Animal Bites and Rabies Risk

A Guide for Public Health Professionals

Zoonotic Disease Program

Ohio Department of Health

CONTACTS

For Consultation on Animal Bites and Rabies Exposure in Humans or Animals (excluding livestock)

Contact your local health department or

Ohio Department of Health
Bureau of Infectious Diseases
Zoonotic Disease Program
246 N. High Street
Columbus, OH 43215
Phone: 614-752-1029, option 2
Fax: 614-564-2437

For Consultation on Rabies Exposure in Livestock

Ohio Department of Agriculture
8995 E. Main Street
Reynoldsburg, OH 43068
Phone: 614-728-6201
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For Specimen Submission for Rabies Testing in Animals

Ohio Department of Health Laboratory
8995 E. Main Street
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Reynoldsburg, OH 43068
Phone: 614-644-4105

For Specimen Submission for Rabies Testing in Humans

Ohio Department of Health
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I. Introduction

Rabies is a viral illness that causes fatal encephalitis in affected individuals. All mammals are susceptible to infection with rabies virus. Rabies is spread through exposure to saliva from an infected animal usually through a bite wound, although it can also be transmitted through saliva contact with broken skin or mucous membranes. Rabies virus cannot penetrate intact skin and is quickly inactivated by ultraviolet light, drying and disinfectants. Therefore, rabies cannot be contracted through contact with the environment around a rabid animal. In Ohio, rabies is found primarily in raccoons, skunks and bats. Livestock and pets are usually exposed to rabies through the bite of a rabid raccoon or less commonly a skunk. People, on the other hand, are usually exposed by bites from bats, livestock or unvaccinated pets. Bites from other wild animals are also a concern for potential rabies exposure. Please see Table 1 on page 13 for a list of species with the potential to transmit rabies. Additional information about rabies epidemiology in Ohio can be found at http://www.odh.ohio.gov/odhprograms/dis/zoonoses/rabies/rab1.aspx .

II. Management of Animal Bites to Humans

All mammalian animal bites to humans should be treated as potential rabies exposures and a patient evaluation and rabies risk assessment should be performed to determine the need for post-exposure prophylaxis.

Patient evaluation following an animal bite

- Wash the wound well with soap and running water
- Assess the need for a tetanus vaccination booster
- Assess the need for antibiotics
- Assess the need for primary wound repair
- Assess the need for rabies post-exposure-prophylaxis (PEP)

Rabies risk assessment after an animal bite

- Is the biting animal a species of concern for rabies transmission? (Table 1)
- Was there a bite or saliva exposure to broken skin or a mucous membrane? (Table 2 on page 14)
- Is the animal available for 10 days of observation (dog, cat or ferret only) or is it available for rabies testing? (Figure 1 on page 15)
- Is the bite to the face or is the victim a young child?
  Bites to the face and head or when a young child is involved are more urgent and may warrant administration of PEP before completion of the 10-day waiting period for dog, cat or ferret bites. However, it is usually acceptable to defer PEP when the animal is available for immediate rabies testing. Rabies test results from the Ohio Department of Health Laboratory are usually available with one to two business days. Please consult with the Ohio Department of Health, Zoonotic Disease Progam at (614)752-1029, option 2 regarding these cases.

Rationale for the confinement and observation period

An animal cannot transmit rabies to a human or another animal until the virus is present in the animal's saliva. The time period between the onset of viral shedding in the saliva and the onset of clinical signs of rabies is known to be four to five days in dogs, cats and ferrets. Therefore, if a dog, cat or ferret had rabies virus in its saliva at the time of a bite, it will begin to show signs of rabies within four or five days. The recommended 10-day confinement period is based on this information and includes a large safety factor. Although a currently rabies vaccinated dog, cat or ferret is less likely to contract rabies than an unvaccinated one, vaccine failures have been known to occur and currently vaccinated pets have developed rabies. For this reason, it is important that all dogs, cats or ferrets that bite humans be confined and observed for ten days regardless of vaccination status. If the biting animal dies **for any reason** during the 10-day confinement and observation period it must be tested for rabies (OAC 3701-3-29).

In Ohio, dogs, cats and ferrets are usually confined and observed at home. It is important that these animals be confined and not allowed to run at large for two reasons. The first is so that the individual responsible for the confinement (usually the owner) can observe the animal on a daily basis and alert the health department and their veterinarian to the first signs of any illness in the animal. The second is to prevent the animal from biting other animals or people and potentially exposing them to rabies virus. The animal must be currently vaccinated against rabies and examined to ensure that it is healthy before being released from confinement.

Note: Only a licensed veterinarian is qualified to determine if an animal is free from signs of rabies.

There is no confinement and observation period recommended for wild animals or domestic animals that are not a dog, cat or ferret. Wild animals that have bitten a human should be euthanized and tested for rabies whenever possible. Domestic animals that are not a dog, cat or ferret should be handled on a case by case basis. Please consult with the Ohio Department of Health, Zoonotic Disease Progam at (614)752-1029, option 2.

Note: Only a rabies vaccine that is licensed for the species to which it was given and that was administered by a licensed veterinarian is recognized as a valid rabies vaccination. All vaccines should be verified by a current rabies certificate signed by a licensed veterinarian.

III. Management of Human Bat Encounters

Bat encounters and bat bites

Most people who have been bitten by a bat report a stinging or needle prick sensation. However, bat bites may occur without being noticed such as when someone is sleeping or when a bat flies into a person. The pain of the impact with the bat may mask the sensation of being bitten. Bat bites are often quite small and may leave little or no evidence of a wound or puncture. See Table 2 on page 14 for guidance on what constitutes a human bat rabies exposure. All bats that have potentially exposed a human or domestic animal to rabies should be submitted for rabies testing if available.

How to capture a bat and submit it for testing

- Close the doors and windows and turn on the lights in the room where the bat is located.
- Wait for the bat to land.
- Wear leather gloves and use a container such as a coffee can or small cardboard box. Do not use pillowcases, blankets or towels as bats may bite through fabric.
- Approach the bat slowly and place the container over the bat. Then slide a piece of cardboard underneath the bat and flip the container over, trapping the bat inside.
- Secure the lid with tape.
- Be carefully not to shake or otherwise traumatize the bat as this can damage the brain, rendering it untestable for rabies.
- If the bat is dead, keep it cool but avoid freezing it.
- Contact your local health department to submit the bat for rabies testing.

Rabies risk assessment after a human bat encounter

- Bat rabies exposures include all of the following (Table 2 on page 15):
    - A known bite.
    - The person felt the bat hit them.
    - The bat was found in a room where someone was sleeping.
    - The bat is found in a room with an unattended small child or other person who may not be able to communicate whether or not he/she had contact with the bat.
- If the bat is available for testing, rabies post-exposure prophylaxis (PEP) can be delayed until results of the rabies test are known.
- If the bat is not available for testing and an exposure is suspected, rabies PEP is recommended.
- Consultation with the Ohio Department of Health, Zoonotic Disease Program regarding bat encounters is available by calling 614-752-1029, option 2.

IV. Rabies Post-exposure Prophylaxis (PEP) Regimen

Rabies PEP overview

Healthy, immunocompetent persons including pregnant women

The rabies PEP regimen for immunocompetent individuals who have not previously been vaccinated against rabies involves administration of human rabies immune globulin (HRIG), which is only given once and a series of four rabies vaccinations (Table 3 on page 16). HRIG and the first vaccination are given on the first day of treatment (day 0) and the three additional rabies vaccinations are given on days three, seven and 14.

Immunocompromised persons

Immunocompromised person receive a fifth vaccination on day 28 and should be tested for seroconversion seven to 14 days following completion of the PEP regimen (Table 4 on page 17).

Previously vaccinated persons

Patients who have previously been vaccinated against rabies should receive only two rabies vaccine boosters given on days zero and three. Patients who have been previously vaccinated SHOULD NOT receive HRIG even if the previous vaccination occurred many years prior.

Persons receiving post-exposure prophylaxis outside the United States

Person exposed to rabies outside the United States might receive post-exposure prophylaxis with regimens or biologics that are not licensed in the United States. In these instances, additional treatment may be required when the individual presents for care in Ohio. Please contact the Ohio Department of Health, Zoonotic Disease Program at 614-752-1029, option 2 for specific advice in these cases.

Deviations from the recommended PEP vaccination schedule

Once the decision to initiate PEP is made, it should be started as soon as possible. Every effort should be made to adhere to the recommended PEP vaccination schedule. For most minor interruptions, the vaccination schedule can be shifted and resumed as if the patient were on schedule. When substantial deviations from the schedule occur, immune status should be assessed by performing serologic testing seven to 14 days after administration of the final dose in the series.

Human rabies immune globulin (HRIG)

Human rabies immune globulin (HRIG) provides rapid passive immune protection. It is intended to provide an immediate supply of virus-neutralizing antibodies to bridge the gap until the individual begins to produce active immunity in response to vaccine administration. It is given only once on the first day of the PEP regimen. No more than the recommended dosage of HRIG should be given. Exceeding the recommended dose can partially suppress active production of antibody following vaccination. If HRIG was not administered on day zero, it can be given up to day seven of the PEP regimen. Beyond day seven, HRIG is not indicated.

- The recommended dosage of HRIG is 20 IU/kg body weight for all ages including children.
- Infiltrate as much of the HRIG as is anatomically feasible into and around the wound.
- Administer the remaining HRIG intramuscularly (IM) at a site distant from the first vaccination site, usually in the quadriceps or deltoids.
- If there is no wound, such as following a bat in the bedroom exposure, then the entire dose of HRIG may be given in the deltoids or quadriceps.

Rabies vaccine

A 1.0 ml dose of rabies vaccine is administered IM in the deltoid area of adults or the anterolateral thigh of young children on days zero, three ,seven and 14 of the rabies PEP regimen (Table 3on page 16). An additional fifth dose is given on day 28 to immunocompromised individuals (Table 4 on page 17). Rabies vaccine must not be given in the gluteals due to the possibility of poor absorption from that site resulting in lower virus-neutralizing antibody titers.

Two rabies vaccines are currently licensed in the United States for human use: human diploid cell vaccine (HDCV, Imovax®Rabies) and purified chick embryo cell vaccine (PCECV, RabAvert®). Both are considered

equally safe and efficacious. It is recommended that a vaccine series be completed with the same vaccine throughout. However, there have been no documented cases of decreased efficacy or increased adverse reactions when the series is initiated with one product and completed with another.

Patient assistance programs

Patient assistance programs that provide medications to uninsured or underinsured patients are available for rabies vaccine and Immune globulin.

Sanofi Pasteur's Patient Assistance Program (providing Imogam ® Rabies-HT and Imovax ® Rabies as well as other vaccines) is now administered through the Franklin Group. A healthcare professional or patient can either contact the Franklin Group directly, or call the customer service team (1-800-VACCINE) who will transfer them to the Franklin Group. The Franklin Group will review the application against the eligibility criteria. For more information about the program or to request an application, please contact the Sanofi Pasteur, Inc. Patient Assistance Program (Franklin Group) at 1 (866) 801-5655. Instructions and request forms are also available at http://www.visitspconline.com.

Novartis' Patient Assistance Program for RabAvert ® is managed through RX for Hope and can be accessed at 1-800-589-0837. Instructions and request forms are also available at the Rx for Hope website, http://www.rxhope.com.

Adverse reactions

In general, there is a very low incidence of serious reactions to the rabies PEP regimen. Local pain, erythema and itching, headache and low-grade fever are the most commonly reported reactions. Rabies PEP should not be interrupted or discontinued due to mild local or systemic adverse reactions to rabies vaccine. Non-steroidal anti-inflammatory drugs may be used to control mild adverse reactions.

When a person with a history of serious hypersensitivity to rabies vaccine must be revaccinated, antihistamines may be administered along with the rabies vaccine. The person should then be observed for the development of anaphylaxis immediately following vaccination.

V. Rabies Pre-Exposure Prophylaxis Regimen

Pre-exposure vaccination against rabies simplifies the post-exposure treatment and it may protect in cases of unrecognized rabies exposure or when post-exposure treatment is delayed. It does not eliminate the need for appropriate treatment following a known rabies exposure.

Who should receive rabies pre-exposure prophylaxis?

- Veterinarians and veterinary technicians
- Animal control officers, wildlife rehabilitators and certain zoo employees
- Certain laboratory workers
- International travelers to areas with endemic rabies who are likely to come into contact with dogs or wild animals

Pre-exposure rabies vaccination series

- Three 1.0 ml doses of rabies vaccine are given IM, one injection per day, on days zero, seven and 21 or 28. Injections should be given in the deltoid area in adults and the anterolateral thigh in young children.
- Either vaccine licensed in the United States may be used, although it is recommended that the vaccine series be initiated and completed with the same vaccine product.
- No HRIG is given.

Antibody titers and booster vaccination

Following the initial rabies vaccination series, persons in high-risk occupations should have their rabies virus neutralizing antibody titers checked periodically. Those who work with rabies on a continuous basis, such a rabies research laboratory workers or rabies biologics production workers, should have titers checked every six months. Those who have frequent exposures to rabies, such as rabies diagnostic laboratory workers, veterinarians, veterinary technicians, animal control and wildlife workers in areas where rabies is enzootic and all persons who handle bats should have titers checked every two years. Those whose exposure to rabies is infrequent do not require rabies titer testing.

The rapid fluorescent focus inhibition test (RFFIT) is the only accepted test for determining rabies virus neutralizing antibody levels. Other available titer tests are not recommended for this purpose.

According to World Health Organization guidelines, a rabies antibody level of greater than or equal to 0.5 IU/mL demonstrates an adequate response to vaccination. If the level falls below this value, a booster dose of rabies vaccine may be recommended for people who are at continuous or frequent risk of rabies virus exposure.

Points that should be considered as to whether a person should receive a booster dose of rabies vaccine when their antibody level falls below 0.5 IU/mL are:

- Anticipated risk of exposure (i.e., routinely handling sick animals or rabies reservoir species in enzootic areas).
- Length of time until the next antibody measurement.
- Previous rabies antibody levels and the probability of decay to low or undetectable levels in the intervening period.
- Individual health status (consider immunocompromising conditions or a history of poor vaccine response).
- Timely access to vaccine and administration should a potential exposure occur.

Additional information on rabies serology including a list of laboratories providing RFFIT can be found on the Centers for Disease Control and Prevention website at:
http://www.cdc.gov/rabies/specific_groups/doctors/serology.html

VI. Management of Animals Exposed to a Rabid Animal

It is important to investigate all known exposures of domestic animals to a potentially rabid animal. Identifying and properly handling these exposures greatly reduces the risk of subsequent human exposures

to rabid domestic animals. A wild animal that has potentially exposed a domestic animal to rabies should be tested for rabies whenever possible. Exposed domestic animals should be managed as follows:

- A domestic animal that is currently vaccinated against rabies at the time of exposure is immediately revaccinated for rabies and kept under quarantine for 45 days.
- A domestic animal that is not currently vaccinated against rabies should be either euthanized immediately or vaccinated against rabies and quarantined for 180 days.
- All other animals should be evaluated on a case-by-case basis. Please consult with the Ohio Department of Health, Zoonotic Disease Program at (614)752-1029, option 2.

Note: Only a rabies vaccine that is licensed for the species to which it was given and that was administered by a licensed veterinarian is recognized as a valid rabies vaccination. All vaccines should be verified by a current rabies certificate signed by a licensed veterinarian.

VII. Rabies Testing

Guidelines for submitting suspect animals for rabies testing

The Ohio Department of Health Laboratory (ODHL) performs the direct fluorescent antibody (DFA) test for rabies on all submitted specimens. This is the only accepted test for when an exposure to a human or domestic animal is involved. There is no live animal test for rabies. The animal's brain, specifically sections of the medulla, cerebellum and hippocampus, are required to perform the DFA test. The brain must be relatively fresh and in good condition, as the test cannot be reliably performed if the different regions of the brain cannot be identified. See the Rabies Specimen Submission Form (Appendix A or http://www.odh.ohio.gov/pdf/forms/hea2539.pdf) for complete instructions on specimen handling and submission. For questions or an emergency testing situation, contact ODHL at 614-644-4654 during regular business hours.

Rabies testing in humans

Testing for diagnosis of rabies in humans is performed at the Center for Disease Control and Prevention. Please contact the Ohio Department of Health, Bureau of Infectious Diseases, Outbreak Response and Bioterrorism Investigation Team (ORBIT) at 614-995-5599 or the Zoonotic Disease Program at 614-752-1029, option 2 for information regarding specimen collection and submission.

VI. References:

Centers for Disease Control and Prevention, Rabies Serology. Accessed 8/4/2014.

Compendium of animal rabies prevention and control, 2011. J Am Vet Med Assoc, 2011. 239(5): p. 609-617.

Manning, S.E., et al., Human rabies prevention--United States, 2008: Recommendations of the Advisory Committee on Immunization Practices. MMWR Recomm Rep, 2008. 57(RR-3): p. 1-28.

Ohio Administrative Code: 3701-3-28, 3701-3-29, 3701-3-30.

Rabies. In: Heymann D, ed. *Control of Communicable Diseases Manual* 19th Edition. Washington DC: American Public Health Association, 2008; 498-508.

Rupprecht, C.E., 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): p.1-9.

Rupprecht, C.E. and R.V. Gibbons, *Clinical practice. Prophylaxis against rabies.* N Engl J Med, 2004. 351(25): p. 2626-35.

Table 1: Species with the potential to transmit rabies

Potential rabies vectors	
Domestic animals	Alpaca Cat Cow Dog Donkey Ferret Goat Horse Llama Mule Pig Sheep
Wild animals including captive wild animals and hybrids	Badger Bat Bear Beaver Bison Bobcat Cat hybrid Coyote Deer Elk Ermine Fisher Fox Lynx Marten Mink Monkey Moose Mountain lion Muskrat Opossum Otter Porcupine Puma/Cougar Raccoon Skunk Weasel Wolf Wolf/dog hybrid Wolverine Woodchuck
Species that are not rabies vectors*	
All amphibians All birds All reptiles Chipmunk Gerbil Gopher Guinea pig Hamster Hare Hedgehog Mole Mouse Rabbit Rat Shrew Squirrel Vole	

*Small rodents and rabbits are rarely infected with rabies and ODH discourages testing these species. However, any mammal has the potential to be infected with and transmit rabies and unique situations do occur in which testing may be justified. Please consult with the Zoonotic Disease Program at 614-752-1029, option 2 prior to submitting samples from these species.

Table 2: Rabies exposures to humans or domestic animals

Animal	Rabies exposure	Not a rabies exposure
Terrestrial mammals (all potential rabies vectors (Table 1) except bats)	Bite that breaks the skin Scratch that breaks the skin with saliva contamination Saliva contamination of a fresh open wound Saliva contamination of a mucous membrane (eyes, nose, mouth)	Exposure to blood, urine, feces or skunk spray Dry scratch without saliva contamination Petting a rabid animal Cleaning cages or equipment that has been in contact with a rabid animal Saliva contamination of intact skin
Bats	A known bite The person felt the bat hit them Saliva contamination of a fresh open wound Saliva contamination of a mucous membrane (eyes, nose, mouth) The bat was found in a room where someone was sleeping The bat is found in a room with an unattended small child or pet The bat is found in a room with a person who may not be able to communicate whether or not he/she had contact with the bat	Touching a bat on its fur Finding a bat in an unoccupied part of the house Exposure to bat urine or feces (guano) Touching something that has touched a bat Bats flying nearby

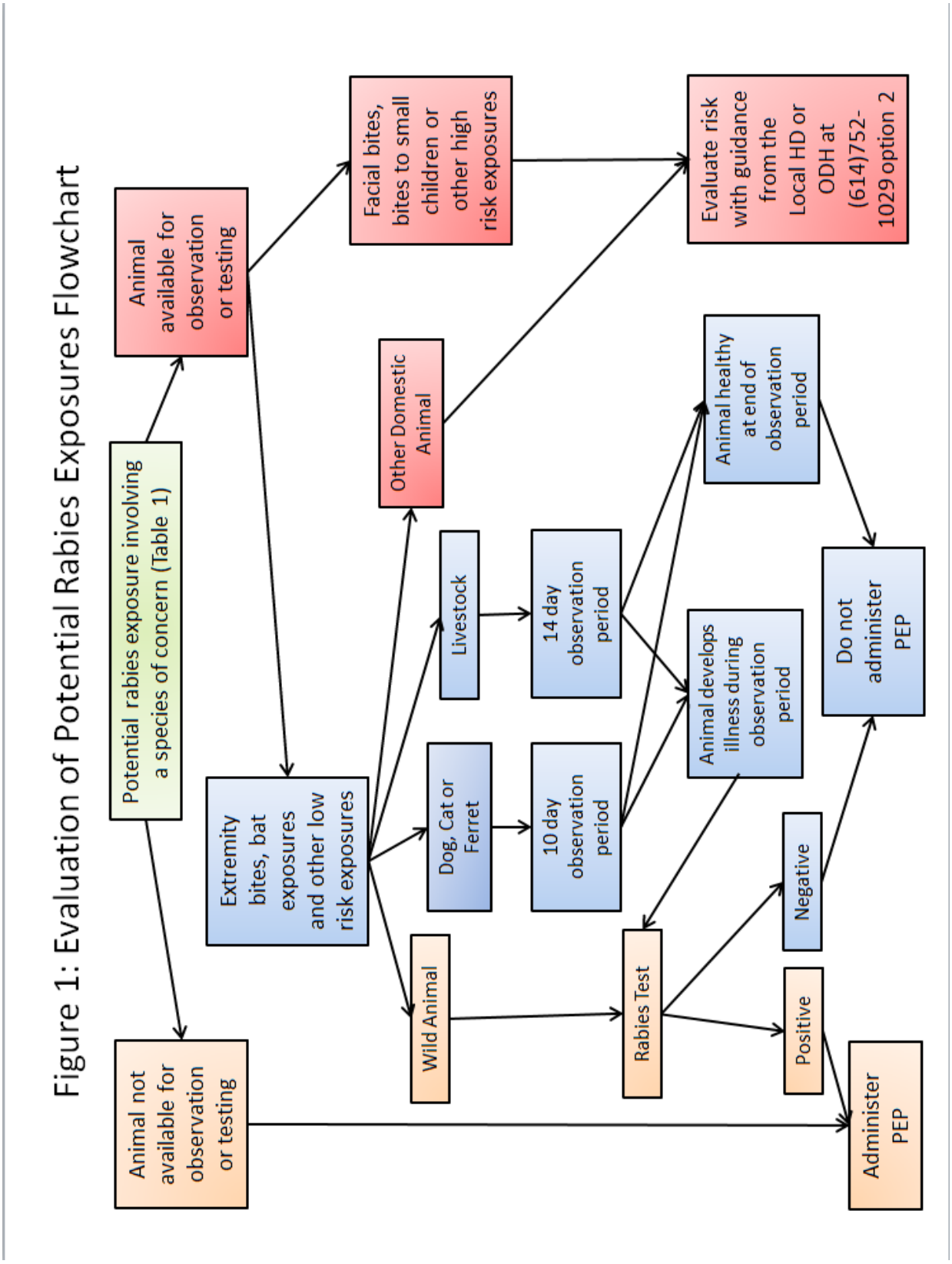
Figure 1: Evaluation of Potential Rabies Exposures Flowchart
Potential rabies exposure involving a species of concern (Table 1)
Animal available for observation or testing
Animal not available for observation or testing
Facial bites, bites to small children or other high risk exposures
Evaluate risk with guidance from the Local HD or ODH at (614)752-1029 option 2
Other Domestic Animal
Extremity bites, bat exposures and other low risk exposures
Livestock
Dog, Cat or Ferret
Wild Animal
14 day observation period
10 day observation period
Animal healthy at end of observation period
Animal develops illness during observation period
Do not administer PEP
Rabies Test
Negative
Positive
Administer PEP

Table 3: Rabies post-exposure prophylaxis: Healthy, immunocompetent persons including pregnant women

Vaccination status	Treatment	Dosage/Administration guidelines	Day of regimen
Not previously vaccinated	Wound cleansing Tetanus toxoid booster	Tetanus toxoid indicated if last tetanus toxoid vaccine was more than 5 years prior to exposure	Day 0 (First day of treatment)
	Human rabies immune globulin (HRIG)	20 IU/kg body weight Infiltrate HRIG into and around wound Remaining HRIG given IM at a site distant from the vaccination site	Day 0 (can be given up to day 7) After day 7, HRIG is contraindicated
	Rabies vaccine	1.0 ml dose given IM in the deltoid area (or anterolateral thigh in young children) **NEVER GIVE IN THE GLUTEALS**	Days 0, 3, 7 and 14
Previously vaccinated	Wound cleansing Tetanus toxoid booster	Tetanus toxoid indicated if last tetanus toxoid vaccine was more than 5 years prior to exposure	Day 0
	Human rabies immune globulin (HRIG)	**DO NOT GIVE**	**DO NOT GIVE**
	Rabies vaccine	1.0 ml dose given IM in the deltoid area (or anterolateral thigh in young children) **NEVER GIVE IN THE GLUTEALS**	Days 0 and 3

Table 4: Rabies post-exposure prophylaxis: Healthy, immunocompromised persons

Vaccination status	Treatment	Dosage/Administration guidelines	Day of regimen
Not previously vaccinated	Wound cleansing Tetanus toxoid booster	Tetanus toxoid indicated if last tetanus toxoid vaccine was more than 5 years prior to exposure	Day 0
	Human rabies immune globulin (HRIG)	20IU/kg body weight Infiltrate HRIG into and around wound Remaining HRIG given IM at a site distant from the vaccination site	Day 0 (can be given up to day 7) After day 7, HRIG is contraindicated
	Rabies vaccine	1.0 ml dose given IM in the deltoid area (or anterolateral thigh in young children) **NEVER GIVE IN THE GLUTEALS**	Days 0, 3, 7, 14 **and 28**
	Post vaccination serological testing	Submit 2 ml of serum for rabies antibody titer by RFFIT* Adequate antibody titer: complete neutralization at 0.5 IU/ml (WHO standard) by the RFFIT method	7 to 14 days following PEP completion
Previously vaccinated	Wound cleansing Tetanus toxoid booster	Tetanus toxoid indicated if last tetanus toxoid vaccine was more than 5 years prior to exposure	Day 0
	Human rabies immune globulin (HRIG)	**DO NOT GIVE**	**DO NOT GIVE**
	Rabies vaccine	1.0 ml dose given IM in the deltoid area (or anterolateral thigh in young children) **NEVER GIVE IN THE GLUTEALS**	Days 0 and 3
	Post vaccination serological testing	Submit 2 ml of serum for rabies antibody titer by RFFIT* Adequate antibody titer: complete neutralization at 0.5 IU/ml (WHO standard) by the RFFIT method	7 to 14 days following PEP completion

*A list of laboratories providing RFFIT can be found on the Centers for Disease Control and Prevention website at: http://www.cdc.gov/rabies/specific_groups/doctors/serology.html

Internal Rabies Number ODH LAB USE ONLY	Ohio Department of Health Laboratories **Rabies Test Submission Report**	LITS NUMBER ODH LAB USE ONLY

Animal Information (to be completed by submitter)

Species:	Predominant Breed:	Sex	Age
Bat ❑ Cat ❑ Dog ❑ Horse ❑ Raccoon ❑ Other (indicate) ❑_____		❑ Male ❑ Female	

Reason for Test: **(Check the primary reason)**

❑ Human Exposure ❑ Odd Behavior/Sick/Wounded ❑ Found Dead

❑ Pet/Domestic Animal Exposure ❑ Nuisance/Otherwise Healthy ❑ Roadkill

Date of Collection (MM/DD/YYYY) ___/___/____

Owner's address or location where found:	County

City	State	ZIP

Latitude (in decimal degrees)	Longitude (in decimal degrees)
___.____	-___.____

Case Administration (to be completed by submitter)

Human exposure? ❑ Yes ❑ No ❑ Unknown	# of persons bitten	# of non-bite exposures

Post-exposure prophylaxis? ❑ Yes ❑ No # of persons treated for rabies	Animal exposure ❑ Yes ❑ No ❑ Unknown

Name of ❑ person exposed or ❑ pet owner (Check One)

Submitter of Animal: *Last Name*	*First Name*	*Telephone*
		___-___-____

Local Health Department Information

(to be completed by submitter)

Local Health Department Name
Contact person
Telephone ___-___-____
Comments

Submitter Address for Reporting Results

Name		
Address		
City	State	ZIP
Phone		
Fax		

Bill To: (see submission guidelines for non-exempt testing)

Name		
Address		
City	State	ZIP
Phone		

For Lab Use Only

Date Received	Billing ❑ Exempt ❑ Fee Due	Specimen Type ❑ Brain ❑ Skull Impression
Specimen Condition ❑ Decomposed ❑ Mutilated ❑ Satisfactory ❑ Unsatisfactory/missing		
Test Name: Direct Fluorescent Antibody	DFA Result ❑ Positive ❑ Negative	
Date Reported	Person contacted with result	Date of Call / Initials

HEA 2539 (Rev. 10/12)

Ohio Department of Health Laboratory
Guidelines for Rabies Specimen Submission

Laboratory Testing

The standard test for detecting rabies is a fluorescent antibody test on brain tissue. If the test is positive, it is assumed the saliva also contained virus and the animal was infectious for rabies. If the test is negative, rabies virus is considered not to have been in the saliva. Rabies specimens are processed Monday through Friday afternoons, and results are read the following workday morning. Results are then phoned to the submitter. Rabies samples should be addressed as below:

Ohio Department of Health Laboratory
8995 E. Main Street
Building 22 (ODHL)
Reynoldsburg, Ohio 43068
(614) 644-4654

Only rabies testing is done at Ohio Department of Health (ODH). If a diagnosis other than rabies is of interest, contact a veterinary pathology service such as The Ohio State University Veterinary School at (614) 292-5661 or the Ohio Department of Agriculture at (614) 728-6220. Often specimens can be sent to them first, and they will forward tissue to ODHL. These and/or other private labs may have their own fees.

Appropriate Specimens

Live animals will not be accepted at the lab. Send only the head of animal to be tested. In the case of bats, mice and gerbils, the whole animal is suitable.

Tissue must be fresh. Do not submit maggot-infested or extremely decomposed specimens or specimens fixed in formalin.

Specimen Preparation

Animals should be killed in a humane manner without damaging the skull. Only experienced persons or veterinarians with current rabies pre-exposure prophylaxis should perform decapitations of rabies-suspect animals. Water-repellent gloves, protective clothing and goggles should be worn for safety. Carcasses should be disposed of in accordance with local and state laws.

Charge for Testing

There is a $30 charge for pet and wild rodents including gerbils, hamsters, guinea pigs, mice, rabbits, rats, squirrels and chipmunks, shrews and moles. There is no charge for testing other animal species. Please make checks payable to "Treasurer, State of Ohio". Business entities should include their Federal Tax ID number on the check.

In counties where raccoon rabies is endemic, fee exemption may be requested for testing rabbits or wild rodents. This will be considered only in situations where the rabbit or rodent has displayed clinical signs compatible with rabies and there has been a human exposure. Contact the ODH Zoonotic Disease Program at (888) 722-4371.

Specimens Handling and Packaging

Animal heads or brain tissue should be kept refrigerated but not frozen. The specimen should be double bagged using heavy plastic and each bag should be properly sealed. Do not use metal twist ties. If the specimen has any sharp protruding parts such as shattered bone, wrap it in several layers of newspaper first. Place the bagged specimen in an insulated container and surround the specimen with frozen packs. If dry ice must be used, place aluminum foil or several layers of newspaper between it and the specimen to prevent freezing. If more than one animal of the same species is submitted in a container, each head should be bagged and tagged separately for identification. Seal container securely with tape.

A fully completed Rabies Test Submission Report must be included for each specimen submitted. If the form is submitted within the shipping container, be sure it is sealed in a separate waterproof bag in the event of leakage. If necessary, securely affix it in an envelope to the outside of the container.

Shipping

Specimens should be either hand delivered, or sent by overnight courier service. Do not ship on Fridays or before holidays as there may be no one at the lab to accept delivery on weekends. Instead, hold the specimen until the following weekday.

Specimens can be delivered directly to the ODHL from 8 a.m. until 5 p.m. Monday through Friday.
There is no after-hours or weekend access to the laboratory facility to drop off specimens.

Emergency

For questions or an emergency testing situation, call the ODHL during business hours at (614) 644-4654. For reporting rabies suspect animals or animal bites, contact your local health department. The ODH Zoonotic Disease Program is also available to answer rabies exposure questions at (888) 722-4371 or (614) 752-1029. Additional information on rabies is available on the ODH Rabies Web site http://www.odh.ohio.gov or the Centers for Disease Control and Prevention at http://www.cdc.gov.