# Rabies: Animal Management

This individual chapter is part of the Rabies Prevention and Control in Florida guidance documents. The purpose of this compendium is to provide recommended policies and procedures for rabies prevention and control in Florida. It is intended primarily for use by county health department staff, animal control specialists, veterinarians, health care providers and others with related responsibilities or interests. This publication, while produced and distributed by the Florida Department of Health (DOH) Division of Disease Control and Health Protection, has been developed by a multidisciplinary Florida Rabies Advisory Committee that represents the major agencies, institutions and organizations involved with rabies prevention and control in the state. The individual chapters and associated resources are routinely updated and posted on the following website:
*www.floridahealth.gov/diseases-and-conditions/rabies/professionals.html

## A. Animal pre-exposure vaccination

1. Vaccines

   a. There are currently 17 parenteral animal rabies vaccines licensed by the U.S. Department of Agriculture (USDA) for use in dogs, cats, sheep, cattle, horses, and ferrets. Some are approved for dogs or cats for a multi-year immunity period and others for only a one-year period. All dogs and cats should be revaccinated 12 months after initial vaccination regardless of the length of immunity period of the initial vaccine. Thereafter, the interval between vaccinations will conform to the manufacturer's directions, either one year or multiple years except for instances involving post-exposure treatment of rabies. More frequent use of these vaccines is considered "off-label" and may be injurious to the animal. Peak rabies antibody titers are reached within 28 days of the primary vaccination. Per Florida Administrative Code rule, an animal is considered currently vaccinated if it has received primary vaccination at least 28 days prior to the rabies exposure incident. Because a rapid anamnestic response is expected, an animal is considered currently vaccinated immediately after a booster vaccination. Obtaining a booster vaccination immediately following an exposure to a rabid animal is important to ensure adequate protection against the virus. Although uncommon, rabies has occurred in vaccinated animals that did not receive a rabies booster vaccination following exposure.[1] For a list of USDA-approved vaccines, see Rabies Vaccines Licensed and Marketed in the U.S., 2016*. Additional resources include the recommended National Association of State Public Health Veterinarians (NASPHV) rabies vaccination certificate* and a disclaimer* for use by veterinarians vaccinating wildlife species. Veterinarians in Florida are required to maintain medical records, including rabies vaccination records, for at least three years (61G18.18.002 [1 & 2], Florida Administrative Code).

   b. **Wolves and wolf-dog crosses, wild cats (lions, pumas, bobcats, etc.), raccoons, wild cat/housecat crosses, and other wild animals are not recommended as pets. However, if owned, captive-bred animals must be properly permitted through the Florida Fish and Wildlife Conservation Commission (FWC). Because of the possible protective effect of vaccination, veterinarians are encouraged to vaccinate these animals against rabies providing: 1) the owner signs a**

[1] Murray KO, Holmes KC, Hanlon CA. Rabies in vaccinated dogs and cats in the United States, 1997-2001. JAVMA. 2009:235(6):691-95.

**statement recognizing the current "off-label" use of the vaccine; and 2) the owner understands that the animal will be euthanized and tested for rabies should it bite or expose a person or be exposed to a rabid animal.**

c. Rabies vaccination of domestic dogs, cats and ferrets should be performed in accordance with the requirements of section 828.30, Florida Statutes.

d. Animals NOT meeting the definition of "currently vaccinated" include:

   i. Dog, cat, ferret, horse, cattle, or sheep whose first vaccination was given less than one month before exposure.

   ii. Dog, cat, ferret, horse, cattle, or sheep whose previous vaccination expired.

   iii. Dog or cat that was given an initial vaccination and not boosted one year later.

   iv. Dog, cat, ferret, horse, cattle, or sheep vaccinated by anyone other than a licensed veterinarian.

   v. Any wild animal, or wild and domestic animal crosses.

e. Research has shown that dogs and cats that are not currently vaccinated but have received a rabies vaccine at some point in the past ("previously vaccinated") mount an antibody response after booster vaccination that is comparable to the immune response seen among currently vaccinated animals.[2] As a result, for previously vaccinated dogs or cats exposed to suspect rabid animals that receive immediate rabies booster vaccination, the quarantine requirements have been shortened from a 4-month to a 45-day confinement.

f. **Titers are NOT acceptable in lieu of revaccination.**

g. Zoo-keepers may elect to vaccinate valuable zoo animals against rabies. It should be noted that this is "off-label" use of the vaccine. If a vaccinated zoo animal bites a person, it may have to be tested for rabies.

h. Oral vaccination for wildlife is available under limited circumstances to control epidemics, but not for use in individual animals. See the Rabies: Epidemic Control Measures chapter for more information.

2. Serologic Confirmation of Antibody Titer for International Export: Rabies antibody titers for dogs, cats, or ferrets may be obtained via serologic testing with the rapid fluorescent focus inhibition test (RFFIT) examination (see the DOH Bureau of Public Health Laboratories (BPHL) Rabies Test Form* for a list of laboratories and contact information). **Evidence of circulating rabies virus antibodies must not be used as a substitute for current vaccination in managing rabies exposure or determining the need for booster vaccinations.**

[2]Moore MC; Davis RD; Kang Q; Vahl CI; Wallace RM, Hanlon CA; Mosier DA, Comparison of anamnestic responses to rabies vaccination in dogs and cats with current and out-of-date vaccination status. JAVMA 2015:246(2):205-211.

## B. Types of confinement

**Confinement** should be by fence or cage, inside the living quarters or related buildings or on a leash under control of a responsible person. The word confinement has been used to describe different rabies control activities. To clarify, please note the following:

- **Isolation and Observation Periods:** Dogs, cats, and ferrets that bite or otherwise potentially expose a person to rabies can be confined for observation for 10 days. Horses can be confined for a 14-day observation period.

- **Quarantine Period:** Dogs, cats, ferrets, horses, cattle, and sheep may be confined and observed when they are bitten or otherwise potentially exposed to rabies by other animals. The quarantine period is 45 days for vaccinated dogs, cats, ferrets, horses, cattle, and sheep and also for previously vaccinated dogs and cats that receive a prompt booster vaccination after exposure. The quarantine period is four months for unvaccinated dogs and cats, and six months for ferrets, horses, cattle, and sheep.

    1. **Isolation and Observation Periods -- Suspect Rabid Animal Exposes a Person**: When the report of an animal biting or potentially exposing a human is received, the investigating officer should contact the owner and the victim as soon as possible. This is particularly important when the exposure involves the head or neck. Initial contact with the animal owner and the victim by telephone should be sufficient unless circumstances warrant a field visit. The officer should also obtain and verify documentation of current veterinarian-administered rabies vaccination. Please document this information on the Animal Bite Report Form*.

        a. **10-Day Isolation and Observation Period for Dogs, Cats or Ferrets**: Dogs, cats, and ferrets involved in biting/exposure incidents of humans, regardless of their vaccination status should be captured alive, if possible, and confined for a period of 10 days. The observation period is to begin from the time of the bite for a 10-day period, not 10 days from the time of capture. Unvaccinated domestic animals with a history of a potential rabies exposure (i.e. interaction with rabid, feral, or wild animals) that cause moderate to severe face or neck bites to a person should be immediately tested. If confinement of the animal is not possible or practical, the animal can be euthanized and its brain submitted for laboratory examination at the owner's expense. Testing may not be necessary for animals with virtually no rabies risk (i.e. currently vaccinated older animals with a history of multiple rabies vaccinations, strictly indoor pets).

            Observation is of value because the length of time that virus may be excreted in the saliva prior to onset of signs can be predicted. It is known that dogs, cats, and ferrets may excrete rabies virus only a few days prior to onset of illness. The observation period is longer to allow for a wide safety margin. If the biting animal is alive after 10 days from the exposure, it was not shedding rabies in the saliva at the time of the bite. Conversely, if the animal exhibits signs of rabies, it should be euthanized and the head submitted for rabies testing immediately. If the sick animal cannot be immediately tested, post-exposure prophylaxis (PEP) should be initiated for persons who were exposed.

                i. In most cases, wolves, wolf-dog crosses and exotic cat crosses will be euthanized and tested for rabies should they bite or otherwise expose a person.

ii. Rabies vaccine should not be administered to the suspect rabid dog, cat, or ferret during the observation period because this would necessitate other people being exposed to the animal. In rare cases, side effects from the vaccine administration can also be confused with rabies signs and animals may be euthanized and tested unnecessarily as a result. The 10-day period is not altered should the animal be inadvertently vaccinated.

Vaccinated Animals - If the animal is a "currently vaccinated" or a "previously vaccinated" dog or cat, it may be isolated and observed at home provided: 1) the investigating officer certifies the adequacy of the isolation site; 2) the owner signs a confinement responsibility statement; and 3) there is no record of noncompliance with animal control regulations. The Rabies Program Home Confinement Agreement Form* is available in several languages under the translated materials section on the linked website. The animal owner should be informed that termination of isolation may, in extenuating circumstances, require examination of the animal by a licensed veterinarian prior to release, and that cost for the examination will be borne by the owner. It is the owner's responsibility to immediately report any unusual behavior indicative of rabies in the animal or the death of the animal during the isolation period. If possible, the victim should be encouraged to monitor and report violations of home confinement. When the animal is not isolated at home, it should be held in a county health department (CHD) approved facility at the owner's expense. CHD staff must immediately notify the exposed individual if the animal develops rabies. Police dogs and service dogs that have current rabies vaccination administered by a licensed veterinarian are exempt from the isolation and observation period (section 767.16, Florida Statutes).

Unvaccinated Animals - If the animal is unvaccinated and at moderate risk for rabies, the 10-day observation is recommended in a city or county animal shelter or at a licensed veterinary clinic having recognized isolation procedures, at the owner's expense. Any abnormal behavior or sign of rabies must be reported immediately to the investigating officer (signs of rabies in animals are included in the Rabies: Background and General Virus Information chapter). The animal may be isolated and observed at home at the discretion of the CHD or their designees if this can be accomplished safely and: 1) the investigating officer certifies the adequacy of the isolation site; 2) the owner signs a confinement responsibility statement; and 3) there is no record of noncompliance with animal control regulations (Rabies Program Home Confinement Agreement Form*). **The animal must be vaccinated against rabies at the owner's expense by a licensed veterinarian following termination of the observation period**. Unvaccinated, high-risk, domestic animals that bite a person on the face or neck should be tested rather than observed.

Termination of Observation Period - Animals can be released from the isolation and observation period status only upon approval of the CHD director/administrator or designee. The investigating officer will notify the exposed individual and the animal owner, and complete the Animal Bite Report Form.*

b. **Livestock:** When livestock (cattle, sheep, goats or pigs) other than horses are involved in a biting incident or other possible exposure of an individual to rabies, they should be evaluated on an individual basis at the discretion of the CHD director/administrator to determine the need for laboratory examination. Pot-bellied pigs occupy a unique niche within any consideration of livestock exposure. While some

meet the definition of conventional (i.e. pen-reared) livestock, others have low risk for exposure that is no different than indoor pets. For bites by these animals, careful evaluation of all the circumstances surrounding the incident should be considered against the relative risk of rabies. **Please immediately notify the Division of Disease Control and Health Protection, Bureau of Epidemiology (DCBE) if rabies is suspected in livestock (including horses) to ensure that the Florida Department of Agriculture and Consumer Services (FDACS) Animal Industry is alerted.** FDACS can assist with animal assessment and livestock confinement.

Animals exhibiting unusual behavior should be euthanized and tested for rabies. Under certain circumstances, asymptomatic biting animals can be isolated and observed for a period of 14 days at the owner's expense. Typically, rabid livestock show signs and symptoms very quickly. Therefore, confinement to their owner's premises may be appropriate in most circumstances.

If testing of livestock is necessary, FDACS Bronson Animal Disease Diagnostic Laboratory located in Kissimmee can assist with collection of the brain (for contact information go to www.freshfromflorida.com/Divisions-Offices/Animal-Industry/Consumer-Resources/Diagnostic-Laboratory-Testing-Services). The animal must be transported to the laboratory and sampling should be arranged with the FDACS laboratory prior to transport. Alternatively, a veterinarian should remove the brain for rabies testing. In counties where a veterinarian is unavailable, the rabies authority should have a staff member trained in safe decapitation procedures. If at all possible, the individual should be previously immunized and wear a mask, gown, gloves, and eye protection.

c. **Horses:** Several incidents involving horses biting humans have led to the development of the following DOH policy for isolation and observation of horses. The recommended 14-day observation period is based on current understanding of the pathology of rabies in animals and reflects standard practices of states that have large numbers of horses, including Kentucky and Maryland.

    i. If a horse that bites a human is (1) exhibiting altered behavior or (2) has no owner or (3) the owner is not interested in preserving the animal's life, the horse should be humanely destroyed and its brain submitted for laboratory examination. A valuable animal, regardless of vaccination status, may be spared by placing it under observation for 14 days from the date of the bite. If the CHD determines that the owner is unwilling or unable to comply with the requirements for placing the animal under observation, the horse should be destroyed in a humane manner and its brain submitted for rabies examination.

    ii. The horse should be confined and isolated on the owner's premises, in a stable or securely fenced pasture that is isolated from humans and other animals and that has been inspected and approved by the CHD or designee.

    iii. The horse should remain under the control of the owner or a responsible individual designated by the owner, who will stay on the premises or visit daily during the 14 days to observe the horse. During the observation period, the horse should be under the supervision of a licensed veterinarian. At the owner's expense, the veterinarian should examine the horse at least at the beginning

and at the end of the observation period and certify in writing to the CHD that the animal is free of signs of rabies upon release from observation.

1. If, at any time during the observation period, the owner or designee notices unusual behavior in the horse, the veterinarian should be notified immediately. If the veterinarian determines that the horse is showing signs of rabies, the CHD should be notified and the horse immediately destroyed and its brain submitted for rabies examination.

2. If the horse under observation is euthanized and tests positive for rabies upon examination or the CHD loses contact with the horse before the end of the observation period, the individual(s) bitten should immediately begin rabies post-exposure prophylaxis.

3. Vaccination is recommended when the horse is released from observation.

d. **Wildlife:** The time that rabies virus may be excreted in the saliva of wild carnivores (i.e., raccoons, foxes, and skunks) and bats is not known. Therefore, there is no established confinement period for these animals.

i. **Free Roaming:** The investigating officer should contact the exposed individual immediately, and if the species is appropriate for rabies risk and the location of that specific animal is known, the animal should be submitted for testing. If the animal cannot be located, the person exposed should be notified within 24 hours and informed about their risk of exposure to rabies, their options regarding post-exposure prophylaxis, and advised to consult a physician promptly. Captured animals that have bitten or exposed a human shall be disposed of immediately in a manner such that the intact brain can be submitted to a DOH BPHL location (see the DOH BPHL Rabies Test Form* and BPHL Rabies Testing Labs by County map* for the appropriate BPHL) for examination for rabies.

ii. **Personal Pets:** The DOH opposes keeping wild animals as pets. The commercial sale of high-risk species, such as raccoons, foxes, bats, skunks, or bobcats as pets should be discouraged. Although it is legal (but not recommended) to keep these types of animals if they are captive-born and the owner has the appropriate FWC permit, it is against the law to capture and adopt them from the wild. At the time of permitting, FWC will provide rabies risk information to the pet owner indicating that any bite incident will require euthanizing and testing the animal http://myfwc.com/permits/. CHDs should also notify their regional FWC Captive Wildlife Law Enforcement Investigator when people are bitten by pet wildlife or exotic animals.

In cases where a high-risk wildlife species is involved, such as bobcats, foxes, raccoons, otters, bats, or skunks, if the animal had potential exposure to rabid animals anytime during its lifetime, the recommendation is to euthanize the animal regardless of how or where the animal was obtained or its vaccination status. The CHD working with FWC Captive Wildlife Investigators and County Animal Services personnel may seize and test such animals. In cases where euthanasia is recommended, the animal can be spared in special

circumstances if the victim: 1) opts to take the anti-rabies treatment at the owner's cost; or 2) refuses treatment and signs an informed consent form stating that they understand the potential consequences of this choice and release the CHD and animal owner from responsibility in the event rabies occurs.

iii. **Wildlife in Licensed Zoos/Tourist Attractions:** Captive wild mammals such as those kept in licensed zoos or tourist attractions that bite or potentially expose a human to rabies must be evaluated individually regarding confinement or examination in accordance with the history of possible exposure to rabies and the relative risk as a species.

2. **Animal Quarantine - Animal Exposes Another Animal**

Information on this topic can also be found on the additional resources page in the document entitled Management of Animal Patients Exposed to Known or Potentially Rabid Animals; Public Health Guidelines for Florida Veterinarians.* When domestic animals are exposed to known or suspected rabid animals, the owner of the domestic animal shall be required to either: 1) euthanize the exposed animal; or 2) confine the exposed animal until the suspect animal is tested negative or the appropriate quarantine period (victim) or isolation period (if the biting animal is a domestic dog, cat, ferret, or livestock) has ended. If the suspect rabid animal is not located, the domestic animal shall be quarantined according to the provisions below based on the vaccination status of the animal victim. Wild, high-risk species (raccoon, fox, skunk, bat, and bobcat) that cannot be located for testing should be considered rabid for quarantine purposes. If the biting animal is totally unknown, but suspected to be a high-risk rabies vector, the veterinarian should counsel the owner on signs, symptoms, and incubation period of rabies. A veterinarian should be consulted if symptoms occur.

a. **Animal exposes a <u>vaccinated</u> animal**

i. **Dog, Cat, Ferret, Horse, Cow or Sheep:** Currently vaccinated animals and previously vaccinated dogs or cats exposed to a known or suspected rabid animal shall be revaccinated immediately by a licensed veterinarian and quarantined for 45 days in a place approved by the CHD director/administrator or designee (or euthanized if the pet owner elects). Refer to section A.1. above for the definition of currently and previously vaccinated. Dogs shall be leashed and muzzled when taken outdoors, or restricted by fencing from exposure to others and pets of others. Cats and ferrets must be quarantined indoors. Any illness must be evaluated by a licensed veterinarian on premise and, if considered possibly rabid, reported immediately to the rabies investigative authority.

<u>Home Quarantine</u>. An immunized dog, cat, or ferret should immediately receive a rabies booster vaccination and may then be placed under quarantine for 45 days on the owner's premises as determined by the CHD director/administrator or designee. It is the owner's responsibility to produce documentation of current rabies vaccination by a licensed veterinarian. **In the absence of proof, the animal should be considered unvaccinated. Owner-administered vaccinations are not considered valid.** The owner should be advised of the report, quarantine requirement, and procedures to be followed during quarantine. The owner should be sent a letter with a Rabies Program Home

Confinement Agreement Form* and a Rabies Fact Sheet.* If the signed agreement is not received by the agency within 72 hours, a home visit should be made.

ii. **Livestock:** Currently vaccinated livestock should receive a booster vaccination and be confined and observed for a period of 45 days.

b. **Animal exposes an <u>unvaccinated</u> animal**

i. **Unvaccinated Dog, Cat or Ferret:** Any unvaccinated dog, cat, or not currently vaccinated ferret that is exposed to a known or suspected rabid animal shall be euthanized or, if the owner desires, placed under rabies quarantine (at the owner's expense) in a place approved by the CHD director/administrator or designee with no contact with other animals and reduced contact with people. Unvaccinated dogs and cats should be quarantined for 4 months and not currently vaccinated ferrets must be quarantined for 6 months.[3] At a minimum, CHD staff or animal control officers should inspect the animal on a weekly basis for eight weeks, then monthly, unless the animal exhibits signs or symptoms of rabies. Place of quarantine may include the owner's home if facilities are approved by the CHD or designee (Rabies Program Home Confinement Agreement Form*) and owner cooperation is such that secondary exposures off the premises are unlikely. If the owner declines to euthanize an animal with no documentation of ever having received rabies vaccination, the animal should be vaccinated upon entry into quarantine or one month prior to leaving the quarantine to comply with pre-exposure vaccination recommendations. If the dog, cat, or ferret is killed or dies within the quarantine period and there is a potential for human exposure, the head must be detached from the body without mutilation, properly cooled, and forwarded to the closest DOH BPHL for rabies examination. The owner is responsible for any costs associated with the animal's quarantine.

ii. **Unvaccinated Livestock:** In all instances of livestock exposure, FDACS staff must be informed via DCBE public health veterinarians. Livestock known to have been bitten by rabid animals should be euthanized or slaughtered within seven days. If the owner is unwilling to have this done and if approved by the CHD director/administrator, the animal must be kept away from other animals and under very close observation for six months (at the owner's expense). During this time, it may not be slaughtered, no milk may be consumed or sold, no semen may be collected, and proper handling procedures must be outlined and followed to minimize potential human exposure. Multiple rabid animals in a herd or herbivore-to-herbivore rabies transmission are uncommon; therefore, restricting the rest of the herd if a single animal has been exposed or infected by rabies is usually not necessary. Unvaccinated horses exposed to a known or suspect rabid animal out of state must complete the 180-day quarantine prior to re-entering Florida.

[3] Compendium of Animal Rabies Prevention and Control, 2016. J Am Vet Med Assoc. 2016 Mar 1;248(5):505-17. Web link: http://nasphv.org/Documents/NASPHVRabiesCompendium.pdf

The following are recommendations to livestock owners and carcass processors:

1. If slaughtered within seven days of being bitten and providing that the exposed area inclusive of musculature and other tissues is disposed of, remaining meat may be eaten without risk of infection. USDA Food Safety and Inspection Services (FSIS) meat inspectors may reject for slaughter any animal that has been exposed to rabies within the past eight months and should be consulted to determine whether animals slaughtered within seven days of being exposed to a rabid animal, or following six months of observation are acceptable for slaughter. Euthanized animals not acceptable for slaughter should be buried or incinerated at the direction of the FDACS and Department of Environmental Protection. Persons who slaughter, skin, or otherwise process suspect rabid animals should use appropriate barrier protection and work with care to prevent possible exposure to the bite wound areas.

2. No tissues or secretions from a clinically rabid animal should be used for human or animal consumption. If consumption of rabid animals occurred, the CHD should be notified. However, because pasteurization temperatures will inactivate rabies virus, inadvertently drinking pasteurized milk or eating completely cooked meat does not constitute a rabies exposure.

iii. **Wild Animals**: Any wild mammal species bitten by a known rabid animal should be euthanized, if capture is possible. In the case of zoos or controlled attractions, the rabies authority may permit certain endangered animal(s) to be quarantined for a period of six months in a manner and place approved by the rabies authority at the owner's expense in lieu of euthanasia. In all instances, the FWC will be informed about the circumstances of the disposition and their assistance requested if necessary. See section E.4.b for information regarding safe capture of live bats.

3. **Rabies Alert/Area Quarantine**

During outbreak situations, CHDs may issue a rabies alert or, in unusual circumstances, an area quarantine to decrease human exposure to rabid animals, increase pet vaccination rates, and restrict the movement of animals. Please refer to the Rabies: Epidemic Control Measures chapter for detailed information.

## C. Confidentiality

Information contained in a notifiable disease report made from a health care provider to the DOH is confidential per section 381.0031, Florida Statues; however, the information can be released to animal control officers and other agencies when necessary for public health. The statute limits both the type of information shared and the number of people in receipt of the records. Confidential information should only be given to persons who need it to complete the public health response. For example, to ensure that the animal bite is investigated appropriately the identity of the victim may have to be released to animal control officers when the victim is needed to identify the biting animal. If the animal can be classified as a dangerous dog (section 767.11, Florida Statute), it may

also be necessary to share details about the attack such as wound site and the severity of the injury.

### D. Animal Post-Exposure Prophylaxis

Findings from a study conducted by Hanlon et al[4] suggested that five doses of canine rabies vaccine administered to dogs on days 0, 3, 14, 21 and 35 along with murine anti-rabies antibody on day 0 may be effective in protecting a previously unvaccinated animal exposed to rabies. Dogs that received only rabies vaccine following rabies challenge all died. Unfortunately, murine anti-rabies antibody is not routinely available, making this protocol impractical at this time. In a different study, Texas Department of State Health Services reported that all 1,014 unvaccinated animals including dogs, cats, horses, cattle, sheep and a llama that were suspected or known to have been exposed to rabies and which received a Texas-approved rabies PEP treatment survived. The protocol required rabies vaccination immediately following exposure with booster doses at 3 and 8 weeks.[5] Any attempt at using experimental rabies PEP protocols in animals does not preclude the need for a four-month quarantine.

### E. Laboratory Testing, Billing, and Sample Submittal Policies and Procedures

1. General Public Health Testing and Billing Policy:
   The following information is provided to clarify the criteria used by the DOH BPHL to test and charge fees for rabies examinations. Due to the large volume of testing from animal exposures that pose a true risk of rabies, DOH is unable to provide rabies testing of animals that pose no risk to an individual or the public at large. **Consultation with the local CHD is required prior to submission of specimens for rabies testing.** An accurate description of the type of exposure including the signs and symptoms of the animal is required. **Specimens received omitting the type of exposure will not be tested until that information is obtained.**

   **The DOH BPHL testing and billing policies are as follows:**

   a. **High-priority situations**: DOH BPHL will process specimens from suspected rabid animals using Direct Fluorescent Antibody (DFA) test for rabies procedures within a 24 hour (Monday - Friday) or 48 hour (Saturday - Sunday) turn-around time. There will be no charge for this testing. Weekend testing will be done for high-priority situations. Emergency testing service is also available in special situations with specimens arriving by 9:00 a.m. and reported out by 5:00 p.m. The time from exposure to testing will be taken into consideration for weekend testing. In addition to the DOH BPHL Rabies Test Form*, an Animal Bite Report Form* must be submitted along with the specimen. **Specimens received omitting the type of exposure will not be tested until that information is obtained.**

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[4]Hanlon CA, Niezgoda M, Rupprecht CE. Post-exposure prophylaxis for prevention of rabies in dogs. Am J Vet Res 2002; 63:1096-110. web link to abstract: http://www.ncbi.nlm.nih.gov/pubmed?term=Hanlon%20Post-exposure%20prophylaxis%20for%20prevention%20of%20rabies%20in%20dogs

[5]Wilson PJ, Oertli EH, Hunt PR. Evaluation of a postexposure rabies prophylaxis protocol for domestic animals I Texas: 2000-2009; 237:1395-1401. web link to abstract: http://www.ncbi.nlm.nih.gov/pubmed?term=.%20Evaluation%20of%20a%20postexposure%20rabies%20prophylaxis%20protocol%20for%20domestic%20animals%20I%20Texas%3A%202000-2009

i. A bite to a **human** from a wild or stray rabies vector. This includes animals at high or moderate risk for acquiring rabies, e.g., foxes, raccoons, skunks, otters, bats, stray cats, and stray dogs.

ii. Bats that are found in the same room with an unattended **child or someone** who was sleeping, or other situations with a reasonably high probability of contact, with or without proof of exposure.

iii. A bite to a **human** from a stray or domestic animal (including pets and livestock) that exhibits neurological signs, regardless of vaccination status.

iv. Domestic animals involved in a **human** exposure that die during the observation period.

b. Moderate-priority risk situations; turn-around time of 72 hours or less. Submission requirements as for high priority situations.

i. A bite to a domestic animal (including pets and livestock) from wild or stray rabies vectors.

ii. A bite to a domestic animal (including pets and livestock) from a domestic animal with neurological signs. The neurological signs need to be validated by a veterinarian, animal control officer or CHD employee.

iii. A scratch to a person from wild or stray rabies vectors or from a domestic animal with neurological signs.

iv. Exposures (including bites) to humans involving **unprovoked** bites from rabbits, opossums, and small rodents. Such situations are extremely rare. These cases must be approved for testing by DCBE.

c. **All animals that are tested and do not meet the criteria above (sections a or b) will be subject to an $80 testing fee by the DOH BPHL unless written (including email) approval is obtained from DOH DCBE**. Examples of testing that will be subject to the testing fee include:

i. Domestic animals or livestock involved in a human or pet exposure, which are euthanized because of owner's surrender during the 10- or 14-day observation period.

ii. Domestic animals or livestock involved in a human or pet exposure that die or are euthanized due to an unrelated illness during the 10- or 14-day observation period.

d. In situations where it was determined by CHD or DCBE staff that an exposure did not occur, but testing is desired for surveillance purposes, fee-based testing is available through FDACS Animal Disease Diagnostic Laboratory (BADDL). Information and submittal forms are available at: www.fdacs.gov/Consumer-Resources/Animals/Bronson-Animal-Disease-Diagnostic-Laboratory-BADDL. Required to submit:

i. Consent from the CHD to ensure exposure assessment has been done.

ii. KSU submission form should also include CHD contact name, phone and fax number.

iii. All positive test results should be reported to the CHD.

iv. Samples must be submitted through a veterinarian.

v. Samples should be packaged as described in section E4.

vi. Submitter is responsible for all costs of sample collection, shipping, testing, etc.

FDACS BADDL shipping and contact information:

Bronson Animal Disease Diagnostic Laboratory
2700 N. John Young Pkwy.
Kissimmee, FL 34741-1266
Website: www.fdacs.gov/Consumer-Resources/Animals/Bronson-Animal-Disease-Diagnostic-Laboratory-BADDL
Main Phone: (321) 697-1400
Fax: (321) 697-1467

2. Policies related to FDACS Bronson Animal Disease Diagnostic Laboratory (BADDL):
BADDL has offered assistance removing brains from large animals if county health departments call ahead and arrangements can be made for the animals to be transported to the BADDL). Please call prior to shipping: Kissimmee (321) 697-1400. In addition, some veterinarians and other entities occasionally submit samples to the FDACS animal disease diagnostic laboratories for rabies testing without realizing their CHD should be consulted first. Samples submitted through the state veterinary laboratories are generally tested at BPHL-Tampa. Rabies policies related to the FDACS animal diagnostic laboratories are as follows:

   a. BADDL staff will contact and direct any client who submits an animal for rabies testing to their local CHD before shipping the specimen to the DOH BPHL-Tampa for testing. The sample will be held refrigerated at BADDL until the CHD (or the County Animal Services group) provides a bite/exposure form to BADDL to be submitted to DOH BPHL-Tampa with the specimen.

   b. DOH BPHL-Tampa will provide rabies testing for livestock samples being screened for West Nile virus (WNV) infection, Eastern equine encephalitis (EEE), or bovine spongiform encephalopathy (BSE) free of charge for BADDL to enhance safety of BADDL staff.

   c. BADDL will provide rabies sample collection from large animals (horses, cattle, etc.) by request of the submitting CHD.

   d. DOH BPHL-Tampa will bill the submitter of the rabies sample, rather than BADDL. The Animal Bite Report Form* will contain information needed for billing purposes.

3. Sample Collection and Testing Procedure

Rapid submission of specimens for laboratory analysis: With the predominance of high temperature and high humidity in Florida, many specimens are lost to test due to delays in submission. In all instances where the circumstances of the biting incident or the behavior of the biting animal indicate the probability of rabies infection, the animal bite investigator should make provisions for the humane euthanasia of the animal and proper shipment of the appropriate specimen to the **nearest** DOH laboratory for examination (DOH BPHL Rabies Test Form* and BPHL Rabies Testing Labs by County map*). The CHD can enlist the assistance of an appropriate, qualified, pre-vaccinated person to decapitate suspect animals. The FDACS BADDL can assist the counties with large animal brain removal. Please call prior to shipping to Kissimmee (321) 697-1400.

a. **The submitter must call the respective DOH BPHL prior to submitting specimens for rabies testing (DOH BPHL Rabies Test Form* and BPHL Rabies Testing Labs by County map*).**

b. **Do not shoot animals in the head or damage or destroy the head or brain of animals that may have bitten or exposed a person.**

c. **Do not dispose of animals that may have bitten or exposed a person until a rabies assessment is made.**

d. **Animal victims euthanized immediately after a rabid animal exposure should not be submitted for rabies examination.**

e. Examination of brain tissue is necessary to diagnose cases of animal rabies and enable proper medical treatment of persons exposed. Currently, there are no conclusive antemortem diagnostics available.

f. The current standard for confirmation of animal rabies is the DFA test (www.cdc.gov/rabies/diagnosis/direct_fluorescent_antibody.html). Smears from the brain stem and cerebellum are air dried, fixed in acetone (>1 hour or overnight), stained, washed, dried and read with a fluorescent microscope. The DOH BPHL will report results as positive or negative. Unsatisfactory specimens (e.g., due to cellular degradation or insufficient material -- such as lack of brainstem) will be reported as unsatisfactory. Sections from both sides of the brain stem are required for livestock testing.

g. An unsatisfactory laboratory result should be treated as if the animal were positive.

h. Currently, there are no USDA-licensed rapid test kits available for rabies diagnosis. Unlicensed tests should not be used due to several concerns: the sensitivity/specificity 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 test result would need to be confirmed by more reliable methods such as DFA testing on brain tissue, and the interpretation of results may place exposed animals and persons at risk. In addition**,** FDACS Division of Animal Industry has not approved licensing needed for sale of any type of rapid kit in Florida, and requests that any such unauthorized sales be reported to the State Veterinarian at 850-410-0900.

4. Instructions for Preparing, Packing, and Shipping Specimens for Rabies Examination

a. Animals should be euthanized consistent with the "American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals (2013 edition)" (www.avma.org/KB/Policies/Documents/euthanasia.pdf ). Humane euthanasia methods recommended for bats produced by the Michigan Rabies Working Group may be found at: www.michigan.gov/documents/emergingdiseases/Humane_Euthanasia_of_Bats-Final_244979_7.pdf

b. Live bats: If there is a possibility that a person or pet has had contact with a bat, capture the bat, carefully avoiding direct contact with it and without damaging its head. To capture the bat, close windows, the room and closet doors, turn on dim light if the room is dark, and wait for the bat to land. While wearing gloves, 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. Immediately contact your local animal control to assist in arranging for testing.

c. The respective DOH BPHL must be called in advance of specimen shipment and provided with the waybill number and the expected hour of arrival of the specimen. If the specimen is **shipped on a Friday, mark the area for Saturday delivery** on the shipping label and provide weekend contact information.

d. **Specimen:** Staff assigned to decapitate animals should have received rabies pre-exposure prophylaxis and be trained to use universal precautions. To ensure an adequate specimen, the CHD or designee must send:

    i. The whole body of bats (to identify the species). Counties may send the whole body of small rodents or any animal no larger than a squirrel.

    ii. Only the head of dogs, cats, ferrets, raccoons, skunks, rabbits, and similarly sized animals. **The skin should not be removed from the head or the head mutilated in any way.**

    iii. Only the brain and brainstem of large animals or animals with horns (cows, horses, pigs over 50 pounds, goats, etc.). The brain should be removed from the cranial vault by a veterinarian or other experienced persons who can protect themselves from tissue and aerosol exposure. The FDACS Animal Diagnostic Laboratory can provide brain sample collection from livestock transported to their facilities.

    iv. Specimens may be submitted in instances where the animal was buried, or where trauma occurred to the animal's head; however, the validity of the test may be compromised.

e. **Safe handling of rabies specimens**

    i. Rubber gloves (two pairs of disposable gloves or stainless steel mesh gloves) and protective clothing, as well as face and eye protection should be worn while the head is being removed and packaged. Pre-exposure rabies vaccination is recommended.

ii. Sever the head between the foramen magnum and the atlas. Local veterinarians can assist in this removal. **Do not use mechanized saws.**

iii. Allow fluids and blood to drain from the head. Keep as clean as possible and place the head in a double plastic bag for transport to the laboratory.

iv. Cutting surfaces and instruments should be thoroughly cleaned with detergent and water and disinfected. Gloves should also be cleaned and disinfected or discarded following use.

f. **Specimen Storage:** Until the specimen is ready to be packaged and shipped to the laboratory, it should be refrigerated and only frozen where no alternative method is available for cold storage. Without refrigeration, the brain deteriorates very rapidly and frozen specimens must be allowed to thaw before examination, thus causing delayed test results. Frozen tissues can be tested using the DFA test regardless of the length of time stored in this manner. When submitting a whole body or intact head, spray specimens with a flea and tick killer prior to packaging and submission to the laboratory.

g. **Packaging:** Specimens must be placed in two heavy plastic bags and packed in a watertight container. This inner container should be placed in a larger leak-proof outer container (Styrofoam) and the space between packed with freeze packs, cold cans, etc. Dry ice should not be used since freezing may occur. Each shipping container shall not contain more than one animal head of moderate to large size. For small mammals such as bats, more than one specimen may be enclosed in the container, but each animal specimen must be double-sealed with tape inside a zip-lock plastic bag and clearly identified as to its distinct character, species, and exposed individual or animal. These instructions are also on the back of the Rabies Test Form DOH Form 959 (DOH BPHL Rabies Test Form*). **Under no conditions should an animal head be placed in a mixed shipment with human clinical specimens or potable and environmental water samples**.

h. **Forms Required:** An Animal Bite Report Form* must be completed and entered into Merlin. The hard copy, along with the Rabies Test Form DOH 959 (DOH BPHL Rabies Test Form*), should be placed in a zip-lock bag and attached securely to the plastic-wrapped animal specimen in the shipping container.

i. To ensure rapid turnaround of all results, please enter the animal case information into Merlin.

ii. The laboratory reports out positive and negative results in Merlin daily.

i. **Shipping:** The CHD is responsible for ensuring that specimens associated with human and animal rabies exposure are appropriately submitted to the laboratory.

i. Specimens submitted for rabies testing are considered diagnostic specimens. A 2” x 2” UN3373 Biological Substance Category B label should be placed on the outside of the box (can be hand-drawn).




ii. Courier service (e.g. FedEx) is the best method for workday and emergency delivery to ensure minimum delay in transport. **DO NOT use a bus service.**

j. **Emergencies:** DOH BPHL will, upon request, perform emergency examinations on weekends. Generally, an emergency is one in which there is an unprovoked bite by a high-risk animal, a feral domestic animal, or unvaccinated dog or cat that is showing signs of rabies. If special circumstances warrant such emergency examination, the CHD director/administrator should call first. For after-hours and weekend rabies emergencies, contact the respective DOH BPHL (DOH BPHL Rabies Test Form* and BPHL Rabies Testing Labs by County map*).

5. Reporting:
The DOH BPHL will telephone all positive results and unsatisfactory specimens to the number given on the DOH BPHL Rabies Test Form* or Merlin Form. The DOH BPHL will mail hard copies of all results to the appropriate CHD and submit the positive results via Merlin to the DOH Bureau of Epidemiology by the next business day. Entry of positive domestic animal results in Merlin will generate an automatic alert sent to DCBE personnel, who will forward reports and notifications to the FDACS Division of Animal Industry upon receipt. Parties interested in learning results may call the laboratory as arranged during the pre-submission telephone call.

6. **See the DOH BPHL Rabies Test Form* for a listing of laboratories and BPHL contact information.**

## F. Additional Resources*

Additional rabies guidance, information, and resource documents can be found at the following website: www.floridahealth.gov/diseases-and-conditions/rabies/professionals.html