster dose of rabies vaccine within 5 days of exposure if there was exposure.

Dead Animals: If a caller reports a dead animal on his/her property, typically it is the owner's responsibility. Provide education on preventing exposure. Determine if anyone was seen touching the animal or if an unvaccinated pet was seen in contact with the animal. Vaccinated animals can receive a rabies booster. As long as there was no contact or exposure, the animal can be buried. Advise the caller to wear gloves to prevent contact. Neighbors and family members may be a resource to caller if assistance is needed.

- Owner can bury animal at least 3 ft deep and 75 yds away from water source
- Owner can double bag and throw in trash.

APPENDIX A

RABIES LAWS

Public Health Law – State Rabies and Animal Control Statutes

State Sanitary Code Part 2 – Section 2.14 (a) – (k)

Part 57 – Conditions for a Dog Actively Immunized against Rabies

Public Health Law, Article 21

Title 4: Rabies

- 2140 Definitions
- 2141 Compulsory vaccination
- 2142 Rabies; emergency provisions
- 2143 Rabies; seizure and disposal; reports
- 2144 Rabies; county responsibility
- 2145 Rabies; services and expenses of suppression
- 2146 City of New York; exceptions

§ 2140. Definitions. For the purpose of this title:

1. "Actively immunized" shall mean that the animal has been injected with a rabies vaccine suitable to the species and which meets the standards prescribed by the United States department of agriculture for interstate sale and which was administered according to the manufacturer's instructions under the direction of a duly licensed veterinarian not later than the expiration date on the package. Active immunization shall begin fourteen days following primary vaccination or immediately following a booster vaccination, and continue for the period stated in the manufacturer's instructions.

2. "County" shall mean a county of the state other than those in the city of New York.

3. "County health authority" shall mean the county health agency.

4. "Domestic livestock" includes cattle, goats, horses, donkeys, mules, sheep, and swine.

5. "Certificate of immunization" shall mean a signed statement issued by the veterinarian containing the following information: name and address of the owner, date or dates of vaccination, type of vaccine administered and duration of immunity, amount and manner of administration, name of manufacturer of the vaccine, and the lot number and expiration date of the vaccine. The certificate of immunization for domestic livestock may include multiple animals. The system of identification applicable to the livestock is to be used.

6. "Owner" shall mean any person keeping, harboring, or having charge or control of, or permitting any dog, cat or domesticated ferret to remain on or be lodged or fed within such person's house, yard, or premises. This term shall not apply to veterinarians or other facilities temporarily maintaining on their premises dogs, cats or domesticated ferrets owned by others for periods of no more than four months or to the owner or occupant of property inhabited by a feral animal.

7. "Confinement and observation" refers to the conditions under which apparently healthy dogs, cats, domesticated ferrets, and domestic livestock, which are not exhibiting symptoms of rabies, must be maintained to determine rabies status if such an animal has potentially exposed a person to rabies, and the owner wishes to avoid euthanizing and testing the animal. If the county health authority does not approve home confinement, the ten day confinement and observation period must take place, at owner's expense, at an appropriate facility such as an animal shelter, veterinarian's office, kennel or farm. The confinement

must include (i) provisions to prevent escape of the animal during the confinement period and (ii) requirements that the owner notify the public health authority immediately if the animal becomes ill at anytime during confinement, and (iii) verification by the county health authority or their designee at the end of the ten day period that the animal is healthy. If a police work dog bites an individual in the course of such dog's official duty the police department may apply for a waiver from confinement from the local department of health. As part of such application for a waiver, the police department shall provide the local health department with records of such dog's past vaccination for rabies and proof that such dog's rabies vaccinations are up-to-date.

8. "Quarantine" refers to a six month period of restriction for animals which are not actively immunized against rabies and have been exposed to a potentially rabid animal, in accordance with applicable regulations of the department. The quarantine must include provisions to prevent escape of the animal during the quarantine period and to minimize contacts with humans and other animals, and these provisions must be verified by the county health authority during and at the end of the six month period.

9. "Local residence", under the conditions hereinafter specified, shall mean any person who has his or her primary residence, secondary residence, vacation home or school within a county of the state of New York shall be deemed to have local residence in such county.

10. "Qualification on residence." Local residence shall not include residence:

- (a) as an inmate of any state or federal prison, or
- (b) on a military reservation.

11. "Initial treatment after human exposure to rabies" shall mean administration of the first postexposure dose of rabies vaccine and, when necessary, administration of rabies immune globulin.

12. "Animal control officer" shall mean one or more persons designated by the county health authority as having responsibility for animal control issues in the county. This responsibility may be delegated to others such as cities and towns, law enforcement agencies, animal shelters, or private nuisance control officers.

13. "Feral animal" shall mean any cat, dog or ferret that is born in the wild and is not socialized, is the offspring of an owned or feral cat, dog or ferret and is not socialized, or is a formerly owned cat, dog or ferret that has been abandoned and is no longer socialized.

§ 2141. Compulsory vaccination. 1. Every dog, cat and domesticated ferret shall be actively immunized against rabies in accordance with regulations promulgated by the commissioner. Every dog, cat and domesticated ferret shall have all initial vaccinations administered no later than four months after birth. Every dog, cat and domesticated ferret shall have a second vaccination within one year of the first. Terms of subsequent vaccine administration and duration of immunity must be in compliance with USDA licenses of vaccines used. The veterinarian immunizing or supervising any person authorized by law to immunize such animal shall provide the owner with a certificate of immunization consistent with the requirements of section one hundred nine of the agriculture and markets law. The veterinarian immunizing or supervising any person authorized by law to immunize such animal shall provide any public health official with the certificate of immunization in any case involving a dog, cat or domesticated ferret which has been or may have been exposed to rabies or in any case of possible exposure of a person or another animal to rabies.

2. Subdivision one of this section shall not apply to any feral animal or any dog, cat or domesticated ferret:

(a) that is transported through the state and remains in the state fifteen days or fewer;

(b) confined to the premises of an incorporated society devoted to the care of lost, stray or homeless animals;

(c) for which vaccination against rabies would adversely affect the animal's health, as determined by a licensed veterinarian; or

(d) confined for the purposes of research to the premises of a college

or other educational or research institution.

3. (a) Every veterinarian providing treatment to a dog, cat or domesticated ferret shall verify, in accordance with standards established by the commissioner, if such animal is actively immunized against rabies or is exempt under subdivision two of this section. If active immunization or exemption cannot be verified, the veterinarian shall immunize the animal at the owner's request.

(b) If the animal is exempt from the provisions of subdivision one of this section, pursuant to paragraph (c) of subdivision two of this section, the veterinarian shall provide the owner of the dog, cat or domesticated ferret with a certified statement verifying that the animal is exempt from immunization because the immunization would adversely affect the health of the animal, and verifying the nature and duration of such exemption. The certified statement shall be in a form prescribed by the commissioner and shall be consistent with the requirements of section one hundred nine of the agriculture and markets law. Medical exemptions are to be renewed on an annual basis.

4. The owning of a dog, cat or domesticated ferret by any person in violation of subdivision one of this section shall constitute a violation, and shall be subject to a fine not to exceed two hundred dollars for each offense.

§ 2142. **Rabies; emergency provisions.** Whenever the commissioner confirms an outbreak of the disease rabies in terrestrial animals in any county or the vicinity thereof, the commissioner shall declare a rabies alert for that area and so certify to the county or local health authorities or any local health district contained therein. It shall be the duty of the health officials to immediately and annually thereafter publish a notice of the existence of the disease, together with a summary of the provisions of this title, in a newspaper generally circulated within the county or local health district, or to post notices in several conspicuous places, or both. Such certification shall remain in force until such time as the commissioner confirms that the outbreak is over.

§ 2143. **Rabies; seizure and disposal; reports.** Whenever the commissioner certifies a county to have a rabies alert pursuant to section twenty-one hundred forty-two of this title, any duly appointed dog control officer, animal control officer, peace officer, police officer, or health officer for that area may seize and confine any dog, cat or domesticated ferret found at large and may destroy a dog, cat or domesticated ferret found at large that is exhibiting symptoms of rabies and cannot be seized without placing any person at serious risk of physical injury. Any duly appointed person who seizes, confines, or destroys a dog, cat or domesticated ferret pursuant to this section shall immediately report in writing the facts relating thereto to the county or local health authority.

§ 2144. **Rabies; county responsibility.** Each county health authority is required to develop a rabies control protocol that identifies and coordinates all activities within the county to accomplish a comprehensive rabies response. The county health authority shall have responsibility for the implementation of the protocol, including the coordination of the response to rabies issues by other local agencies. This protocol must be approved by the department and revised and updated as directed by the department.

§ 2145. **Rabies; services and expenses of suppression.** 1. The county health authority is responsible for the services and expenses necessary for the suppression of human rabies. Suppression of human rabies shall include, but not be limited to:

(a) availability at all times for prompt investigation of reports of possible exposures to rabies of people, pets, or domestic livestock occurring within the county, and to render authorization for human postexposure treatment,

(b) making arrangements for appropriate disposition of the animals

involved, including confinement and observation, quarantines, vaccination boosters, or euthanasia and testing,

(c) collection, preparation and submission of animal specimens to a laboratory approved by the commissioner for rabies diagnosis,

(d) verifying terms of confinement, observation and quarantines,

(e) authorized human postexposure treatment under the conditions hereinafter specified, except that third party coverage or indemnification shall first be applied against the cost of treatment, and

(f) operation of rabies vaccination clinics free of charge for dogs, cats and domesticated ferrets owned by persons with local residence.

2. Under the conditions specified below, the county health authority is responsible for authorized human postexposure treatment for all persons exposed within the county, regardless of the location of the person's residence; except in any case where the person's county of residence has agreed to be responsible for such treatment in accordance with the provisions of this title. In addition, for persons with local residence who are exposed to rabies in New York city or out of state, the county health authority is responsible for that portion of treatment that occurs after such persons return to their local residences.

3. Human postexposure treatment specifically authorized by the county health authority shall be rendered by the provider or providers selected by the county health authority, located within the county or the vicinity thereof, and approved by the person's health insurance carrier or managed care plan if pre-approval is required by the health insurance carrier or managed care plan, provided that:

(a) any person may, at his or her option, be treated at his or her own expense by the health care provider of his or her choice,

(b) the county health authority may, at its option, assume financial responsibility for necessary treatment rendered by other providers,

(c) the county shall authorize initial treatment from a provider or providers geographically accessible to the location of the exposed person at the time that treatment is determined to be necessary, and

(d) the county shall authorize post-initial treatment from a provider or providers geographically accessible to the exposed person's residence if the person returns to his or her residence during the course of treatment.

4. Consent by any person to human postexposure treatment authorized by the county health authority shall constitute assignment of any third party health benefits to the county health authority and permission for the person's health care and insurance providers to release medical and financial information regarding the treatment to the county health authority.

5. Health care and insurance providers shall comply with any requests by the county health authority for information regarding human postexposure treatment rendered to an enrollee whose treatment was authorized by the county health authority.

6. Under the terms of this title, the county health authority is not responsible for:

(a) services and expenses of human postexposure treatment that were not specifically authorized by the county health authority, except for completion of treatment for their residents exposed and started on rabies treatment in New York city or elsewhere outside of New York state,

(b) services and expenses of medical treatment unrelated to the prevention of rabies infection such as wound suturing and measures to control bacterial infection of bite wounds, and

(c) expenses of preexposure rabies vaccination.

7. A clinic for rabies vaccination for dogs, cats and domesticated ferrets of persons with local residence shall be conducted at least every four months within the county under the direction of the county government, by the health officials of the county and the several local health districts within a county. Donations may be requested but not required at the clinics. Any listing of costs in clinic announcements or advertisements must indicate that vaccinations are available free of charge, and that donations are optional. Counties may at their option

provide vaccination clinic services to persons without county residence, and may require a fee based on cost from these persons.

8. Claims for services and expenses, approved by the county shall be paid by the fiscal officer of the county from funds in his or her custody upon presentation of such claim, without further or other audit or may be paid pursuant to the local finance law.

§ 2146. City of New York; exceptions. The provisions of sections two thousand one hundred forty through two thousand one hundred forty-five of this title, inclusive, shall not apply to the city of New York.

Questions or comments: bcdc@health.ny.gov

Revised: March 2015

General Business Law and Agriculture and Markets Law
(only those sections added or amended are included below)

A new Section 753(2-a) of the general business law

2-a. Every pet dealer who sells an animal required to be vaccinated against rabies, pursuant to section twenty-one hundred forty-one of the public health law, to a consumer shall provide the consumer at point of sale with a written notice, provided by the department of health, summarizing rabies immunization requirements.

Section 105-d of the agriculture and markets law

§ 105-d. Indemnification for rabies.

Each county shall be liable for damages resulting within the county to domestic animals from the disease known as rabies and indemnification therefore shall be made in the manner provided by this article. The term "domestic animals" as used in this article shall mean domesticated sheep, horses, cattle, swine and goats. Such indemnification shall not exceed the actual damage and shall in no event exceed the sum of five hundred dollars for each animal in the case of damage to horses or cattle, or one hundred fifty dollars for each animal in the case of damage to swine, goats or sheep, provided, however, that in the case of registered purebred bovine animals indemnification may be made in an amount not to exceed seven hundred dollars for each animal. The board of supervisors of each county shall have power to cause to be assessed, levied and collected in the same manner as other charges against the county, such sums of money as shall be necessary to pay indemnification on account of damages resulting from rabies as provided in this article.

Section 109 of the agriculture and markets law

(1)(a) The owner of any dog reaching the age of four months shall immediately make application for a dog license. No license shall be required for any dog which is under the age of four months and which is not at large. A license shall be renewed after a period of one year beginning with the first day of the month following the date of issuance and shall be renewable annually thereafter prior to the expiration date, provided that any municipality, authorized to issue licenses pursuant to this article, which has a population not exceeding two thousand five hundred may, upon the approval of and pursuant to rules and regulations promulgated by the commissioner, establish a common renewal date for all such licenses.

(2)(c) The application shall state the name, address and telephone number of the owner; the county and city, town or village where such dogs are harbored; the sex, breed, registry name and number of each purebred registered dog over the age of four months which is harbored on the premises; and the sex and breed of each purebred dog over the age of four months which is harbored on the premises and which is eligible for registration. The application shall also include a statement by the owner that all purebred dogs over the age of four months which are harbored on the premises have been listed.

3. The clerk, authorized dog control officer or authorized pound or shelter manager, at the time of issuing any license pursuant to this article, shall require the applicant to present a statement certified by a licensed veterinarian showing that the dog or dogs have been vaccinated to prevent rabies or, in lieu thereof, a statement certified by a licensed

veterinarian stating that because of old age or other reason, the life of the dog or dogs would be endangered by the administration of vaccine. The clerk, authorized dog control officer or pound or shelter manager shall make or cause to be made from such statement a record of such information as may be required by the commissioner and shall file such record with a copy of the license.

**Revised Section 110(4)(c) and new Section 110(4)(d)
of the agriculture and markets law**

c. In addition to the fee charged pursuant to subdivisions one and two of this section, any person applying for a dog or purebred license shall pay a fee of three dollars for any dog four months of age or older which has not been spayed or neutered unless an owner presents with the license application a statement certified by a licensed veterinarian stating that he or she has examined the dog and found that because of old age or other reason, the life of the dog would be endangered by spaying or neutering. All fees collected pursuant to the provisions of this paragraph shall be forwarded by the commissioner to the state comptroller for deposit in the animal population control fund, created pursuant to section ninety-seven-xx of the state finance law and section one hundred seventeen-a of this article.

d. In addition to any other applicable fee, any person applying for a dog or purebred license for a dog identified as unlicensed during an enumeration conducted pursuant to subdivision seven of section one hundred fourteen of this article shall pay a fee of five dollars. Such additional fee shall be the property of the licensing municipality and shall be used to pay the expenses incurred by the municipality in conducting the enumeration. In the event the additional fees collected exceed the expenses incurred by the municipality in conducting an enumeration in any year, such excess fees may be used by the municipality for any other lawful purpose.

Section 114 of the agriculture and markets law

7. The governing body of any municipality in which licenses are issued, may, either individually or in cooperation with other municipal entities, require its dog control officer or animal control officer or any other authorized agent to ascertain and list the names of all persons in the municipality owning or harboring dogs, or in lieu thereof, such municipality may contract to have the same done.

Chapter 115 of the laws of 1894

§ 3-a. In addition to the fee charged pursuant to sections one and two of this chapter, any person applying for a dog license shall pay a fee of three dollars for any dog four months of age or older which has not been spayed or neutered unless an owner presents with the license application a statement certified by a licensed veterinarian stating that he or she has examined the dog and found that because of old age or other reasons, the life of the dog would be endangered by spaying or neutering. All fees collected pursuant to the provisions of this section shall be forwarded to the state comptroller for deposit in the animal population control fund created pursuant to section 97-xx of the state finance law and section 117-a of the agriculture and markets law.

NEW YORK
state department of
HEALTH

Nirav R. Shah, M.D., M. P.M.
Commissioner

Sue Kelly
Executive Deputy Commissioner

December 16, 2013

TO: Local Health Departments (LHDs)

FROM: New York State Department of Health (NYSDOH) Bureau of Communicable Disease Control (BCDC)

INFORMATIONAL MESSAGE: CHANGE TO PUBLIC HEALTH LAW - POLICE DOGS MAY BE GRANTED WAIVER FROM 10-DAY CONFINEMENT IF THEY BITE DURING THE COURSE OF THEIR OFFICIAL DUTY

In July, Governor Cuomo signed a bill into law that allows police departments to ask the LHD to grant a waiver from confinement for police dogs that bite a human in the line of duty (see Public Health Law, Article 21, Title 4, Section 2140, subparagraph 7). New York State Department of Health supported this amendment to the Rabies Law. Previously police dogs were not exempt from the 10-day confinement requirements if they bit an individual during the course of their official duty.

The amended law, applying only to the subparagraph referenced above is currently in effect. The new subparagraph 7 states (new language underlined):

7. "Confinement and observation" refers to the conditions under which apparently healthy dogs, cats, domesticated ferrets, and domestic livestock, which are not exhibiting symptoms of rabies, must be maintained to determine rabies status if such an animal has potentially exposed a person to rabies, and the owner wishes to avoid euthanizing and testing the animal. If the county health authority does not approve home confinement, the ten day confinement and observation period must take place, at owner's expense, at an appropriate facility such as an animal shelter, veterinarian's office, kennel or farm. The confinement must include (i) provisions to prevent escape of the animal during the confinement period and (ii) requirements that the owner notify the public health authority immediately if the animal becomes ill at any time during confinement, and (iii) verification by the county health authority or their designee at the end of the ten day period that the animal is healthy. If a police work dog bites an individual in the course of such dog's official duty the police department may apply for a waiver from confinement from the local department of health. As part of such application for a waiver, the police department shall provide the local health department with records of such dog's past vaccination for rabies and proof that such dog's rabies vaccinations are up-to-date.

Under the current law, police dogs will be able to continue to work during the 10-observation period if the LHD grants the police department a waiver of confinement. **It is the responsibility of the police department to apply for a waiver from the LHD in the county where the bite occurred.** In granting the waiver, the LHD will need to verify that the biting dog is actively immunized and require the police department to notify the LHD if the dog were to develop a neurologic illness or die within 10-days of a bite for which waiver of confinement has been granted. If the animal dies or a veterinarian determines

the animal is exhibiting signs consistent with rabies during the 10-day period, the dog's head must be submitted for rabies testing. The NYSDOH guidance regarding 10-day confinement of animals is in the process of being updated to reflect the amended law.

The Public Health Law pertaining to rabies is accessible here: <http://goo.gl/YmTCdS>. Please direct any questions about this amended law to Dr. Andie Newman [apnO 1 @health.ny.gov](mailto:apnO1@health.ny.gov) or Dr. Angela Maxted (amm23@health.ny.gov) by e-mail or at (518) 473-4439. Thank you.

SUBJECT: Guidance Regarding 10-day Confinement of Animals for Rabies Observation

1. Introduction/Purpose

Animals that have potentially exposed a person to rabies through bite or other means must be evaluated to determine whether they may have been transmitting rabies at the time of the exposure incident. Under New York State (NYS) public health law¹ domesticated animals² may be observed for 10 days following an exposure incident to determine whether they were possibly shedding rabies virus. If a domesticated animal was shedding rabies virus in its saliva at the time of exposure, that animal will be showing signs of rabies either at the time of the exposure incident or within several days following the incident. Based on guidelines from the Advisory Committee on Immunization Practices³, if a domesticated animal remains clinically normal for 10 days following a potential exposure incident, it is assumed that the animal was not shedding rabies at the time of the incident; therefore there was no rabies exposure. Determination of rabies status of animals other than domesticated animals requires euthanasia of the animal and testing of the animal's brain for evidence of rabies virus.

Under NYS Public Health Law effective 22 December 2011, "If the county health authority does not approve home confinement, the ten day confinement and observation period must take place, at owner's expense, at an appropriate facility such as an animal shelter, veterinarian's office, kennel or farm."

This document provides general guidelines and best practices for effective 10-day confinement of domesticated animals that have potentially exposed a person to rabies. The conditions under which an animal may be kept during, and the method by which an animal is evaluated at the end of, the 10-day confinement are ultimately determined by the local health department (LHD) with jurisdiction over the incident. LHD staff are in the best position to determine, in each situation, what confinement conditions will provide the greatest assurance that the animal will be available for follow-up at the end of confinement. Rabies response staff of the New York State Department of Health (NYSDOH) Bureau of Communicable Disease Control (BCDC) are available to discuss situations requiring further guidance. Contact BCDC staff at (518) 473-4439.

The following general principles should guide confinement decision-making, and are further detailed in this document:

- In general, healthy domesticated animals behaving normally at the time of a potential rabies exposure incident may be confined for 10-day observation at the owner's home. **Animals with neurologic disease, or that are acting unusually aggressive, should not be placed under 10-day confinement without consultation with BCDC rabies response staff.**
- In circumstances where owner compliance is in doubt, or where the exposing animal's exposure and vaccination history are unknown, confinement in a facility may be more appropriate.
- Confinement conditions should be explained and provided to owners in writing to ensure compliance.

¹ Article 21, Title 4, Section 2140, Subparagraph 7

² Domesticated animals include dogs, cats, ferrets, horses, donkeys, mules, cattle, sheep, goats, and pigs.

³ CDC. Human rabies prevention - United States, 2008; recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. 2008; 57.

- Method of assessment of the animal at the end of confinement can vary from telephone confirmation with the owner to evaluation by a veterinarian, and will depend on the circumstances in each case.

Information on what is considered an exposure, as well as considerations to use in the assessment of risk in particular exposure incidents, can be found in the guidance document, “Guidance Regarding Human Exposure to Rabies and Postexposure Prophylaxis Decisions,” available at http://www.health.ny.gov/diseases/communicable/zoonoses/rabies/docs/nys_rabies_treatment_guidelines.pdf.

2. Home vs. Facility Confinement

No animal that has been placed in 10-day confinement in New York State has ever gone on to develop rabies. Healthy, normal acting animals are considered low risk for rabies, and home confinement is generally appropriate. Facility confinement should be considered under the following circumstances:

- There are concerns about owner compliance, such as in situations involving potential legal action or other hostility between animal owner and bite victim.
- There is little known about the animal’s exposure and vaccination history, as might occur with stray or feral animals.
- The animal’s behavior or health is not normal.

Owner compliance concerns

- LHD staff should use broad discretion to consider facility confinement if an animal’s owner is not forthcoming with information, appears hostile or unreliable, or has a history of non-compliance.
- If the LHD is aware that legal action may be pending between a bite victim and animal owner, facility confinement may be advisable to ensure follow-up.
- Facility confinement may be necessary if an owner cannot meet the conditions of confinement, e.g., LHD determines animal must be kept indoors for confinement, but owner insists the animal can only be kept in the yard.

Lack of animal history

Stray or feral animals have greater opportunities than pets to become exposed to rabies without a person’s knowledge, and are typically unvaccinated. Recently acquired animals similarly may have little history. In these cases, if an owner is identified and home confinement is considered, it is especially important to ensure owner compliance.

Animal behavior/health status

An animal behaving abnormally (based on knowledge of that specific animal’s normal behavior, not just the general behavior of the breed or species) or demonstrating neurologic disease at the time it is involved in a potential rabies exposure of a person should be considered high risk for rabies and generally should be tested for rabies unless an alternative cause for the illness or behavior is established. In some situations, observation under a veterinarian’s care may be appropriate for the ill animal that has been involved in a human exposure. Examples include animals with a good vaccination history, and animals with little opportunity for rabies exposure (e.g., indoor-housed cats and dogs that are only leash-walked and never out of the owner’s sight).

These exposure situations should be evaluated on a case-by-case basis, and discussed with BCDC staff to ensure that state and local health authorities are in agreement on the proper course of action. In all situations where observation and clinical workup of an abnormally acting animal is permitted, observation must occur in a veterinary hospital and not at the owner’s home.

3. Conditions of 10-day confinement

Documentation

Owners of animals under 10-day confinement **should be provided written documentation** stating, at a minimum:

- Start and end dates of confinement.
- Requirements for how the animal is to be confined.
- Signs of rabies to look for in the animal (e.g., changes in behavior, unusual aggression, weakness, lameness, paralysis, seizures).
- How the LHD should be notified, including after work hours, in the event the animal becomes ill.
- Consequences of failure to comply (e.g., immediate facility confinement at owner expense.)

Contact with the animal

It is generally not necessary to prevent members of the owner's household and immediate family from having contact with an animal under confinement, however contact with people or pets outside the household or immediate family should be limited to reduce the possibility of additional exposures.

Control of the animal

Confinement conditions should be established to ensure the animal is always under the owner's control and to minimize the risk of the animal escaping and being lost to follow up. Examples of confinement conditions include being loose inside the home; in a securely fenced yard or enclosure; or off the owner's property on a leash.

Unacceptable means of owner control of the animal include:

- Invisible fences
- Off leash on the assumption that the animal will respond to voice commands.

Relocation of the animal during confinement

Animals under confinement may not be moved from the jurisdiction of the LHD without prior approval of the local health Commissioner (or equivalent) of both the origin and destination locations. Out of state movement requires approval at both state health departments.

If relocation of an animal to another location is necessary, the owner should contact the LHD immediately to seek approval for the new location prior to moving the animal. In cases where the animal is not a resident of the county of exposure and has returned to its home county or state or will be returning to its home prior to the end of 10-day confinement, arrangements should be discussed with the LHD in the county of residence as soon as possible. For out of state movement, contact BCDC rabies response staff who will assist with arranging confinement and follow up with the other state.

For emergency movement (e.g., an emergency requiring admission to a veterinary hospital) owners should be instructed to contact the LHD as soon as possible.

4. Assessment of the animal at the end of confinement

LHD staff must verify that the animal is healthy before releasing the animal from confinement. Examples of methods of verification include:

- Verbal confirmation by the owner that the animal is healthy (provided owner reliability is not in question)
- Visit by animal control, law enforcement, or LHD staff to observe the animal
- Confirmation by a veterinarian that the animal was examined and determined not to be displaying signs of rabies

Verbal confirmation vs. visit and visual inspection

Assessment of animals when the exposed individuals are part of the owner's family can often be managed through verbal confirmation from the owner. For exposures to non-family members, or if there are concerns with the reliability of the owner for any reason, it is advisable to have an independent party such as an LHD staff person or animal control officer visually inspect the animal and document that visit. A veterinary exam is typically not necessary; the individual performing health verification should be familiar enough with animals to judge whether the animal appears to be healthy. If there is any question about the health status of the animal, referral should be made for veterinary evaluation at owner expense.

Veterinary exam to assess health status of the animal

A veterinary exam, with or without written documentation, may be necessary to verify the health of the animal in cases where:

- there is a question about the health of the animal at the end of confinement
- other circumstances warrant it (e.g., legal action between bite victim and animal owner).

In such cases, it is the responsibility of the owner to have the animal evaluated by a licensed veterinarian at the owner's expense. If appropriate based on the circumstances of the incident, the veterinarian should provide a signed, written statement verifying the health of the animal to the LHD before the animal is released from confinement.

5. Other considerations

Animals that have potentially exposed other animals

While not mandated in law or regulation, situations involving animal-to-animal exposure may warrant 10-day follow-up of the animal causing exposure. Such situations might include:

- Dog gets loose and attacks another dog that is not currently vaccinated
- Dog attacks unvaccinated farm animals
- Outdoor cats fight and wound each other and one or both are overdue for vaccination

In these cases, getting voluntary compliance for 10-day observation from the owner of the biting animal can avoid a 6 month quarantine of an unvaccinated bitten animal. The same policies regarding conditions and final assessment should apply to these incidents as to incidents involving human exposure.

Follow-up of animals outside the LHD's jurisdiction

For potential human exposures that occur outside the jurisdiction of the LHD (e.g., a county resident exposed out of state or in New York City) BCDC rabies response staff will assist with coordinating follow-up of animals.

State Sanitary Code, Chapter 10, Health

Part 2 - Section 2.14

Reporting of suspected rabid animals and persons exposed to them.

***Action to be taken by health authority.



(a) Definitions:

1. Health care provider shall mean any person or facility which gives primary or secondary medical care to humans.
2. Exposure shall mean introduction of the rabies virus into the body of a human or animal. Any penetration by mouth to the skin of humans or animals constitutes a bite exposure. A nonbite exposure is a scratch, abrasion, open wound, or contamination of mucous membranes with saliva or other potentially infectious material from a rabid animal.
3. Domestic livestock shall mean sheep, horses, cattle, goats and swine.
4. Current vaccination shall mean the administration of a rabies vaccine suitable to the species, which meets the standards prescribed by the United States Department of Agriculture for interstate sale and is administered according to the manufacturer's instructions under the direction of a duly licensed veterinarian not later than the expiration date on the package. Current vaccination shall begin 14 days following primary vaccination, and continue for the period stated in the manufacturer's instructions.
5. Approved vaccine shall mean any rabies vaccine which meets the standards prescribed by the United States Department of Agriculture for interstate sale.

(b) It shall be the duty of every health care provider to report immediately to the local health authority having jurisdiction the full name, age, address and telephone number of any person under his care or observation who has been exposed to any animal suspected by the health care provider of having rabies and all pertinent facts relating to such exposure. Such notification shall occur prior to starting rabies postexposure prophylaxis, except in those cases where prior notification would compromise the health of the patient.

(c) If no health care provider is in attendance and the person exposed is a child, it shall be the duty of the parent or guardian to make such report immediately. If the person exposed is an adult, such person shall himself make the report, or, if incapacitated, it shall be made by whomever is caring for such person.

(d) It shall be the duty of every health care provider who has cause to believe that contact has occurred with a rabid animal or animal suspected of being rabid by the health care provider which requires rabies prophylaxis subsequent to the exposure to report the initiation of such prophylaxis and all pertinent facts relating to any such bite, exposure or treatment to the local health authority.

(e) It shall be the duty of every person having knowledge of the existence of an animal exhibiting clinical signs suggestive of rabies to report immediately to the local health authority the existence of such animal, the place where seen, the owner's name, if known, and the signs of infection suggesting rabies.

(f) Whenever, in accordance with this section, the local health authority is notified of a person who has been exposed to any dog, cat, ferret or domestic livestock, vaccinated or not, the local health authority may cause the animal to be confined for 10 days. Any costs associated with this confinement shall be an expense of the animal's owner. Such health authority may, subject to the approval of the owner, if known,

cause the animal to be destroyed immediately and have the animal's head submitted to a laboratory approved by the State Commissioner of Health for examination. The dog, cat, ferret or domestic livestock whose ownership cannot be determined may be confined for 10 days, under the direction of the local health authority. Any costs associated with this confinement shall be an expense of the party seeking this confinement. Confinement of the animal, in any case, shall be subject to such conditions and instructions, and under the control of such persons, including the owner if ascertainable, that the local health authority determines will reasonably assure the continued confinement of the animal for the prescribed 10-day period. Should the confined animal develop signs of rabies within the 10-day period, it shall be destroyed under the direction of the local health authority and submitted to a laboratory approved by the State Commissioner of Health for examination. In the case of a dog, cat, ferret or domestic livestock whose ownership cannot be determined, if confinement is not possible or desirable, the animal may be destroyed immediately and an appropriate specimen shall be submitted to a laboratory approved by the State Commissioner of Health for examination.

(1) Bats and any animal other than a dog, cat, ferret or domestic livestock suspected of being rabid shall not be held for observation and shall be destroyed immediately, without injury to the head, and may be submitted upon approval of the local health authority to a laboratory approved by the State Commissioner of Health for examination.

(g) Except as hereinafter provided, any mammal which has been bitten by or in direct contact with a known rabid animal or animal suspected by the local health authority of being rabid shall be destroyed unless it shall be isolated for a period of six months either in a veterinary hospital approved by the local health authority, or in a locked enclosure approved by the local health authority as being so constructed and maintained that the animal cannot escape and cannot have contact with any other animal or human except, when absolutely necessary, with the person responsible for the care of the confined animal. Quarantine of the animal, in any case, shall be subject to such conditions and instructions, and under the control of such persons, including the owner if ascertainable, that the health authority determines will reasonably assure the continued quarantine of the animal for the prescribed six-month period. The expense of such isolation shall be borne by the owner. Any animal currently vaccinated as defined in this section, prior to exposure, may remain at large or under the owner's immediate control as may be required by local ordinance provided a booster injection of such approved vaccine is given within five days of the date of exposure.

(h) An animal under such restrictions shall not be removed from one health district into another prior to the conclusion of the prescribed isolation period except with the permission of the health authority from whose district such animal is to be removed and the permission of the health authority to whose jurisdiction such animal is to be transferred. The former shall give permission only after securing the consent of the health authority to whose jurisdiction the animal is to be transferred, except that if removal is to be to New York City or into another state, he shall give permission only after securing the consent of the Commissioner of Health of the State of New York. Such removal shall be by private conveyance, in charge of a responsible person and conducted in such a manner as to prevent the escape of the animal or its coming in contact with other animals or persons.

(i) The local health authority shall report forthwith to the state district health office or county health office having jurisdiction the name, age and address of every person exposed to any animal suspected of having rabies, any incident which requires rabies prophylaxis and all the pertinent facts relating to any such bite, exposure or treatment.

(j) Whenever any animal that has or is suspected of having rabies dies, or is killed, the local health authority may, at his discretion, cause the head of such animal to be removed and sent immediately, properly packed, with a complete history of the case, to a laboratory approved for this purpose by the State Commissioner of Health for examination.

(k) Whenever the disease rabies is confirmed by the State Wadsworth Center for Laboratories and Research in a raccoon in any county of New York State, within 30 days of notice to the county of the confirmation, all cats residing in the county who are not then actively immunized as defined in this section must be vaccinated as outlined below. Such notice will be sent to the county's local health authority by the Commissioner of Health. Actively immunized shall mean injection of a rabies vaccine which meets the standards prescribed by the United States Department of Agriculture for interstate sale and administered according to the manufacturer's instructions under the direction of a duly licensed veterinarian. All cats in the county, three months of age or over, are to be vaccinated to prevent rabies. This section shall not apply to cats owned by a non-resident, while passing through any town, city or village for a period not exceeding fifteen days, if entered in any exhibition at any cat show therein, and if confined and in immediate charge of the exhibitor, or to cats actually confined to the premises of incorporated societies, devoted to the care or hospital treatment of lost, strayed or homeless animals, or confined to the premises of public or private hospitals devoted to the treatment of sick animals, or confined for the purposes of research institutions, or to cats actually confined to the premises of a person, firm, or corporation actually engaged in the business of breeding or raising cats for profit and are so licensed as a class A dealer under the Federal Laboratory Animal Welfare Act, or if such vaccination would adversely affect the health of the cat as determined by a duly licensed veterinarian.

The veterinarian either administering the vaccine or responsible for supervising the vaccination shall give to the owner of the cat a signed statement. Such statement shall include the following information: name and address of the owner, date or dates of vaccination together with the type of vaccine injected and its duration of immunity, amount and manner of injection, name of manufacturer, lot number and expiration date of the vaccine. Or, if applicable, the veterinarian shall give the owner of the cat a signed statement verifying that the cat is exempt because such vaccination would adversely affect the health of the cat.

Compulsory vaccination shall remain in effect until the county presents evidence to the Commissioner that it has been one year since the last confirmed case of rabies in a terrestrial animal species.

Proof of rabies immunization must be shown by the owner to the local health authority whenever a cat bites a person. If the owner is unable to show such proof, the local health authority must follow the procedures outlined in subdivision (f) of this section.

*** See Public Health Law, Sections 2140-2146; Agriculture and Markets Law, Sections 106-127.

CHANGED EFFECTIVE AUGUST 30, 2000

State Sanitary Code Part 2

Questions or comments: bcdc@health.ny.gov

Revised: May 2006

Title: Part 57 - Conditions Under Which A Dog Actively Immunized Against Rabies May Be At Large In Designated Areas Certified For Rabies

(Statutory authority: Public Health Law, § 2140)

Sec.

- 57.1 Definitions
- 57.2 Privilege of vaccinated dogs to run at large in a designated area
- 57.3 Additional conditions to be complied with
- 57.4 Requirements for designated area

Volume: A-1

Statutory Authority: Public Health Law, Section 2140)

Title: Section 57.1 - Definitions

Section 57.1 Definitions.

(a) Three-year vaccine is a rabies vaccine for dogs which the Federal government has accepted as providing three-year duration of immunity.

(b) Active Immunization, to permit a dog to be at large,* shall mean the injection of a three-year vaccine which meets the standards prescribed by the United States Department of Agriculture for interstate sale ** and has been administered by a duly licensed veterinarian not later than the expiration date on the package. Vaccine's shall be administered following the directions of the manufacturer as approved by the Federal government.

* FOOTNOTE: In accordance with section 2140, article 21 of the Public Health Law "at large" means "elsewhere than on the premises of the owner, except it be on the premises of another person with the knowledge and assent of such other person". An opinion from the Attorney General states a dog on leash is not "at large" within the meaning of this statute (1943, Op. Att. Gen. 290).

** FOOTNOTE: Such products have the legend "U.S. Veterinary License No.---" printed on all containers.

(c) Certified area means an area certified by the State Commissioner of Health in accordance with section 2140 of article 21 of the Public Health Law as one in which, or in the vicinity of which, rabies exists.

(d) Designated area means an area which the State Commissioner of Health has designated as one in which dogs which have been actively immunized against rabies in accordance with the provisions in the rules may be permitted to be at large.

Volume: A-1

Title: Section 57.2 - Privilege of vaccinated dogs to run at large in a designated area

57.2 Privilege of vaccinated dogs to run at large in a designated area. The privilege of vaccinated dogs to run at large in a designated area shall not apply:

- (a) to any dog until 21 days after rabies vaccination;
- (b) to any dog after three years from its last vaccination against rabies with a three-year vaccine;
- (c) to any dog which has been bitten by or has been in intimate contact with a rabid animal from the date of such bite or exposure until four months later, except that dogs vaccinated with a three-year vaccine within an interval of three weeks to three years prior to exposure shall be permitted to remain at large, providing a booster injection of a three-year vaccine is given within five days of exposure.***
- (d) to any dog which has bitten a person until 10 days after such bite.***

*** FOOTNOTE: See Regulation 5, Chapter II, Sanitary Code.

Volume: A-1

Title: Section 57.3 - Additional conditions to be complied with

57.3 Additional conditions to be complied with.

(a) The veterinarian administering the vaccine shall give to the owner **** of the dog a signed statement which shall give the name and address of owner, and date or dates of vaccination together with the type of vaccine injected, the amount and manner of injection, name of manufacturer, lot number, and expiration date of the vaccine.

**** FOOTNOTE: Section 107 of the Agriculture and Markets Law States: "The word 'owner' includes a person harboring or keeping a dog."

- (b) The owner shall keep this statement readily available for inspection by official agents concerned with the control of rabies.
- (c) The veterinarian administering the vaccine shall attach an indestructible tag securely to the collar of the dog indicating that the dog has been vaccinated against rabies, with the date of last vaccination marked on the tag, which shall be worn by the dog at all times, and which shall be of a size plainly visible at a reasonable distance for purposes of inspection by officials concerned, and readily distinguishable from the dog license tag.

Volume: A-1

Title: Section 57.4 - Requirements for designated area

57.4 Requirements for designated area.

(a) An area may be designated after at least 70 percent of the enumerated dogs have been vaccinated as defined in subdivision (b) of section 57.1 of this Part.

(b) An area may be designated upon receipt of a resolution from the board of supervisors of the county, requesting the State Commissioner of Health to permit all dogs vaccinated against rabies to run at large, whereupon the commissioner may grant such privilege subject to the limitations of section 57.2 of this Part and subject to the following conditions:

(1) that the board of supervisors shall have provided funds and made the necessary arrangements for giving dog owners the opportunity of having their dogs vaccinated;

(2) that every effort shall be made to permit only vaccinated dogs to run at large;

(3) that, if within four months of the date of granting this request, 70 percent or more of the enumerated dog population have not been vaccinated, the commissioner may revoke this privilege.

Designation may be revoked at any time for failure to enforce the provisions of the Public Health Law.

Volume: A-1

Questions or comments: bcddc@health.ny.gov

Revised: May 2006



GOVERNOR ANDREW M. CUOMO HOME

July 24, 2013
Albany, NY

Governor Cuomo Signs Legislation to Increase Penalties for Killing a Police Animal

Governor Andrew M. Cuomo today signed legislation that will make the killing of a police animal a felony. Specially-trained police animals, particularly dogs and horses, are often put in harm's way when they are relied upon by law enforcement to keep New Yorkers safe. The new law will hold responsible individuals who kill these animals.

"Police animals go where others will not in order to keep law enforcement officials and all New Yorkers safe from harm and its a tragedy when one is killed," Governor Cuomo said. "This new law will hold the guilty parties accountable and offer better protections for these highly trained animals who are important members of our law enforcement community.

Law enforcement agencies have increasingly relied on the use of animals to assist with a variety of tasks to protect New Yorkers, including crime solving as well as rescue and recovery operations. The animals' specialized abilities are the result of extensive training that requires a great deal of time and resources. The killing of a police animal is both a tragic event and a serious loss to law enforcement in their work to keep New Yorkers safe. The new law signed today by Governor Cuomo (S1079A) will make the killing of a police dog or a police horse while it is performing its duties a class E felony. It is currently a Class A misdemeanor. The new law takes effect on November 1, 2013.

In addition, the Governor today signed legislation (S1993A) that will allow police departments to waive the requirement that a police dog must be confined for 10 days after biting an individual while in the course of official duties. Under current law, dogs that had bitten individuals are detained for a 10 day observation period as a precaution to protect against any possible rabies exposure. As police dogs are a vital part of a police department's mission, the new law will allow law enforcement to receive a waiver from a local health department based on the dog's up-to-date rabies vaccinations to allow the dog to immediately return to its duties keeping New Yorkers safe. The new law will take effect immediately.

Senator George D. Maziarz, who sponsored (S1079A), said: Every day, police animals throughout New York are protecting and serving our citizens. In 2011, Rocky, the Niagara County Sheriff's Office K-9, lost his life while tracking clues in a robbery. Animals like Rocky are continually and increasingly used for tasks that place their lives on the line. It is time that we provide these animals with the protection they deserve under the law when they are injured or die in the line of duty.

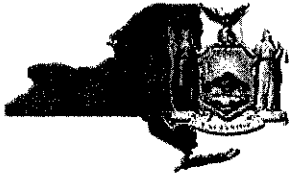
Senator David Carlucci, who sponsored (S1993A), said, This is common sense legislation that will provide our law enforcement personnel with the tools and flexibility they need to protect all New Yorkers. Our K-9 officers provide an invaluable service and should not be subjected to unnecessary confinement for simply doing their jobs. Today, we have taken another step forward to remove an additional costly mandate. I would like to thank Governor Cuomo for signing this into law and for his commitment to law enforcement and overall public safety."

Assemblyman Ken Zebrowski, who sponsored both bills, said, "I want to thank Governor Cuomo for signing these two important bills. The importance of police animals during investigations and apprehensions has significantly grown over the years. These animals provide protection, assistance and improve public safety. State and local police invest a great deal of time and resources in the training of these extraordinary animals and our laws must reflect that."

Source URL: <https://www.governor.ny.gov/press/07242013-increased-penalties-for-killing-police-animal>

Links:

[1] <https://www.governor.ny.gov/press/07242013-increased-penalties-for-killing-police-animal>



New York State Assembly

S01993 Summary:

Exempts certain police work dogs, that may bite an individual in

BILL NO S01993A

SAME AS SAME AS A01287-A

SPONSOR CARLUCCI

Law Selection Public Health Law

Law Amd S2140, Pub Health L

the course of their official duty, from confinement and observation periods.

S01993 Actions:

BILL NO S01993A

01/09/2013 REFERRED TO HEALTH

01/24/2013 1ST REPORT CAL.5

01/28/2013 2ND REPORT CAL.

01/29/2013 ADVANCED TO THIRD READING

02/04/2013 PASSED SENATE

02/04/2013 DELIVERED TO ASSEMBLY

02/04/2013 referred to health

05/01/2013 RECALLED FROM ASSEMBLY

05/01/2013 returned to senate

05/01/2013 VOTE RECONSIDERED - RESTORED TO THIRD READING

05/01/2013 AMENDED ON THIRD READING 1993A

05/08/2013 REPASSED SENATE

05/08/2013 RETURNED TO ASSEMBLY

05/08/2013 referred to codes

05/20/2013 substituted for a1287a

05/20/2013 ordered to third reading cal.297

05/20/2013 passed assembly

05/20/2013 returned to senate

07/19/2013 DELIVERED TO GOVERNOR

07/24/2013 SIGNED CHAP.163

S01993 Committee Votes:

DATE:05/20/2013 Assembly Vote YEA/NAY: 132/1

Abbate	Y	Crespo	Y	Goodell	Y	Lupardo	Y	Paulin	Y	Simanowitz	Y
Abinanti	Y	Crouch	Y	Gottfried	Y	Lupinacci	Y	Peoples-Stokes	Y	Simotas	Y
Arroyo	Y	Curran	Y	Graf	Y	Magee	Y	Perry	Y	Skartados	Y
Aubry	Y	Cusick	Y	Gunther	Y	Magnarelli	Y	Pretlow	Y	Skoufis	Y
Barclay	Y	Cymbrowitz	ER	Hawley	ER	Maisel	Y	Quart	Y	Solages	Y
Barrett	Y	DenDekker	Y	Heastie	Y	Malliotakis	Y	Ra	Y	Stec	Y
Barron	ER	Dinowitz	ER	Hennessey	Y	Markey	Y	Rabbitt	Y	Steck	Y
Benedetto	Y	DiPietro	Y	Hevesi	Y	Mayer	Y	Raia	Y	Stevenson	ER
Blankenbush	Y	Duprey	Y	Hikind	Y	McDonald	Y	Ramos	Y	Stirpe	Y
Borelli	Y	Englebright	Y	Hooper	Y	McDonough	Y	Reilich	Y	Sweeney	Y
Boyland	ER	Espinal	Y	Jacobs	ER	McKevitt	Y	Rivera	Y	Tedisco	Y
Braunstein	Y	Fahy	Y	Jaffee	Y	McLaughlin	Y	Roberts	Y	Tenney	ER
Brennan	Y	Farrell	Y	Johns	Y	Miller	Y	Robinson	Y	Thiele	Y
Brindisi	Y	Finch	ER	Jordan	Y	Millman	Y	Rodriguez	ER	Titone	Y
Bronson	Y	Fitzpatrick	ER	Katz	Y	Montesano	Y	Rosa	Y	Titus	ER
Brook-Krasny	Y	Friend	Y	Kavanagh	NO	Morelle	Y	Rosenthal	Y	Walter	Y
Buchwald	Y	Gabryszak	Y	Kearns	Y	Mosley	Y	Rozic	Y	Weinstein	Y
Butler	Y	Galef	Y	Kellner	Y	Moya	Y	Russell	Y	Weisenberg	Y
Cahill	Y	Gantt	Y	Kim	Y	Nojay	Y	Ryan	Y	Weprin	Y
Camara	Y	Garbarino	Y	Kolb	Y	Nolan	Y	Saladino	Y	Wright	Y
Ceretto	Y	Gibson	Y	Lalor	Y	Oaks	Y	Santabarbara	Y	Zebrowski	Y
Clark	ER	Giglio	Y	Lavine	Y	O'Donnell	Y	Scarborough	ER	Mr Spkr	Y
Colton	Y	Gjonaj	Y	Lentol	Y	Ortiz	Y	Schimel	Y		
Cook	Y	Glick	Y	Lifton	Y	Otis	Y	Schimminger	Y		
Corwin	Y	Goldfeder	Y	Lopez	Y	Palmesano	Y	Sepulveda	Y		

S01993 Floor Votes:

S01993 Memo:

Memo not available

STATE OF NEW YORK

Cal. No. 5

1993--A

2013-2014 Regular Sessions

IN SENATE

(Prefiled)

January 9, 2013

Introduced by Sen. CARLUCCI -- read twice and ordered printed, and when printed to be committed to the Committee on Health -- reported favorably from said committee, ordered to first and second report, ordered to a third reading, passed by Senate and delivered to the Assembly, recalled, vote reconsidered, restored to third reading, amended and ordered reprinted, retaining its place in the order of third reading

AN ACT to amend the public health law, in relation to exempting police dogs from confinement and observation

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Subdivision 7 of section 2140 of the public health law, as amended by chapter 510 of the laws of 2011, is amended to read as follows:

7. "Confinement and observation" refers to the conditions under which apparently healthy dogs, cats, domesticated ferrets, and domestic live-stock, which are not exhibiting symptoms of rabies, must be maintained to determine rabies status if such an animal has potentially exposed a person to rabies, and the owner wishes to avoid euthanizing and testing the animal. If the county health authority does not approve home confinement, the ten day confinement and observation period must take place, at owner's expense, at an appropriate facility such as an animal shelter, veterinarian's office, kennel or farm. The confinement must include (i) provisions to prevent escape of the animal during the confinement period and (ii) requirements that the owner notify the public health authority immediately if the animal becomes ill at anytime during confinement, and (iii) verification by the county health authority or their designee at the end of the ten day period that the animal is healthy.

If a police work dog bites an individual in the course of such dog's official duty the police department may apply for a waiver from confinement from the local department of health. As part of such application for a waiver, the police department shall provide the local health department with records of such dog's past vaccination for rabies and proof that such dog's rabies vaccinations are up-to-date.

§ 2. This act shall take effect immediately.

EXPLANATION--Matter in italics (underscored) is new; matter in brackets

[] is old law to be omitted.

APPENDIX B

Resources For Physicians

Explanation For Animal Bite Report Form

Animal Bite Form

Rabies Post Exposure Prophylaxis Algorithm 01/2010

Guidance Regarding Human Exposure To Rabies and Post Exposure Prophylaxis
Decisions 10/2010

MMWR: Use of Reduced 4-Dose Vaccine Schedule For Post Exposure Prophylaxis
03/2010

County Requirements/Guidelines For Patients Needing Rabies Series

Explanation For County Approval For Rabies Post Exposure

Post Exposure Approval Form

Rabies Vaccine VIS Form 10/2009

**EXPLANATION FOR
ANIMAL BITE REPORT FORM**

- Purpose: To make reporting easier, faster, and produce a record for each individual.
- Complete, Call or Fax: To victim's county of residence.
- Call: Call victim's county of residence if there is a high risk exposure or post exposure prophylaxis is needed. County approval must be obtained prior to starting rabies post exposure prophylaxis for county to ensure payment. Each county has a mechanism for accepting after hour calls.
- Incident Date: Necessary to determine quarantine period and record incident.
- Demographic Information: Necessary for adequate follow up, especially if animal control must be dispatched. If visiting, temporary and permanent address is helpful.
- ER Treatment: Necessary to reinforce teaching given at ER. In addition, reinforce s/s of infection.
- Animal Owner: Necessary for locating animal. If animal is stray, description, location is important.
- Reported To: Public Health by fax or phone.

WARREN COUNTY HEALTH SERVICES
DIVISION OF PUBLIC HEALTH
1340 State Route 9, Lake George NY 12845
TEL#: (518)-761-6580 ~ FAX#: (518)-761-6422
Email: healthservices@warrencountyny.gov

ANIMAL BITE REPORT

Date of Incident: _____

Description of Incident

Name of Individual Bitten: _____

Address: _____ Telephone: (H) _____
(W) _____

Was Medical Attention Sought? Yes No

If Yes, Where? _____

Medical Provider Seen: _____

Treatment Rendered _____ Last TD (date) _____

Informed of S&S Infection: _____ Initials _____

Name Of Animal Owner: _____ Telephone: (H) _____

Address: _____ (W) _____

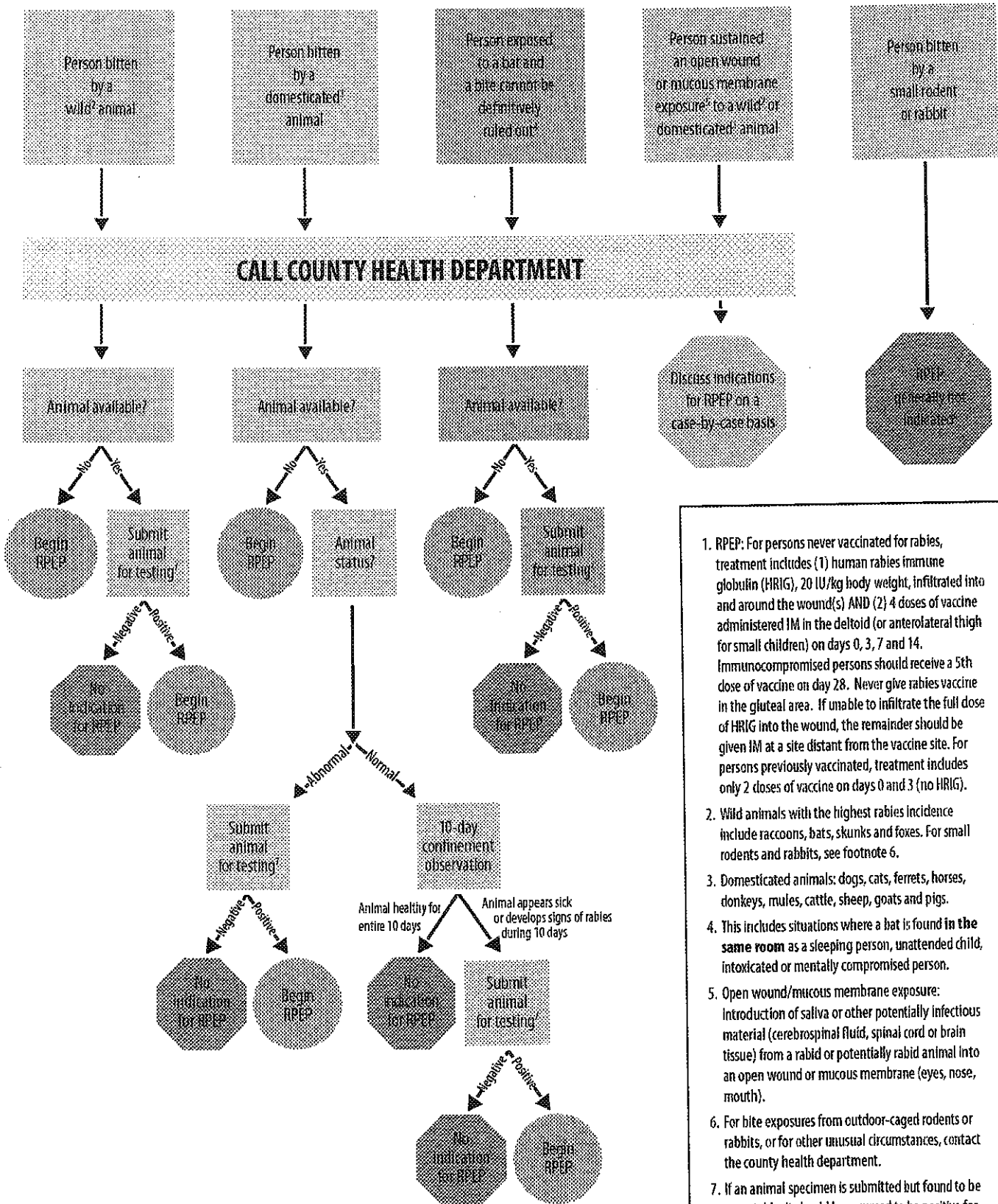
Type of Animal Involved: _____ Description: _____

Rabies Vaccination Date: _____ Type: 1yr 3yr Tag#: _____

Reported By: _____ Date: _____

Telephone Number: _____

Rabies Post Exposure Prophylaxis (RPEP)¹ Algorithm



1. RPEP: For persons never vaccinated for rabies, treatment includes (1) human rabies immune globulin (HRIG), 20 IU/kg body weight, infiltrated into and around the wound(s) AND (2) 4 doses of vaccine administered IM in the deltoid (or anterolateral thigh for small children) on days 0, 3, 7 and 14. Immunocompromised persons should receive a 5th dose of vaccine on day 28. Never give rabies vaccine in the gluteal area. If unable to infiltrate the full dose of HRIG into the wound, the remainder should be given IM at a site distant from the vaccine site. For persons previously vaccinated, treatment includes only 2 doses of vaccine on days 0 and 3 (no HRIG).
2. Wild animals with the highest rabies incidence include raccoons, bats, skunks and foxes. For small rodents and rabbits, see footnote 6.
3. Domesticated animals: dogs, cats, ferrets, horses, donkeys, mules, cattle, sheep, goats and pigs.
4. This includes situations where a bat is found in the same room as a sleeping person, unattended child, intoxicated or mentally compromised person.
5. Open wound/mucous membrane exposure: Introduction of saliva or other potentially infectious material (cerebrospinal fluid, spinal cord or brain tissue) from a rabid or potentially rabid animal into an open wound or mucous membrane (eyes, nose, mouth).
6. For bite exposures from outdoor-caged rodents or rabbits, or for other unusual circumstances, contact the county health department.
7. If an animal specimen is submitted but found to be untestable, it should be assumed to be positive for rabies treatment decision making purposes.

***SUBJECT: Guidance Regarding Human Exposure to Rabies and
Postexposure Prophylaxis Decisions***

I. Human exposure to rabies

Human exposures to rabies can generally be categorized as bite, open wound, mucous membrane, or other types of exposure:

Bite exposure: Any penetration of the skin of a person by the teeth of a rabid or potentially rabid animal.

Open wound exposure: Introduction of saliva or other potentially infectious material (cerebrospinal fluid, spinal cord, or brain tissue) from a rabid or potentially rabid animal into an open wound (e.g., broken skin that bled within the past 24 hours).

Mucous membrane exposure: Introduction of saliva or other potentially infectious material (cerebrospinal fluid, spinal cord, or brain tissue) from a rabid or potentially rabid animal onto any mucous membrane (eyes, nose, mouth).

Other exposure: Any interaction with a rabid or potentially rabid animal where a bite, open wound, or mucous membrane exposure cannot be definitively ruled out. This includes situations where a bat is found in a room with a sleeping person, unattended child, intoxicated or mentally compromised person. Situations that **DO NOT MEET** the criteria for potential human exposure to rabies include the following:

- Wounds of unknown origin where no animal was ever witnessed by any person at the scene.
- Petting a rabid or potentially rabid animal with no saliva contact.
- Direct contact with a bat where the person exposed is reasonably certain a bite did not occur.
- Exposure situations of any type involving **wild/free-roaming** rabbits or small rodents (e.g., squirrels, chipmunks, rats, mice).
- Exposure situations of any type involving pet rabbits or small pet rodents (e.g., rats, mice) **housed exclusively indoors**.
- Contact with the blood, urine, feces (e.g., guano), milk, or spray (e.g., from a skunk) of a rabid or potentially rabid animal.
- Secondary exposure scenarios (i.e., contact with an animal, surface, or object that has had contact with a rabid or potentially rabid animal) that do not meet the definition of open wound or mucous membrane exposure.

Human exposures to bats in multiple person dwellings

Group homes, long term care facilities, dormitories, and camps are examples of dwellings where many persons could be potentially exposed (“other exposure” category, above) to bats. It is absolutely imperative in these multiple person exposure situations to make every attempt to capture the bat for testing, make a list of all persons with possible contact, and thoroughly review each individual’s potential exposure. Generally, all persons exposed in these settings should be evaluated as any exposed individual would be evaluated.

Potential exposure scenarios not covered in this guidance document should be discussed as needed on a case by case basis for determination of human exposure criteria by contacting the New York State Department of Health (NYSDOH) Bureau of Communicable Disease Control (BCDC) at (518) 473-4439 and after hours at (866) 881-2809.

II. Determining rabies status of the animal

In order to assist in rabies postexposure prophylaxis (RPEP) decisions, any potentially rabid animal that comes into contact with a human, causing them to be potentially exposed to rabies, should be evaluated for rabies either by confinement/observation (domesticated animals only, see below) or by laboratory testing.

For bat and other non-domesticated animal exposures, every attempt should be made to safely capture the animal to be submitted for laboratory testing. For domesticated¹ animal exposures, decisions about whether to evaluate by confinement/observation versus laboratory testing should take into consideration the risk of rabies in the exposing animal based upon species, behavior, clinical presentation, and exposure circumstances. Table 1 describes various factors that can be used to aid in this assessment; however, often there is no single factor alone that places the risk of rabies clearly into the high or low risk categories. All factors should be considered and contribute to the overall risk assessment.

Table 1: Factors to aid in the assessment for the risk of rabies in the exposing animal

High-suspect for rabies	Low-suspect for rabies
Behavior abnormal for the species or changes in behavior of a known animal	Normal animal behavior
Clinical signs compatible with rabies	No clinical signs of rabies
Unprovoked attack*	Provoked attack*
Rabies vector species (bat, raccoon, fox, skunk)	Owned domesticated species ¹ ; wild or outdoor housed rabbits and small rodents
Actual or possible contact with a known rabid animal	No neurologic signs (stumbling, seizures, tremors, reduced or heightened excitability)

*Note: Provoking behaviors by a person can include taking food, surprising, inflicting pain, moving suddenly, making loud noises, touching, making eye contact, running, biking, invading territory, approaching a mother animal with a litter, or getting near an old or ill/injured animal.

Confinement/observation

Confinement/observation is considered only for domesticated animals (dog, cat, ferret, sheep, goat, cattle, horse, donkey, mule, or swine). If a domesticated animal has exposed a human and is a low-suspect for rabies, it may be held in confinement and observed daily for signs of rabies for 10 days commencing from the day the exposure occurred. RPEP of exposed persons should not be automatically initiated when pursuing 10 day confinement/observation. Note that animals under rabies observation should not be vaccinated until the conclusion of the 10-day period to avoid potential vaccine reactions that may mimic early rabies signs.

If an animal dies or becomes clinically ill during the 10 day observation period, and the county health authority and consulting veterinarian find the presentation compatible with rabies, then the animal should be humanely euthanized and submitted for rabies testing immediately. RPEP of exposed persons should then be initiated only if rabies is not ruled out.

Laboratory testing

According to the New York State (NYS) Sanitary Code, human exposure from bat and other non-domesticated animal species generally requires euthanasia and testing of the animal to determine rabies status and the necessity of RPEP. Under extenuating circumstances, exceptions can be made on a case-by-case basis after consultation with the NYSDOH.

¹ Domesticated animals include dogs, cats, ferrets, horses, donkeys, mules, cattle, sheep, goats, and pigs.

Any animal (domesticated or non-domesticated) that is a high-suspect for rabies (see Table 1) and/or exhibiting clinical signs compatible with rabies and has exposed a human should not be confined and observed but should be immediately humanely euthanized and submitted for rabies testing.

Obtaining laboratory testing

Laboratory testing of animals that have potentially exposed a human or animal to rabies is available free of charge at the NYSDOH Wadsworth Center Rabies Laboratory. Testing is performed during routine business hours but can be performed on an emergency basis if the situation warrants, such as when an animal that is strongly suspected to be rabid has bitten a human and treatment is being withheld pending test results.

Detailed submission guidelines (including submission policies for animal species and human specimens) are available at: www.wadsworth.org/rabies or by phone at (518) 485-6464. After hours, please contact (518) 527-7369 or (518) 527-7370.

III. RPEP for exposed persons never previously vaccinated for rabies

For all persons who have never been previously vaccinated for rabies, RPEP includes:

- wound management
- administration of Human Rabies Immune Globulin (HRIG)
- administration of four doses of rabies vaccine on days 0, 3, 7, and 14
- administration of a fifth dose of rabies vaccine on day 28 for persons with immunosuppression

The schedule for all vaccine doses should be adhered to as closely as possible.

This guidance document covers detailed information about timeliness, wound management, HRIG administration, vaccine administration, scheduling variations, and discontinuation of RPEP. Situations falling outside the general recommendations in this guidance document should be discussed on a case by case basis by contacting the NYSDOH BCDC at (518) 473-4439 and after hours at (866) 881-2809.

Timeliness

RPEP should be authorized and provided as soon as possible after exposure to an animal that is known to be rabid or is a high-suspect for rabies. In general, RPEP should only be delayed when a suspect animal's rabies status can be determined with confinement/observation or when laboratory test results will be available in a timely manner. For incidents involving bite, mucous membrane, open wound, or other exposures from an animal known to be rabid or is a high-suspect for rabies but is not available for testing, RPEP should be authorized and initiated regardless of the length of time since the exposure occurred.

For bite, mucous membrane, open wound, or other exposures to animals that are low-suspect for rabies, RPEP for exposures that occurred more than 3 months previously should be discussed on a case-by-case basis though consultation with the NYSDOH prior to authorizing and initiating RPEP. Exposures involving a bat found in a room where exposure cannot be definitively ruled out (as defined in Section I) and that occurred more than 3 months prior should not be authorized.

Exceptions to these general guidelines about timeliness should only be made on a case-by-case basis and through consultation with the NYSDOH prior to authorizing and initiating RPEP.

Delay of RPEP while attempting to locate the exposing animal

For exposures to domesticated animals, all efforts should be made to capture and test (or observe) domesticated animals when there has been a human exposure.

Historically, 3 days has been used as a general guideline for how long one might reasonably wait before deciding that the animal is not likely to be found and so prophylaxis should be started. This "3 day rule" is not intended as a set-in-stone, absolute cutoff for starting treatment. The length of time to wait (if any)

should be managed in consultation with their physician and appropriate public health officials. Information on titer testing at the NYSDOH Wadsworth Center Rabies Laboratory is available at: <http://www.wadsworth.org/rabies/prof/SerologyGuidelines.htm>.

RPEP schedule variations

If a patient gets off schedule, consult with the NYSDOH BCDC regarding recommendations for schedule adjustment. In general, RPEP schedule considerations include:

- Under no circumstances should the series be re-started.
- HRIG should not be administered more than once, except in certain circumstances as described above.
- Although HRIG should be given on day 0 with the first dose of vaccine, it can be given up to 7 days after starting the vaccine schedule.
- A deviation of 1 day from the recommended schedule should be managed by maintaining Vaccine doses as per the original schedule, if possible.
- If deviations of greater than 1 day from the original schedule are necessary or unavoidable, all subsequent doses should be administered on a new schedule adjusted for the time delay.
- If there is concern about **significant** (>2 week) deviation from the schedule, antibody titers should be verified on a serum sample collected 14–28 days after the final vaccine dose.
- If a patient began RPEP in another country and needs to continue here, consult with the NYSDOH BCDC. In rare circumstances, it may be necessary to re-start treatment.

Discontinuation of RPEP

If RPEP is begun and the animal's rabies status is ultimately determined to be negative by laboratory testing or confinement/observation, RPEP should be discontinued. Those who receive partial RPEP (2 or more doses of vaccine) should be advised to request a serum antibody titer drawn 1–2 months after the last vaccine dose in order to potentially allow use of the shortened treatment course in the event of a future rabies exposure.

IV. RPEP for exposed persons previously vaccinated for rabies

Previously vaccinated persons are those individuals who have received either:

- A complete rabies pre-exposure or postexposure prophylaxis regimen in accordance with ACIP recommendations using a modern, cell culture-derived rabies vaccine (such as Imovax® or RabAvert®); or
- Rabies vaccination following another protocol or with another vaccine with a subsequent documented rabies virus neutralizing antibody titer.

In all other cases, including partial RPEP regimens without a documented virus neutralizing antibody titer, the full RPEP consisting of HRIG plus four doses (or five doses for immunosuppressed persons) of vaccine should be administered.

RPEP for previously vaccinated persons consists of wound management as above and **two** doses of rabies vaccine, 1 ml administered IM in the deltoid area or, for small children, in the anterolateral aspect of the thigh, given on day 0 and day 3. Rabies vaccine should **never** be given in the gluteal area, as this is a specific contraindication on the product label. The schedule for these doses should be adhered to as closely as possible.

HRIG is not given to previously vaccinated persons receiving RPEP. Administration of HRIG to a person who already has immunity to rabies is contraindicated because it may interfere with the anamnestic response to vaccine. It is unclear whether such administration could interfere sufficiently to cause treatment failure. Thus, every effort must be made to assure that HRIG is only given if the person is not previously vaccinated. If HRIG is erroneously given, the patient should receive an extra dose of vaccine on or after day seven. This recommendation is not part of the national ACIP guidelines, but has

been suggested by the Centers for Disease Control and Prevention as a precautionary measure.

V. Adverse reactions to RPEP

Treatment with any biological is not completely risk-free and adverse reactions may occur following the administration of human rabies vaccines or HRIG, although no life threatening reactions have been reported to date. Thus, decisions on the necessity for RPEP in lower-risk exposures should include consideration of the risk of treatment.

Any adverse events related to rabies treatment should be discussed with experts at the NYSDOH BCDC and reported to VAERS at: <http://vaers.hhs.gov/esub/index>.

VI. Additional resources

Additional information regarding human RPEP recommendations can be found in the following ACIP guidance documents. **Note that in cases where NYS law, regulation, or policy differs from ACIP guidelines, the NYS law, regulation, or policy supersedes ACIP guidelines.**

Centers for Disease Control and Prevention. Human Rabies Prevention – United States, 2008. Recommendations of the Advisory Committee on Immunization Practices. MMWR 2008; 57 (RR-3): 1–28, available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5703a1.htm>.

Centers for Disease Control and Prevention. Use of a Reduced (4-Dose) Vaccine Schedule for Postexposure Prophylaxis to Prevent Human Rabies – Recommendations of the Advisory Committee on Immunization Practices. MMWR 2010; 59 (RR-2): 1–9 available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5902a1.htm>.



MMWRTM

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**

DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

The *MMWR* series of publications is published by Surveillance, Epidemiology, and Laboratory Services, Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services, Atlanta, GA 30333.

Suggested Citation: Centers for Disease Control and Prevention. [Title]. *MMWR* 2010;59(No. RR-#):[inclusive page numbers].

Centers for Disease Control and Prevention

Thomas R. Frieden, MD, MPH
Director

Peter A. Briss, MD, MPH
Acting Associate Director for Science

James W. Stephens, PhD
Office of the Associate Director for Science

Stephen B. Thacker, MD, MSc
*Deputy Director for
Surveillance, Epidemiology, and Laboratory Services*

Editorial and Production Staff

Frédéric E. Shaw, MD, JD
Editor, MMWR Series

Christine G. Casey, MD
Deputy Editor, MMWR Series

Teresa E. Rutledge
Managing Editor, MMWR Series

David C. Johnson
Lead Technical Writer-Editor

Jeffrey D. Sokolow, MA
Project Editor

Martha P. Boyd
Lead Visual Information Specialist

Malbea A. LaPere
Stephen R. Spriggs

Terraye M. Starr
Visual Information Specialists

Kim L. Bright
Quang M. Doan, MBA

Phyllis H. King
Information Technology Specialists

Editorial Board

William L. Roper, MD, MPH, Chapel Hill, NC, *Chairman*
Virginia A. Gaine, MD, Indianapolis, IN

Jonathan E. Fielding, MD, MPH, MBA, Los Angeles, CA
David W. Fleming, MD, Seattle, WA

William E. Halperin, MD, DrPH, MPH, Newark, NJ
King K. Holmes, MD, PhD, Seattle, WA

Deborah Holzman, PhD, Atlanta, GA
John K. Iglehart, Bethesda, MD

Dennis G. Maki, MD, Madison, WI
Sue Mallonee, MPH, Oklahoma City, OK

Patricia Quinlisk, MD, MPH, Des Moines, IA
Patrick L. Remington, MD, MPH, Madison, WI

Barbara K. Rimer, DrPH, Chapel Hill, NC
John V. Rullan, MD, MPH, San Juan, PR

William Schaffner, MD, Nashville, TN
Anne Schuchat, MD, Atlanta, GA

Dixie E. Snider, MD, MPH, Atlanta, GA
John W. Ward, MD, Atlanta, GA

CONTENTS

Introduction	1
Methods	2
Rationale for Reduced Doses of Human Rabies Vaccine.....	2
Revised Rabies Postexposure Prophylaxis Recommendations.....	5
Vaccination and Serologic Testing.....	7
Management of Adverse Reactions, Precautions, and Contraindications	7
Variation from Human Rabies Vaccine Package Inserts.....	7
References	8

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

Recommendations of the Advisory Committee on Immunization Practices

Prepared by

Charles E. Rupprecht, VMD, PhD¹

Deborah Briggs, PhD²

Catherine M. Brown, DVM³

Richard Franka, DVM, PhD¹

Samuel L. Katz, MD⁴

Harry D. Kerr, MD⁵

Susan M. Lett, MD³

Robin Levis, PhD⁶

Martin I. Meltzer, PhD¹

William Schaffner, MD⁷

Paul R. Cieslak, MD⁸

¹National Center for Emerging and Zoonotic Infectious Diseases (proposed), CDC

²Kansas State University, Manhattan, Kansas

³Massachusetts Department of Public Health, Jamaica Plain, Massachusetts

⁴Duke University Medical Center, Durham, North Carolina

⁵American College of Emergency Physicians, Dallas, Texas

⁶Food and Drug Administration, Washington, District of Columbia

⁷Vanderbilt University School of Medicine, Nashville, Tennessee

⁸Oregon Department of Public Health, Corvallis, Oregon

Summary

This report summarizes new recommendation and updates previous recommendations of the Advisory Committee on Immunization Practices (ACIP) for postexposure prophylaxis (PEP) to prevent human rabies (CDC. Human rabies prevention—United States, 2008: recommendations of the Advisory Committee on Immunization Practices. MMWR 2008;57[No. RR-3]). Previously, ACIP recommended a 5-dose rabies vaccination regimen with human diploid cell vaccine (HDCV) or purified chick embryo cell vaccine (PCECV). These new recommendations reduce the number of vaccine doses to four. The reduction in doses recommended for PEP was based in part on evidence from rabies virus pathogenesis data, experimental animal work, clinical studies, and epidemiologic surveillance. These studies indicated that 4 vaccine doses in combination with rabies immune globulin (RIG) elicited adequate immune responses and that a fifth dose of vaccine did not contribute to more favorable outcomes. For persons previously unvaccinated with rabies vaccine, the reduced regimen of 4 1-mL doses of HDCV or PCECV should be administered intramuscularly. The first dose of the 4-dose course should be administered as soon as possible after exposure (day 0). Additional doses then should be administered on days 3, 7, and 14 after the first vaccination. ACIP recommendations for the use of RIG remain unchanged. For persons who previously received a complete vaccination series (pre- or postexposure prophylaxis) with a cell-culture vaccine or who previously had a documented adequate rabies virus-neutralizing antibody titer following vaccination with noncell-culture vaccine, the recommendation for a 2-dose PEP vaccination series has not changed. Similarly, the number of doses recommended for persons with altered immunocompetence has not changed; for such persons, PEP should continue to comprise a 5-dose vaccination regimen with 1 dose of RIG. Recommendations for pre-exposure prophylaxis also remain unchanged, with 3 doses of vaccine administered on days 0, 7, and 21 or 28. Prompt rabies PEP combining wound care, infiltration of RIG into and around the wound, and multiple doses of rabies cell-culture vaccine continue to be highly effective in preventing human rabies.

Introduction

Rabies is a zoonotic disease caused by RNA viruses in the family *Rhabdoviridae*, genus *Lyssavirus* (*I*). Virus is transmitted in the saliva of rabid mammals via a bite. After entry to the central nervous system, these viruses cause an acute, progressive encephalomyelitis. The incubation period usually ranges from 1 to 3 months after exposure, but can range from days to

The material in this report originated in the National Center for Emerging and Zoonotic Infectious Diseases (proposed), Lonnie King, DVM, Director.

Corresponding preparer: Charles E. Rupprecht, VMD, PhD, National Center for Emerging and Zoonotic Infectious Diseases (proposed), 1600 Clifton Road, N.E., MS G-33, Atlanta, GA 30333. Telephone: 404-639-1050; Fax: 404-639-1564; E-mail: cyr5@cdc.gov.

years. Rabies can be prevented by avoidance of viral exposure and initiation of prompt medical intervention when exposure does occur. In the United States, animal rabies is common. In a recent study, approximately 23,000 persons per year were estimated to have been exposed to potentially rabid animals and received rabies postexposure prophylaxis (PEP) (2). With the elimination of canine rabies virus variants and enzootic transmission among dogs, human rabies is now rare in the United States, with an average of one or two cases occurring annually since 1960 (3).

Prompt wound care and the administration of rabies immune globulin (RIG) and vaccine are highly effective in preventing human rabies following exposure. A variety of empirical schedules and vaccine doses have been recommended over time, based in part on immunogenicity and clinical experience in areas of the world with enzootic canine or wildlife rabies (4). As more potent vaccines were developed, the number of vaccine doses recommended for PEP has decreased, and studies aimed at further revision and reduction of PEP schedules and doses in humans have been encouraged. By the latter half of the 20th century, a 4- to 6-dose, intramuscular regimen using human diploid cell vaccine (HDCV) or purified chick embryo cell vaccine (PCECV) was being recommended (5–8). In the United States, a 5-dose PEP vaccine regimen was adopted during the 1980s (9–12). In 2007, when human rabies vaccine was in limited supply, an ad hoc National Rabies Working Group was formed to reassess the recommendations for rabies prevention and control in humans and other animals. In 2008, a smaller Advisory Committee on Immunization Practices (ACIP) Rabies Workgroup was formed to review rabies vaccine regimen options. This report provides updated ACIP recommendations regarding the use of a 4-dose vaccination regimen, replacing the previously recommended 5-dose regimen, for rabies PEP in previously unvaccinated persons.

Methods

The ACIP Rabies Workgroup* was formed in October 2008 to review 1) previous recommendations; 2) published and unpublished data from both national and global sources regarding rabies PEP; and 3) the immunogenicity, effectiveness, and safety of a 4-dose PEP rabies vaccination regimen. The ACIP Rabies Workgroup used an evidence-based process for consideration of a reduced vaccination regimen in human rabies PEP. This approach consisted of a review of information available from basic and applied studies of rabies prevention. Because rabies is almost always fatal among immunologically naïve

persons once clinical symptoms of rabies occur, randomized, placebo-controlled efficacy studies of vaccine in humans cannot be conducted. The ACIP Rabies Workgroup reviewed six areas: 1) rabies virus pathogenesis, 2) experimental animal models, 3) human immunogenicity studies, 4) prophylaxis effectiveness in humans, 5) documented failures of prophylaxis in humans, and 6) vaccine safety. Studies for review were identified by searching the PubMed database and other relevant references and by consulting subject-matter experts. When definitive research evidence was lacking, the recommendations incorporated the expert opinion of the ACIP Rabies Workgroup members. The ACIP Rabies Workgroup also sought advice and comment from representatives of the vaccine industry, the National Association of State Public Health Veterinarians, the Council of State and Territorial Epidemiologists, state and local public health officials, additional national stakeholder groups, and other national and international experts. The proposed revised recommendations and a draft statement from the ACIP Rabies Workgroup were presented to the full ACIP during February 2009. After review and comment by ACIP, a revised draft, recommending a reduced regimen of 4 1-mL doses of rabies vaccine for PEP in previously unvaccinated persons, was prepared for consideration. These recommendations were discussed and accepted by ACIP at the June 2009 meeting (13).

Rationale for Reduced Doses of Human Rabies Vaccine

A detailed review of the evidence in support of a reduced, 4-dose schedule for human PEP has been published (14). The totality of the evidence, obtained from the available peer-reviewed literature, unpublished data sources, epidemiologic reviews, and expert opinion strongly supports a reduced vaccination schedule (Table 1). Since the 19th century, prophylactic interventions against rabies have recognized the highly neurotropic characteristics of lyssaviruses and have aimed at neutralizing the virus at the site of infection before it can enter the human central nervous system (Figure 1) (4,15,16). To accomplish this, immunologic interventions must be prompt and must be directed toward local virus neutralization, such as local infiltration with RIG and vaccination. Modern recommended rabies PEP regimens emphasize early wound care and passive immunization (i.e., infiltration of RIG in and around the wound) combined with active immunization (i.e., serial doses of rabies vaccine). Accumulated scientific evidence indicates that, following rabies virus exposure, successful neutralization and clearance of rabies virus mediated via appropriate PEP generally ensures patient survival (8).

*A list of the membership appears on page 9 of this report.

TABLE 1. Summary of evidence in support of a 4-dose postexposure prophylaxis regimen — United States, 2010

Evidence	Conclusion	Sources
Rabies virus pathogenesis	High neurotropism of rabies virus requires immediate immunization (local infiltration with human rabies immune globulin [HRIG] and vaccination) to neutralize virus at the site of infection and prevent viral entry into the central nervous system.	Published literature,* expert national and international opinion, and historic observations
Experimental animal models	Protection in animal models was elicited without regard to the absolute number of vaccine doses used.	Published literature,† expert national and international opinion, and unpublished data
Human clinical studies	All patients develop adequate levels of virus-neutralizing antibodies by day 14, without any additive value of a 5th dose of vaccine administered at day 28 (in regards to any substantive increase in measured virus-neutralizing antibody levels).	Published literature,§ expert national and international opinion, and unpublished data
Epidemiologic surveillance	No human rabies cases were identified in patients who received appropriate wound care, HRIG, and 4 doses of vaccine.	Published literature,¶ expert national and international opinion, and unpublished data
Health economics	Expected positive national benefits are related to omission of a 5th dose (e.g., minimized travel expenses, reduced time out of work, health-care workers have more time for other patients, and fewer adverse reactions).	Published literature** and expert national opinion

* **SOURCES:** Lyles DS, Rupprecht CE. *Rhabdoviridae*. In: Knipe D, Howley P, eds. *Fields virology*. 5th ed. Philadelphia, PA: Lippincott, Williams, & Wilkins; 2007:1363–408. Plotkin SA, Koprowski H, Rupprecht CE. Rabies vaccines. In: Plotkin SA, Orenstein WA, Offit PA, eds. *Vaccines*. 5th ed. Philadelphia, PA: Saunders; 2008:687–714. World Health Organization. WHO Expert Consultation on Rabies. 1st report. WHO Technical Report Series, No. 931. Geneva, Switzerland: World Health Organization; 2005. Rupprecht CE, Briggs D, Brown C, et al. Evidence for a 4-dose vaccine schedule for human rabies post-exposure prophylaxis in previously non-vaccinated individuals. *Vaccine* 2009;27:7141–8. Charlton KM, Nadin-Davis S, Casey GA, Wandeler AI. The long incubation period in rabies: delayed progression of infection in muscle at the site of exposure. *Acta Neuropathol* 1997;94:73–7. Dietzschold B, Schnell M, Koprowski H. Pathogenesis of rabies. *Curr Top Microbiol Immunol* 2005;292:45–56.

† **SOURCES:** Lyles DS, Rupprecht CE. *Rhabdoviridae*. In: Knipe D, Howley P, eds. *Fields Virology*. 5th Ed. Philadelphia, PA: Lippincott, Williams, & Wilkins; 2007:1363–408. World Health Organization. WHO Expert Consultation on Rabies. 1st Report. WHO Technical Report Series, No. 931. Geneva, Switzerland: World Health Organization; 2005. Rupprecht CE, Briggs D, Brown C, et al. Evidence for a 4-dose vaccine schedule for human rabies post-exposure prophylaxis in previously non-vaccinated individuals. *Vaccine* 2009;27:7141–8. Baer GM. Animal models in the pathogenesis and treatment of rabies. *Rev Infect Dis* 1988;10(Suppl 4):S739–50. Franka R, Wu X, Jackson RF, et al. Rabies virus pathogenesis in relationship to intervention with inactivated and attenuated rabies vaccines. *Vaccine* 2009;27:7149–55. Sikes RK, Cleary WF, Koprowski H, Wiktor TJ, Kaplan MM. Effective protection of monkeys against death from street virus by post-exposure administration of tissue-culture rabies vaccine. *Bull World Health Organ* 1971;45:1–11. Manickama R, Basheer MD, Jayakumar R. Post-exposure prophylaxis (PEP) of rabies-infected Indian street dogs. *Vaccine* 2008;26:6564–8.

§ **SOURCES:** Plotkin SA, Koprowski H, Rupprecht CE. Rabies vaccines. In: Plotkin SA, Orenstein WA, Offit PA, eds. *Vaccines*. 5th ed. Philadelphia, PA: Saunders; 2008:687–714. World Health Organization. WHO Expert Consultation on Rabies. 1st Report. WHO Technical Report Series, No. 931. Geneva, Switzerland: World Health Organization; 2005. Rupprecht CE, Briggs D, Brown C, et al. Evidence for a 4-dose vaccine schedule for human rabies post-exposure prophylaxis in previously non-vaccinated individuals. *Vaccine* 2009;27:7141–8.

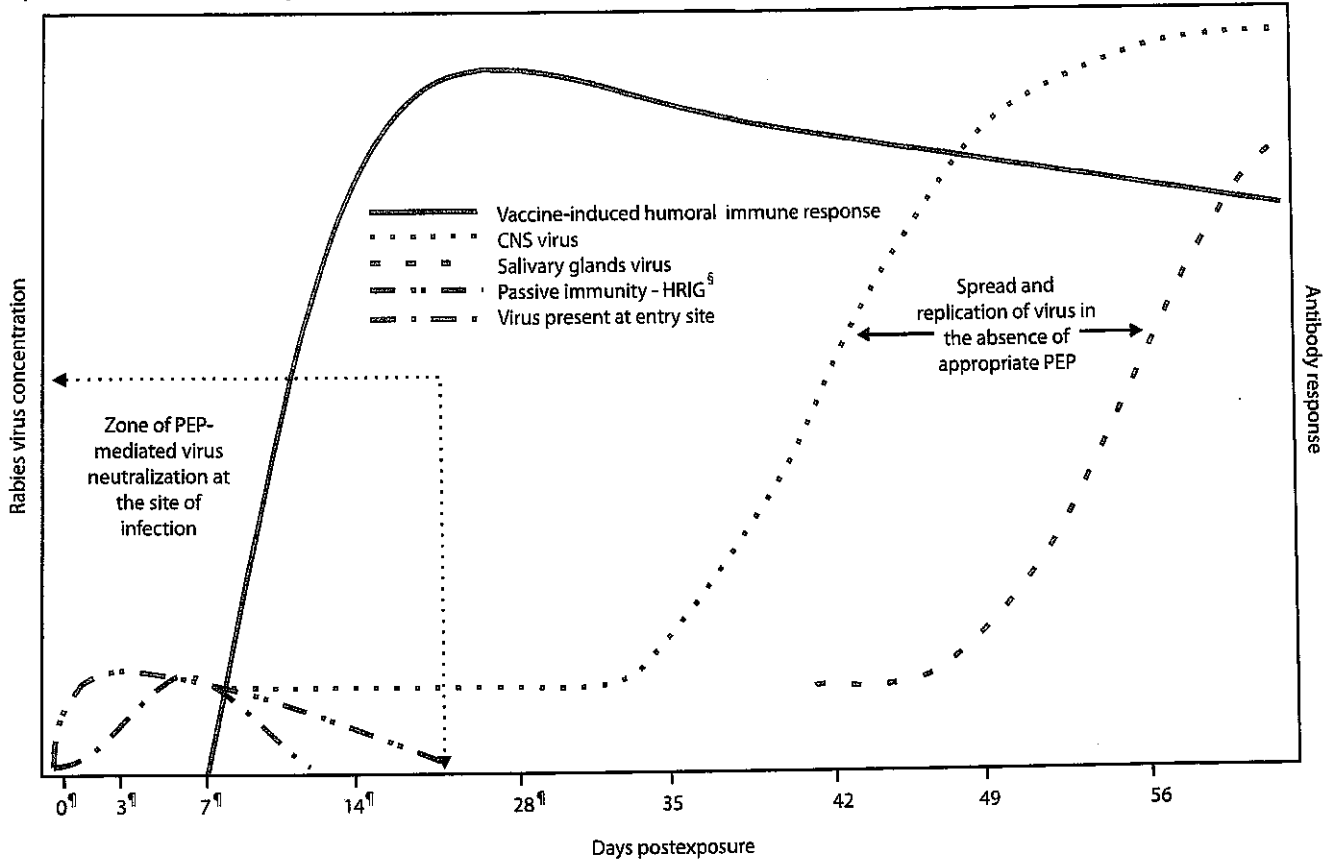
¶ **SOURCES:** Plotkin SA, Koprowski H, Rupprecht CE. Rabies vaccines. In: Plotkin SA, Orenstein WA, Offit PA, eds. *Vaccines*. 5th ed. Philadelphia, PA: Saunders; 2008:687–714. Rupprecht CE, Briggs D, Brown C, et al. Evidence for a 4-dose vaccine schedule for human rabies post-exposure prophylaxis in previously non-vaccinated individuals. *Vaccine* 2009; 27:7141–8. Wilde H. Failures of post-exposure rabies prophylaxis. *Vaccine* 2007;25:7605–9.

** **SOURCES:** Meltzer MI, Rupprecht CE. A review of the economics of the prevention and control of rabies: I: global impact and rabies in humans. *Pharmacoeconomics* 1998;14:365–83. Dhankhar P, Vaidya SA, Fishbien DB, Meltzer MI. Cost effectiveness of rabies post exposure prophylaxis in the United States. *Vaccine* 2008;26:4251–5.

The induction of a rabies virus-specific antibody response is one important immunologic component of response to vaccination (4). Development of detectable rabies virus-specific neutralizing antibodies is a surrogate for an adequate immune response to vaccination. Clinical trials of human rabies vaccination indicate that all healthy persons develop detectable rabies virus-neutralizing antibody titer rapidly after initiation of PEP. For example, in a literature review conducted by the ACIP Rabies Workgroup of at least 12 published rabies vaccination studies during 1976–2008 representing approximately 1,000 human subjects, all subjects developed rabies virus-neutralizing antibodies by day 14 (14).

Observational studies indicate that PEP is universally effective in preventing human rabies when administered promptly and appropriately. Of the >55,000 persons who die annually of rabies worldwide, the majority either did not receive any PEP, received some form of PEP (usually without RIG) after substantial delays, or were administered PEP according to schedules that deviated substantially from current ACIP or World Health Organization recommendations (17). For example, a review of a series of 21 fatal human cases in which patients received some form of PEP indicated that 20 patients developed signs of illness, and most died before day 28 (Figure 2). In such cases, in which widespread infection of the central

FIGURE 1. Schematic of dynamics of rabies virus pathogenesis* in the presence and absence of postexposure prophylaxis (PEP)-mediated immune responses†



* Rabies can progress through five stages: incubation period (5 days to >2 years: U.S. median ~35 days), prodrome state (0–10 days), acute neurologic period (2–7 days), coma (5–14 days), and death.

† Once in tissues at the entry site, rabies virus can be neutralized by passively administered rabies immune globulin (RIG). Active immunization (vaccine) stimulates the host immune system, and, as a result, virus-neutralizing antibodies (VNA) are produced approximately 7–10 days after initiation of vaccination. By approximately day 14–28 (after administration of 4 vaccine doses), VNAs peak. In the absence of early and adequate PEP, virus enters host neurons, spreads to the central nervous system (CNS), and causes disease, with inevitably fatal consequence.

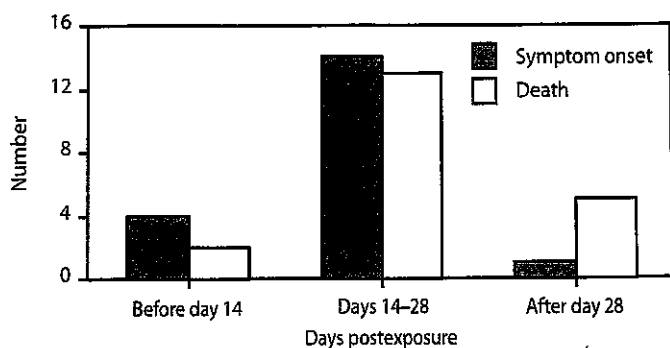
§ Human rabies immune globulin.

¶ Day vaccine administered.

nervous system occurs before the due date (i.e., day 28) of the fifth vaccine dose, the utility of that dose must be nil. In the United States, of the 27 human rabies cases reported during 2000–2008, none of the patients had a history of receiving any PEP before illness, and this is the most common situation for human rabies deaths in both developed and developing countries (3,8). In India, an analysis from two animal bite centers during 2001–2002 demonstrated that in 192 human rabies cases, all deaths could be attributed to failure to seek timely and appropriate PEP, and none of them could be attributed to a failure to receive the fifth (day 28) vaccine dose (18). Even when PEP is administered imperfectly or not according to established scheduled dose recommendations, it might be generally effective. Several studies have reported cases involving persons who were exposed to potentially rabid animals and who received less than 5, 4, or even 3 doses of rabies vaccine but

who nevertheless did not acquire rabies (Table 2). For example, in one series from New York, 147 (13%) of 1,132 patients had no report of receiving the complete 5-dose vaccine regimen. Of these patients, 26 (18%) received only 4 doses of vaccine, and two of these patients were exposed to animals with laboratory-confirmed rabies. However, no documented cases of human rabies occurred (CDC, unpublished data, 2003). The ACIP Rabies Working Group estimates that >1,000 persons in the United States receive rabies prophylaxis annually of only 3 or 4 doses, with no resulting documented cases of human rabies, even though >30% of these persons likely have exposure to confirmed rabid animals (14). In addition, no case of human rabies in the United States has been reported in which failure of PEP was attributable to receiving less than the 5-dose vaccine course. Worldwide, although human PEP failures have been reported very rarely, even in cases in which intervention

FIGURE 2. Number of documented rabies postexposure prophylaxis (PEP) failures — Burma, India, the Philippines, South Africa, Sri Lanka, and Thailand, 1984–2007*



SOURCES: Wilde H. Failures of post-exposure rabies prophylaxis. *Vaccine* 2007;25:7605–9; Wilde H, Sirikawin S, Sabcharoen A, et al. Failure of postexposure treatment of rabies in children. *Clin Infect Dis* 1996;22:228–32; Matha IS, Salunke SR. Immunogenicity of purified vero cell rabies vaccine used in the treatment of fox-bite victims in India. *Clin Infect Dis* 2005;40:611–3.

* Of 21 reported PEP failures described, 20 patients had symptoms and 15 died before day 28.

appeared both prompt and appropriate (8), no cases have been attributed to the lack of receipt of the fifth human rabies vaccine dose on day 28 (4,17).

In vivo laboratory animal studies using multiple animal models from rodents to nonhuman primates have underscored the importance of timely PEP using RIG and vaccine, regardless of the absolute number of vaccine doses used or the schedule (14,19). For example, in a study in which 1, 2, 3, 4, or 5 doses of rabies vaccine were used in a Syrian hamster model in combination with human rabies immune globulin (HRIG), no statistically significant differences in elicited protection and consequent survivorship were observed among groups receiving different doses (20). In the same study, using a murine model, no differences were detected in immunogenicity and efficacy of PEP with 2, 3, or 4 vaccine doses. In another study using a nonhuman primate model, 1 dose of cell-culture vaccine, in combination with RIG administered 6 hours postexposure, provided substantial protection (21). In another study, a 3-dose

regime was evaluated in a canine model and determined to be effective in preventing rabies (22).

Compared with older, nerve tissue-based products, adverse reactions associated with modern human rabies vaccination are uncommon (4). A review by the Workgroup of published and unpublished human rabies vaccine clinical trials and Vaccine Adverse Event Reporting System data identified no adverse events that were correlated to a failure to receive the fifth vaccine dose. As some adverse reactions might be independent clinical events with each vaccine administration, the omission of the vaccine dose on day 28 might have some positive health benefits. Otherwise, the overall safety of human rabies PEP is expected to be unchanged from the evidence provided in the 2008 ACIP report (12).

Preliminary economic assessments support the cost savings associated with a reduced schedule of vaccination (23,24). The ACIP Rabies Workgroup has estimated that, assuming 100% compliance with a recommended vaccine regimen, a change in recommendation from a 5-dose schedule to a 4-dose schedule would save approximately \$16.6 million in costs to the U.S. health-care system. Persons who receive rabies vaccination might see some savings related to deletion of the fifth recommended dose of vaccine, measured in both the cost of the vaccine and the costs associated with the additional medical visit.

Revised Rabies Postexposure Prophylaxis Recommendations

This report presents revised recommendations for human rabies PEP (Table 3). Rabies PEP includes wound care and administration of both RIG and vaccine.

Postexposure Prophylaxis for Unvaccinated Persons

For unvaccinated persons, the combination of RIG and vaccine is recommended for both bite and nonbite exposures, regardless of the time interval between exposure and initiation

TABLE 2. Number and percentage of patients with suspected rabies exposures who received <5 doses of vaccine — India, 2003; New York, 1998–2000; and Puerto Rico, 2008*

Location (year)	No. of persons exposed	Persons who received <5 doses of vaccine		No. of documented rabies deaths
		No.	(%)	
New York (1998–2000) [†]	1,132	147	(13)	0
India (2003) [§]	439	261	(59)	0
Puerto Rico (2008) [¶]	191	30	(16)	0

* No cases of human rabies were recorded that were attributable to receipt of only 4 doses of vaccine.

[†] SOURCE: CDC, unpublished data, 2003.

[§] SOURCE: Association for the Prevention and Control of Rabies (APCRI) in India. Assessing the burden of rabies in India: WHO sponsored national multi-center rabies survey 2003. Final report May 2004. Available at <http://rabies.org.in>. Accessed March 8, 2010. Sudarshan MK, Madhusudana SN, Mahendra BJ, et al. Assessing the burden of human rabies in India: results of a national multi-center epidemiological survey. *Int J Infect Dis* 2007;11:29–35.

[¶] SOURCE: CDC, unpublished data, 2008.

TABLE 3. Rabies postexposure prophylaxis (PEP) schedule — United States, 2010

Vaccination status	Intervention	Regimen*
Not previously vaccinated	Wound cleansing	All PEP should begin with immediate thorough cleansing of all wounds with soap and water. If available, a virucidal agent (e.g., povidine-iodine solution) should be used to irrigate the wounds.
	Human rabies immune globulin (HRIG)	Administer 20 IU/kg body weight. If anatomically feasible, the full dose should be infiltrated around and into the wound(s), and any remaining volume should be administered at an anatomical site (intramuscular [IM]) distant from vaccine administration. Also, HRIG should not be administered in the same syringe as vaccine. Because HRIG might partially suppress active production of rabies virus antibody, no more than the recommended dose should be administered.
	Vaccine	Human diploid cell vaccine (HDCV) or purified chick embryo cell vaccine (PCECV) 1.0 mL, IM (deltoid area [†]), 1 each on days 0, [§] 3, 7 and 14. [¶]
Previously vaccinated**	Wound cleansing	All PEP should begin with immediate thorough cleansing of all wounds with soap and water. If available, a virucidal agent such as povidine-iodine solution should be used to irrigate the wounds.
	HRIG	HRIG should not be administered.
	Vaccine	HDCV or PCECV 1.0 mL, IM (deltoid area [†]), 1 each on days 0 [§] and 3.

* These regimens are applicable for persons in all age groups, including children.

[†] The deltoid area is the only acceptable site of vaccination for adults and older children. For younger children, the outer aspect of the thigh may be used. Vaccine should never be administered in the gluteal area.

[§] Day 0 is the day dose 1 of vaccine is administered.

[¶] For persons with immunosuppression, rabies PEP should be administered using all 5 doses of vaccine on days 0, 3, 7, 14, and 28.

** Any person with a history of pre-exposure vaccination with HDCV, PCECV, or rabies vaccine adsorbed (RVA); prior PEP with HDCV, PCECV or RVA; or previous vaccination with any other type of rabies vaccine and a documented history of antibody response to the prior vaccination.

of PEP. If PEP has been initiated and appropriate laboratory diagnostic testing (i.e., the direct fluorescent antibody test) indicates that the animal that caused the exposure was not rabid, PEP may be discontinued.

Vaccine Use

A regimen of 4 1-mL vaccine doses of HDCV or PCECV should be administered intramuscularly to previously unvaccinated persons (Table 3). The first dose of the 4-dose regimen should be administered as soon as possible after exposure. The date of the first dose is considered to be day 0 of the PEP series. Additional doses then should be administered on days 3, 7, and 14 after the first vaccination. Recommendations for the site of the intramuscular vaccination remain unchanged (e.g., for adults, the deltoid area; for children, the anterolateral aspect of the thigh also is acceptable). The gluteal area should not be used because administration of vaccine in this area might result in a diminished immunologic response. Children should receive the same vaccine dose (i.e., vaccine volume) as recommended for adults.

HRIG Use

The recommendations for use of immune globulin in rabies prophylaxis remain unchanged by the revised recommendation of a reduced rabies vaccine schedule. HRIG is administered once to previously unvaccinated persons to provide rabies virus-neutralizing antibody coverage until the patient responds to

vaccination by actively producing virus-neutralizing antibodies. HRIG is administered once on day 0 at the time PEP is initiated, in conjunction with human rabies vaccines available for use in the United States. If HRIG was not administered when vaccination was begun on day 0, it can be administered up to and including day 7 of the PEP series (12,25). If anatomically feasible, the full dose of HRIG is infiltrated around and into any wounds. Any remaining volume is injected intramuscularly at a site distant from vaccine administration. HRIG is not administered in the same syringe or at the same anatomic site as the first vaccine dose. However, subsequent doses (i.e., on days 3, 7, and 14) of vaccine in the 4-dose vaccine series can be administered in the same anatomic location in which HRIG was administered.

Postexposure Prophylaxis for Previously Vaccinated Persons

Recommendations for PEP have not changed for persons who were vaccinated previously. Previously vaccinated persons are those who have received one of the ACIP-recommended pre- or postexposure prophylaxis regimens (with cell-culture vaccines) or those who received another vaccine regimen (or vaccines other than cell-culture vaccine) and had a documented adequate rabies virus-neutralizing antibody response. Previously vaccinated persons, as defined above, should receive 2 vaccine doses (1.0 mL each in the deltoid), the first dose

immediately and the second dose 3 days later. Administration of HRIG is unnecessary, and HRIG should not be administered to previously vaccinated persons to avoid possible inhibition of the relative strength or rapidity of an expected anamnestic response (26). Local wound care remains an important part of rabies PEP for any previously vaccinated persons.

Vaccination and Serologic Testing

Postvaccination Serologic Testing

All healthy persons tested in accordance with ACIP guidelines after completion of at least a 4-dose regimen of rabies PEP should demonstrate an adequate antibody response against rabies virus (14). Therefore, no routine testing of healthy patients completing PEP is necessary to document seroconversion (12). When titers are obtained, serum specimens collected 1–2 weeks after prophylaxis (after last dose of vaccine) should completely neutralize challenge virus at least at a 1:5 serum dilution by the rapid fluorescent focus inhibition test (RFFIT). The rabies virus-neutralizing antibody titers will decline gradually since the last vaccination. Minimal differences (i.e., within one dilution of sera) in the reported values of rabies virus-neutralizing antibody results might occur between laboratories that provide antibody determination using the recommended RFFIT. Commercial rabies virus antibody titer determination kits that are not approved by the Food and Drug Administration are not appropriate for use as a substitute for the RFFIT. Discrepant results might occur after the use of such tests, and actual virus-neutralizing activity in clinical specimens cannot be measured.

Management of Adverse Reactions, Precautions, and Contraindications

Management of Adverse Reactions

Recommendations for management and reporting of vaccine adverse events have not changed. These recommendations have been described in detail previously (12).

Immunosuppression

Recommendations for rabies pre- and postexposure prophylaxis for persons with immunosuppression have not changed. General recommendations for active and passive immunization in persons with altered immunocompetence have been summarized previously (27,28). This updated report

discusses specific recommendations for patients with altered immunocompetence who require rabies pre- and postexposure prophylaxis. All rabies vaccines licensed in the United States are inactivated cell-culture vaccines that can be administered safely to persons with altered immunocompetence. Because corticosteroids, other immunosuppressive agents, antimalarials, and immunosuppressive illnesses might reduce immune responses to rabies vaccines substantially, for persons with immunosuppression, rabies PEP should be administered using a 5-dose vaccine regimen (i.e., 1 dose of vaccine on days 0, 3, 7, 14, and 28), with the understanding that the immune response still might be inadequate. Immunosuppressive agents should not be administered during rabies PEP unless essential for the treatment of other conditions. If possible, immunosuppressed patients should postpone rabies preexposure prophylaxis until the immunocompromising condition is resolved. When postponement is not possible, immunosuppressed persons who are at risk for rabies should have their virus-neutralizing antibody responses checked after completing the preexposure series. Postvaccination rabies virus-neutralizing antibody values might be less than adequate among immunosuppressed persons with HIV or other infections (29,30). When rabies pre- or postexposure prophylaxis is administered to an immunosuppressed person, one or more serum samples should be tested for rabies virus-neutralizing antibody by the RFFIT to ensure that an acceptable antibody response has developed after completing the series. If no acceptable antibody response is detected after the final dose in the pre- or postexposure prophylaxis series, the patient should be managed in consultation with their physician and appropriate public health officials.

Variation from Human Rabies Vaccine Package Inserts

These new ACIP recommendations differ from current rabies vaccine label instructions, which still list the 5-dose series for PEP. Historically, ACIP review and subsequent public health recommendations for the use of various biologics has occurred after vaccine licensure and generally are in agreement with product labels. However, differences between ACIP recommendations and product labels are not unprecedented. For example, during the early 1980s, ACIP review and recommendations concerning the intradermal use of rabies vaccines occurred well in advance of actual label claims and licensing (9). On the basis of discussions with industry representatives, alterations of current product labels for HDCV and PCEC are not anticipated by the producers of human rabies vaccines licensed for use in the United States.

References

1. Lyles DS, Rupprecht CE. *Rhabdoviridae*. In: Knipe D, Howley P, eds. *Fields Virology*. 5th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2007:1363–408.
2. Christian KA, Blanton JD, Auslander M, Rupprecht CE. Epidemiology of rabies post-exposure prophylaxis—United States of America 2006–2008. *Vaccine* 2009;27:7156–61.
3. Blanton JD, Robertson K, Palmer D, Rupprecht CE. Rabies surveillance in the United States during 2008. *J Am Vet Med Assoc* 2009;235:676–89.
4. Plotkin SA, Koprowski H, Rupprecht CE. Rabies vaccines. In Plotkin SA, Orenstein WA, Offit PA, eds. *Vaccines*. 5th ed. Philadelphia, PA: Saunders; 2008:687–714.
5. World Health Organization. WHO Expert Committee on Rabies. 6th report. WHO Technical Report Series, No. 523. Geneva, Switzerland: World Health Organization; 1973.
6. World Health Organization. WHO Expert Committee on Rabies. 7th report. WHO Technical Report Series, No. 709. Geneva, Switzerland: World Health Organization; 1984.
7. World Health Organization. WHO Expert Committee on Rabies. 8th report. WHO Technical Report Series, No. 824. Geneva, Switzerland: World Health Organization; 1992.
8. World Health Organization. WHO Expert Consultation on Rabies. 1st report. WHO Technical Report Series, No. 931. Geneva, Switzerland: World Health Organization; 2005.
9. CDC. Rabies prevention—United States, 1984. *y*;33:393–408.
10. CDC. Rabies prevention—United States, 1991: recommendations of the Immunization Practices Advisory Committee (ACIP). *y*40(No. RR-3).
11. CDC. Human rabies prevention—United States, 1999: recommendations of the Advisory Committee on Immunization Practices (ACIP). *y*48(No. RR-1).
12. CDC. Human rabies prevention—United States, 2008: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 2008;57(No. RR-3).
13. CDC. Human rabies biologics: consideration of reduced vaccine schedule in post-exposure prophylaxis. Advisory Committee on Immunization Practices (ACIP): summary report of meeting held February 25–26, 2009 in Atlanta, GA. Available at <http://www.cdc.gov/vaccines/recs/provisional/downloads/rabies-July2009-508.pdf>. Accessed March 3, 2010.
14. Rupprecht CE, Briggs D, Brown C, et al. Evidence for a 4-dose vaccine schedule for human rabies post-exposure prophylaxis in previously non-vaccinated individuals. *Vaccine* 2009;27:7141–8.
15. Charlton KM, Nadin-Davis S, Casey GA, Wandeler AI. The long incubation period in rabies: delayed progression of infection in muscle at the site of exposure. *Acta Neuropathol* 1997;94:73–7.
16. Dietzschold B, Schnell M, Koprowski H. Pathogenesis of rabies. *Curr Top Microbiol Immunol* 2005;292:45–56.
17. Wilde H. Failures of post-exposure rabies prophylaxis. *Vaccine* 2007;25:7605–9.
18. Ichhpujani RL, Mala C, Veena M, et al. Epidemiology of animal bites and rabies cases in India: a multicentric study. *J Commun Dis* 2008;40:27–36.
19. Baer GM. Animal models in the pathogenesis and treatment of rabies. *Rev Infect Dis* 1988;10(Suppl 4):S739–50.
20. Franka R, Wu X, Jackson RH, et al. Rabies virus pathogenesis in relationship to intervention with inactivated and attenuated rabies vaccines. *Vaccine* 2009;27:7149–55.
21. Sikes RK, Cleary WE, Koprowski H, Wiktor TJ, Kaplan MM. Effective protection of monkeys against death from street virus by post-exposure administration of tissue-culture rabies vaccine. *Bull World Health Organ* 1971;45:1–11.
22. Manickam R, y, y. Post-exposure prophylaxis (PEP) of rabies-infected Indian street dogs. *y* 2008;26:6564–8.
23. Meltzer MI, Rupprecht CE. A review of the economics of the prevention and control of rabies: I. Global impact and rabies in humans. *PharmacoEconomics* 1998;14:365–83.
24. Dhankhar P, Vaidya SA, Fishbien DB, Meltzer MI. Cost effectiveness of rabies post exposure prophylaxis in the United States. *Vaccine* 2008;26:4251–5.
25. Khawplod P, Wilde H, Chomchey P, et al. What is an acceptable delay in rabies immune globulin administration when vaccine alone had been given previously? *Vaccine* 1996;14:389–91.
26. Schumacher CL, Ertl HC, Koprowski H, Dietzschold B. Inhibition of immune responses against rabies virus by monoclonal antibodies directed against rabies virus antigens. *Vaccine* 1992;10:754–60.
27. CDC. Recommendations of the Advisory Committee on Immunization Practices (ACIP): use of vaccines and immune globulins for persons with altered immunocompetence. *y*42(No. RR-4).
28. CDC. General recommendations on immunization: recommendations of the Advisory Committee on Immunization Practices (ACIP). *y*55(No. RR-15).
29. Tantawichien T, Jaijaroensup W, Khawplod P, Sitprija V. Failure of multiple-site intradermal postexposure rabies vaccination in patients with human immunodeficiency virus with low CD4+ T lymphocyte counts. *Clin Infect Dis* 2001;33:E122–4.
30. Pancharoen C, Thisyakorn U, Tantawichien T, Jaijaroensup W, Khawplod P, Wilde H. Failure of pre- and postexposure rabies vaccinations in a child infected with HIV. *Scand J Infect Dis* 2001;33:390–1.

Advisory Committee on Immunization Practices Membership as of June 24, 2009

Chair: Dale Morse, MD, New York State Department of Health, Albany, New York.

Executive Secretary: Larry Pickering, MD, National Center for Immunization and Respiratory Diseases, CDC, Atlanta, Georgia.

Members: Carol Baker, MD, Baylor College of Medicine, Houston, Texas; Robert Beck, JD, Consumer Representative, Palmyra, Virginia; Lance Chilton, MD, University of New Mexico, Albuquerque, New Mexico; Paul Cieslak, MD, Oregon Public Health Division, Portland, Oregon; Kristen Ehresmann, MPH, Minnesota Department of Health, St. Paul, Minnesota; Janet Englund, MD, University of Washington and Children's Hospital and Regional Medical Center, Seattle, Washington; Franklyn Judson, MD, University of Colorado Health Sciences Center, Denver, Colorado; Susan Lett, MD, Massachusetts Department of Public Health, Boston, Massachusetts; Michael Marcy, MD, UCLA Center for Vaccine Research, Torrance, California; Cody Meissner, MD, Tufts Medical Center, Boston, Massachusetts; Kathleen Neuzil, MD, University of Washington; Seattle, Washington; Mark Sawyer, MD, University of California—San Diego, California; Ciro Valent Sumaya, MD, Texas A&M Health Science Center, College Station, Texas; Jonathan Temte, MD, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

Ex Officio Members: James E. Cheek, MD, Indian Health Service, Albuquerque, New Mexico; Wayne Hachey, DO, Department of Defense, Falls Church, Virginia; Geoffrey S. Evans, MD, Health Resources and Services Administration, Rockville, Maryland; Bruce Gellin, MD, National Vaccine Program Office, Washington, District of Columbia; Linda Murphy, Centers for Medicare and Medicaid Services, Baltimore, Maryland; George T. Curlin, MD, National Institutes of Health, Bethesda, Maryland; Norman Baylor, MD, Food and Drug Administration, Bethesda, Maryland; Linda Kinsinger, MD, Department of Veterans Affairs, Durham, North Carolina.

Liaison Representatives: American Academy of Family Physicians, Doug Campos-Outcalt, MD, Phoenix, Arizona; American Academy of Pediatrics, Joseph Bocchini, MD, Shreveport, Louisiana; American College Health Association, James C. Turner, MD, Birmingham, Alabama; American College Health Association, Stanley Gall, MD, Louisville, Kentucky; American College of Physicians, Charlottesville, Virginia; American College of Obstetricians and Gynecologists, Stanley Gall, MD, Louisville, Kentucky; American College of Physicians, Gregory Poland, MD, Rochester, Minnesota; American Geriatrics Society, Kenneth Schmader, MD, Durham, North Carolina; American Health Insurance Plans, Tamara Lewis, MD, Salt Lake City, Utah; American Medical Association, Litjen Tan, PhD, Chicago, Illinois; American Osteopathic Association, Stanley Grogg, DO, Tulsa, Oklahoma; American Pharmacists Association, Stephan L. Foster, PharmD, Memphis, Tennessee; Association for Prevention Teaching and Research, W. Paul McKinney, MD, Louisville, Kentucky; Biotechnology Industry Organization, Clement Lewin, PhD, Cambridge, Massachusetts; Canadian National Advisory Committee on Immunization, Joanne Langley, MD, Halifax, Nova Scotia, Canada; Department of Health, United Kingdom, David M. Salisbury, MD, London, United Kingdom; Healthcare Infection Control Practices Advisory Committee, Alexis Elward, MD, St Louis, Missouri; Infectious Diseases Society of America, Samuel L. Katz, MD, Durham, North Carolina; National Association of County and City Health Officials, Jeff Duchin, MD, Seattle, Washington; National Association of Pediatric Nurse Practitioners, Patricia Stinchfield, MPH; National Foundation for Infectious Diseases, William Schaffner, MD, Nashville, Tennessee; National Immunization Council and Child Health Program, Mexico, Vesta Richardson, MD, Mexico City, Mexico; National Medical Association, Patricia Whitley-Williams, MD, New Brunswick, New Jersey; National Vaccine Advisory Committee, Guthrie Birkhead, MD, Albany, New York; Pharmaceutical Research and Manufacturers of America, Damian A. Braga, Swiftwater, Pennsylvania; Peter Paradiso, PhD, Collegeville, Pennsylvania; Society for Adolescent Medicine, Amy Middleman, MD, Houston, Texas; Society for Healthcare Epidemiology of America, Harry Keyserling, MD, Atlanta, Georgia.

ACIP Rabies Workgroup Membership as of June 24, 2009

Chair: Paul Cieslak, MD, Oregon Department of Public Health, Corvallis, Oregon.

Members: Deborah Briggs, PhD, Kansas State University, Manhattan, Kansas; Catherine Brown, DVM, Massachusetts Department of Public Health, Jamaica Plain, Massachusetts; Samuel L. Katz, MD, Duke University Medical Center, Durham, North Carolina; Harry D. Kerr, MD, American College of Emergency Physicians, Dallas, Texas; Susan M. Lett, MD, Massachusetts Department of Public Health, Jamaica Plain, Massachusetts; Robin Levis, PhD, Food and Drug Administration, Washington, District of Columbia; William Schaffner, MD, Vanderbilt University School of Medicine, Nashville, Tennessee. Charles E. Rupprecht, VMD, PhD, Richard Franka, DVM, PhD, Martin I. Meltzer, PhD, CDC, Atlanta, Georgia.

The *Morbidity and Mortality Weekly Report (MMWR)* Series is prepared by the Centers for Disease Control and Prevention (CDC) and is available free of charge in electronic format. To receive an electronic copy each week, visit *MMWR's* free subscription page at <http://www.cdc.gov/mmwr/mmwrsubscribe.html>. Paper copy subscriptions are available through the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402; telephone 202-512-1800.

Data presented by the Notifiable Disease Data Team and 122 Cities Mortality Data Team in the weekly *MMWR* are provisional, based on weekly reports to CDC by state health departments. Address all inquiries about the *MMWR* Series, including material to be considered for publication, to Editor, *MMWR* Series, Mailstop E-90, CDC, 1600 Clifton Rd., N.E., Atlanta, GA 30333 or to mmwrqa@cdc.gov.

All material in the *MMWR* Series is in the public domain and may be used and republished without permission; citation as to source, however, is appreciated. Use of trade names and commercial sources is for identification only and does not imply endorsement by the U.S. Department of Health and Human Services.

References to non-CDC sites on the Internet are provided as a service to *MMWR* readers and do not constitute or imply endorsement of these organizations or their programs by CDC or the U.S. Department of Health and Human Services. CDC is not responsible for the content of these sites. URL addresses listed in *MMWR* were current as of the date of publication.

**COUNTY REQUIREMENTS/GUIDELINES FOR
PATIENTS NEEDING RABIES POST-EXPOSURE TREATMENT**

Report all animal bites/exposures to Warren County Public Health at 761-6580 (24 hours/day).

Prior approval must be obtained from Public Health before rabies series begins. PH utilizes NYSDOH guidelines to determine if there is an exposure or potential exposure to rabies. If rabies post exposure treatment is approved by PH, rabies post exposure costs in excess of a patient's insurance coverage (i.e. copays) will be paid by the county.

The following are guidelines for patients:

With Insurance

1. Go to ER at GFH for HRIG and 1st Rabies Vaccine.
2. Patient returns to GFH ER for remainder of series on days 3, 7 and 14. If an immunocompromising condition is present, a 5th dose on day 28 may be necessary.
3. Patient should call PH if a bill is received.

Without Insurance

1. Go to ER for HRIG 1st Rabies Vaccine.
2. Patient calls PH (761-6580) to make arrangements to receive remainder of series on days 3, 7, and 14 at the municipal center. Home visits and after hour appointments can be arranged if necessary.
3. Patient should call PH if a bill is received.

Rabies Vaccine

What You Need to Know

Many Vaccine Information Statements are available in Spanish and other languages. See www.immunize.org/vis
 Hojas de información sobre vacunas están disponibles en español y en muchos otros idiomas. Visite www.immunize.org/vis

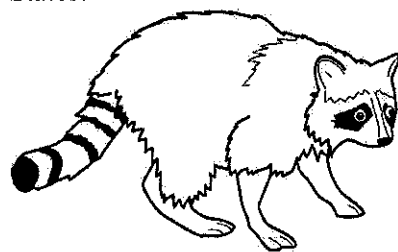
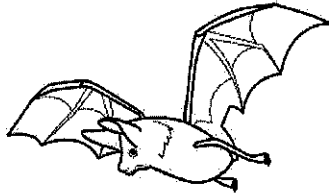
1 What is rabies?

Rabies is a serious disease. It is caused by a virus.

Rabies is mainly a disease of animals. Humans get rabies when they are bitten by infected animals.

At first there might not be any symptoms. But weeks, or even months after a bite, rabies can cause pain, fatigue, headaches, fever, and irritability. These are followed by seizures, hallucinations, and paralysis. Human rabies is almost always fatal.

Wild animals—especially bats—are the most common source of human rabies infection in the United States.



Skunks, raccoons, dogs, cats, coyotes, foxes and other mammals can also transmit the disease.

Human rabies is rare in the United States.

There have been only 55 cases diagnosed since 1990.

However, between 16,000 and 39,000 people are vaccinated each year as a precaution after animal bites. Also, rabies is far more common in other parts of the world, with about 40,000–70,000 rabies-related deaths worldwide each year. Bites from unvaccinated dogs cause most of these cases.

Rabies vaccine can prevent rabies.

2 Rabies vaccine

Rabies vaccine is given to people at high risk of rabies to protect them if they are exposed. It can also prevent the disease if it is given to a person after they have been exposed.

Rabies vaccine is made from killed rabies virus. It cannot cause rabies.

3 Who should get rabies vaccine and when?

Preventive vaccination (no exposure)

- People at high risk of exposure to rabies, such as veterinarians, animal handlers, rabies laboratory workers, spelunkers, and rabies biologics production workers should be offered rabies vaccine.
- The vaccine should also be considered for:
 - People whose activities bring them into frequent contact with rabies virus or with possibly rabid animals.
 - International travelers who are likely to come in contact with animals in parts of the world where rabies is common.

The pre-exposure schedule for rabies vaccination is **3 doses**, given at the following times:

- | | |
|---------|---------------------------------|
| Dose 1: | As appropriate |
| Dose 2: | 7 days after Dose 1 |
| Dose 3: | 21 days or 28 days after Dose 1 |

For laboratory workers and others who may be repeatedly exposed to rabies virus, periodic testing for immunity is recommended, and booster doses should be given as needed. (Testing or booster doses are not recommended for travelers.) Ask your doctor for details.

Vaccination after an exposure

Anyone who has been bitten by an animal, or who otherwise may have been exposed to rabies, should clean the wound and see a doctor immediately. The doctor will determine if they need to be vaccinated.

A person who is exposed and has never been vaccinated against rabies should get **4 doses** of rabies vaccine—one dose right away, and additional doses on the 3rd, 7th, and 14th days. They should also get another shot called Rabies Immune Globulin at the same time as the first dose.

A person who has been previously vaccinated should get **2 doses** of rabies vaccine—one right away and another on the 3rd day. Rabies Immune Globulin is not needed.



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

4 Tell your doctor if...

Talk with a doctor before getting rabies vaccine if you:

1. ever had a serious (life-threatening) allergic reaction to a previous dose of rabies vaccine, or to any component of the vaccine; tell your doctor if you have any severe allergies,
2. have a weakened immune system because of:
 - HIV/AIDS or another disease that affects the immune system,
 - treatment with drugs that affect the immune system, such as steroids,
 - cancer, or cancer treatment with radiation or drugs.

If you have a minor illnesses, such as a cold, you can be vaccinated. If you are moderately or severely ill, you should probably wait until you recover before getting a routine (non-exposure) dose of rabies vaccine.

If you have been exposed to rabies virus, you should get the vaccine regardless of any other illnesses you may have.

5 What are the risks from rabies vaccine?

A vaccine, like any medicine, is capable of causing serious problems, such as severe allergic reactions. The risk of a vaccine causing serious harm, or death, is extremely small. Serious problems from rabies vaccine are very rare.

Mild problems

- soreness, redness, swelling, or itching where the shot was given (30%–74%)
- headache, nausea, abdominal pain, muscle aches, dizziness (5%–40%)

Moderate problems

- hives, pain in the joints, fever (about 6% of booster doses)

Other nervous system disorders, such as Guillain-Barré syndrome (GBS), have been reported after rabies vaccine, but this happens so rarely that it is not known whether they are related to the vaccine.

NOTE: Several brands of rabies vaccine are available in the United States, and reactions may vary between brands. Your provider can give you more information about a particular brand.

6 What if there is a serious reaction?

What should I look for?

- Look for anything that concerns you, such as signs of a severe allergic reaction, very high fever, or behavior changes.

Signs of a severe allergic reaction can include hives, swelling of the face and throat, difficulty breathing, a fast heartbeat, dizziness, and weakness. These would start a few minutes to a few hours after the vaccination.

What should I do?

- If you think it is a severe allergic reaction or other emergency that can't wait, call 9-1-1 or get the person to the nearest hospital. Otherwise, call your doctor.
- Afterward, the reaction should be reported to the Vaccine Adverse Event Reporting System (VAERS). Your doctor might file this report, or you can do it yourself through the VAERS web site at www.vaers.hhs.gov, or by calling 1-800-822-7967.

VAERS is only for reporting reactions. They do not give medical advice.

7 How can I learn more?

- Ask your doctor.
- Call your local or state health department.
- Contact the Centers for Disease Control and Prevention (CDC):
 - Visit CDC's rabies website at www.cdc.gov/rabies/

Vaccine Information Statement
Rabies Vaccine

10/6/2009

Office Use Only



APPENDIX C

Resources for Animal/Dog Control

Guidance Regarding 10 Day Confinement of Animal For Observation 01/2012

What Pet Owners Need To Know About Pet Vaccination

Guidelines For Pet Shops

Quarantine For Pet Shops

Guidelines For Managing Bats and Risk Of Rabies Transmission 02/1999

Management Of Bat Related Incidents In Public Settings/Home/Camps

Model State Program For Management of Livestock In Rabies Enzootic Areas 09/1998

Rabies Policies and Procedures

(518) 473-4439

(866) 881-2809 (after hours)

SUBJECT: Guidance Regarding 10-day Confinement of Animals for Rabies Observation

1. Introduction/Purpose

Animals that have potentially exposed a person to rabies through bite or other means must be evaluated to determine whether they may have been transmitting rabies at the time of the exposure incident. Under New York State (NYS) public health law¹ domesticated animals² may be observed for 10 days following an exposure incident to determine whether they were possibly shedding rabies virus. If a domesticated animal was shedding rabies virus in its saliva at the time of exposure, that animal will be showing signs of rabies either at the time of the exposure incident or within several days following the incident. Based on guidelines from the Advisory Committee on Immunization Practices³, if a domesticated animal remains clinically normal for 10 days following a potential exposure incident, it is assumed that the animal was not shedding rabies at the time of the incident; therefore there was no rabies exposure. Determination of rabies status of animals other than domesticated animals requires euthanasia of the animal and testing of the animal's brain for evidence of rabies virus.

Under NYS Public Health Law effective 22 December 2011, "If the county health authority does not approve home confinement, the ten day confinement and observation period must take place, at owner's expense, at an appropriate facility such as an animal shelter, veterinarian's office, kennel or farm."

This document provides general guidelines and best practices for effective 10-day confinement of domesticated animals that have potentially exposed a person to rabies. The conditions under which an animal may be kept during, and the method by which an animal is evaluated at the end of, the 10-day confinement are ultimately determined by the local health department (LHD) with jurisdiction over the incident. LHD staff are in the best position to determine, in each situation, what confinement conditions will provide the greatest assurance that the animal will be available for follow-up at the end of confinement. Rabies response staff of the New York State Department of Health (NYSDOH) Bureau of Communicable Disease Control (BCDC) are available to discuss situations requiring further guidance. Contact BCDC staff at (518) 473-4439.

The following general principles should guide confinement decision-making, and are further detailed in this document:

- In general, healthy domesticated animals behaving normally at the time of a potential rabies exposure incident may be confined for 10-day observation at the owner's home. **Animals with neurologic disease, or that are acting unusually aggressive, should not be placed under 10-day confinement without consultation with BCDC rabies response staff.**
- In circumstances where owner compliance is in doubt, or where the exposing animal's exposure and vaccination history are unknown, confinement in a facility may be more appropriate.
- Confinement conditions should be explained and provided to owners in writing to ensure compliance.

¹ Article 21, Title 4, Section 2140, Subparagraph 7

² Domesticated animals include dogs, cats, ferrets, horses, donkeys, mules, cattle, sheep, goats, and pigs.

³ CDC. Human rabies prevention - United States, 2008: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR. 2008; 57.

- Method of assessment of the animal at the end of confinement can vary from telephone confirmation with the owner to evaluation by a veterinarian, and will depend on the circumstances in each case.

Information on what is considered an exposure, as well as considerations to use in the assessment of risk in particular exposure incidents, can be found in the guidance document, “Guidance Regarding Human Exposure to Rabies and Postexposure Prophylaxis Decisions,” available at

http://www.health.ny.gov/diseases/communicable/zoonoses/rabies/docs/nys_rabies_treatment_guidelines.pdf.

2. Home vs. Facility Confinement

No animal that has been placed in 10-day confinement in New York State has ever gone on to develop rabies. Healthy, normal acting animals are considered low risk for rabies, and home confinement is generally appropriate. Facility confinement should be considered under the following circumstances:

- There are concerns about owner compliance, such as in situations involving potential legal action or other hostility between animal owner and bite victim.
- There is little known about the animal’s exposure and vaccination history, as might occur with stray or feral animals.
- The animal’s behavior or health is not normal.

Owner compliance concerns

- LHD staff should use broad discretion to consider facility confinement if an animal’s owner is not forthcoming with information, appears hostile or unreliable, or has a history of non-compliance.
- If the LHD is aware that legal action may be pending between a bite victim and animal owner, facility confinement may be advisable to ensure follow-up.
- Facility confinement may be necessary if an owner cannot meet the conditions of confinement, e.g., LHD determines animal must be kept indoors for confinement, but owner insists the animal can only be kept in the yard.

Lack of animal history

Stray or feral animals have greater opportunities than pets to become exposed to rabies without a person’s knowledge, and are typically unvaccinated. Recently acquired animals similarly may have little history. In these cases, if an owner is identified and home confinement is considered, it is especially important to ensure owner compliance.

Animal behavior/health status

An animal behaving abnormally (based on knowledge of that specific animal’s normal behavior, not just the general behavior of the breed or species) or demonstrating neurologic disease at the time it is involved in a potential rabies exposure of a person should be considered high risk for rabies and generally should be tested for rabies unless an alternative cause for the illness or behavior is established. In some situations, observation under a veterinarian’s care may be appropriate for the ill animal that has been involved in a human exposure. Examples include animals with a good vaccination history, and animals with little opportunity for rabies exposure (e.g., indoor-housed cats and dogs that are only leash-walked and never out of the owner’s sight).

These exposure situations should be evaluated on a case-by-case basis, and discussed with BCDC staff to ensure that state and local health authorities are in agreement on the proper course of action. In all situations where observation and clinical workup of an abnormally acting animal is permitted, observation must occur in a veterinary hospital and not at the owner’s home.

Documentation

3. Conditions of 10-day confinement

Owners of animals under 10-day confinement **should be provided written documentation** stating, at a minimum:

- Start and end dates of confinement.
- Requirements for how the animal is to be confined.
- Signs of rabies to look for in the animal (e.g., changes in behavior, unusual aggression, weakness, lameness, paralysis, seizures).
- How the LHD should be notified, including after work hours, in the event the animal becomes ill.
- Consequences of failure to comply (e.g., immediate facility confinement at owner expense.)

Contact with the animal

It is generally not necessary to prevent members of the owner's household and immediate family from having contact with an animal under confinement, however contact with people or pets outside the household or immediate family should be limited to reduce the possibility of additional exposures.

Control of the animal

Confinement conditions should be established to ensure the animal is always under the owner's control and to minimize the risk of the animal escaping and being lost to follow up. Examples of confinement conditions include being loose inside the home; in a securely fenced yard or enclosure; or off the owner's property on a leash.

Unacceptable means of owner control of the animal include:

- Invisible fences
- Off leash on the assumption that the animal will respond to voice commands.

Relocation of the animal during confinement

Animals under confinement may not be moved from the jurisdiction of the LHD without prior approval of the local health Commissioner (or equivalent) of both the origin and destination locations. Out of state movement requires approval at both state health departments.

If relocation of an animal to another location is necessary, the owner should contact the LHD immediately to seek approval for the new location prior to moving the animal. In cases where the animal is not a resident of the county of exposure and has returned to its home county or state or will be returning to its home prior to the end of 10-day confinement, arrangements should be discussed with the LHD in the county of residence as soon as possible. For out of state movement, contact BCDC rabies response staff who will assist with arranging confinement and follow up with the other state.

For emergency movement (e.g., an emergency requiring admission to a veterinary hospital) owners should be instructed to contact the LHD as soon as possible.

4. Assessment of the animal at the end of confinement

LHD staff must verify that the animal is healthy before releasing the animal from confinement. Examples of methods of verification include:

- Verbal confirmation by the owner that the animal is healthy (provided owner reliability is not in question)
- Visit by animal control, law enforcement, or LHD staff to observe the animal
- Confirmation by a veterinarian that the animal was examined and determined not to be displaying signs of rabies

Verbal confirmation vs. visit and visual inspection

Assessment of animals when the exposed individuals are part of the owner's family can often be managed through verbal confirmation from the owner. For exposures to non-family members, or if there are concerns with the reliability of the owner for any reason, it is advisable to have an independent party such as an LHD staff person or animal control officer visually inspect the animal and document that visit. A veterinary exam is typically not necessary; the individual performing health verification should be familiar enough with animals to judge whether the animal appears to be healthy. If there is any question about the health status of the animal, referral should be made for veterinary evaluation at owner expense.

Veterinary exam to assess health status of the animal

A veterinary exam, with or without written documentation, may be necessary to verify the health of the animal in cases where:

- there is a question about the health of the animal at the end of confinement
- other circumstances warrant it (e.g., legal action between bite victim and animal owner).

In such cases, it is the responsibility of the owner to have the animal evaluated by a licensed veterinarian at the owner's expense. If appropriate based on the circumstances of the incident, the veterinarian should provide a signed, written statement verifying the health of the animal to the LHD before the animal is released from confinement.

5. Other considerations

Animals that have potentially exposed other animals

While not mandated in law or regulation, situations involving animal-to-animal exposure may warrant 10-day follow-up of the animal causing exposure. Such situations might include:

- Dog gets loose and attacks another dog that is not currently vaccinated
- Dog attacks unvaccinated farm animals
- Outdoor cats fight and wound each other and one or both are overdue for vaccination

In these cases, getting voluntary compliance for 10-day observation from the owner of the biting animal can avoid a 6 month quarantine of an unvaccinated bitten animal. The same policies regarding conditions and final assessment should apply to these incidents as to incidents involving human exposure.

Follow-up of animals outside the LHD's jurisdiction

For potential human exposures that occur outside the jurisdiction of the LHD (e.g., a county resident exposed out of state or in New York City) BCDC rabies response staff will assist with coordinating follow-up of animals.

QUARANTINE GUIDELINES FOR PET SHOPS

Purpose: To protect person exposed and establish public safety.

To monitor animal's health for 10 days following the exposure.

THE PURPOSE OF QUARANTINE RESTRICTIONS:

1. Animal must be placed in its own kennel without contact with other animals.
2. Minimal staff should care for animal.
3. Strict handwashing procedures should be followed after handling animal. (gloves should be worn for breaks, cuts, or scratches in skin. Careful attention should be used to avoid rubbing eyes; and eating should be discouraged until hands are washed)
4. Careful records should be maintained of all human contact in case animal is found to be rabid. Phone numbers and addresses would be helpful.
5. No public contact with animal in quarantine.
6. Animal must be quarantined despite rabies vaccination status.
7. Animal must not be sold until approval is granted from animal control in conjunction with Public Health.
8. If the animal displays signs or symptoms - or dies - PH should be notified immediately at 761-6580. Call animal control as back up.

QUARANTINE PROCEDURE:

1. Follow requirements above.
2. Animal must be placed in kennel.
3. Observe for signs and symptoms of illness. (change in disposition, excitable or delirious behavior, docile, difficulty walking, abnormal behavior, and paralysis)
4. Confinement guarantees animal cannot escape. Animal can be taken out on leash by staff, but no public contact can be made. Public Health should be notified at once if animal escapes and is not caught.

SUBJECT: Guidelines for Managing Bats and Risk of Rabies Transmission

Most of the human deaths from rabies in the United States in recent years have been due to infection with bat variants of the rabies virus, and most of these have been due to a single bat variant which studies show may be uniquely adapted for transmission. The number of human deaths from bat rabies is small, usually fewer than five each year in the U.S., and most bats do not have rabies. Thus the risk of death from contact with bats is low. In addition, bat presence is not abnormal in certain environments. However, evidence indicates that many of the human cases resulted from bites that were not recognized or reported.

Because rabies is an incurable, fatal disease once symptoms begin, it is desirable to reduce the risk of acquiring rabies as much as possible, acknowledging that achieving zero risk is not possible with any health issue. These NYSDOH guidelines have been developed based on national guidelines from the Centers for Disease Control and Prevention*, to provide recommendations for achieving risk reduction with reasonable measures. For questions about implementing these guidelines, please contact the State Department of Health at 518-474-3186.

NYS is unique in that rabies treatments that have been authorized by the county health authority are managed and paid for (after payment by third party payers) by county health authorities. To insure maximum availability of public health resources, and conserve frequently scarce vaccine and immune globulin supplies, NYSDOH recommends that county health authorities only authorize treatments that fall under the recommendations in these guidelines. Patients and physicians who wish to obtain rabies treatment for situations in which NYSDOH or the county health authorities do not recommend or authorize treatment may use their own resources to do so.

I. Definition of Exposure to a Bat

Rabies treatment should be recommended and authorized for all bat exposures that fall under the traditional definitions of exposure to rabies. These are the same as the guidelines for other species. Treatment should be authorized for the following exposures after contact with a rabid or untestable bat:

- bites (this is the primary, well-documented route of exposure)
- scratches
- saliva or nervous tissue in contact with a mucous membrane (e.g., inside of eyes, nose, mouth) or an open break in the skin

* Human rabies prevention—United States, 1999: recommendations of the Advisory Committee on Immunization Practices (ACIP)

Because people can develop rabies after inapparent exposures, rabies treatment also should be recommended and authorized in situations in which there is a reasonable probability of any of the aforementioned exposures. The primary circumstances in which this could occur include:

- direct physical contact with a bat
- bat found in a room with a sleeping person
- bat found in a room with an unattended child
- in some circumstances, bat found in close proximity to an unattended child outdoors
- bat found in a room with an individual under the influence of alcohol or drugs or with other sensory or mental impairment

See examples of situations (Part III) to assist in determining whether a reasonable probability of exposure has occurred.

II. Determining Rabies Status of the Bat

It is frequently much easier to determine the rabies status of a bat which has potentially exposed someone to rabies than to determine the likelihood of exposure. Thus, in all circumstances in which there could be any questions about potential exposures, NYSDOH strongly advises: **CAPTURE THE BAT** and call the county health authority. Free rabies testing is available through the Wadsworth Center's Rabies Laboratory, and specimen preparation and shipment is managed by county health authorities. On average, 2% - 3% of bats tested by the Rabies Laboratory are positive for rabies, and thus most of the bat-related postexposure treatments could be avoided if the bats were captured and tested. Details of shipment procedures are available from the county health authorities and at the Rabies Laboratory web page: www.wadsworth.org/rabies.

All homes, buildings, and camps where bats are seen indoors should have procedures and equipment in place to capture bats safely. Recommendations for bat capture in a building include:

- wear gloves and avoid direct skin contact with the bat
- avoid damage to the bat's head
- confine the bat to one room (close the windows, the room and closet doors)
- turn on lights if room is dark
- wait for the bat to land
- cover the bat with a coffee can or similar container
- slide a piece of cardboard under the can trapping the bat
- tape the cardboard tightly to the can
- if necessary, use a net or long pole with a piece of duct tape (sticky side out) to capture bat
- do not use glue board to capture bat (it cannot be easily removed for rabies testing)
- immediately contact local health authority to arrange for rabies examination of the bat

III. Examples of situations in which there is a reasonable probability of exposure
(postexposure treatment should be considered)

Direct contact with a bat:

- child touches live or dead bat
- teenager or adult touches bat without seeing the part of the bat they touched
- bat flies into someone of any age and touches bare skin
- adult sees bat fly near child and child reports it hit me
- someone steps on a dead bat in bare feet
- unidentified flying object hits someone and the time of day (dusk or dawn), presence of marks where it hit, and place that it was coming from (good for roosting bats, not birds) all support that it was a bat and not a bird or insect

Bats near a person:

- person awakens to find a bat in the room with them
- adult comes into room where child was left alone for a period of time, and live bat is found near child
- person slept in camp cabin which was small, closed-in, and bats were swooping past sleeping people
- bat found on ground near unattended infant, toddler, or a person with sensory or mental impairment
- person puts hand in firewood or brush, feels pain, then sees a bat

Examples of situations in which there is less evidence to support that there is a reasonable probability of exposure (depending on the circumstances, postexposure treatment probably should not be recommended, but mitigating measures should be implemented, see Parts IV-VI)

Direct contact:

- teenager or adult touches the back of a live bat while looking at it
- bat brushes past thick long hair of teenager or adult and they are certain there was no skin contact
- person has contact with a completely dried-up carcass of a bat

Bats near a person:

- bats swoop past awake teenager or adult who does not feel them touch
- dead bat found in room of home with no evidence that child touched it
- bats are heard or seen in walls or attic of house
- bats are found in other parts of the house even if bedroom doors were open
- bats are heard or seen hanging from upper rafters of large A-frame cabin
- bat guano or other signs of bat are found in sleeping quarters
- bat found in sleeping quarters at a time when no one is there or there is an awake adult

IV. Bats In Homes

It is not unusual to find bats in homes in New York State, and the presence of bats usually does not result in a need for rabies postexposure prophylaxis. Most (~98%) bats tested at the NYS Wadsworth Center's Rabies Laboratory are negative for rabies. However, because many of the recent human cases of rabies may have acquired their disease from a bat bite in a home situation, all reasonable steps should be taken to keep bats out of the home environment, especially sleeping quarters.

To keep bats from getting into buildings, bat proofing techniques should include:

- not leaving unscreened doors open to the outside
- not leaving unscreened windows open to the outside
- making sure windows have screens, chimneys are capped, and electrical and plumbing openings are plugged
- sealing up all openings larger than ½ inch by ½ inch square into the attic, basement, walls, or occupied areas of the house
- using materials such as expanding spray-on foam, caulk, wire mesh, wood that fits tightly, steel wool (around pipes that enter buildings), or polypropylene bird netting, to seal or cover gaps and holes.

To determine whether bats are already in a house, evidence can be obtained by:

- hearing squeaking noises coming from attic, walls, or elsewhere
- inspecting attic space, rafters, porches, and walls for signs of roosting bats, including bat guano and crystallized urine, or bare scratched areas on beams
- walking around the outside of the house at dusk to see if bats are flying out of the house to feed, or before dawn to see if bats are flying into the house to roost

To get bats out of a house in which they are roosting or entering, bat exclusion techniques should include the following considerations:

- killing or poisoning the bats is seldom a necessary or desirable solution
- openings should not be sealed while bats are inside--this may drive them into occupied areas or create a sanitary problem if the bats are trapped and die inside
- major home renovations and sealing should be done during the winter when most bats have left buildings
- the bats' entry and exit points should be determined by observing the house at dusk or dawn as described above
- special netting can be used in a manner that allows bats to exit the house, but not to re-enter it
- pest control experts specializing in bat control should be consulted when necessary

V. Bats In Children's Camps

Camps are usually located in areas that are prime habitat for bats and other wildlife, and the type of construction in camp buildings is often conducive to roosting bats. Bats are frequently encountered in the camp setting. If people are sleeping in cabins with bats, or children are handling bats found on the ground, rabies exposures can occur. Bats that are infected with rabies are often mistaken for injured animals when they are found flopping around on the ground. Abnormal behavior seen in rabid bats includes being on the ground, landing on someone, and flying during the day. Occasionally, there is no obvious abnormal behavior, so all contact with bats and other wild animals should be reported to the camp nurse.

Inspections for making decisions about which cabins will be used for sleeping should take place every spring before the camp opens. Inspections should include:

- inspecting attic space, rafters, porches, and walls for signs of roosting bats, such as bat guano and crystallized urine, or a musty odor
- looking for openings through which bats could get into sleeping quarters, such as openings larger than ½ inch by ½ inch and long thin slots larger than ¼ inch by 2 inches
- not allowing cabins with evidence of bat roosts to be used as sleeping quarters until they have been bat proofed

Camp buildings and cabins, particularly those used as sleeping quarters, should be bat proofed:

- do not bat proof buildings during the period from late May to mid-August, to avoid trapping baby bats inside the building
- seal openings larger than ½ inch by ½ inch, or long thin slots larger than ¼ inch by 2 inches
- use materials such as expanding spray-on foam, caulk, wire mesh, wood that fits tightly, steel wool (around pipes that enter buildings) etc., to seal gaps and holes.
- make sure windows have screens, chimneys are capped, and electrical and plumbing openings are plugged

To reduce the risk of rabies and the need for large-scale exposure investigations and postexposure treatments, health and environmental authorities should consider requiring that:

- camp directors and managers attend a pre-opening training session about zoonotic disease risks, including rabies
- information about zoonotic diseases is provided by camp management to all camp staff and attendees at orientation sessions
- information about zoonotic diseases is pre-approved by county health authorities

Information for camp directors, managers, staff, and attendees should include messages about:

- avoiding contact with sick, injured or dead animals
- preventing human or pet contact with a grounded bat
- capturing a bat which may have exposed someone by covering it with a box or can and placing a rock or brick on top of the container to secure it
- avoiding damage to the bat when capturing it; the brain must be intact for laboratory testing
- calling the county health authority for advice regarding all potential bat encounters and submission of bats to the NYS Wadsworth Center's Rabies Laboratory for testing
- immediately washing with soap and water any wounds or areas of skin contact with wild animals

VI. Recommended Actions for Camp Areas and Buildings Based on Building Location, Use, and Findings:

During Pre-Camp Inspection

	Outdoors	Unoccupied	Day Use	Over night
area is conducive to roosting bats	education*	education	education	seek information about bat proofing
evidence of solitary bat presence	education	enter with caution	3rd priority** for batproofing	2nd priority for batproofing
a rabid bat is confirmed	education	enter with caution	re-inspection, 3rd priority for batproofing	re-inspection, 2nd priority for batproofing
roosting bats observed	education	restrict access	2nd priority for batproofing, cautious bat exclusion	1st priority for batproofing, bat exclusion confirmed prior to overnight use

During Camp Sessions

area is conducive to bats	education	education	education	seek information about bat proofing
evidence of solitary bat presence	education	restrict access, don't disturb bat	re-inspection, 3rd priority for batproofing	re-inspection, 2nd priority for batproofing
a rabid bat is confirmed	education	restrict access, don't disturb other bats	re-inspection, 3rd priority for batproofing	re-inspection, 2nd priority for batproofing
Roosting bats observed	education	restrict access, don't disturb bats	cautious bat exclusion, consider <u>restricting access</u> until batproofed based on bat proximity and age of campers	<u>relocate campers</u> until successful bat exclusion and batproofing (determined by bat watches)

*Education: General education about bats and risk of rabies, avoiding exposures, and reporting exposures must be provided to all camp staff and camp attendees regardless of circumstances.

**Priority for batproofing is based on the degree of risk for exposures which may require rabies postexposure treatments. Priority level reflects the relative importance for batproofing a particular building if a camp has a number of problem buildings. It may also be used by health and/or environmental authorities to develop appropriate timetables for remediation. Priority level may be used for determining resources and funds for remediation. The Zoonoses Program (518-474-3186) should be the first contact for questions about implementation of these priorities.

VII. General Guidelines for Management of Bat-Related Incidents at Children's Camps

- Bats observed flying at night outside
 - provide general education to all camp staff and camp attendees about bats and risk of rabies, avoiding exposures, and reporting possible exposures
- Bat observed flying outside in daytime
 - provide general education to all camp staff and camp attendees about bats and risk of rabies, avoiding exposures, and reporting possible exposures (note: if bat appears to be aggressively and deliberately swooping at people, keep campers away from area, capture bat, and submit for rabies testing)
- Bat found outside grounded or roosting in camper accessible location
 - restrict access to area
 - temporarily contain bat, for example with an inverted pail or coffee can
 - capture bat
 - report incident to county health authority
 - submit bat for rabies testing
- Bat flying in or roosting in camper-occupied building
 - Building large, no children are present unattended:
 - evaluate situation for potential risk, consider exclusion and bat-proofing as soon as possible
 - Building small, leading to close proximity of bat to occupants, and children are present:
 - leave one person in building to observe bat
 - remove campers from building, as well as adults who will not be involved in capturing the bat
 - make a list of building occupants while they exit the building or immediately afterwards
 - capture bat
 - report incident to county health authority
 - submit bat for rabies testing
- Bat present indoors with sleeping adults or unattended children
 - leave one person in building to observe bat
 - remove campers from building, as well as adults who will not be involved in capturing the bat
 - make a list of building occupants while they exit the building or immediately afterwards
 - capture bat
 - report incident to county health authority
 - submit bat for rabies testing
- Known or suspected contact with a bat
 - capture bat
 - immediately make list of those with possible contact
 - have those persons with possible contact wash the area of potential contact with soap and water
 - report incident to county health authority
 - submit bat for rabies testing
 - depending on severity, consider having wounds evaluated by health care provider for medical treatment

Management of Bat-Related Incidents in Public Settings

Indoor Structures

(e.g., schools, day care centers, hospitals, health care clinics, prisons, fairs, camps, etc.)

Bat flying in or roosting in an occupied building

- *Building large, no children are present unattended: ◦ evaluate situation for potential risk, consider exclusion and batproofing as soon as possible*
- *Building small, leading to close proximity of bat to occupants, and children are present:*
 - *leave one person in building to observe bat*
 - *remove occupants from building, as well as adults who will not be involved in capturing the bat*
 - *make a list of building occupants while they exit the building or immediately afterwards*
 - *capture bat*
 - *report incident to local health department; submit bat for rabies testing*

Bat present indoors with sleeping adults or unattended children

- *leave one person in building to observe bat*
- *remove occupants from building, as well as adults who will not be involved in capturing the bat*
- *make a list of building occupants while they exit the building or immediately afterwards*
- *capture bat*
- *report incident to local health department; submit bat for rabies testing*

Known or suspected contact with a bat

- *capture bat*
- *immediately make list of those with possible contact*
- *have those persons with possible contact wash the area of potential contact with soap and water*
- *report incident to local health department; submit bat for rabies testing*
- *depending on severity, consider having wounds evaluated by health care provider for medical treatment*

Outdoors -- Public Locations

Bats observed flying at night outside

- *provide general education to persons frequenting location about bats and risk of rabies, avoiding exposures, and reporting possible exposures*

Bat observed flying outside in daytime

- *provide general education to persons frequenting location about bats and risk of rabies, avoiding exposures, and reporting possible exposures (note: if bat appears to be*

aggressively and deliberately swooping at people, keep people away from area, capture bat, contact local health department and submit for rabies testing)

Bat found outside grounded or roosting in a location accessible to the public

- restrict access to area*
- temporarily contain bat, for example with an inverted pail or coffee can*
- capture bat*
- report incident to local health department; submit bat for rabies testing*

All bat-related incidents should be reported to the local health department.

For questions about handling incidents, or to immediately report those which may require rabies treatment, the local health department should be contacted. They have someone available 24 hours per day.

For this building, the name of the local health department is:

Their business hours phone number is: _____

Their off hours phone number is: _____

Instructions for use of bat capture kit:

When an incident occurs, the person in this building who should be immediately notified to capture the bat is: _____

They can be reached by: _____ (phone number, pager number, etc.)

*In this building, the bat capture kit is kept: _____
(location)*

Carefully avoid direct contact with the bat and avoid damaging its head.

- Close the windows, and the room and closet doors; turn on the lights if the room is dark*
- Wait for the bat to land*
- Wearing gloves (heavy, preferably pliable thick leather), cover the bat with a coffee can or similar container with a lid* (see note below)*
- Slide a piece of cardboard under the can, trapping the bat*
- With one hand firmly holding the cardboard in place against the top of the can, turn the can right side up*
- Replace the cardboard with the lid (if no lid, tape the cardboard tightly to the can)*

- While wearing gloves (heavy, preferably pliable thick leather), slowly approach the bat with net
- Rotate the pole so that the bat is scooped into the net and the net turns in on itself containing the bat
- With a gloved hand, grab the bat through the outside of the net, slide the coffee can into the net, push the bat into the can and place the lid on the can (if no lid, tape a piece of cardboard over the can)

** Note: If a bat has landed behind something or in a space that is too narrow to cover with a coffee can, forceps may be used to capture it. Using a gloved hand to hold the forceps, firmly but gently grasp the bat under a wing and close to its body. Place the bat in the bottom of the coffee can and release your grip on the forceps. Cover the coffee can and contact the local health department as stated above.*

In the event that four or more hours are needed before transportation of a bat for subsequent rabies testing occurs, the bat should be double-bagged in plastic and placed in a cooler or refrigerated area. Under no circumstances should a bat be stored in the same cooler or refrigerator as food or pharmaceuticals. The specimen should be kept away from potential contact with people or other animals.

Questions or comments: bcdc@health.ny.gov

Revised: May 2001

Management of Bat-Related Incidents in Homes

In New York State, it is not uncommon for bats to appear in occupied dwellings, such as homes, apartments or camps. Evaluating potential human and domestic animal contact with a bat and capturing and retaining it for rabies testing, if necessary, is critical for the effective management of rabies exposures.

Almost all of the human rabies deaths that have occurred in the United States since 1990 were linked to bat rabies. Of the bat-associated fatalities, the majority of people did not report any known contact with a bat. Among bats submitted to the NYS Department of Health Wadsworth Center Rabies Laboratory for testing,

Evaluate potential human and domestic animal contact.

All bat-related incidents should be reported to the local health department.

For questions about handling incidents, or to immediately report those which may require rabies treatment, the local health department should be contacted. They have someone available 24 hours per day.

The name of the local health department is: _____

Their business hours phone number is: _____

Their off hours phone number is: _____

Instructions for use of bat capture kit:

*In this home, the bat capture kit is kept: _____
(location)*

Carefully avoid direct contact with the bat and avoid damaging its head.

- Close the windows, and the room and closet doors; turn on the lights if the room is dark*
- Wait for the bat to land*
- Wearing gloves (heavy, preferably pliable thick leather), cover the bat with a coffee can or similar container with a lid**
- Slide a piece of cardboard under the can, trapping the bat*
- With one hand firmly holding the cardboard in place against the top of the can, turn the can right side up*
- Replace the cardboard with the lid (if no lid, tape the cardboard tightly to the can)*

- While wearing gloves (heavy, preferably pliable thick leather), slowly approach the bat with net*

- Rotate the pole so that the bat is scooped into the net and the net turns in on itself containing the bat*
- With a gloved hand, grab the bat through the outside of the net, slide the coffee can into the net, push the bat into the can and place the lid on the can (if no lid, tape a piece of cardboard over the can)*

** Note: If a bat has landed behind something or in a space that is too narrow to cover with a coffee can, forceps may be used to capture it. Using a gloved hand to hold the forceps, firmly but gently grasp the bat under a wing and close to its body. Place the bat in the bottom of the coffee can and release your grip on the forceps. Cover the coffee can and contact the local health department as stated above.*

In the event that four or more hours are needed before transportation of a bat for subsequent rabies testing occurs, the bat should be double-bagged in plastic and placed in a cooler or refrigerated area. Under no circumstances should a bat be stored in the same cooler or refrigerator as food or pharmaceuticals. The specimen should be kept away from potential contact with people or other animals.

Questions or comments: bcdc@health.ny.gov

Revised: July 2006

Fact Sheet for Bat Inspection in Homes

It is not unusual to find bats in homes in New York State, and the presence of bats usually does not result in a need for rabies post-exposure prophylaxis. Most (97%) bats tested at the NYS Wadsworth Center's Rabies Laboratory are negative for rabies. However, because many of the human rabies cases in the United States since 1990 appear to have acquired their disease from an unrecognized bat bite in a home situation, all reasonable steps should be taken to keep bats out of the home environment, especially sleeping quarters.

- not leaving unscreened doors open to the outside*
 - not leaving unscreened windows open to the outside*
 - making sure windows have screens, chimneys are capped, and electrical and plumbing openings are plugged*
 - sealing up all openings larger than 1/2 inch by 1/2 inch square into the attic, basement, walls, or occupied areas of the house*
 - using materials such as expanding spray-on foam, caulk, wire mesh, wood that fits tightly, steel wool (around pipes that enter buildings), or polypropylene bird netting, to seal or cover gaps and holes*
-
- hearing squeaking noises coming from attic, walls, or elsewhere*
 - inspecting attic space, rafters, porches, and walls for signs of roosting bats, including bat guano and crystallized urine, or bare scratched areas on beams*
 - walking around the outside of the house at dusk to see if bats are flying out of the house to feed, or before dawn to see if bats are flying into the house to roost*
-
- killing or poisoning the bats is seldom a necessary or desirable solution*
 - openings should not be sealed while bats are inside--this may drive them into occupied areas or create a sanitary problem if the bats are trapped and die inside*
 - major home renovations and sealing should be done during the winter when bats have mostly left buildings*
 - the bats' entry and exit points should be determined by observing the house at dusk or dawn as described above*
 - special netting can be used in a manner that allows bats to exit a house, but not re-enter*
 - pest control experts specializing in bat control should be consulted when necessary*

Questions or comments: bcdc@health.ny.gov

Revised: July 2006

Fact Sheet for Bat Habitat Inspection and Bat-proofing in Children's Camps

Camps are usually located in areas that are prime habitat for bats and other wildlife, and the type of construction in camp buildings is often conducive to roosting bats. Bats are frequently encountered in the camp setting. If people are sleeping in cabins with bats, or children are handling bats found on the ground, rabies exposures can occur. Bats that are infected with rabies are often mistaken for injured animals when they are found flopping around on the ground. Abnormal behavior seen in rabid bats includes being on the ground, landing on someone, and flying during the day. Occasionally, there is no obvious abnormal behavior, so all contact with bats and other wild animals should be reported to the camp nurse.

Inspections for making decisions about which cabins will be used for sleeping should take place every spring before the camp opens. Inspections should include:

- inspecting attic space, rafters, porches, and walls for signs of roosting bats, such as bat guano and crystallized urine, or a musty odor
- looking for openings through which bats could get into sleeping quarters, such as openings larger than 1/2 inch by 1/2 inch and long thin slots larger than 1/4 inch by 2 inches
- not allowing cabins with evidence of bat roosts to be used as sleeping quarters until they have been bat-proofed

Camp buildings and cabins, particularly those used as sleeping quarters, should be bat-proofed

- do not bat-proof buildings during the period from late May to mid-August, to avoid trapping baby bats inside the building
- seal openings larger than 1/2 inch by 1/2 inch, or long thin slots larger than 1/4 inch by 2 inches
- use materials such as expanding spray-on foam, caulk, wire mesh, wood that fits tightly, steel wool (around pipes that enter buildings) etc., to seal gaps and holes.
- make sure windows have screens, chimneys are capped, and electrical and plumbing openings are plugged

For questions on inspections or bat-proofing, please contact your local health department for more information.

Questions or comments: bcfdc@health.ny.gov

Revised: May 2001

General Guidelines for Management of Bat-Related Incidents at Children's Camps

Bats observed flying at night outside

- provide general education to all camp staff and camp attendees about bats and risk of rabies, avoiding exposures, and reporting possible exposures

Bat observed flying outside in daytime

- provide general education to all camp staff and camp attendees about bats and risk of rabies, avoiding exposures, and reporting possible exposures (note: if bat appears to be aggressively and deliberately swooping at people, keep campers away from area, capture bat, and submit for rabies testing)

Bat found outside grounded or roosting in camper accessible location

- restrict access to area
- temporarily contain bat, for example with an inverted pail or coffee can
- capture bat
- report incident to local health department
- submit bat for rabies testing

Bat flying in or roosting in camper-occupied building

Building large, no children are present unattended:

- evaluate situation for potential risk, consider exclusion and bat-proofing as soon as possible

Building small, leading to close proximity of bat to occupants, and children are present:

- leave one person in building to observe bat
- remove campers from building, as well as adults who will not be involved in capturing the bat
- make a list of building occupants while they exit the building or immediately afterwards
- capture bat
- report incident to local health department
- submit bat for rabies testing

Bat present indoors with sleeping adults or unattended children

- leave one person in building to observe bat
- remove campers from building, as well as adults who will not be involved in capturing the bat
- make a list of building occupants while they exit the building or immediately afterwards
- capture bat
- report incident to local health department
- submit bat for rabies testing

Known or suspected contact with a bat

- capture bat
- immediately make list of those with possible contact

- have those persons with possible contact wash the area of potential contact with soap and water
- report incident to local health department
- submit bat for rabies testing
- depending on severity, consider having wounds evaluated by health care provider for medical treatment

All bat-related incidents should be reported to the local health department.

For questions about handling incidents, or to immediately report those which may require rabies treatment, the local health department should be contacted. They have someone available 24 hours per day.

For this camp, the name of the local health department is:

Their business hours phone number is:

Their off hours phone number is:

Instructions for use of bat capture kit:

When an incident occurs, the person in this building who should be immediately notified to capture the bat is:

and they can be reached by: (phone number, pager number, etc.)

In this camp the bat capture kit is kept: (location)

If a bat is within arm's reach, the coffee can method should be used:

Carefully avoid direct contact with the bat and avoid damaging its head

To capture the bat:

- Close the windows, and the room and closet doors; turn on the lights if the room is dark;
- Wait for the bat to land.
- Wearing gloves, cover the bat with a coffee can (or similar container with a lid).
- Slide a piece of cardboard under the can, trapping the bat.
- With one hand firmly holding the cardboard in place against the top of the can, turn the can right side up.
- Replace the cardboard with the lid (if no lid, tape the cardboard tightly to the can.)
- Immediately contact your local health department to arrange for rabies examination of the bat.

If a bat is not within arm's reach, an extension pole with a net may be used to capture the bat:

- While wearing gloves, slowly approach the bat with net.
- Rotate the pole so that the bat is scooped into the net and the net turns in on itself containing the bat.
- With a gloved hand grab the bat through the outside of the net, slide the coffee can into the net, push the bat into the can, and place the lid on the can. (if no lid, tape a piece of cardboard over the can.)

•Immediately contact your local health department to arrange for rabies examination of the bat.

1If a bat has landed behind something or in a space that is too narrow to cover with a coffee can, forceps may be used to capture it. Using a gloved hand to hold the forceps, firmly but gently grasp the bat under a wing and close to its body. Place the bat in the bottom of the coffee can and release your grip on the forceps. Cover the coffee can and contact the local health department as stated above.

In the event that four or more hours are needed before transportation of a bat for subsequent rabies testing occurs, the bat should be double-bagged in plastic and placed in a cooler or refrigerated area. Under no circumstances should a bat be stored in the same cooler or refrigerator as food or pharmaceuticals. The specimen should be kept away from potential contact with people or other animals.

Questions or comments: bcfdc@health.ny.gov

Revised: May 2008

Bat Capture Kit for Children's' Camps

- Gloves (heavy, preferably pliable thick leather)
- Forceps (9" to 12" length, rat-tooth for gripping)
- Extension pole w/net (fine mesh insect net of polyester or muslin material with a spring steel hoop on telescoping pole -- net and pole sold separately)
- Coffee can w/tight-fitting lid or similar container (e.g., cardboard ice cream carton w/lid; keep multiple containers on hand)
- Sheet of cardboard to slide between wall and container to act as a lid
- Tape (to secure lid on container)
- Flashlights (including fresh batteries & extra batteries)
- General Guidelines for Management of Bat-Related Incidents at Children's Camps (for display, guidelines should be double-sided, laminated and hung on lanyard/string)

To obtain some of the items listed above the following types of vendors are suggested:

- Hardware store/home & garden center - gloves, extension pole, flashlight, batteries, tape
- Medical supply company - forceps
- Forestry supply company - fine mesh insect net

Questions or comments: bcfdc@health.ny.gov

Revised: May 2001

Potential Rabies Exposure Report

See Environmental Health Manual Procedure CSFP-146 and back of form before completing.

Camp Name: _____ Address: _____

Exposure Date: ___/___/___ Time: ___:___ (Military time) Report Date: ___/___/___ eHIPS Log Number: _____

Rabies Analysis- Provide the following information for each animal involved in the incident.

Animal Description	Submitted for Rabies Analysis		If Submitted for Analysis, Indicate Results		
#1	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> Untestable
#2	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> Untestable
#3	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> Untestable
#4	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> Untestable

If exposure was a result of a bat entering a building, were bat exclusion techniques utilized after the incident to prevent future bat entry and potential human exposure? Yes No

COMPLETE FOR ALL PERSON(S) INVOLVED IN THE EXPOSURE INCIDENT - Shaded information is confidential

1. Victim Information: eHIPS Victim Number: _____ Exposure Date ___/___/___ Time: ___:___ (military)

Name of Patient: (Last, First, M.I.) _____
 Home Address: _____
 Parent or Guardian Name _____ Home Phone Number: (____) _____

Age: [] [] Sex: Male Female Status: Camper Developmentally Disabled Camper CIT/Jr. Counselor
 Counselor Other Staff* Other* (Specify*)

Animal	Type of Exposure (select from back of form)	Animal	Type of Exposures (select from back of form)
#1		#3	
#2		#4	

Was postexposure prophylaxis (PEP) recommended? Yes No Was PEP administered? Yes No Refused

2. Victim Information: eHIPS Victim Number: _____ Exposure Date ___/___/___ Time: ___:___ (military)

Name of Patient: (Last, First, M.I.) _____
 Home Address: _____
 Parent or Guardian Name _____ Home Phone Number: (____) _____

Age: [] [] Sex: Male Female Status: Camper Developmentally Disabled Camper CIT/Jr. Counselor
 Counselor Other Staff* Other* (Specify*)

Animal	Type of Exposure (select from back of form)	Animal	Type of Exposures (select from back of form)
#1		#3	
#2		#4	

Was postexposure prophylaxis (PEP) recommended? Yes No Was PEP administered? Yes No Refused

3. Victim Information: eHIPS Victim Number: _____ Exposure Date ___/___/___ Time: ___:___ (military)

Name of Patient: (Last, First, M.I.) _____
 Home Address: _____
 Parent or Guardian Name _____ Home Phone Number: (____) _____

Age: [] [] Sex: Male Female Status: Camper Developmentally Disabled Camper CIT/Jr. Counselor
 Counselor Other Staff* Other* (Specify*)

Animal	Type of Exposure (select from back of form)	Animal	Type of Exposures (select from back of form)
#1		#3	
#2		#4	

Was postexposure prophylaxis (PEP) recommended? Yes No Was PEP administered? Yes No Refused

4. Victim Information: eHIPS Victim Number: _____ Exposure Date ___/___/___ Time: ___:___ (military)

Name of Patient: (Last, First, M.I.) _____
 Home Address: _____
 Parent or Guardian Name _____ Home Phone Number: (____) _____

Age: [] [] Sex: Male Female Status: Camper Developmentally Disabled Camper CIT/Jr. Counselor
 Counselor Other Staff* Other* (Specify*)

Animal	Type of Exposure (select from back of form)	Animal	Type of Exposures (select from back of form)
#1		#3	
#2		#4	

Was postexposure prophylaxis (PEP) recommended? Yes No Was PEP administered? Yes No Refused

Instructions for Completing the Children's Camp Rabies Exposure Report Form

For each exposure incident, complete the requested information for all persons exposed. A separate form must be utilized for each incident. An incident can be exposures of one or more people to one or more animals over the course of a period of time (onsite petting zoo) or to a single animal one time. The local health department Rabies Coordinator must be consulted to arrange for and determine the appropriateness of postexposure prophylaxis (PEP). A copy of the Children's Camp Potential Rabies Exposure Incident Report should be sent to the Rabies Coordinator for their records. When an exposure occurred over a period of time, indicated the first exposure date and time as that for the incident and specify each victims exposure date and time in the victim information section.

When an exposure is a result of a bat inside a building, the path of entry must be identified and the appropriate exclusion techniques to prevent future exposure(s) must be employed.

TYPE OF EXPOSURE - Using the coding scheme below, indicate the letter that corresponds to each victim's type(s) of exposure; up to four letters may be selected, if appropriate. When multiple animals are involved with a single incident, consistency must be maintained between the animal number designation in the "Rabies Analysis" section and the animal number designation in the "Type of Exposure" section.

The below exposure types have a reasonable probability of transmitting rabies and must be reported to the Local Health Department by the camp. In general, PEP is recommended for these exposures when rabies exposure cannot be ruled out. A-C can be used for all exposures, D-M are for bats only. Select N only after consultation with the Bureau of Community Sanitation and Food Protection and describe the exposure in the narrative.

- A = Bite.
- B = Scratch.
- C = Saliva or nervous tissue contact.
- D = Direct physical contact with live or dead bat.
- E = Person touched bat without seeing the part of bat touched.
- F = Bat flew into person and touched bare skin.
- G = Bat flew into person on part of body with lightweight clothing and the person reports feeling an unpleasant sensation at the point of contact.
- H = Person with bare feet stepped on bat.
- I = Person awakens to find a bat in the room with them.
- J = Live bat found in room with unattended infant, child, or person with sensory or mental impairment.
- K = Person slept in small, closed-in camp cabin, bats swooping past while sleeping.
- L = Bat found on ground near unattended infant, child, or person with mental impairment.
- M = Unidentified flying object hits person and time of day (dusk or dawn), presence of mark where hit, and place where flying object came from (i.e., good site for roosting bats) all support likelihood that it was a bat.
- N = Other

Narrative:

Provide a description of the exposure incident. When the exposure was a result of a bat entering a building, state which building the exposure occurred in.

Children's Camp Inspector: _____ Title: _____

Local Health Department: _____ Date: ____/____/____ Telephone (____) _____

Date Rabies Coordinator Consulted: ____/____/____ Date Form Sent to Rabies Coordinator: ____/____/____

Rabies Policies and Procedures

(518) 474-3186

(518) 465-9720 (after hours)

SUBJECT: Model State Program for Management of Livestock in Rabies-Enzootic Areas

1. Rabies vaccines are licensed for cattle, horses, and sheep. Annual revaccination is required to maintain a current vaccination status (except for sheep that receive a booster vaccination with a three year vaccine after having received a primary vaccination).
2. Vaccination of all livestock may not be economically feasible or justified from a public health standpoint. However, vaccination should be considered for:
 - a. Vaccination of valuable livestock in rabies enzootic areas.
 - b. Livestock housed in structures with roosting bats or frequented by bats.
 - c. Livestock with frequent contact with humans.
3. Livestock in contact with general public (e.g., fairs, petting zoos, shows, farm tours) should be vaccinated:
 - a. All species for which a USDA licensed vaccine is available must be accompanied by a veterinary certification of current immunization for rabies, as defined in the applicable passage of the New York State Sanitary Code* : "current vaccination shall mean the injection of a rabies vaccine suitable to the species, which meets the standards prescribed by the United States Department of Agriculture for interstate sale and is administered according to the manufacturer's instructions under the direction of a duly licensed veterinarian not later than the expiration date on the package. Current vaccination shall begin 14 days following primary vaccination, and continue for the period stated in the manufacturer's instructions."
 - b. It is strongly recommended that all mammals to be exhibited at a fair or similar exhibition in NYS be vaccinated annually for rabies no less than 14 days prior to arrival at the fair grounds. While the New York State Interdepartmental Rabies Committee recognizes the safety and probable efficacy of licensed rabies vaccines for use off-label in other mammals, it is important to note: (1) efficacy of the vaccine in off-label species has not been established, and it must be assumed that vaccine failure may occur; (2) in compliance with the terms of the State Sanitary Code, a mammal vaccinated by off-label use will be treated as an unvaccinated animal if it is exposed to rabies or if it bites or otherwise potentially exposes a human to rabies.
 - c. Small mammals such as hamsters, gerbils, rats and rabbits may alternatively be isolated from any direct contact with the public.
 - d. Unvaccinated and off-label vaccinated mammals should be restricted from certain activities at fairs and similar settings that encourage intimate contact with the public (e.g., petting zoo's, on-leash walks through general pedestrian areas).
 - e. For off-label vaccinated mammals, public contact may be allowed if the animals are kept under surveillance for rabies symptoms and if contacts are limited to a small, defined number of animals which have been vaccinated at least two months prior to contact. In addition, a register of those having contact must be maintained with names, addresses, and phone numbers, in order to quickly identify those possibly needing rabies treatment if the animal develops symptoms:

* New York State Sanitary Code, Chapter 10, Health, Part 2 - Section 2.14 para. (a) 4.

4. All suspected cases of rabies in animals, and animal bites to humans must immediately be reported to the local health authority. When appropriate the health authority will arrange ten day observation or rabies examination of the biting animal.
5. Unvaccinated and off-label vaccinated mammals (including livestock) in contact with a rabid animal must be destroyed unless quarantined for a 6 month period. Animals currently vaccinated (as defined in 3.a., above) in contact with a rabid animal must receive a rabies booster injection within 5 days of the exposure. Quarantine on a farm for livestock means isolation from other domestic animals and from all humans except for the person caring for the animal. NYS Ag & Markets veterinarians should be consulted for on-site advice on setting up the quarantines.
6. When rabies is confirmed in a domestic animal on a farm, it is not necessary to consider all animals in the herd as exposed, as horizontal transfer (e.g., cow to cow) is unlikely. However, any mammal known to be bitten by or otherwise exposed to the saliva of the rabid animal must be managed as in 5 (above). Furthermore, because another member of the herd may have been exposed to rabies through the same carrier that infected the rabid domestic animal, other members of the herd must be watched carefully for development of signs of rabies, and isolated immediately should that occur. Milk from the remainder of the herd may be sold. Rabies virus has not been demonstrated in infectious doses in milk. Pasteurization will inactivate rabies virus.
7. The meat from an animal exposed to rabies (i.e., known to be bitten by a rabid animal) may be eaten without risk of rabies providing the animal is slaughtered within 7 days of exposure to rabies and liberal portions of the exposed area are discarded. Milk from an animal in quarantine may be used if pasteurized. Neither meat nor milk from a rabid animal (i.e., became ill with or died from the disease) should be used for human or animal consumption.
8. Veterinarians, their staff, and livestock owners in rabies enzootic areas should immediately suspect rabies when animals become ill or demonstrate abnormal behavior. Promptly isolate the animal. Protective rubber gloves should be worn when handling and medicating sick animals, especially animals suspected of choking, as this is frequently an early sign of rabies.
9. Barns, fences, and other barriers to sick wildlife should be maintained in good repair. Doors should be kept closed whenever possible, especially at night.
10. Dogs and cats are required to be currently vaccinated for rabies at all times. Barn cats should be vaccinated and controlled (rabies is 5 to 10 times more prevalent in cats than in dogs in areas affected by the raccoon rabies outbreak).
11. Veterinarians, veterinary technicians, and others in intimate contact with sick livestock in rabies enzootic areas should receive rabies pre-exposure immunization. Care must be taken while treating and during necropsy of rabies-suspect animals. Protective clothing should include rubber gloves, surgical mask and face shield or other eye protection.
12. Specimens for diagnosis of rabies in livestock must include refrigerated (not fixed) samples of brainstem and cerebellum.

APPENDIX D

Resources For Veterinarians

Rabies Packaging And Shipping Instructions

Address To Rabies Lab

MMWR: Compendium Of Animal Rabies Prevention And Control 11/2011



Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

May 16, 2016

To better provide rabies testing services the New York State Department of Health has made two key changes to the requirements for specimen delivery to the Rabies Laboratory.

- **Specimens must be shipped so that they are guaranteed to arrive at the laboratory within one day after shipment.**
- **For emergency testing on a Saturday please select the 'early Saturday morning delivery' option.**

In addition, please note the following continuing guidance:

- Do not ship specimens for emergency testing on Saturdays without obtaining prior approval for weekend testing from the Bureau of Communicable Disease Control (BCDC).
- Any specimens received for which approval for emergency testing was not given will be held for testing on the next business day.
- Properly packaged specimens should be shipped to the Wadsworth Center Rabies Laboratory at this address:
Griffin Laboratory
Wadsworth Center
NYS Department of Health
5668 State Farm Road
Slingerlands, NY 12159
- When specimens are being prepared for emergency testing on Saturdays, the LHD should verify that 'early Saturday AM delivery' is requested and obtain a tracking number for all specimens. The tracking number should be emailed to rabies@health.ny.gov.
- LHDs can continue to send in specimens that will be delivered to the laboratory on Saturday but that do not require weekend testing. These specimens should have printed on the outside of the shipping container "For Saturday Delivery, Non-Emergency".

A delay in specimen delivery can result in specimen decomposition, unsatisfactory testing results, delays or unnecessary post-exposure prophylaxis and/or unnecessary quarantine of companion animals.

Summary of emergency animal rabies testing policy

1. Emergency/off-hours rabies testing of animals must be reviewed and approved by BCDC either during normal business hours at (518) 473-4439, or after hours through the NYSDOH Duty Officer at (866) 881-2809.
2. After consultation with BCDC, if off-hours testing is approved, the LHD must immediately notify the rabies laboratory at (518) 485-6464 during business hours, or after hours through the NYSDOH Duty Officer system at (866) 881-2809. Immediate notification of the rabies laboratory is necessary to:
 - Ensure that rabies lab technologists are available to receive and test the specimen.
 - Verify appropriate shipping will be requested so that the specimen will arrive in a timely manner.
 - Confirm to whom and how emergency testing results will be reported.
3. Emergency rabies testing is indicated for an animal that has ***bitten a human and is highly suspect for rabies infection*** based on species, behavior, and circumstances of the incident. Emergency testing is reserved for situations where, due to timing around weekends or holidays, it may not be possible to have the results of testing back within 3 days of the date of the exposure incident.

Some examples of incidents that should be considered for emergency testing would include:

- A bite, or significant saliva exposure to an open wound, from abnormal acting raccoon, skunk, or fox.
- A bite or other **direct contact** where a bite cannot be ruled out involving a bat (note that a bat found with a sleeping person with no known direct contact must still be tested, but would not be considered for emergency testing).
- A known bite from domestic animal that has been examined by a veterinarian and determined to be showing signs consistent with rabies.

The rabies specimen submission policy can be found on the Rabies Laboratory website at <http://www.wadsworth.org/programs/id/rabies/animal-specimen-testing>.



Published on *New York State Department of Health, Wadsworth Center*
(<http://www.wadsworth.org>)

Home > Public Health Programs > Infectious Diseases > Rabies > Animal Specimen Testing

Animal Specimen Testing ^[1]

Rabies testing in animal specimens consists of microscopic examination of brain tissue samples using an immunofluorescence staining technique. Results are confirmed by virus isolation in a cell culture system. All local health departments should submit specimens using the Electronic Submission for Animal Rabies through the Health Commerce System ^[2]. For parties that do not have access to the Health Commerce System, such as veterinary practices, pest control companies and wildlife rehabilitators, a copy of the animal rabies specimen history form ^[3] may be filled out, printed and included with the specimens according to specimen packaging instructions.

Specimen Collection

Do not submit live animals. The animal should be humanely euthanized without damage to the head. The head must then be removed from the body and submitted intact for examination except in the case of bats where the entire animal should be submitted. For livestock, samples of all 3 lobes of the cerebellum (equal to 2 walnuts) and a complete cross-section of the brainstem are required and may be removed through the foramen magnum. The cerebellum and brainstem samples must be placed in a small, crush-resistant plastic canister or tub, then sent to the lab in the standard New York rabies specimen shipping container according to the provided detailed instructions. Decapitation and livestock brain sample extraction can best be performed at a co-operating veterinary hospital.

Authorization for submission of specimens for rabies diagnosis must be obtained from the local health authority. Bites and other exposures to saliva or nervous tissue from animals suspected of having rabies must be reported to the local health authority.

Questions regarding submission of specimens and the handling of animal bites should be directed to the Rabies Laboratory weekdays from 8 a.m. to 4:30 p.m. at (518) 485-6464. Emergency weekend or holiday examinations must be arranged with the laboratory by the local health authority or should be directed to the Duty Officer at (866) 881-2809.

Specimen Storage

Specimens must be preserved by refrigeration. Freezing should be avoided, but is acceptable if refrigeration is not possible. Tissues must not be fixed with chemical preservatives.

Specimen preparation for shipping

Although the rabies specified shipping container provided is compliant with current federal shipping regulations, the shipper is responsible for the proper packaging and labeling of diagnostic specimens. Tools, cages and other surfaces potentially contaminated with infectious saliva or blood can be disinfected with a 10% solution of sodium hypochlorite (household bleach) in water

Shipping sets include:

- One pre-assembled shipping container, including
 - Outer cardboard box
 - EPS cooler
 - 2 biohazard pressure bags
- Packing instructions are printed on top-inner flaps of the outer cardboard box.
- Two gel packs of refrigerant (store frozen until needed).
- Two plastic bags (13 x 20 x 4 ml) for the animal head, livestock or other large animal brain, or entire bat.
- One large plastic bag that surrounds the closed EPS cooler.
- Two absorbent sheets which are to be placed in biohazard pressure bags along with the specimen.
- Two blank rabies history forms with directions for collection and submission of specimens.
- One zip-lock bag for the rabies history forms.

Packing Directions:

1. Remove the head from the body of the animal (except bats-which are shipped whole and livestock) and place the head in a small plastic bag.
 - When shipping samples consisting of only cerebellum and brain stem (livestock submissions), first place the brain tissue in a small, hard plastic container, then place in the small plastic bag.
 - When shipping more than one specimen in the container (bats), be certain that each specimen is individually bagged to prevent cross contamination and that each specimen is clearly identified.
2. Cool specimen in refrigerator or freezer, whenever possible, before packaging, to enhance preservation (especially in warm weather).
3. If sharp objects protrude from the specimen (bone fragments, porcupine quills), wrap specimen in several layers of newspaper prior to putting the specimen into plastic bag.
4. Place the bagged specimen into the biohazard pressure bag along with the sheet of absorbent.
5. Seal the biohazard specimen bag:
 1. Remove the tape adhesive backing from the bag.
 2. Fold the bag at the slit and orient lines onto corresponding lines.
 3. Press hard from the center working outward.
 4. Do not force larger heads into the biohazard pressure bag.
 5. If the head is too large for the biohazard pressure bag, contact the Rabies Laboratory (518-485-6464) for assistance.
6. Complete the history form on-line at Health Commerce System ^[2] or fill out the one provided with the shipper.
 - Complete one form per sample. 102

- The identification on the bag containing the specimen and the history form should be identical. If the specimen bag is labeled "bat #1-Smith", then the history should also have the identification "bat #1-Smith", written clearly and in indelible ink.
 - Answer all questions as accurately as possible. The information provided will be used to report results to the local health authority.
7. Place the completed rabies history form in the zip-lock bag provided.
 8. Place the zip-lock bag on top of the EPS cooler.
 9. Follow packaging instructions printed on the inside flap of box.
 10. Do not use glass, wire, tag fasteners or other materials which could puncture packaging or cause injury.
 11. Wash hands.
 12. Disinfect or burn all materials contaminated in specimen preparation process. Surfaces potentially contaminated with infectious saliva or blood can be disinfected with a 10% solution of sodium hypochlorite (household bleach) in water
 13. **Next day delivery is required for all specimens**

Shipping Specimens

Properly packaged specimens may be shipped directly to the Rabies Laboratory as described below. **Special arrangements are necessary with carriers for weekend delivery.** Local health offices may arrange transportation to the laboratory. **DO NOT ship emergency specimens on Friday without prior approval for emergency testing.**

To better provide rabies testing services the New York State Department of Health has made two key changes to the requirements for specimen delivery to the Rabies Laboratory .

- **Specimens must be shipped so that they are guaranteed to arrive at the laboratory within one day after shipment.**
- **For emergency testing on a Saturday please select the 'early Saturday morning delivery' option.**

In addition, please note the following continuing guidance:

- Do not ship specimens for emergency testing on Saturdays without obtaining prior approval for weekend testing from the Bureau of Communicable Disease Control (BCDC)
- Any specimens received for which approval for emergency testing was not given will be held for testing on the next business day.

Properly packaged specimens should be shipped to the Wadsworth Center Rabies Laboratory at this address:

Griffin Laboratory
Wadsworth Center
NYS Department of Health
5668 State Farm Road
Slingerlands, NY 12159

- When specimens are being prepared for emergency testing on Saturdays, the LHD should verify that 'early Saturday AM delivery' is requested and obtain a tracking number for all specimens.
- LHDs can continue to send in specimens that will be delivered to the laboratory on Saturday but that do not require weekend testing. These specimens should have printed on the outside of the shipping container "For Saturday Delivery, Non-Emergency".

A delay in specimen delivery can result in specimen decomposition, unsatisfactory testing results, delays or unnecessary post-exposure prophylaxis and/or unnecessary quarantine of companion animals.

Summary of emergency animal rabies testing policy

Emergency/off-hours rabies testing of animals must be reviewed and approved by BCDC either during normal business hours at (518) 473-4439, or after hours through the NYSDOH Duty Officer at (866) 881-2809.

After consultation with BCDC, if off-hours testing is approved, the LHD must immediately notify the rabies laboratory at (518) 485-6464 during business hours, or after hours through the NYSDOH Duty Officer system at (866) 881-2809. Immediate notification of the rabies laboratory is necessary to:

- Ensure that rabies lab technologists are available to receive and test the specimen.
- Verify appropriate shipping will be requested so that the specimen will arrive in a timely manner.
- Confirm to whom and how emergency testing results will be reported.

Emergency rabies testing is indicated for an animal that has ***bitten a human and is highly suspect for rabies infection*** based on species, behavior, and circumstances of the incident. Emergency testing is reserved for situations where, due to timing around weekends or holidays, it may not be possible to have the results of testing back within 3 days of the date of the exposure incident.

Some examples of incidents that should be considered for emergency testing would include:

- A bite, or significant saliva exposure to an open wound, from abnormal acting raccoon, skunk, or fox.
- A bite or other **direct contact** where a bite cannot be ruled out involving a bat (note that a bat found with a sleeping person with no known direct contact must still be tested, but would not be considered for emergency testing).
- A known bite from domestic animal that has been examined by a veterinarian and determined to be showing signs consistent with rabies.

The rabies specimen submission policy can be found at the top of this web page.

A printable pdf of the Shipping Instructions ^[4] is provided.

Results

Results are routinely available at the local health authority on the workday following arrival of the specimen at the laboratory.

Related Links

- International Air Transport Association - Dangerous Goods Documentation ^[5]
- United States Postal Service - Toxic Substances and Infectious Substances ^[6]

Source URL: <http://www.wadsworth.org/programs/id/rabies/animal-specimen-testing>

Links

[1] <http://www.wadsworth.org/programs/id/rabies/animal-specimen-testing>

[2] https://commerce.health.state.ny.us/public/hcs_login.html

[3] <http://www.wadsworth.org/sites/default/files/WebDoc/26923434/DOH487.pdf>

[4] <http://www.wadsworth.org/sites/default/files/WebDoc/Rabies%20lab%20info%20message%20May%2013.pdf>

[5] <http://www.iata.org/whatwedo/cargo/dgr/Pages/download.aspx>

[6] http://pe.usps.com/text/pub52/pub52c3_023.htm

Compendium of Animal Rabies Prevention and Control, 2016

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

Catherine M. Brown DVM, MSc, MPH (Co-Chair)

Sally Slavinski DVM, MPH (Co-Chair)

Paul Ettestad DVM, MS

Tom J. Sidwa DVM, MPH

Faye E. Sorhage VMD, MPH

From the Massachusetts Department of Public Health, 305 South St, Jamaica Plain, MA 02130 (Brown); the New York City Department of Health and Mental Hygiene, 2 Gotham Center, CN# 22A, 42-09 28th St, Queens, NY 11101 (Slavinski); the New Mexico Department of Health, 1190 St Francis Dr, Room N-1350, Santa Fe, NM 87502 (Ettestad); and the Texas Department of State Health Services, PO Box 149347, MC 1956, Austin, TX 78714 (Sidwa).

Consultants to the Committee: Jesse Blanton, PhD (CDC, 1600 Clifton Rd, Mailstop G-33, Atlanta, GA 30333); Richard B. Chipman, MS, MBA (USDA APHIS Wildlife Services, 59 Chenell Dr, Ste 2, Concord, NH 03301); Roian D. Davis, MS (Kansas State University, Room 1016 Research Park, Manhattan, KS 66506); Cathleen A. Hanlon, VMD, PhD (Retired); Jamie McAloon Lampman (McKamey Animal Center, 4500 N Access Rd, Chattanooga, TN 37415 [representing the National Animal Care and Control Association]); Joanne L. Maki, DVM, PhD (Merial a Sanofi Co, 115 Trans Tech Dr, Athens, GA 30601 [representing the Animal Health Institute]); Michael C. Moore, DVM, MPH (Kansas State University, Room 1016 Research Park, Manhattan, KS 66506); Jim Powell, MS (Wisconsin State Laboratory of Hygiene, 465 Henry Mall, Madison, WI 53706 [representing the Association of Public Health Laboratories]); Charles E. Rupprecht, VMD, PhD (Wistar Institute of Anatomy and Biology, 3601 Spruce St, Philadelphia, PA 19104); Geetha B. Srinivas, DVM, PhD (USDA Center for Veterinary Biologics, 1920 Dayton Ave, Ames, IA 50010); Nick Striegel, DVM, MPH (Colorado Department of Agriculture, 305 Interlocken Pkwy, Broomfield, CO 80021); and Burton W. Wilcke Jr, PhD (University of Vermont, 302 Rowell Building, Burlington, VT 05405 [representing the American Public Health Association]).

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).

Rabies is a fatal viral zoonosis and serious public health problem.¹ All mammals are believed to be susceptible to the disease, and for the purposes of this document, use of the term animal refers to mammals. The disease is an acute, progressive encephalitis caused by viruses in the genus *Lyssavirus*.² Rabies virus is the most important lyssavirus globally. In the United States, multiple rabies virus variants are maintained in wild mammalian reservoir populations such as raccoons, skunks, foxes, and bats. Although the United States has been declared free from transmission of canine rabies virus variants, there is always a risk of reintroduction of these variants.³⁻⁷

The rabies virus is usually transmitted from animal to animal through bites. The incubation period is highly variable. In domestic animals, it is generally 3 to 12 weeks, but can range from several days to months, rarely exceeding 6 months.⁸ Rabies is communicable during the period of salivary shedding of rabies virus. Experimental and historic evidence documents that dogs, cats, and ferrets shed the virus for a few days prior to the onset of clinical signs and during illness. Clinical signs of rabies are variable and include inap-

petance, dysphagia, cranial nerve deficits, abnormal behavior, ataxia, paralysis, altered vocalization, and seizures. Progression to death is rapid. There are currently no known effective rabies antiviral drugs.

The recommendations in this compendium serve as a basis for animal rabies prevention and control programs throughout the United States and facilitate standardization of procedures among jurisdictions, thereby contributing to an effective national rabies control program. The compendium is reviewed and revised as necessary, with the most current version replacing all previous versions. These recommendations do not supersede state and local laws or requirements. Principles of rabies prevention and control are detailed in Part I, and recommendations for parenteral vaccination procedures are presented in Part II. All animal rabies vaccines licensed by the USDA and marketed in the United States are listed and described in Appendix 1, and contact information for manufacturers of these vaccines is provided in Appendix 2.

Modifications of note in this updated version of the compendium, compared with the previous version,⁹ include clarification of language, explicit en-

couragement of an interdisciplinary approach to rabies control, a recommendation to collect and report at the national level additional data elements on rabid domestic animals, changes to the recommended management of dogs and cats exposed to rabies that are either unvaccinated or overdue for booster vaccination, reduction of the recommended 6-month quarantine period for certain species, and updates to the list of marketed animal rabies vaccines.

Part I. Rabies Prevention and Control

A. Principles of rabies prevention and control

1. **Case definition.** An animal is determined to be rabid after diagnosis by a qualified laboratory as specified (*see* Part I.A. 10. Rabies diagnosis). The national case definition for animal rabies requires laboratory confirmation on the basis of either a positive result for the direct fluorescent antibody test (preferably performed on CNS tissue) or isolation of rabies virus in cell culture or a laboratory animal.¹⁰

2. **Rabies virus exposure.** Rabies is transmitted when the virus is introduced into bite wounds, into open cuts in skin, or onto mucous membranes from saliva or other potentially infectious material such as neural tissue.¹¹ Questions regarding possible exposures should be directed promptly to state or local public health authorities.

3. **Interdisciplinary approach.** Clear and consistent communication and coordination among relevant animal and human health partners across and within all jurisdictions (including international, national, state, and local) is necessary to most effectively prevent and control rabies. As is the case for the prevention of many zoonotic and emerging infections, rabies prevention requires the cooperation of animal control, law enforcement, and natural resource personnel; veterinarians; diagnosticians; public health professionals; physicians; animal and pet owners; and others. An integrated program must include provisions to promptly respond to situations; humanely restrain, capture, and euthanize animals; administer quarantine, confinement, and observation periods; and prepare samples for submission to a testing laboratory.

4. **Awareness and education.** Essential components of rabies prevention and control include ongoing public education, responsible pet ownership, routine veterinary care and vaccination, and professional continuing education. Most animal and human exposures to rabies can be prevented by raising awareness concerning rabies transmission routes, the importance of avoiding contact with wildlife, and the need for appropriate veterinary care. Prompt recognition and reporting

of possible exposures to medical and veterinary professionals and local public health authorities are critical.

5. **Human rabies prevention.** Rabies in humans can be prevented by eliminating exposures to rabid animals or by providing exposed persons prompt postexposure prophylaxis consisting of local treatment of wounds in combination with appropriate administration of human rabies immune globulin and vaccine. An exposure assessment should occur before rabies postexposure prophylaxis is initiated and should include discussion between medical providers and public health officials. The rationale for recommending preexposure prophylaxis and details of both preexposure and postexposure prophylaxis administration can be found in the current recommendations of the Advisory Committee on Immunization Practices.^{11,12} These recommendations, along with information concerning the current local and regional epidemiology of animal rabies and the availability of human rabies biologics, are available from state health departments.

6. **Domestic animal vaccination.** Multiple vaccines are licensed for use in domestic animal species. Vaccines available include inactivated and modified-live virus vectored products, products for IM and SC administration, products with durations of immunity for periods of 1 to 3 years, and products with various minimum ages of vaccination. Recommended vaccination procedures are specified in Part II of this compendium; animal rabies vaccines licensed by the USDA and marketed in the United States are specified in Appendix 1. Local governments should initiate and maintain effective programs to ensure vaccination of all dogs, cats, and ferrets and to remove stray and unwanted animals. Such procedures have reduced laboratory-confirmed cases of rabies among dogs in the United States from 6,949 cases in 1947 to 89 cases in 2013.³ Because more rabies cases are reported annually involving cats (247 in 2013) than dogs, vaccination of cats should be required.³ Animal shelters and animal control authorities should establish policies to ensure that adopted animals are vaccinated against rabies.

An important tool to optimize public and animal health and enhance domestic animal rabies control is routine or emergency implementation of low-cost or free clinics for rabies vaccination. To facilitate implementation, jurisdictions should work with veterinary medical licensing boards, veterinary associations, the local veterinary community, animal control officials, and animal welfare organizations.

7. **Rabies in vaccinated animals.** Rabies is rare in vaccinated animals.¹³⁻¹⁵ If rabies is suspected in a vaccinated animal, it should be reported to public health officials, the vaccine manufacturer, and the USDA APHIS Center for Veterinary Biologics

(www.aphis.usda.gov; search for "adverse event reporting"). The laboratory diagnosis should be confirmed and the virus variant characterized by the CDC's rabies reference laboratory. A thorough epidemiologic investigation including documentation of the animal's vaccination history and potential rabies exposures should be conducted.

8. **Rabies in wildlife.** It is difficult to control rabies among wildlife reservoir species.¹⁶ Vaccination of free-ranging wildlife or point infection control is useful in some situations,¹⁷ but the success of such procedures depends on the circumstances surrounding each rabies outbreak (See Part I. C. Prevention and control methods related to wildlife). Because of the risk of rabies in wild animals (especially raccoons, skunks, coyotes, foxes, and bats), the AVMA, American Public Health Association, Council of State and Territorial Epidemiologists, National Animal Care and Control Association, and National Association of State Public Health Veterinarians strongly recommend the enactment and enforcement of state laws prohibiting the importation, distribution, translocation, and private ownership of wild animals.

9. **Rabies surveillance.** Laboratory-based rabies surveillance and variant typing are essential components of rabies prevention and control programs. A comprehensive surveillance program should not be limited to testing only those animals that have potentially exposed people or domestic animals to rabies. Accurate and timely information and reporting are necessary to guide decisions regarding postexposure prophylaxis in potentially exposed humans, determine appropriate management of potentially exposed animals, aid in the discovery of emerging variants, describe the epidemiology of the disease, and assess the effectiveness of vaccination programs for domestic animals and wildlife. Every animal submitted for rabies testing should be reported to the CDC to evaluate surveillance trends. Public health authorities should implement electronic laboratory reporting and notification systems.¹⁸ Information reported on every animal submitted for rabies testing should include species, point location, vaccination status, rabies virus variant (if rabid), and human or domestic animal exposures. To enhance the ability to make evidence-based recommendations from national surveillance data, additional data should be collected and reported on all rabid domestic animals. In this regard, essential data elements include age, sex, neuter status, ownership status, quarantine dates (if any), date of onset of any clinical signs, and complete vaccination history. Rabid animals with a history of importation into the United States within the past 60 days are immediately notifiable by state health departments to the CDC; for all indigenous cases, standard notification protocols should be followed.¹⁹

10. Rabies diagnosis.

a) The direct fluorescent antibody test is the gold standard for rabies diagnosis. The test should be performed in accordance with the established national standardized protocol (www.cdc.gov/rabies/pdf/rabiesdfaspv2.pdf) by a qualified laboratory that has been designated by the local or state health department.^{20,21} Animals submitted for rabies testing should be euthanized^{22,23} in such a way as to maintain the integrity of the brain so that the laboratory can recognize anatomic structures. Except in the case of very small animals, such as bats, only the head or entire brain (including brainstem) should be submitted to the laboratory. To facilitate prompt laboratory testing, submitted specimens should be stored and shipped under refrigeration without delay. The need to thaw frozen specimens will delay testing. Chemical fixation of tissues should be avoided to prevent significant testing delays and because such fixation might preclude reliable testing. Questions about testing of fixed tissues should be directed to the local rabies laboratory or public health department.

b) Rabies testing should be available outside of normal business hours at the discretion of public health officials to expedite exposure management decisions.²⁰ When confirmatory testing is needed by state health departments (eg, in the event of inconclusive results, unusual species, or mass exposures), the CDC rabies laboratory can provide additional testing and results within 24 hours of sample receipt.²⁴

c) Professional associations such as the Association of Public Health Laboratories should advocate for, distribute, and promote the development of guidelines for routinely assessing testing practices within rabies laboratories to ensure maintenance of quality and safety.

d) A direct rapid immunohistochemical test (referred to as dRIT) is being used by trained field personnel in surveillance programs for specimens not involved in human or domestic animal exposures.²⁵⁻²⁸ All positive direct rapid immunohistochemical test results need to be confirmed by means of direct fluorescent antibody testing at a qualified laboratory.

e) Currently, there are no commercially available, USDA-licensed rapid test kits for rabies diagnosis. Unlicensed tests should not be used owing to the following concerns: sensitivity and specificity of these tests are not known, the tests have not been validated against current standard methods, the excretion of virus in the saliva is intermittent and the amount varies over time, any unlicensed test result would

need to be confirmed by validated methods such as direct fluorescent antibody testing on brain tissue, and the interpretation of results from unlicensed tests may place exposed animals and persons at risk.

11. **Rabies serology.** Some jurisdictions require evidence of vaccination and rabies virus antibodies for animal importation purposes. Rabies virus antibody titers are indicative of a response to vaccine or infection. Titers do not directly correlate with protection because other immunologic factors also play a role in preventing rabies and our abilities to measure and interpret those other factors are not well-developed. Therefore, evidence of circulating rabies virus antibodies in animals should not be used as a substitute for current vaccination in managing rabies exposures or determining the need for booster vaccination.²⁹⁻³²

12. **Rabies research.** Information derived from well-designed studies is essential for the development of evidence-based recommendations. Data are needed in several areas, including viral shedding periods for domestic livestock and lagomorphs, potential shedding of virus in milk, the earliest age at which rabies vaccination is effective, protective effect of maternal antibody, duration of immunity, postexposure prophylaxis protocols for domestic animals, models for treatment of clinical rabies, extralabel vaccine use in domestic animals and wildlife rabies reservoir species, host-pathogen adaptations and dynamics, and the ecology of wildlife rabies reservoir species, especially in relation to the use of oral rabies vaccines.

B. Prevention and control methods in domestic and confined animals

1. **Preexposure vaccination and management.** Adherence to a regular rabies vaccination schedule is critical to protect animals against recognized and unrecognized rabies exposures. Parenteral animal rabies vaccines should be administered only by or under the direct supervision of a licensed veterinarian on premises. Rabies vaccines may be administered under the supervision of a licensed veterinarian to animals held in animal shelters before release.^{33,34} The veterinarian signing a rabies vaccination certificate must ensure that the person who administered the vaccine is identified on the certificate and has been appropriately trained in vaccine storage, handling, and administration and in the management of adverse events. This ensures that a qualified and responsible person can be held accountable for properly vaccinating the animal.

Within 28 days after initial vaccination, a peak rabies virus antibody titer is expected, and the animal can be considered immunized.^{31,35-37} Regardless of the age of the animal at initial vaccination, a booster vaccination should be administered 1 year later (see Part II and Appendix 1). An animal is currently vaccinated and is consid-

ered immunized immediately after any booster vaccination.^{38,39}

a) **Booster vaccination.** Following the initial vaccination, booster vaccinations should be given in a manner consistent with the manufacturer's label. If a previously vaccinated animal is overdue for any booster vaccination, including the first booster vaccination due 1 year after initial vaccination, it should be given a booster vaccination. Immediately after this booster vaccination, the animal is considered currently vaccinated and should be placed on a booster vaccination schedule consistent with the label of the vaccine used. There are no laboratory or epidemiological data to support the annual or biennial administration of 3-year vaccines after completion of the initial vaccine series (ie, the initial vaccination and 1-year booster vaccination).

b) **Dogs, cats, and ferrets.** All dogs, cats, and ferrets should be vaccinated against rabies and revaccinated in accordance with recommendations in this compendium (Appendix 1).

c) **Livestock.** All horses should be vaccinated against rabies.⁴⁰ Livestock, including species for which licensed vaccines are not available, that have frequent contact with humans (eg, in petting zoos, fairs, and other public exhibitions) should be vaccinated against rabies.^{41,42} Consideration should also be given to vaccinating livestock that are particularly valuable.

d) **Captive wild animals and wild animal hybrids** (the offspring of wild animals crossed to domestic animals).

(1) Wild animals and wild animal hybrids should not be kept as pets.^{43,44} No parenteral rabies vaccines are licensed for use in wild animals or wild animal hybrids.⁴⁵

(2) Animals that are farmed (eg, for food, fur, or fiber) or maintained in exhibits or zoological parks and that are not completely excluded from all contact with rabies vectors can become infected.⁴⁶ Moreover, wild animals might be incubating rabies when initially captured. Therefore, wild-caught animals susceptible to rabies should be quarantined for a minimum of 6 months.

(3) Employees who work with animals in exhibits or zoological parks should receive preexposure rabies vaccination. The use of preexposure or postexposure rabies vaccination for handlers who work with animals at such facilities might reduce the need for euthanasia of captive animals that expose handlers. Carnivores and bats should be housed in a manner

that precludes direct contact with the public.^{41,42} Consideration may be given to vaccinating animals that are particularly valuable (see Part II.D. Vaccination of wild-life and wild animal hybrids).

2. **Stray animals.** Stray dogs, cats, and ferrets should be removed from the community, and mechanisms should be put in place to facilitate voluntary surrender of animals to prevent abandonment. Local health departments and animal control officials can enforce the removal of strays more effectively if owned animals are required to have identification and be confined or kept on leash. Strays should be impounded for at least 3 business days to determine whether human exposure has occurred and to give owners sufficient time to reclaim animals.

Stray and feral cats serve as a significant source of rabies exposure risk.⁴⁷ If communities allow maintenance of feral cat colonies despite this risk, they should safeguard the health of the cats and the communities in which they reside by requiring that cats receive initial rabies vaccinations and appropriately scheduled booster vaccinations.

3. Importation and interstate movement of animals.

a) Areas with dog-to-dog rabies transmission. Canine rabies virus variants have been eliminated from the United States^{3,7}; however, rabid dogs and a rabid cat have been introduced into the continental United States from areas with dog-to-dog rabies transmission.^{4-6,48,49} The movement of dogs for the purposes of adoption or sale from areas with dog-to-dog rabies transmission increases the risk of introducing canine-transmitted rabies to areas where it does not currently exist, and this practice should be prohibited.

b) International importation. Current federal regulations are insufficient to prevent the introduction of rabid animals into the United States and must be strengthened and appropriately enforced.^{4-6,48,49} The CDC and USDA APHIS have regulatory authority over the importation of dogs and cats into the United States.⁶ Importers of dogs must comply with rabies vaccination requirements.^{50,51} These regulations require that dogs from rabies-endemic countries be currently vaccinated against rabies prior to importation. The appropriate health official of the state of destination should be notified by the appropriate federal authorities within 72 hours of the arrival of any unvaccinated imported dog required to be placed in confinement (as defined by the CDC⁵²) under these regulations. Failure of the owner to comply with these confinement requirements should be promptly reported to the CDC's Division of Global Migration and Quarantine (CDCAnimalImports@cdc.gov).

All imported dogs and cats are also subject to state and local laws governing rabies and

should be currently vaccinated against rabies with USDA-licensed products in accordance with this compendium. Failure of the owner to comply with state or local requirements should be referred to the appropriate state or local official.

c) Interstate movement (including commonwealths and territories). Before interstate movement occurs, dogs, cats, ferrets, and horses should be currently vaccinated against rabies in accordance with this compendium. Animals in transit should be accompanied by a current, valid rabies vaccination certificate such as Form 51 from the National Association of State Public Health Veterinarians.⁵³ When an interstate health certificate or certificate of veterinary inspection is required, it should contain the same rabies vaccination information as Form 51.

4. Adjunct procedures. Methods or procedures that enhance rabies control include the following⁵⁴:

a) Identification. Dogs, cats, and ferrets should be identified (eg, metal or plastic tags or microchips) to allow for verification of rabies vaccination status.

b) Licensure. Registration or licensure of all dogs, cats, and ferrets is an integral component of an effective rabies control program. A fee is frequently charged for such licensure, and revenues collected are used to maintain rabies or animal control activities. Evidence of current vaccination should be an essential prerequisite to licensure.

c) Canvassing. House-to-house canvassing by animal control officials facilitates enforcement of vaccination and licensure requirements.

d) Citations. Citations are legal summonses issued to owners for violations, including the failure to vaccinate or license their animals. The authority for officers to issue citations should be an integral part of animal control programs.

e) Animal control. All local jurisdictions should incorporate training and continuing education of personnel regarding stray-animal control, leash laws, animal bite prevention, and rabies prevention and control into their programs.

f) Public education. All local jurisdictions should incorporate education covering responsible pet ownership, bite prevention, and appropriate veterinary care into their programs.

5. **Postexposure management.** This section refers to any animal exposed (see Part I.A. 2. Rabies virus exposure) to a confirmed or suspected rabid animal. Wild mammalian carnivores, skunks, and bats that are not available or suitable for testing should be regarded as rabid. The rationale for

observation, confinement, or strict quarantine periods of exposed animals despite previous vaccination is based in part on the potential for overwhelming viral challenge, incomplete vaccine efficacy, improper vaccine administration, variable host immunocompetence, and immune-mediated death (ie, early death phenomenon).^{13,55-57}

a) Dogs, cats, and ferrets. Any illness in an exposed animal should be reported immediately to the local health department. If signs suggestive of rabies develop (eg, paralysis or seizures), the animal should be euthanized, and the head or entire brain (including brainstem) should be submitted for testing (see Part I.A. 10. Rabies diagnosis).

(1) Dogs, cats, and ferrets that are current on rabies vaccination should immediately receive veterinary medical care for assessment, wound cleansing, and booster vaccination. The animal should be kept under the owner's control and observed for 45 days.

(2) Dogs, cats, and ferrets that have never been vaccinated should be euthanized immediately. There are currently no USDA-licensed biologics for postexposure prophylaxis of previously unvaccinated domestic animals, and there is evidence that the use of vaccine alone will not reliably prevent the disease in these animals.⁵⁸ If the owner is unwilling to have the animal euthanized, the animal should be placed in strict quarantine for 4 (dogs and cats) or 6 (ferrets) months. Strict quarantine in this context refers to confinement in an enclosure that precludes direct contact with people and other animals. A rabies vaccine should be administered at the time of entry into quarantine to bring the animal up to current rabies vaccination status. Administration of vaccine should be done as soon as possible. It is recommended that the period from exposure to vaccination not exceed 96 hours.^{59,60} If vaccination is delayed, public health officials may consider increasing the quarantine period for dogs and cats from 4 to 6 months, taking into consideration factors such as the severity of exposure, the length of delay in vaccination, current health status, and local rabies epidemiology.

(3) Dogs and cats that are overdue for a booster vaccination and that have appropriate documentation of having received a USDA-licensed rabies vaccine at least once previously should immediately receive veterinary medical care for assessment, wound cleansing, and booster vaccination. The animal should be kept under the own-

er's control and observed for 45 days.⁵⁹ If booster vaccination is delayed, public health officials may consider increasing the observation period for the animal, taking into consideration factors such as the severity of exposure, the length of delay in booster vaccination, current health status, and local rabies epidemiology.

(4) Dogs and cats that are overdue for a booster vaccination and without appropriate documentation of having received a USDA-licensed rabies vaccine at least once previously should immediately receive veterinary medical care for assessment, wound cleansing, and consultation with local public health authorities.

(a) The animal can be treated as unvaccinated, immediately given a booster vaccination, and placed in strict quarantine (see Part I. B. 5. a) (2)).

(b) Alternatively, prior to booster vaccination, the attending veterinarian may request guidance from the local public health authorities in the possible use of prospective serologic monitoring. Such monitoring would entail collecting paired blood samples to document prior vaccination by providing evidence of an anamnestic response to booster vaccination. If an adequate anamnestic response is documented, the animal can be considered to be overdue for booster vaccination (see Part I. B. 5. a) (3)) and observed for 45 days.⁵⁹ If there is inadequate evidence of an anamnestic response, the animal is considered to have never been vaccinated and should be placed in strict quarantine (see Part I. B. 5. a) (2)).

(5) Ferrets that are overdue for a booster vaccination should be evaluated on a case-by-case basis, taking into consideration factors such as the severity of exposure, time elapsed since last vaccination, number of previous vaccinations, current health status, and local rabies epidemiology, to determine need for euthanasia or immediate booster vaccination followed by observation or strict quarantine.

b) Livestock. All species of livestock are susceptible to rabies; cattle and horses are the most frequently reported infected species.³ Any illness in an exposed animal should be reported immediately to the local health department and animal health officials. If signs suggestive of rabies develop, the animal should be euthanized, and the head or entire brain

(including brainstem) should be submitted for testing (see Part I.A. 10. Rabies diagnosis).

(1) Livestock that have never been vaccinated should be euthanized immediately. Animals that are not euthanized should be confined and observed on a case-by-case basis for 6 months.

(2) Livestock that are current on rabies vaccination with a USDA-licensed vaccine approved for that species should be given a booster vaccination immediately and observed for 45 days.

(3) Livestock overdue for a booster vaccination should be evaluated on a case-by-case basis, taking into consideration factors such as severity of exposure, time elapsed since last vaccination, number of previous vaccinations, current health status, and local rabies epidemiology, to determine need for euthanasia or immediate booster vaccination followed by observation or strict quarantine.

(4) Multiple rabid animals in a herd and herbivore-to-herbivore transmission of rabies are uncommon.⁶¹ Therefore, restricting the rest of the herd if a single animal has been exposed to or infected with rabies is usually not necessary.

(5) Rabies virus is widely distributed in the tissues of rabid animals.⁶²⁻⁶⁴ Tissues and products from a rabid animal should not be used for human or animal consumption^{65,66} or transplantation.⁶⁷ However, pasteurization and cooking will inactivate rabies virus.⁶⁸ Therefore, inadvertently drinking pasteurized milk or eating thoroughly cooked animal products does not constitute a rabies exposure.

(6) Handling and consumption of uncooked tissues from exposed animals might carry a risk for rabies transmission.⁶⁹ Persons handling exposed animals, carcasses, and tissues should use appropriate barrier precautions.^{69,70} State and local public health authorities, state meat inspectors, and the USDA Food Safety and Inspection Service should be notified if exposures occur in animals intended for commercial use. Animals should not be presented for slaughter in a USDA-regulated establishment if such animals originate from a quarantine area and have not been approved for release by the proper authority. If an exposed animal is to be custom slaughtered or home slaughtered for consumption, it should be slaughtered immediately after exposure, and all tissues should be cooked thoroughly.

c) Other animals. Other mammals exposed to a rabid animal should be euthanized

immediately. Animals maintained in USDA-licensed research facilities or accredited zoological parks should be evaluated on a case-by-case basis in consultation with public health authorities. Management options may include quarantine, observation, or administration of rabies biologics.

6. Management of animals that bite humans.

a) Dogs, cats, and ferrets. Rabies virus is excreted in the saliva of infected dogs, cats, and ferrets during illness and for only a few days before the onset of clinical signs or death.⁷¹⁻⁷³ Regardless of rabies vaccination status, a healthy dog, cat, or ferret that exposes a person should be confined and observed daily for 10 days from the time of the exposure⁷⁴; administration of rabies vaccine to the animal is not recommended during the observation period to avoid confusing signs of rabies with rare adverse vaccine reactions.¹⁵ Any illness in the animal should be reported immediately to the local health department. Such animals should be evaluated by a veterinarian at the first sign of illness during confinement. If signs suggestive of rabies develop, the animal should be euthanized, and the head or entire brain (including brainstem) should be submitted for testing (see Part I.A. 10. Rabies diagnosis). Any stray or unwanted dog, cat, or ferret that exposes a person may be euthanized immediately, and the head or entire brain (including brainstem) should be submitted for testing (see Part I.A. 10. Rabies diagnosis).

b) Other animals. Other animals that might have exposed a person to rabies should be reported immediately to the local health department. Management of animals other than dogs, cats, and ferrets depends on the species, the circumstances of the exposure, the epidemiology of rabies in the area, the exposing animal's history and current health status, and the animal's potential for exposure to rabies. The shedding period for rabies virus is undetermined for most species. Previous vaccination of these animals might not preclude the necessity for euthanasia and testing.

7. Outbreak prevention and control. The emergence of new rabies virus variants or the introduction of nonindigenous viruses poses a significant risk to humans, domestic animals, and wildlife.⁷⁵⁻⁸² A rapid and comprehensive response involves coordination of multiple agencies (see Part I.A. 3. Interdisciplinary approach) to accomplish the following outcomes⁸³:

- Characterize the virus at the national reference laboratory.
- Identify and control the source of the introduction.

- Enhance laboratory-based surveillance in wild and domestic animals.
- Increase animal rabies vaccination rates.
- Restrict the movement of animals.
- Evaluate the need for wildlife intervention activities (eg, point infection control, trap-vaccinate-release programs, and oral rabies vaccination programs).
- Provide public and professional outreach and education.

8. **Disaster response.** Animals might be displaced during and after man-made or natural disasters and require emergency sheltering.⁸⁴⁻⁸⁶ Animal rabies vaccination and exposure histories are often not available for displaced animals, and disaster response can create situations where animal caretakers might lack appropriate training or preexposure vaccination. In such situations, it is critical to implement and coordinate rabies prevention and control measures to reduce the risk of rabies transmission and the need for human postexposure prophylaxis. Such measures include the following actions:

- Coordinate relief efforts of individuals and organizations with the local emergency operations center before deployment.
- Examine each animal at a triage site for possible bite injuries or signs of rabies.
- Isolate animals exhibiting signs of rabies pending evaluation by a veterinarian.
- Ensure that all animals have a unique identifier.
- Administer a rabies vaccine to all dogs, cats, and ferrets unless reliable proof of current vaccination exists.
- Adopt minimum standards for animal caretakers as feasible, including use of personal protective equipment, completion of the preexposure rabies vaccination series prior to deployment, and provision of appropriate training.⁸⁷
- Maintain documentation of animal disposition and location (eg, returned to owner, died or euthanized, adopted, or relocated to another shelter with address of new location).
- Provide facilities to confine and observe animals involved in exposures (*see* Part I. B. 6. Management of animals that bite humans).
- Report human exposures to appropriate public health authorities (*see* Part I. A. 2. Rabies virus exposure).

C. Prevention and control methods related to wildlife

The public should be warned not to handle or feed wild mammals. Wild mammals and wild animal hybrids that expose persons, pets, or livestock should be considered for euthanasia and rabies testing. A person exposed by any wild mammal should immediately wash the wound thoroughly and report the incident to a health-care provider who, in consultation with public health authorities, can evaluate the need for postexposure prophylaxis.^{11,12}

Translocating infected wildlife has contributed to the spread of rabies,^{75-80,88} and animals that appear healthy can still be rabid. Therefore, translocation (ie, moving live animals from their point of capture and releasing them) of known rabies reservoir species should be prohibited.⁸⁹ Whereas state-regulated wildlife rehabilitators and nuisance-wildlife control operators should play a role in a comprehensive rabies control program, minimum standards for these persons who handle wild mammals should include rabies pre-exposure vaccination, specific rabies prevention and control training, and ongoing continuing education.

1. **Carnivores.** The use of oral rabies vaccines for mass vaccination of free-ranging wildlife should be considered in selected situations, with the approval of appropriate state and local agencies.^{16,90} There have been documented successes using oral rabies vaccines to control rabies in wildlife in North America.⁹⁰⁻⁹³ The currently licensed vaccinia-vectored oral rabies vaccine is labeled for use in raccoons and coyotes. Research to improve existing oral rabies vaccine and baits and to develop and test novel products to determine safety and efficacy must be encouraged. The distribution of oral rabies vaccines should be based on scientific assessments of the target species and followed by timely and appropriate analysis of surveillance data, with results provided to all stakeholders. In addition, parenteral vaccination (trap-vaccinate-release) of wildlife rabies reservoir species may be integrated into coordinated oral rabies vaccine programs to enhance their effectiveness. Continuous and persistent programs for trapping or poisoning wildlife are not effective in reducing populations of wildlife rabies reservoir species on a statewide basis. However, limited population control in high-contact areas (eg, picnic grounds, camps, and suburban areas) might be indicated for the removal of selected high-risk species of wildlife. State agriculture, public health, and wildlife agencies should be consulted for planning, coordination, and evaluation of vaccination or point infection control programs.¹⁶

2. **Bats.** From the 1950s to today, indigenous rabid bats have been reported from every state except Hawaii and have caused rabies in at least 54 humans in the United States.⁹⁴⁻¹⁰³ Bats should be excluded, using appropriate methods, from houses, public buildings, and adjacent structures to prevent direct association with humans.^{104,105} Such structures should then be made bat-proof by sealing entrances used by bats. Controlling rabies in bats through programs designed to reduce bat populations is neither feasible nor desirable.

Part II. Recommendations for Parenteral Rabies Vaccination Procedures

A. Vaccine administration

All animal rabies vaccines should be restricted to use by or under the direct supervision of a veterinarian.

ian,¹⁰⁶ except as recommended otherwise (see Part I. B. 1. Preexposure vaccination and management).

B. Vaccine selection

All vaccines licensed by the USDA and marketed in the United States at the time of publication of this compendium are listed (Appendix 1). Newly approved vaccines and changes in label specifications made subsequent to publication should be considered as part of this list. Any of the listed vaccines can be used for revaccination, even if the product is not the same as the one previously administered. Vaccines used in state and local rabies control programs should have at least a 3-year duration of immunity. This constitutes the most effective method of increasing the proportion of immunized dogs and cats in any population.¹⁰⁷

C. Adverse events

Currently, no epidemiological association exists between any particular licensed vaccine product and adverse events.^{15,34,108-110} Although rare, adverse events such as vomiting, injection site swelling, lethargy, hypersensitivity, and the occurrence of rabies despite previous vaccination of an animal have been reported. Adverse events should be reported to the vaccine manufacturer and to USDA APHIS's Center for Veterinary Biologics (www.aphis.usda.gov; search for "adverse event reporting"). Although ill animals may not have a full immunologic response to vaccination, there is no evidence to suggest that adverse events are more likely to occur with rabies vaccination of ill than healthy animals. A veterinarian choosing to temporarily delay vaccinating an animal with an acute illness or condition should ensure that the animal is vaccinated as soon as possible. Animals with a previous history of anaphylaxis can be medically managed and observed after vaccination.⁵⁶ Severe adverse events related to rabies vaccination are extremely rare in animals. Decisions concerning rabies vaccination of animals with well-documented severe adverse events to rabies vaccine must be made within the context of a valid veterinarian-client-patient relationship. Due consideration should be given to the attendant risks and benefits of not vaccinating, including regulatory noncompliance. Animals not currently vaccinated that experience a rabies exposure are at greater risk for infection and death and also put their owners and the community at risk.

D. Vaccination of wildlife and wild animal hybrids

The safety and efficacy of parenteral rabies vaccines in wildlife and wild animal hybrids have not been established, and no rabies vaccines are currently licensed for use in these animals. Thus, any use of rabies vaccines in these animals is considered extralabel use. Zoos or research institutions may establish vaccination programs in an attempt to protect valuable animals, but these should not replace appropriate public health activities that protect humans (see Part I. B. 1. d) (3)).

E. Accidental human exposure to rabies vaccines

Human exposure to parenteral animal rabies vaccines listed in Appendix 1 does not constitute a risk for rabies virus infection. Human exposure to vaccinia-vectored oral rabies vaccines should be reported to state health officials.^{111,112}

F. Rabies certificates

All agencies and veterinarians should use Form 51, the rabies vaccination certificate recommended by the National Association of State Public Health Veterinarians,⁵³ or should use an equivalent. The form must be completed in full and signed by the administering or supervising veterinarian. Computer-generated forms containing the same information are also acceptable.

References

1. Rabies. In: Heymann D, ed. *Control of communicable diseases manual*. 20th ed. Washington, DC: American Public Health Association, 2015:497-508.
2. International Committee on Taxonomy of Viruses. Virus taxonomy: 2014 release. Order *Mononegavirales*: family *Rhabdoviridae*: genus *Lyssavirus*. 2014. Available at: www.ictvonline.org/virusTaxonomy.asp. Accessed Jun 15, 2015.
3. Dyer JL, Yager P, Orclari L, et al. Rabies surveillance in the United States during 2013. *J Am Vet Med Assoc* 2014;245:1111-1123.
4. Castrodale L, Walker V, Baldwin J, et al. Rabies in a puppy imported from India to the USA, March 2007. *Zoonoses Public Health* 2008;55:427-430.
5. CDC. Rabies in a dog imported from Iraq—New Jersey, June 2008. *MMWR Morb Mortal Wkly Rep* 2008;57:1076-1078.
6. McQuiston JH, Wilson T, Harris S, et al. Importation of dogs into the United States: risks from rabies and other zoonotic diseases. *Zoonoses Public Health* 2008;55:421-426.
7. Velasco-Villa A, Reeder SA, Orclari LA, et al. Enzootic rabies elimination from dogs and reemergence in wild terrestrial carnivores, United States. *Emerg Infect Dis* 2008;14:1849-1854.
8. Beran GW. Rabies and infections by rabies-related viruses. In: Beran GW, ed. *Handbook of zoonoses section B: viral*. 2nd ed. Boca Raton, Fla: CRC Press, 1994:307-357.
9. Brown CM, Conil L, Ettestad P, et al. Compendium of animal rabies prevention and control, 2011. *J Am Vet Med Assoc* 2011;239:609-617.
10. Council of State and Territorial Epidemiologists Infectious Disease Subcommittee. *Public health reporting and national notification for animal rabies*. 09-ID-12. Atlanta: Council of State and Territorial Epidemiologists, 2009. Available at: cymcdn.com/sites/www.cste.org/resource/resmgr/PS/09-ID-12.pdf. Accessed Jun 15, 2015.
11. Manning SE, Rupprecht CE, Fishbein D, et al. Human rabies prevention—United States, 2008. Recommendations of the Advisory Committee on Immunization Practices. *MMWR Recomm Rep* 2008;57(RR-3):1-28.
12. Rupprecht CE, Briggs D, Brown CM, et al. Use of a reduced (4-dose) vaccine schedule for postexposure prophylaxis to prevent human rabies. Recommendations of the Advisory Committee on Immunization Practices. *MMWR Recomm Rep* 2010;59(RR-2):1-9.
13. McQuiston JH, Yager PA, Smith JS, et al. Epidemiologic characteristics of rabies virus variants in dogs and cats in the United States, 1999. *J Am Vet Med Assoc* 2001;218:1939-1942.
14. Murray KO, Holmes KC, Hanlon CA. Rabies in vaccinated dogs and cats in the United States, 1997-2001. *J Am Vet Med Assoc* 2009;235:691-695.

15. Frana TS, Clough NE, Gatewood DM, et al. Postmarketing surveillance of rabies vaccines for dogs to evaluate safety and efficacy. *J Am Vet Med Assoc* 2008;232:1000-1002.
16. Hanlon CA, Childs JE, Nettles VF, et al. Recommendations of a national working group on prevention and control of rabies in the United States. Article III: rabies in wildlife. *J Am Vet Med Assoc* 1999;215:1612-1618.
17. Slate D, Algeo TD, Nelson KM, et al. Oral rabies vaccination in North America: opportunities, complexities, and challenges. *PLoS Negl Trop Dis* 2009;3:e549.
18. Council of State and Territorial Epidemiologists Surveillance/Informatics Subcommittee. *Recommendations for the implementation of electronic laboratory reporting in the United States*. 09-SI-03. Atlanta: Council of State and Territorial Epidemiologists, 2009. Available at: cymcdn.com/sites/www.cste.org/resource/resmgr/PS/09-SI-03.pdf. Accessed Jun 15, 2015.
19. Council of State and Territorial Epidemiologists Surveillance/Informatics Subcommittee. *Process statement for immediately nationally notifiable conditions*. 09-SI-04. Available at: cymcdn.com/sites/www.cste.org/resource/resmgr/PS/09-SI-04.pdf. Accessed Jun 15, 2015.
20. Hanlon CA, Smith JS, Anderson GR, et al. Recommendations of a national working group on prevention and control of rabies in the United States. Article II: laboratory diagnosis of rabies. *J Am Vet Med Assoc* 1999;215:1444-1446.
21. Rudd RJ, Smith JS, Yager PA, et al. A need for standardized rabies-virus diagnostic procedures: effect of cover-glass mountant on the reliability of antigen detection by the fluorescent antibody test. *Virus Res* 2005;111:83-88.
22. AVMA. AVMA guidelines for the euthanasia of animals: 2013 edition. Available at www.avma.org/KB/Policies/Documents/euthanasia.pdf. Accessed Jun 15, 2015.
23. American Association of Zoo Veterinarians. *Guidelines for the euthanasia of nondomestic animals*. Yulee, Fla: American Association of Zoo Veterinarians, 2006.
24. CDC. Public health response to a potentially rabid bear cub—Iowa, 1999. *MMWR Morb Mortal Wkly Rep* 1999;48:971-973.
25. Niezgodna M, Rupprecht CE. *Standard operating procedure for the direct rapid immunohistochemistry test (DRIT) for the detection of rabies virus antigen*. Atlanta: CDC, 2006. Available at: rabies-surveillance-blueprint.org/IMG/pdf/cdc_drut_sop.pdf. Accessed Jun 15, 2015.
26. Lembo T, Niezgodna M, Velasco-Villa A, et al. Evaluation of a direct, rapid immunohistochemical test for rabies diagnosis. *Emerg Infect Dis* 2006;12:310-313.
27. Dürr S, Naissengar S, Mändekem R, et al. Rabies diagnosis for developing countries. *PLoS Negl Trop Dis* 2008;2:e206.
28. Saturday GA, King R, Fuhrmann L. Validation and operational application of a rapid method for rabies antigen detection. *US Army Med Dep J* 2009;Jan-Mar:42-45.
29. Tizard I, Ni Y. Use of serologic testing to assess immune status of companion animals. *J Am Vet Med Assoc* 1998;213:54-60.
30. Greene CE. Rabies and other lyssavirus infections. In: Greene CE, ed. *Infectious diseases of the dog and cat*. 3rd ed. London: Saunders Elsevier, 2006:167-183.
31. Rupprecht CE, Gilbert J, Pitts R, et al. Evaluation of an inactivated rabies virus vaccine in domestic ferrets. *J Am Vet Med Assoc* 1990;196:1614-1616.
32. Moore SM, Hanlon CA. Rabies-specific antibodies: measuring surrogates of protection against a fatal disease. *PLoS Negl Trop Dis* 2010;4:e595.
33. Welborn LV, DeVries JG, Ford R, et al. 2011 AAHA canine vaccination guidelines. *J Am Anim Hosp Assoc* 2011;47:1-42.
34. Scherk MA, Ford RB, Gaskell RM, et al. 2013 AAHP feline vaccination advisory panel report. *J Feline Med Surg* 2013;15:785-808.
35. Aubert ME. Practical significance of rabies antibodies in cats and dogs. *Rev Sci Tech* 1992;11:735-760.
36. Muirhead TL, McClure JT, Wichtel JJ, et al. The effect of age on serum antibody titers after rabies and influenza vaccination in healthy horses. *J Vet Intern Med* 2008;22:654-661.
37. Shimazaki Y, Inoue S, Takahashi C, et al. Immune response to Japanese rabies vaccine in domestic dogs. *J Vet Med B Infect Dis Vet Public Health* 2003;50:95-98.
38. Cliquet E, Verdier Y, Sagné L, et al. Neutralising antibody titration in 25,000 sera of dogs and cats vaccinated against rabies in France, in the framework of the new regulations that offer an alternative to quarantine. *Rev Sci Tech* 2003;22:857-866.
39. Moore MC, Davis RD, Kang Q, et al. Comparison of anamnestic responses to rabies vaccination in dogs and cats with current and out-of-date vaccination status. *J Am Vet Med Assoc* 2015;246:205-211.
40. American Association of Equine Practitioners. Core vaccination guidelines: rabies. Available at: www.aeep.org/4-165.html. Accessed Jun 15, 2015.
41. National Association of State Public Health Veterinarians Animal Contact Compendium Committee 2013. Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2013. *J Am Vet Med Assoc* 2013;243:1270-1288.
42. Bender JB, Shulman SA. Animals in Public Contact Subcommittee of the National Association of State Public Health Veterinarians. Reports of zoonotic disease outbreaks associated with animal exhibits and availability of recommendations for preventing zoonotic disease transmission from animals to people in such settings. *J Am Vet Med Assoc* 2004;224:1105-1109.
43. AVMA. Position on canine hybrids. Available at: www.avma.org/KB/Policies/Pages/canine-hybrids.aspx. Accessed Jun 15, 2015.
44. Simo BS. Crossing the line: the case against hybrids. *ASPCA Animal Watch* 2000;Winter:22-29.
45. Jay MT, Reilly KE, DeBess EE, et al. Rabies in a vaccinated wolf-dog hybrid. *J Am Vet Med Assoc* 1994;205:1729-1732.
46. Petersen BW, Tack DM, Longenberger A, et al. Rabies in captive deer, Pennsylvania, USA, 2007-2010. *Emerg Infect Dis* 2012;18:138-141.
47. Roebeling AD, Johnson D, Blanton JD, et al. Rabies prevention and management of cats in the context of trap-neuter-vaccine-release programmes. *Zoonoses Public Health* 2014;61:290-296.
48. CDC. An imported case of rabies in an immunized dog. *MMWR Morb Mortal Wkly Rep* 1987;36:94-96.
49. CDC. Imported dog and cat rabies—New Hampshire, California. *MMWR Morb Mortal Wkly Rep* 1988;37:559-560.
50. Rabies vaccination requirements for dogs. 42 CFR §71.51(c).
51. CDC. Bringing a dog into the United States. Available at: www.cdc.gov/animalimportation/dogs.html. Accessed Nov 25, 2015.
52. CDC. Frequently asked questions. Available at: www.cdc.gov/animalimportation/lawsregulations/frequently-asked-questions.html#Confinement. Accessed Nov 25, 2015.
53. National Association of State Public Health Veterinarians. Rabies vaccination certificate. Available at: www.nasphv.org/Documents/RabiesVacCert.pdf. Accessed Nov 25, 2015.
54. Global Alliance for Rabies Control. Rabies blueprint. Available at: www.rabiesblueprint.com. Accessed Nov 25, 2015.
55. Rabies vaccine, killed virus. 9 CFR 113.209.
56. Greene CE. Immunoprophylaxis. In: Greene CE, ed. *Infectious diseases of the dog and cat*. 3rd ed. London: Saunders Elsevier, 2006:1069-1119.
57. Willoughby RE. "Early death" and the contraindication of vaccine during rabies treatment. *Vaccine* 2009;27:7173-7177.
58. Hanlon CA, Niezgodna M, Rupprecht CE. Postexposure prophylaxis for prevention of rabies in dogs. *Am J Vet Res* 2002;63:1096-1100.
59. Wilson PJ, Clark KA. Postexposure rabies prophylaxis protocol for domestic animals and epidemiologic characteristics of rabies vaccination failures in Texas: 1995-1999. *J Am Vet Med Assoc* 2001;218:522-525.
60. Wilson PJ, Oertli EH, Hunt PR, et al. Evaluation of a postexposure rabies prophylaxis protocol for domestic animals in Texas: 2000-2009. *J Am Vet Med Assoc* 2010;237:1395-1401.
61. Mansfield K, McElhinney L, Hübschle O, et al. A molecular epidemiological study of rabies epizootics in kudu (*Tragelaphus strepsiceros*) in Namibia. *BMC Vet Res* 2006;2:2-11.
62. Debbie JG, Trimarchi CV. Pantropism of rabies virus in free-ranging rabid red fox (*Vulpes fulva*). *J Wildl Dis* 1970;6:500-506.
63. Felkadu M, Shaddock JH. Peripheral distribution of virus in dogs inoculated with two strains of rabies virus. *Am J Vet Res* 1984;45:724-729.
64. Charlton KM. The pathogenesis of rabies and other lyssavi-

- ral infections: recent studies. *Curr Top Microbiol Immunol* 1994;187:95-119.
65. Afshar A. A review of non-bite transmission of rabies virus infection. *Br Vet J* 1979;135:142-148.
 66. CDC. Mass treatment of humans who drank unpasteurized milk from rabid cows—Massachusetts, 1996-1998. *MMWR Morb Mortal Wkly Rep* 1999;48:228-229.
 67. CDC. Public health service guideline on infectious disease issues in xenotransplantation. *MMWR Recomm Rep* 2001;50(RR-15):1-46.
 68. Turner GS, Kaplan C. Some properties of fixed rabies virus. *J Gen Virol* 1967;1:537-551.
 69. Wertheim HPL, Nguyen TQ, Nguyen KAT, et al. Furious rabies after an atypical exposure. *PLoS Med* 2009;6:e1000044.
 70. US Department of Health and Human Services. Viral agents. In: *Bio-safety in microbiological and biomedical laboratories*. 5th ed. Washington, DC: US Government Printing Office, 2007;234-235.
 71. Vaughn JB, Gerhardt P, Paterson JC. Excretion of street rabies virus in saliva of cats. *JAMA* 1963;184:705-708.
 72. Vaughn JB, Gerhardt P, Newell KW. Excretion of street rabies virus in the saliva of dogs. *JAMA* 1965;193:363-368.
 73. Niezgodna M, Briggs DJ, Shaddock J, et al. Viral excretion in domestic ferrets (*Mustela putorius furo*) inoculated with a raccoon rabies isolate. *Am J Vet Res* 1998;59:1629-1632.
 74. Tepsumethanon V, Lumleedacha B, Mitmoonpitak C, et al. Survival of naturally infected rabid dogs and cats. *Clin Infect Dis* 2004;39:278-280.
 75. Jenkins SR, Perry BD, Winkler WG. Ecology and epidemiology of raccoon rabies. *Rev Infect Dis* 1988;10(suppl 4):S620-S625.
 76. CDC. Translocation of coyote rabies—Florida, 1994. *MMWR Morb Mortal Wkly Rep* 1995;44:580-581, 587.
 77. Rupprecht CE, Smith JS, Pekadu M, et al. The ascension of wildlife rabies: a cause for public health concern or intervention? *Emerg Infect Dis* 1995;1:107-114.
 78. Constantine DG. Geographic translocation of bats: known and potential problems. *Emerg Infect Dis* 2003;9:17-21.
 79. Krebs JW, Strine TW, Smith JS, et al. Rabies surveillance in the United States during 1993 (Erratum published in *J Am Vet Med Assoc* 1995;206:650). *J Am Vet Med Assoc* 1994;205:1695-1709.
 80. Nettles VF, Shaddock JH, Sikes RK, et al. Rabies in translocated raccoons. *Am J Public Health* 1979;69:601-602.
 81. Engeman RM, Christensen KL, Pipas MJ, et al. Population monitoring in support of a rabies vaccination program for skunks in Arizona. *J Wildl Dis* 2003;39:746-750.
 82. Leslie MJ, Messenger S, Rohde RE, et al. Bat-associated rabies virus in skunks. *Emerg Infect Dis* 2006;12:1274-1277.
 83. Rupprecht CE, Hanlon CA, Slate D. Control and prevention of rabies in animals: paradigm shifts. *Dev Biol (Basel)* 2006;125:103-111.
 84. Pets Evacuation and Transportation Standards Act of 2006. Public Law 109-308.
 85. CDC. Disaster information for pet shelters. Available at: www.bt.cdc.gov/disasters/petshelters.asp. Accessed Nov 25, 2015.
 86. AVMA. Disaster preparedness for veterinarians. Available at: www.avma.org/disaster/default.asp. Accessed Nov 25, 2015.
 87. National Animal Control Association. Guidelines. Available at: c.yumcdn.com/sites/www.nacanet.org/resource/resmgr/Docs/NACA_Guidelines.pdf. Accessed Jun 15, 2015.
 88. Chipman R, Slate D, Rupprecht C, et al. Downside risk of translocation. *Dev Biol (Basel)* 2008;131:223-232.
 89. The Wildlife Society. Standing position statement: wildlife disease. Available at: wildlife.org/wp-content/uploads/2015/04/SP_WildlifeDisease1.pdf. Accessed Jun 15, 2015.
 90. Slate D, Rupprecht CE, Rooney JA, et al. Status of oral rabies vaccination to wild carnivores in the United States. *Virus Res* 2005;111:69-76.
 91. Sidwa TJ, Wilson PJ, Moore GM, et al. Evaluation of oral rabies vaccination programs for control of rabies epizootics in coyotes and gray foxes: 1995-2003. *J Am Vet Med Assoc* 2005;227:785-792.
 92. MacInnes CD, Smith SM, Tinline RR, et al. Elimination of rabies from red foxes in eastern Ontario. *J Wildl Dis* 2001;37:119-132.
 93. Rosane RC, Power MJ, Donovan D, et al. Elimination of arctic variant of rabies in red foxes, metropolitan Toronto. *Emerg Infect Dis* 2007;13:25-27.
 94. Messenger SL, Smith JS, Rupprecht CE. Emerging epidemiology of bat-associated cryptic cases of rabies in humans in the United States. *Clin Infect Dis* 2002;35:738-747.
 95. De Serres G, Dallaire F, Cote M, et al. Bat rabies in the United States and Canada from 1950-2007: human cases with and without bat contact. *Clin Infect Dis* 2008;46:1329-1337.
 96. CDC. Human rabies—Missouri, 2008. *MMWR Morb Mortal Wkly Rep* 2009;58:1207-1209.
 97. CDC. Human rabies—Kentucky/Indiana, 2009. *MMWR Morb Mortal Wkly Rep* 2010;59:393-396.
 98. CDC. Human rabies—Virginia, 2009. *MMWR Morb Mortal Wkly Rep* 2010;59:1236-1238.
 99. CDC. Presumptive abortive human rabies—Texas, 2009. *MMWR Morb Mortal Wkly Rep* 2010;59:185-190.
 100. CDC. Human rabies—Michigan, 2009. *MMWR Morb Mortal Wkly Rep* 2011;60:437-440.
 101. CDC. Human rabies—Wisconsin, 2010. *MMWR Morb Mortal Wkly Rep* 2011;60:1164-1166.
 102. CDC. US-acquired human rabies with symptom onset and diagnosis abroad, 2012. *MMWR Morb Mortal Wkly Rep* 2012;61:777-781.
 103. CDC. Human rabies—South Carolina, 2011. *MMWR Morb Mortal Wkly Rep* 2013;62:642-644.
 104. Greenhall AM. *House bat management*. Resource publication 143. Falls Church, Va: US Fish and Wildlife Service, 1982.
 105. Greenhall AM, Franz SC. Bats. In: Hygnstrom SE, Timm RM, Larson GE, eds. *Prevention and control of wildlife damage—1994*. Available at: icwdm.org/handbook/mammals/bats.asp. Accessed Jun 15, 2015.
 106. AVMA. Model rabies control ordinance. Available at: www.avma.org/KB/Policies/Documents/avma-model-rabies-ordinance.pdf. Accessed Jun 15, 2015.
 107. Bunn TO. Canine and feline vaccines, past and present. In: Baer GM, ed. *The natural history of rabies*. 2nd ed. Boca Raton, Fla: CRC Press Inc, 1991;415-425.
 108. Macy DW, Hendrick MJ. The potential role of inflammation in the development of postvaccinal sarcomas in cats. *Vet Clin North Am Small Anim Pract* 1996;26:103-109.
 109. Gobar GM, Kass PH. World Wide Web-based survey of vaccination practices, postvaccinal reactions, and vaccine site-associated sarcomas in cats. *J Am Vet Med Assoc* 2002;220:1477-1482.
 110. Kass PH, Spangler WL, Hendrick MJ, et al. Multicenter case-control study of risk factors associated with development of vaccine-associated sarcomas in cats. *J Am Vet Med Assoc* 2003;223:1283-1292.
 111. Rupprecht CE, Blass L, Smith K, et al. Human infection due to recombinant vaccinia-rabies glycoprotein virus. *N Engl J Med* 2001;345:582-586.
 112. CDC. Human vaccinia infection after contact with a raccoon rabies vaccine bait—Pennsylvania, 2009. *MMWR Morb Mortal Wkly Rep* 2009;58:1204-1207.

Appendix 1

Rabies vaccines licensed and marketed in the United States, 2016.

Product name	Produced by	Marketed by	For use in	Dose	Age at primary vaccination*	Booster vaccination	Route of inoculation
Monovalent (inactivated) RABVAC 1 RABVAC 3	Boehringer Ingelheim Vetmedica Inc License No. 124 Boehringer Ingelheim Vetmedica Inc License No. 124	Boehringer Ingelheim Vetmedica Inc Boehringer Ingelheim Vetmedica Inc	Dogs and cats Dogs and cats Horses	1 mL 1 mL 2 mL	3 mo 3 mo 3 mo	Annually 1 year later and triennially Annually	IM or SC IM or SC IM
EQU-RAB with Havlogen DEFENSOR 1	Merck Animal Health License No. 165A Zoetis License No. 190	Merck Animal Health Zoetis	Horses Dogs Cats	1 mL 1 mL 1 mL	3 mo 3 mo 3 mo	Annually 1 year later and triennially Annually	IM or SC IM or SC SC
DEFENSOR 3	Zoetis License No. 190	Zoetis	Dogs Cats	1 mL 1 mL	3 mo 3 mo	Annually 1 year later and triennially	IM or SC SC
NOBIVAC: 1-Rabies	Zoetis License No. 190	Merck Animal Health	Sheep and cattle Dogs	1 mL 1 mL	3 mo 3 mo	Annually 1 year later and triennially	IM or SC SC
NOBIVAC: 3-Rabies and 3-Rabies CA	Zoetis License No. 190	Merck Animal Health	Dogs Cats	1 mL 1 mL	3 mo 3 mo	Annually 1 year later and triennially	IM or SC SC
IMRAB 1 IMRAB 1 TF IMRAB 3	Merck Inc License No. 298 Merck Inc License No. 298 Merck Inc License No. 298	Merck Inc Merck Inc Merck Inc	Sheep and cattle Dogs and cats Dogs and cats	1 mL 1 mL 2 mL	3 mo 3 mo 3 mo	Annually 1 year later and triennially Annually	IM or SC IM or SC IM or SC
IMRAB 3 TF	Merck Inc License No. 298	Merck Inc	Sheep	2 mL	3 mo	Annually	IM or SC
IMRAB Large Animal	Merck Inc License No. 298	Merck Inc	Cattle and horses	2 mL	3 mo	Annually	IM or SC
Monovalent (rabies glycoprotein, live canary pox vector) PUREVAX Felina Rabies PUREVAX Felina Rabies 3 YR	Merck Inc License No. 298 Merck Inc License No. 298 Merck Inc License No. 298	Merck Inc Merck Inc Merck Inc	Cats Cats Horses	1 mL 1 mL 1 mL	3 mo 3 mo 3 mo	Annually 1 year later and triennially Annually	SC SC IM
Combination (inactivated) Equine POTOMAVAC + IMRAB	Merck Inc License No. 298	Merck Inc	Horses	1 mL	3 mo	Annually	IM
Combination (rabies glycoprotein, live canary pox vector) PUREVAX Felina 3/Rabies	Merck Inc License No. 298	Merck Inc	Cats	1 mL	8 wk	Every 3 to 4 wk until 3 mo and annually	SC
PUREVAX Felina 4/Rabies	Merck Inc License No. 298	Merck Inc	Cats	1 mL	3 mo 8 wk 3 mo	3 to 4 wk later and annually Every 3 to 4 wk until 3 mo and annually 3 to 4 wk later and annually	SC SC SC
Oral (rabies glycoprotein, live vaccinia vector)† RABORAL-V-RG	Merck Inc License No. 298	Merck Inc	Raccoons and coyotes	NA	NA	As determined by local authorities	Oral

*One month = 28 days; †Oral rabies vaccines are restricted for use in federal and state rabies control programs.
NA = Not applicable.
Information is provided by the vaccine manufacturers and USDA-APHIS Center for Veterinary Biologics and is subject to change.

Appendix 2

Rabies vaccine manufacturer contact information

Manufacturer	Phone No.	URL
Boehringer Ingelheim Vetmedica Inc	800-638-2226	www.bi-vetmedica.com
Merck Animal Health Inc	800-521-5767	www.merck-animal-health-usa.com
Merial Inc	888-637-4251	us.merial.com
Zoetis	800-366-5288	www.zoetis.com

APPENDIX E

RABIES INFORMATION

Fast Facts

General Information

NYS Rabies Fact Sheet

Pathogenesis Of Rabies

Warren County Rabies Statistics

Rabies History in NYS

Rabies Laboratory Confirmed Rabies

Rabies, What To Do If Bitten

Order Form For Rabies Information

RABIES FAST FACTS

What is rabies?	Rabies is a serious disease that is caused by a virus. Each year it kills more than 50,000 people and millions of animals around the world.
Is rabies a problem everywhere?	Rabies is a big problem in Asia, Africa, and Central and South America. In the United States, rabies has been reported in every state except Hawaii.
Who gets rabies?	Any <u>mammal</u> can get rabies. Raccoons, skunks, foxes, bats, dogs, and cats can get rabies. Cattle and humans can also get rabies. Animals that are not mammals--such as birds, snakes, and fish--do not get rabies.
How does an animal get rabies?	Rabies is caused by a <u>virus</u> . An animal gets rabies from saliva, usually from a bite of an animal that has the disease.
How do you know if an animal has rabies?	Animals with rabies may act differently from a healthy animal. Wild animals may move slowly or may act as if they are tame. A pet that is usually friendly may snap at you or may try to bite. Some signs of rabies in animals are: <ul style="list-style-type: none"> • changes in an animal's behavior • general sickness • problems swallowing • increased drooling • aggression
Can rabies be prevented?	Yes! Rabies can be prevented by vaccine and thorough cleaning of the wound. If you are bitten by an animal that could have rabies, immediately clean the bite wound with soap and water and see your doctor.
How can I prevent rabies?	<ul style="list-style-type: none"> • Vaccinate your dogs, cats, and ferrets against rabies • Keep your pets under supervision • Do not handle wild animals. If you see a wild animal or a stray, especially if the animal is acting strangely, call an animal control officer. • If you do get bitten by an animal, wash the wound with soap and water for at least 5 minutes. Call your doctor to see if you need shots. • Get your pets spayed or neutered. Pets that are fixed are less likely to leave home, become strays, and make more stray animals.

GENERAL INFORMATION ABOUT RABIES DISEASE

Rabies is preventable, however, is always fatal if untreated! Edward Rubenstein and Daniel Federman write in their 1993 edition of "Scientific American Medicine" the following specifics with regard to rabies:

Rabies is an acute viral infection of the central nervous system that affects mammals. It is transmitted by the bite of an infected animal which inoculates saliva containing the rabies virus into the patient. The virus replicates in muscle cells near the site of the bite. The incubation period ranges from 12 to 701 days and probably averages 30 days or less.

After replicating in local muscle cells, the virus spreads via nerves to the central nervous system. It then replicates in the brain before moving via the nerves into other tissues, including the salivary glands from which it is shed.

A rabid animal can transmit the disease through its saliva during the clinical period and also for as much as 5 days prior to showing signs of the disease.

Clinical Course: The entire clinical course is quite variable and may take only a few hours but usually is 5 to 7 days.

The *initial phase/prodromal phase* in the typical case lasts 1 to 2 days - marked by pain and paresthesia in the area of the bite, gastrointestinal and upper respiratory symptoms, irritability, apprehension and a sense of impending death. Hydrophobia and aerophobia occur in some patients.

The patient then enters an *excitation stage* that is marked by hyperventilation, hyperactivity, disorientation and even seizures.

During the next few days the patient becomes lethargic and begins to show paralysis, particularly in those areas innervated by the cranial nerves and in the somatic muscles, bladder, and bowels. Gradual involvement in the cardiac muscle and paralysis of respiratory muscles lead to death.

Diagnosis: Rabies should be considered if classic signs of hydrophobia, aerophobia and excited behavior are present and in any case of encephalitis or myelitis of unknown etiology.

A rabid animal can transmit the disease through the saliva during the clinical period and also for as much as 5 days prior to showing signs of the disease. Aerosol transmission has been reported from bats in caves - one in Texas and corneal transmission has occurred from transplants. Rabies in most animals is characterized by changes in behavior (including aggressiveness or unusual friendliness) and paralysis, especially of the hind quarters and throat. Although rabies is primarily transmitted by bite, there is some risk of infection should saliva or nervous tissue from a rabid animal get into an open wound or into mucous membranes.

Prompt local wound treatment is important. Human bites and scratches should be thoroughly washed with soap and water.

Rabies has been confirmed in bats from all areas of New York. The proportion of rabid bats is small, probably less than 1% but the widespread distribution of the cases in New York makes every bat bite or contact a potential exposure to rabies. Whenever a person is bitten or exposed by a bat that is not available for immediate testing, rabies vaccination should be given without delay. Anywhere in New York bats may be a source of infection for terrestrial mammals, especially gray foxes, cats, and horses.

Rabies in Humans

In humans, signs and symptoms usually occur 30-90 days after the bite but can occur within days. Once a person develops symptoms, it is most likely to be fatal. This is why it is very important to notify Public Health (761-6580) right away if you are aware someone has been bitten by an animal that might be rabid. **In Warren County, post exposure prophylaxis treatment is available at Glens Falls Hospital following Public Health approval.**

Early symptoms of rabies include fever, headache, sore throat, and feeling tired. As the virus gets to the brain, the person may act nervous, confused, and upset. With quick reporting and adequate treatment, rabies is preventable.

Other symptoms of rabies in humans include:

- pain or tingling at the site of the bite
- hallucinations (for example seeing things that are not really there)
- hydrophobia ("fear of water" due to spasms in the throat)
- paralysis (unable to move parts of the body)

As the disease advances, the person enters into a coma and dies.

Rabies

Last reviewed: November 2011

- [Versión en español](#)

What is rabies?

Rabies is a deadly disease caused by a virus that attacks the central nervous system (brain and spinal cord). Infected mammals can transmit rabies virus to humans and other mammals. Rabies is almost always fatal once symptoms appear. Fortunately, only a few human cases are reported each year in the United States.

What animals can get rabies?

Rabies is most often seen among wild animals such as raccoons, bats, skunks and foxes, but any mammal can be infected with rabies. Pets and livestock can get rabies if they are not vaccinated to protect them against infection. Among domestic animals, cats are most frequently diagnosed with rabies in New York State.

Some animals *almost never* get rabies. These include rabbits and small rodents such as squirrels, chipmunks, rats, mice, guinea pigs, gerbils and hamsters. It is possible for these animals to get rabies, but only in rare circumstances, such as if they are attacked but not killed by a rabid animal.

Reptiles (such as lizards and snakes), amphibians (like frogs), birds, fish and insects do not get or carry rabies.

What are the signs of rabies in animals?

The first sign of rabies is usually a change in an animal's behavior. It may become unusually aggressive or tame. The animal may lose its fear of people and natural enemies. A wild animal may appear affectionate and friendly. It may become excited or irritable and attack anything in its path. Staggering, convulsions, choking, frothing at the mouth and paralysis are sometimes seen. Many animals will make very unusual sounds. Infected animals usually die within one week after showing signs of rabies.

How do people become exposed to rabies?

People usually get exposed to the rabies virus when an infected animal bites them. Exposure may also occur if saliva from a rabid animal enters an open cut or mucous membrane (eyes, nose or mouth).

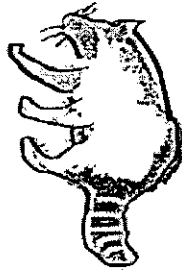
What should I do if I am exposed to rabies?

Wash all wounds thoroughly with soap and water and seek medical attention immediately.

Report all animal bites to your county health department, even if they seem minor. The phone number for your county health department can be found in the government listing of your telephone directory or the New York State Department of Health (NYSDOH) website at:
<http://www.health.ny.gov/diseases/communicable/zoonoses/rabies/contact.htm>.

Try to keep track of the animal that exposed you and report this information to your county health department so the animal can be captured safely, if possible. In the case of a bat, you may be able to safely capture it yourself and take it to your county health department where it will be transferred to the

Pathogenesis of Rabies



Exposure	Incubation Period	Clinical Period	Death
Bite*	usually 3 - 12 weeks	usually 3 - 7 days Virus Shedding • may begin to shed virus up to 3+ days before becoming ill • capable of active transmission.	• saliva dries up • virus remains in tissue of dead animal for time period limited by elevated temperature and advanced decomposition
Scratch			
Corneal transplant			
Aerosol			
Mucous membrane & open wound		<u>clinical signs</u> • paralysis • behavioral changes (aggressive or tame) • self mutilation	
Oral			

* A bite exposure from a rabid animal is the most common route of transmission.

Rabies in Domestic Animals¹: Management of Exposure² to a Known or Suspect-rabid Animal

<u>Exposure</u>	<u>Incubation Period</u>	<u>Pre-clinical Period</u>	<u>Clinical Period</u>
<p>Progression of Disease</p> <p>BITE</p> <p>SCRATCH (from rabid animal, e.g., raccoon, bat, etc.)</p>	<p>Duration: 10 days to several months</p> <p>* can't tell animal is infected</p> <p>* animal can't infect others during this stage</p>	<p>Duration: 3-4 days</p> <p>* animal may shed virus a few days before signs of illness appear</p> <p>* capable of active transmission</p>	<p>Duration 1-7 days ---> Death</p> <p>Clearly abnormal behavior</p> <p>* paresthesia/paralysis</p> <p>* unusually aggressive or tame</p> <p>* foaming at mouth</p> <p>* self-mutilation</p>
<p>Animal Management</p> <p>If currently vaccinated³, boost within 5 days of exposure to protect against rabies from this encounter</p> <p>If not vaccinated, quarantine for 6 months or euthanize</p>	<p>6 MONTH QUARANTINE</p> <p>The 6-month quarantine period will prevent contact between the exposed animal and the public and other animals during the period the animal is likely to develop rabies due to this encounter</p>	<p>10 DAY OBSERVATION</p> <p>When a domestic animal bites a person, it MUST be confined AND observed for 10 days to determine if the animal has rabies; unless the owner wishes the animal to be destroyed, in which case the animal must be tested for rabies.</p> <p>If the animal is not sick or dead in 10 days, did <u>not</u> expose person to rabies;</p> <p>If animal shows signs of rabies or dies within 10-day period, immediate rabies examination is necessary.</p>	

NOTE:

There is no post-exposure treatment for animals which are not currently vaccinated. If an animal is not currently vaccinated, it MUST be quarantined for 6 months OR euthanized.

¹Domestic animals include: cat, dog, ferret, and domestic livestock i.e. sheep, horses, cattle, goats, swine

²A domestic animal exposure is defined as a bite or scratch from, or direct contact with, a rabid or suspect-rabid animal.

³See NYS Sanitary Code, Chapter 10, Health, Part 2, Section 2.14 subdivision (a)(4) for definition of "current vaccination."

WARREN COUNTY RABIES PROGRAM STATISTICS

	2012	2013	2014	2015	2016
Confirmed Rabid Animals	1 cat 1 bat	1 cat 1 fox 2 raccoon	1 skunk 1 fox	1 raccoon 1 fox	1 skunk 3 unsatisfactory specimens
Animal Specimens Submitted for Testing	45	30	42	24	34
Animal Bites	224	234	257	246	251
Patients Receiving Pre-Exp. Vac. (3 Injections) or Booster Vacc. Fee: \$203.00/Dose	3	4 Titers Drawn 8	0	3	3
Patients Receiving Post-Exp. Vac. Series @ GF Hosp. (All RIG and First Injections are Given at GF Hospital)	28	31	19	30	31 + 7 refusals
Patients Receiving Post-Exp. Vac. Series @ P. Health (All RIG and First Injections are Given at GF Hospital)	1	5	5	1	1
Animal Clinics	22	22	22	22	22
Animals Receiving Rabies Vaccinations	1130	905	911	958	841

Expenses paid in relation to Rabies Program: \$26,493.90
 Amount vouchered to New York State: \$16,965.08
 Rabies Clinic Donations: \$7,900.00
 Total program cost to Warren County: \$1,628.82

Note: Data above reflects actual expenses incurred and both actual cash received at clinics and amounts vouchered to the State during 2015. We were able to offset 78.88% of clinic costs with donations received during those clinics. Of the \$274.58 impact to the county, \$100 was related to animal testing which was not fully covered and \$174.58 was related to clinic expenses that were maximized. Rabies expenses were down from previous years due to the fact that there were no Human vaccines billed during 2015. We have been working with Glens Falls Hospital to update those records/billings for 2015. We find that with Human vaccines, most patients have health insurance therefore the Hospital is able to bill for those services and reducing the cost to the county.



Department
of Health

Wadsworth
Center

Published on *New York State Department of Health, Wadsworth Center*
(<http://wadsworth.org>)

Home > Public Health Programs > Infectious Diseases > Rabies > History

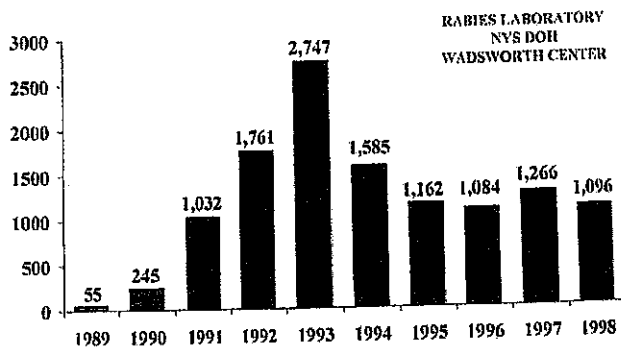
History [1]

History in New York State

Rabies in New York State was initially a disease carried by domestic dogs, a problem brought to all of North America by European settlers in the 1700s. With the advent of record keeping in the 1930s, reported cases of animal rabies fluctuated between 20 and 600 annually. Most cases were recorded in domestic dogs although there was also some spillover to livestock. From 1925 until 1944 there were 10 human rabies fatalities, all linked to domestic dog contact.

Postwar compulsory canine vaccination programs in New York controlled the rabies cycle in domestic dogs by the early 1950s, but rabies in foxes spread concomitantly into the state from the south. Wildlife rabies has cycled in terrestrial carnivores in some areas of the state since the 1950s, mainly in red foxes, skunks and raccoons. The most persistent problems until 1990 were periodic rabies incursions into red fox populations in northern New York counties. The disease found its way to northern New York from the Provinces of Ontario and Quebec, Canada, where rabies was enzootic.

CONFIRMED RABID ANIMALS NEW YORK STATE



Bat Rabies

Rabies virus infection in bats was first recognized in the US in 1953, and the first rabid bat was identified in New York State in 1956. Since then, the disease has been identified in each of New York's nine species of insectivorous bats and is widely distributed geographically within the state. Bats and rabid bats can be found in every corner of New York State, from Manhattan to the most remote area of the Adirondacks.

Among bats encountered by people and pets that are submitted to the rabies laboratory for testing, about 3% are found to be rabid. Among normally behaving bats collected in their natural habitats, a fraction of 1% are rabid. Outbreaks of rabies in bat populations have not been observed, and finding one rabid bat in a colony of bats is not evidence of greater prevalence of rabies in that population.

Rabies infection in bats is similar to the disease in other mammals. It is characterized by a variable incubation period that can be months long, a clinical period of about a week with behavioral changes and progressive paralysis leading to death, and the capacity to transmit the virus by bites inflicted during the clinical period.

Well documented instances of transmission of rabies from bats to terrestrial mammals have occurred in the state, particularly to domestic cats, grey foxes and horses.

There have also been two human rabies deaths attributable to bat rabies in New York State: in 1993 in an 11-year-old Sullivan County resident, and in 1995 in a 13-year-old resident of a nearby Connecticut community that was being treated in a Westchester County hospital.

Since 1990, 20 of 22 domestically acquired human rabies infections in the United States have resulted from infection with bat rabies variants, and in only one of these cases was there a clearly documented bat bite. In many of the other cases there had been a bat encounter where direct contact was probable, but no bite was detected.

Because of these observations, and because bat bites may result in limited injury, rabies post-exposure treatment may be provided following encounters with bats where there is a probability a bite may have occurred and gone undetected, unless the bat can be captured and tests negative for evidence of rabies infection. These changing practices [2] have resulted in an increase in the number of bats received for testing at the Wadsworth Rabies Laboratory.

The Raccoon Rabies Epidemic

An intense and widespread rabies outbreak presently affects raccoon populations across the US eastern seaboard, from Maine to Florida. The raccoon rabies outbreak reached New York from the south in 1990, and has continued to spread so that now nearly the entire state is affected.

This wildlife rabies problem first emerged in Florida in the early 1950's, and spread to its current distribution at a steady rate of 10-20 miles per year, augmented by a few "jumps" of greater distances resulting from the long-distance movement of infected raccoons by human activities.

The great majority of cases in New York have occurred in raccoons, but the disease also has been transmitted by infected raccoons to a wide variety of other wild mammals and unvaccinated domestic animals.

The number of laboratory-confirmed rabid animals in the state increased dramatically as the outbreak spread across the state, reaching 2,747 in 1993, the greatest single-state annual total in the history of the United States.

When raccoon rabies invades an area, there are increasing numbers of cases for a 1 -2 year period, followed by diminished numbers of rabid animals as the raccoon population wanes due to the rabies-related mortality. Periodic flare-ups occur as raccoon populations rebound locally (approximately 5 year cycles).

The raccoon rabies outbreak is extremely costly, due to increased expenditures for traditional rabies control activities such as pet and livestock vaccination programs, laboratory testing, animal control activities, and public education preventive measures.

The greatest outbreak-related increase in expenditures has been a consequence of a tremendous increase in the number of human rabies exposures requiring rabies post-exposure vaccinations. At approximately \$1,000.00 per person treated, the increase from the pre-outbreak average of 100 per year to greater than 2,500 treatments per year is costing New Yorkers more than \$2 million annually.

New York State has been a leader in the conduct of field trials to develop novel methods of wildlife rabies control, such as the distribution of vaccine-laden baits to immunize raccoon populations to interrupt and extinguish the rabies outbreak.

Source URL: <http://wadsworth.org/programs/id/rabies/history>

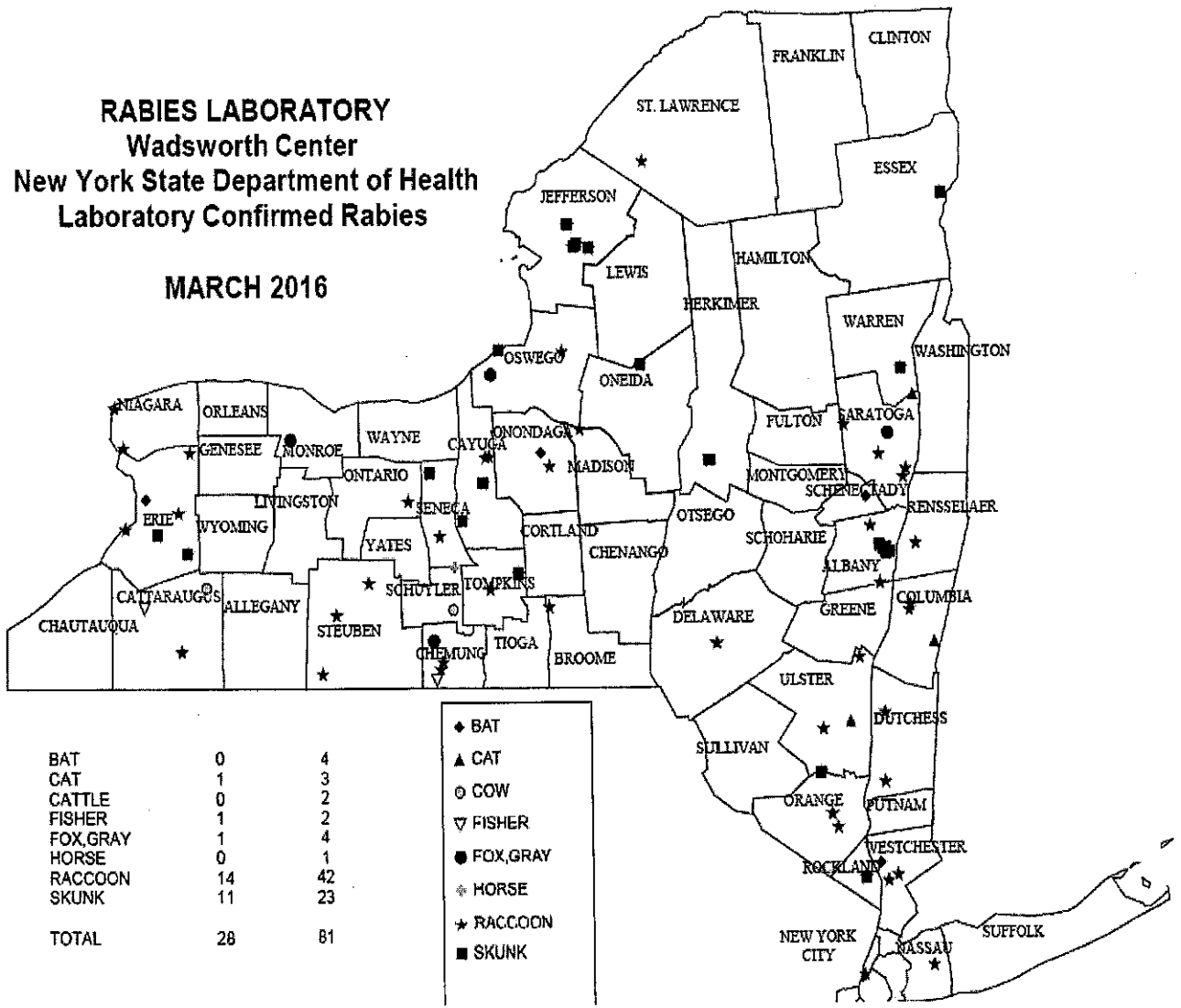
Links

[1] <http://wadsworth.org/programs/id/rabies/history>

[2] <http://www.cdc.gov/rabies/exposure/index.html>

RABIES LABORATORY
Wadsworth Center
New York State Department of Health
Laboratory Confirmed Rabies

MARCH 2016





Rabies

WHAT TO DO IF BITTEN

...BY A WILD ANIMAL

1. Immediately wash the wound with lots of soap and running water.
2. Capture the animal, if possible, so it can be tested. Take care to prevent additional bites or damage to the animal's head.
3. Get medical attention. Call your family doctor or go to the nearest emergency room.
4. Call your county health authority.
5. **DO NOT DELAY SEEKING MEDICAL ADVICE.**
6. If necessary, a dead animal may be kept on ice, double bagged in plastic, until it can be tested. Always wear gloves, use a shovel and clean the area and tools with one part bleach to nine parts water. Keep the dead animal in a protected area away from people and other animals.

...BY A PET DOG OR CAT

1. Immediately wash the wound with lots of soap and running water.
2. Obtain the pet owner's name, address and telephone number.
3. Get medical attention. Call your family doctor or go to the nearest emergency room.
4. Call your county health authority.

Have this information ready:

- Type and description of animal including any features or marks;
- If it was a pet, whether it wore a collar, tags and where it lives;
- How the bite occurred;
- Whether the animal has been seen in the area before and what direction it was traveling.

New York State Department of Health

3007

3/00

Rabies

WHAT TO DO



If you see a wild animal, especially a raccoon, bat, skunk or fox:

- Stay away and keep children away.
- Keep pets indoors.
- Let the animal go away on its own.
- You may call a nuisance wildlife control officer who will remove the animal for a fee.

If the animal is threatening people or pets:

- Call your county health authority for advice (see numbers on front page inside phone book).
- Call the NYS Department of Environmental Conservation during business hours.

Because people can be bitten by a bat and not know it, if a bat is found indoors DO NOT RELEASE IT:

- Contain a bat in a room by closing all windows and room and closet doors.
- Call your county health authority immediately.
- Bats can usually be captured using gloves and a coffee can or similar container, and then can be submitted for rabies testing.

If your pet fights or has contact with an animal that might be rabid:

- Wear gloves to handle your pet. Saliva from the rabid animal may be on your pet's fur.
- Isolate your pet from other animals and people for several hours.
- Call your county health authority for advice.
- Call your veterinarian. Vaccinated pets will need a rabies booster shot within five days of the attack.
- An unvaccinated pet must be quarantined for six months or humanely destroyed.

Precautions to take:

- Vaccinate your dogs, cats and ferrets.
- Have homes and cabins batproofed.
- Don't feed, touch or adopt wild or stray animals.
- Tightly cap garbage cans. Don't attract animals to your home or yard.
- Feed pets indoors; never leave them outdoors unattended.
- Keep a pair of work gloves handy to capture a bat or in case your pet is attacked.



NEW YORK
state department of
HEALTH

Nirav R. Shah, M.D., M.P.H.
Commissioner

Sue Kelly
Executive Deputy Commissioner

The NYSDOH offers limited quantities of free rabies educational materials to NYS residents and organizations.*

To order, complete form and submit by email, fax, or mail.

- Email address: bcdc@health.ny.gov
- Fax number: (518) 473-4439
- Mailing address:
 NYSDOH – BCDC
 ESP, Corning Tower, Rm 651
 Albany, NY 12237-0627

Please allow 2 to 3 weeks for delivery.

Last Revised March 7, 2013

<u>ITEM #</u> (Circle)	<u>TITLE</u> (and language if other than English)	<u>TYPE</u>	<u>QUANTITY</u> (Circle)
3002	Protect Your Cat Against Rabies!	Flier (8-1/2" x 11")	1 10 25
3012	Rabies (Spanish)	Bookmark	1 10 50 100 200
3019	Rabies: It's No Way For a Friend to Die	Poster (Husky and cat)	1 10 50 100 200
3020	Rabies: It's No Way For a Friend to Die Poster	(Retriever and cat)	1 10 50 100 200
3021	Protect Your Pet—Vaccinate Against Rabies	Poster (Cat and dog)	1 10 50 100 200
3023	Bat Rabies Alert	Magnet	1 50 100 200 300
3025	Don't Touch Me	Sticker (Bat)	1 50 100 200 300
3027	Don't Touch Me	8-1/2 x 11 Laminated Sheet (Bat)	1 50 100 200 300
3029	Don't Touch Me (Spanish)	Sticker (Bat)	1 50 100 200 300
3030	Bat Rabies Alert (Spanish)	Magnet (Bat)	1 50 100 200 300
PP18	Catch the Bat!	DVD (1:25 minute)	1 2 3 4 5

Please complete legibly. Illegible or incomplete information will affect the ability to send your requested materials.

Requestor's Name: _____
 Organization: _____
 Street Address: _____
 (Note: no delivery to Post Office Boxes)
 City/State/Zip: _____
 Telephone Number: (____) _____
 Email Address: _____
 Date of order: _____

To order free NYSDOH educational materials on:

- Lyme disease and tick-borne diseases, go to www.health.ny.gov/forms/order_forms/tick.pdf
- West Nile virus and other mosquito-borne diseases, go to www.health.ny.gov/forms/order_forms/west_nile_virus.pdf
- Other health matters, go to www.health.ny.gov/publications/4208/

***To make sure this is the most up-to-date rabies materials order form, go to www.health.ny.gov/forms/order_forms/rabies.pdf**

HEALTH.NY.GOV
 facebook.com/NYSDOH
 twitter.com/HealthNYGov

APPENDIX F

Reference Names And Numbers In Warren County

Town Offices

Resources

- Contract Veterinarian
- Veterinarian
- NYS Agencies
- Law Enforcement
- Physicians

Nuisance/Wildlife Businesses

NYS County Contacts

Animal/Dog Control Officers Quick List

Warren County Public Health Rabies Clinic Information

TOWN OFFICES

City/Town Hall	Mayor/ Supervisor	Animal/Dog Control Officer	Clerk
Bolton Town Hall PO Box 7, Lakeshore Dr. Bolton Landing 12814	Ron Conover 644-2461 (w)	Warren County SPCA 793-4048 (w)	Jodi Connally 644-2444 FAX: 644-2476
Chestertown Town Hall PO Box 423, Main Street Chestertown 12817	Craig Leggett 494-2711 (w)	Florence Converse 494-7111 (w) 494-2163 (h) 260-4995 (c)	Mindy Conway 494-5160 FAX: 494-4146
Glens Falls City Hall 42 Ridge Street Glens Falls 12801	John Diamond 761-3804 (w)	SPCA of Upstate NY 798-3500 798-5059	Robert Curtis 761-3800 FAX: 743-0663
Hague Town Hall PO Box 509 Hague 12836	Edna Frasier 543-6161 (w)	Dan Steitz 543-6500 (w) 543-0014 (h)	Janet Hanna 543-6161 FAX: 543-6273
Horicon Town Hall PO Box 90 Brant Lake 12815	Matthew Simpson 494-3647 (w)	Darien Granger 494-5705 (h) 969-0026 (pager) 683-2367 (c)	Krista Wood 494-4643 FAX: 494-7721
Johnsburg Town Hall 219 Main Street North Creek 12853	Ronald Vanselow 251-2421 (w)	William Mosher 251-2421 (w) 251-4423 (h)	Jo A. Smith 251-3011 FAX: 251-4343
Lake George Town Center PO Box 392 Lake George 12845	Dennis Dickinson 668-5722 (w)	Warren County SPCA 793-4048 (w)	Debra Foley 668-5722 FAX: 668-5721
Lake George Village PO Box 791 Lake George 12845	Robert Blais 668-5771 (w)	Warren County SPCA 793-4048 (w)	Darlene Gunther 668-5771 FAX: 668-3735
Lake Luzerne Town Hall 539 Lake Ave., PO Box 370 Lake Luzerne 12846	Eugene Merlino 696-2711 (w)	Warren County SPCA 793-4048 (w)	Cynthia Sherwood 696-2713 FAX: 696-2773
Queensbury Town Office 742 Bay Road Queensbury 12804	John Strough 761-8230 (w)	Warren County SPCA 793-4048 (w)	Caroline Barber 761-8234 FAX: 745-4437
Stony Creek Town Hall 52 Hadley Road PO Box 96 Stony Creek 12878	Frank Thomas 696-3575 (w)	Maxine Zawartky 696-5991 (h) 232-8403 (c) 696-3575 (w)	Susan Harrington 696-3575 FAX: 696-3948
Thurman Town Hall PO Box 29 Athol 12810	Cynthia Hyde 623-9649 (w)	Warren County SPCA 793-4048 (w)	Susan Staples 623-9649 FAX: 623-4588
Warrensburg 3797 Main Street Emerson Memorial T. Hall Warrensburg 12885	Kevin Geraghty 623-9511 (w)	Warren County SPCA 793-4048 (w)	Donna Combs 623-4561 FAX: 623-3831

12/11, 01/12, 4/12, 2/13, 1/14, 7/14, 2/15, 3/16, 1/17, 5/17

RESOURCES

Contract Veterinarian:

(Veterinarian is available on weekends and after hours to prepare specimens if necessary.)

Contract Veterinarian	Phone	Fax	Contract Services
Glens Falls Animal Hospital 66 Glenwood Avenue Queensbury, NY 12804	792-6575	792-5136	Rabies Clinics Prep Specimens Ship Specimens Quarantine

Other Veterinarians:

	Phone	Fax	Contacts/Comments
Adirondack Animal Hospital 462 Ridge Rd Queensbury, NY 12804	793-6663	793-4793	
Countryside Veterinary Hospital 270 Queensbury Ave Queensbury, NY 12804	793-7083	793-2242	
Dr. Lansing West Mountain Rd Queensbury, NY 12804	793-5098	745-7540	
North Country Cat Hospital 13 Main St Queensbury, NY 12804	793-0994	Same as phone #	
Northway Animal EMERGENCY Clinic 35 Fawn Rd Gansevoort, NY 12831	761-2602	798-0692	
Quaker Animal Hospital 324 Quaker Rd Queensbury, NY 12804	761-9299	761-9296	
Schroon River Animal Hospital 150 Schroon River Rd Warrensburg, NY 12885	623-3181	623-3338	

Hospitals:

	Department	Phone	Fax
Glens Falls Hospital 100 Park Street Glens Falls, NY 12801	General	926-1000	
	Express Care	926-3130	926-3110
	Emergency	926-3000	
	Inpatient Pharmacy	926-2500	926-2557
	Infection Control	926-2180	926-3406
	Billing	926-5149	926-5199
Saratoga Hospital 211 Church St Saratoga Springs, NY 12866		587-3222	583-8323

New York State Agencies

		Phone	Fax
Department of Health	Zoonoses Program www.wadsworth.org/rabies	474-3186	
Department of Environmental Conservation Regional Office Hudson Street Warrensburg, NY 12885	Bureau of Wildlife	623-1200	623-3671

Law Enforcement:

	Phone	Fax
Warren County Sheriff's Office Municipal Center, 1400 State RT 9 Lake George, NY 12845	743-2500	743-2589
New York State Police Aviation Road Queensbury, NY 12804	745-1033	745-1314
Glens Falls Police Department 42 Ridge Street Glens Falls, NY 12801	761-3841	

Physicians:

	Phone	Fax
<u>Adirondack Pediatrics</u> 84 Broad Street, Glens Falls, NY 12801 email: adirondackpediatrics@yahoo.com	798-9538	798-9576
<u>Convenient Medical Care (Andrea Becker)</u> 319 Bay Road., Queensbury, NY 12804 email: merrihewmd@gmail.com or merrihew@me.com andrea@convenientmedicalcare.com	792-2181	792-1531
<u>Evergreen Health Center (Andrea)</u> 13 Palmer Avenue, Corinth, NY 12822 email: ademarsh@glensfallshosp.org	654-6499	654-7303
<u>Garner, Andrew MD (Cindy)</u> 8 Harrison Ave., Glens Falls, NY 12801 email: agarner@roadrunner.com	798-9401	798-9411
<u>Glens Falls Pediatric Consultants</u> 154 Warren Street, PO Box 141 Glens Falls, NY 12801 email: cbethel@gfpeds.com for anything clinical: dtocci@gfpeds.com	798-9985	761-7043
<u>Goe, Eric (Trudy)</u> 65 Elm Street, Glens Falls, NY 12801 email: goemed@nycap.rr.com	793-9636	812-0564
<u>Health Center on Broad Street</u> 100 Broad Street, PO Box 112 Glens Falls, NY 12801 email: mbayliss@hhhn.org	792-2223	792-8231
<u>Hogan-Moulton, Amy MD (Melissa)</u> 2 Broad Street Plaza, Glens Falls, NY 12801 email: lmurphy@glensfallshosp.org	926-1770	926-1799
<u>Hoy, Christopher MD (Kim)</u> 102 Park St., Suite 2, Glens Falls, NY 12801 email: hoy102parkstreet@live.com	798-2871	798-0216
<u>Hudson Headwaters Health Network</u> <u>(Paula x 31111)</u> <u>(Lori Gravelle, Corporate Compliance Officer)</u> 9 Carey Road, PO Box 3253, Qby, NY 12804 email: Lgravelle@hhhn.org	761-0300 x31312	745-1378
<u>Irongate Family Practice Associates</u> <u>(Mary King x247)</u> 3 Irongate Center, Glens Falls, NY 12801 email: nursemgr@irongatefamilypractice.com	793-4409	793-5886 or 615-0140

<u>Moreau Family Health Center (Laurel Dixon)</u> PO Box 381, Fort Edward, NY 12828 email: ldixon@hohn.org (Office Manager) nwest@hohn.org (Nancy West, Nurse Mgr)	761-6961	761-1006
<u>North Country Holistic Care Center</u> 461 Glen St., Glens Falls, NY 12801 email: northcountrymedicine@gmail.com	745-5889	745-0010
<u>Queensbury Health Center (Janet M. Petschauer)</u> 14 Manor Drive, Queensbury, NY 12804 email: jpetschauer@hohn.org	798-6400	798-4105
<u>School Based Health Clinic</u> Stuart M. Townsend Middle School 27 Hyland Drive, Lake Luzerne, NY 12846 Eva Guenther (Nurse) email: guenthere@hlcs.org Annie Horn (Nurse) email: horna@hlcs.org Kathy Herren PA email: kathyherren@hotmail.com	585-6708 696-2378 x107 696-2378 x107 696-2337	585-3260 696-2160 696-2160
<u>VA Primary Care (Tracy Arredondo RN Adm)</u> 84 Broad Street, Glens Falls, NY 12801 email: Tracy.Arrendo@Va.gov	798-6066	761-2097
<u>Warrensburg Health Center (Deb Lawson)</u> 3767 Main Street, Warrensburg NY 12885 Email: dlawson@hohn.org	623-2844	623-2476
<u>West Mountain Primary Care (Melissa Kostek)</u> 161 Carey Road, Queensbury NY 12804 Email: mkostek@hohn.org	824-8610	824-2390

NUISANCE and WILDLIFE CONTROL
(Private Companies)

Adirondack Nuisance Wildlife Control
551 Dean Road
Hudson Falls, NY 12839
747-2571

Hotline for Animal Rehab & Orphans
(North Country Wild Care)
518-964-6740

Hunt's Quality Pest Control
53 Boulevard
Queensbury, NY 12804
518-793-0804

Nuisance Wildlife Control
David Lafforthun
1383 W. Galway Road
Galway, NY 12074
882-9145

ENCON:
623-1240

Warren County Sheriff
518-743-2500

01/11, 8/16

COUNTY HEALTH AGENCIES IN NEW YORK STATE

Albany	518-447-4620	Niagara	716-439-7456
Allegany	585-268-9250	Oneida	315-798-5064
Broome	607-778-2887	Onondaga	315-435-3165
Cattaraugus	716-373-8050	Ontario	585-396-4343
Cayuga	315-253-1405	Orange	845-291-2331
Chautauqua	716-753-4491	Orleans	585-589-3278
Chemung	607-737-2019	Oswego	315-349-3564
Chenango	607-337-1673	Otsego	607-547-4230
Clinton	518-565-4870	Putnam	845-278-6130
Columbia	518-828-3358	Rensselaer	518-270-2655
Cortland	607-753-5035	Rockland	845-364-2594
Delaware	607-832-5200	St. Lawrence	315-386-2325
Dutchess	845-486-3404	Saratoga	518-584-7460
Erie	716-961-6800	Schenectady	518-386-2818
Essex	518-873-3500	Schoharie	518-295-8382
Franklin	518-891-4471	Schuyler	607-535-8140
Fulton	518-736-5720	Seneca	315-539-1945
Genesee	585-344-2580	Steuben	607-664-2438
Greene	518-719-3600	Suffolk	631-853-3055
Hamilton	518-648-6497	Sullivan	845-292-0100
Herkimer	315-867-1176	Tioga	607-687-8563
Jefferson	315-786-3720	Tompkins	607-274-6688
Lewis	315-376-5453	Ulster	845-340-3010
Livingston	585-243-7280	Warren	518-761-6580
Madison	315-366-2361	Washington	518-746-2400
Monroe	585-753-5171	Wayne	315-946-5749
Montgomery	518-853-3531	Westchester	914-864-7359
Nassau	516-227-9663	Wyoming	585-786-8894
New York City	212-788-9830	Yates	315-536-5160

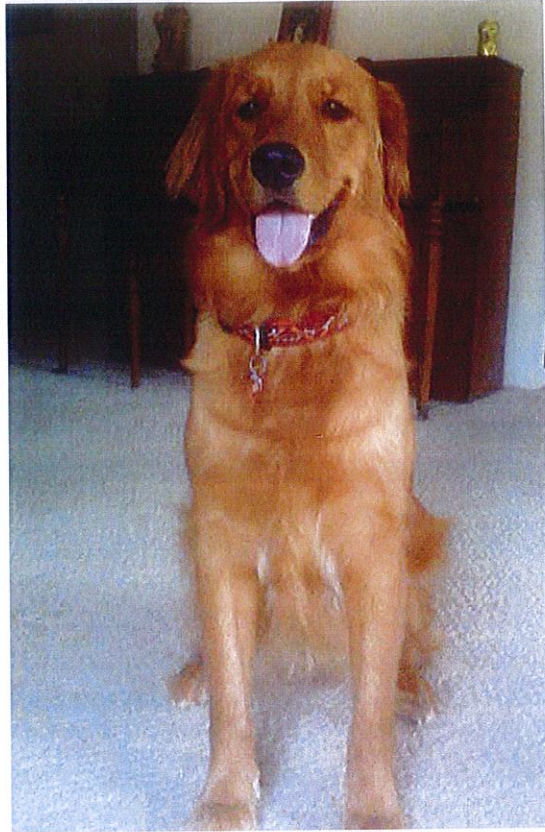
ANIMAL/DOG CONTROL OFFICERS QUICK LIST

Bolton	WCSPCA	793-4048
Chester	Florence Converse	494-7111(w) 494-2163(h) 260-4995(c)
Glens Falls	* Robert Curtis (Clerk)	761-3800(w)
	SPCA, Cathy Cloutier	798-3500 798-5059
Hague	Dan Steitz	543-0014 (h) 543-6500 (w)
Horicon	Darien Granger	494-5705 (h) 683-2367 (c) 969-0026 (pager)
Johnsburg	William Mosher	251-2421 (w) 251-4423 (h)
Lake George Town	Warren County SPCA	793-4048 (w)
Lake George Village	Warren County SPCA	793-4048 (w)
Lake Luzerne	Warren County SPCA	793-4048 (w)
Queensbury	Warren County SPCA	793-4048 (w)
Stony Creek	Maxine Zwartkay	696-3575 (w) 696-5991 (h) 232-8403 (c)
Thurman	Warren County SPCA	793-4048 (w)
Warrensburg	Warren County SPCA	793-4048 (w)

* Report all bites to city clerk's office.

Call Sheriff/Police for back-up

01/12, 4/12, 2/13, 1/14, 7/15, 2/16, 1/17, 5/17



For Rabies Information
or a Rabies Clinic Schedule
contact

Warren County Public Health

at

518-761-6580 or 800-755-8102

or online at

www.warrencountyny.gov/healthservices