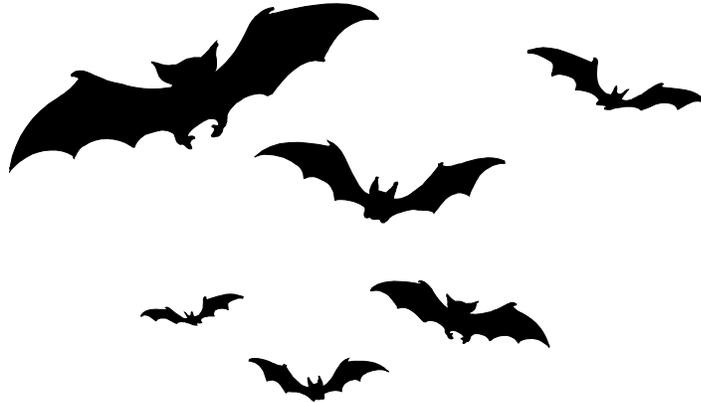


**Idaho Rabies Protocol**  
**Human and Animal Rabies**  
**Prevention and Control**



This document is a consensus agreement between representatives of the Idaho Department of Health and Welfare (IDHW), Idaho Public Health Districts (PHDs), the Idaho State Department of Agriculture (ISDA), the Idaho Department of Fish and Game (IDFG), and private veterinary practice.

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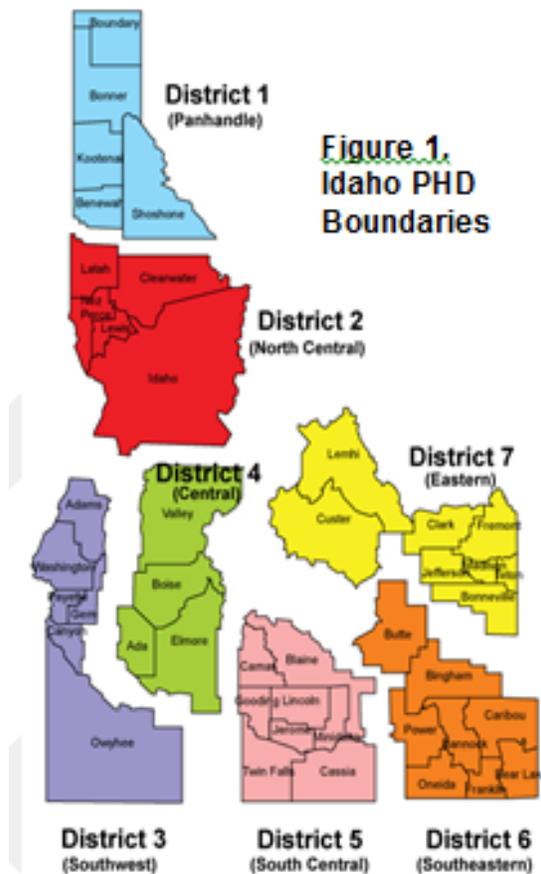
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# 1. INTENT AND DISCLAIMER

The intent of this document is to provide rabies management guidance for the most common rabies exposure scenarios encountered in Idaho. The intended user is someone who, through their occupation, might be in a position to assist a person or animal exposed to a suspected or confirmed rabid animal. The guidance document was designed to heighten awareness of the science and epidemiology of rabies, and guide the user through management decisions, sample collection, laboratory testing, and reporting in Idaho. Although every effort was made to cover the management of common scenarios, this document is not meant to be all inclusive.



## 2. INTRODUCTION

Rabies is a deadly neurologic disease of humans and other mammals, caused by the rabies virus. Because rabies prevention and control is of both public health and veterinary importance, it cannot be adequately addressed without establishing and maintaining One Health partnerships and procedures across disciplines. In Idaho, rabies prevention and control partners include the Idaho Department of Health and Welfare (IDHW), Idaho State Department of Agriculture (ISDA), Idaho Department of Fish and Game (IDFG), and Public Health Districts (PHD). Community partners include medical and veterinary professionals, animal control, law enforcement, humane societies, animal shelters, and other animal rescue organizations. The Idaho Rabies Protocol was developed by past and present Rabies Protocol Working Group members who represent rabies prevention stakeholders. This 2016 revised document is based on the latest published scientific information. The use of national resource material helps standardize procedures across jurisdictions, contributing to an effective national rabies control program. State and local (PHD) public health officials are available to healthcare providers and veterinarians for consultation regarding rabies-specific topics. These topics include exposure management of humans and animals, testing recommendations, and all aspects of rabies pre- and post-exposure prophylaxis. Inquiries regarding livestock, in the absence of human exposures, are referred to ISDA. Inquiries regarding wildlife, in the absence of human exposures, are referred to IDFG.

Questions regarding rabies or the use of this protocol may be directed to the following:

State Government Agencies	
IDHW, BCDP Epidemiology Program	(208) 334-5939
ISDA, Division of Animal Industries	(208) 332-8540
IDFG, Wildlife Health Laboratory	(208) 454-7646
PHD Epidemiologists (Figure 1):	
• Panhandle Health District (PHD1)	(208) 415-5100
• North Central Health District (PHD2)	(208) 799-3100
• Southwest District Health (PHD3)	(208) 455-5300
• Central District Health Department (PHD4)	(208) 375-5211
• South Central Public Health (PHD5)	(208) 734-5900
• Southeastern Idaho Public Health (PHD6)	(208) 233-9080
• Eastern Idaho Public Health District (PHD7)	(208) 522-0310
After hours:	
Idaho State Communications, an epidemiologist can be paged for assistance	(800) 632-8000

### 3. RABIES BIOLOGY

- a) The rabies virus is part of the Rhabdoviridae family of RNA viruses.
- b) The virus attacks the nervous system. Once the rabies virus is introduced into the body through a bite wound or other point of entry, such as a mucous membrane, the virus travels up the closest peripheral nerve (such as nerves in the arms or legs), entering the central nervous system, and infecting the brain.
- c) The incubation period, which is the time from exposure to the virus to onset of illness, is typically 3–12 weeks in domestic animals; ranging from days to months. In humans, the incubation period is typically 1–3 months, but can range from <1 week to years.
- d) Once the virus attacks the brain, it travels to the salivary glands where it is excreted in the saliva. The greatest risk for rabies transmission comes from virus found in the saliva.
- e) Rabies is virtually 100% fatal in animals and people who do not receive rabies post-exposure prophylaxis (rPEP) in a timely manner.
- f) To learn more about the biology of rabies, go to the CDC rabies website <http://www.cdc.gov/rabies/transmission/body.html>

### 4. ROUTES OF TRANSMISSION

Rabies virus can be acquired from bite and non-bite exposures. Rabies is transmitted when the virus, found in saliva or other potentially infectious materials such as nervous tissue (brain or spinal cord), is introduced into bite wounds, open cuts or skin abrasions, or onto mucous membranes.<sup>1</sup>

#### a) **Bite Exposures:**

Any penetration of the skin by teeth constitutes a bite exposure.<sup>1</sup> All mammal bites represent a potential risk for rabies virus exposure and warrant an investigation to consider the use of rPEP (see section RABIES PREVENTION). It is critical to document the type of animal that caused the bite, if known; the animal's vaccination status (if a domestic animal); the anatomic site of the bite (*i.e.* foot, hand, head); and the severity of the wound(s). Bat bites, although tiny, must be taken seriously, as bats represent the primary rabies reservoir in Idaho. Unlike bites from larger animals, the minimal trauma of a bat bite is not likely to warrant medical attention and persons may not fully comprehend the serious health risks associated with a seemingly insignificant wound from a bat bite. Persons may be exposed to a bat while sleeping and not realize an encounter has occurred. Awakening to the presence of a bat should warrant an investigation by a PHD epidemiologist and a visit to a healthcare provider for advice on the use of rPEP. Unless the potential for rabies exposure is known to the patient, medical management may not be sought in a

timely manner, and a fatal outcome could ensue. Almost all human cases of rabies acquired in the United States are now associated with a bat strain of rabies virus.

**b) Non-bite Exposures:**

Reports of rabies transmission by the non-bite route exist, although they are uncommon. Saliva or neural tissue from an animal could come into contact with an open wound, abrasion, scratch, or mucous membrane leading to infection. Rare non-bite exposures have come from organ and tissue transplantation, laboratory exposures, and airborne exposure in bat caves.<sup>1</sup> Non-bite exposures should also be evaluated for rPEP administration.

## 5. HUMAN RABIES

**a) The Disease:**

According to the Centers for Disease Control and Prevention (CDC), and the Advisory Committee on Immunization Practices (ACIP), rabies causes the highest case-fatality rate in the world of any communicable disease.<sup>1</sup> Once the rabies virus is introduced into the body, it travels up the peripheral nerves to the brain (see section RABIES BIOLOGY). Typically, the incubation period is of shorter duration the closer the exposure is to the head. The first symptoms of rabies in humans are vague and may include general weakness, fever, or headache; there can also be some discomfort or a prickling or itching sensation at the site of the bite (if there was one). These symptoms can last for days, but will progress to more serious manifestations including anxiety, confusion, agitation, delirium, abnormal behavior, hallucinations, and insomnia. Two clinical types have been described; furious and paralytic (dumb). People with furious rabies are hyperactive, excitable, and die by cardio-respiratory arrest, while those with the paralytic form suffer a more prolonged course including paralysis, coma, and death.<sup>2</sup> The acute period of disease in people typically ends in death after 2 to 10 days. According to CDC, once a person begins to exhibit signs of rabies, survival is exceedingly rare.<sup>2</sup> Bite prevention and early use of rPEP (see section RABIES PREVENTION) when warranted is the key to survival.<sup>1,4</sup>

**b) Surveillance:**

Between 2003 and 2015 (October), 37 (34 fatal and 3 non-fatal) human cases of rabies were reported in the United States.<sup>2</sup> Virus variants were documented for 34/37 (92%) cases including the following: eighteen (53%) bat variant; 8 (24%) dog variant, all acquired while out of country; 3 (8.8%) raccoon variant; 1 (3%) fox variant; and 3 (8.8%) unknown variants. Transplantation-associated rabies was documented in 4/18 (22%) bat variant cases and 1/3 (33%) raccoon variant cases receiving tissues from donors who died from the specific variants in question.<sup>5,6,7</sup> The last human case of rabies in Idaho was reported in 1979 in a recipient of a contaminated cornea.<sup>5</sup> Although survival is exceedingly rare, three non-fatal cases were reported during this time frame; two had bat variant infections and the third was infected with an unknown virus variant. It is believed that partial completion of the vaccination series and other complex factors may have played a role in their

survival.<sup>8,9,10,11</sup> In 2004 an experimental medical protocol was employed, known as the Milwaukee Protocol, which was credited with saving the life of one of the clinically affected individuals.<sup>8,9,10</sup> Since that time, a registry of individuals who were given the Milwaukee Protocol has been established, but the success rate has been poor (<http://www.chw.org/display/PPF/DocID/33223/router.asp>). Individuals should not rely on the Milwaukee Protocol after a potential rabies exposure to save their lives; timely use and completion of rPEP is critical to survival. The survival of the second case (Texas in 2009), was considered an abortive rabies infection, also associated with a bat variant.<sup>10</sup> Not much is known about abortive rabies infections, but interest is growing in this area. The variant was never determined for the third surviving case from California in 2011, but a bat or cat was suspected to be the source.<sup>11</sup>

## 6. ANIMAL RABIES

### a) The Disease:

The rabies virus can attack any part of the animal brain, leading to a variety of behavioral changes, depending on the affected site. Signs of rabies in animals can include daytime activity in animals normally active at night, staggering, weakness, paralysis, seizures, a change in the sound of the animal's voice, inability or reluctance to eat or drink, convulsions, and excessive salivation or frothing at the mouth (see section INFORMATION FOR VETERINARIANS).<sup>2</sup> Rabies is 100% fatal in animals. There are two common clinical presentations of rabies in animals.

- i. *"Dumb" rabies*: An animal might become unusually approachable, losing all caution for natural enemies, and may appear sluggish, confused, and depressed. With the dumb form the animal can appear more listless than usual, unusually shy, salivate excessively, or appear to be choking.
- ii. *"Furious" rabies*: An animal might lose all caution for natural enemies; becoming excitable, irritable, and aggressive. At times, they might seem confused and calm, then attack suddenly when approached or without apparent provocation.

### b) Geographic distribution:

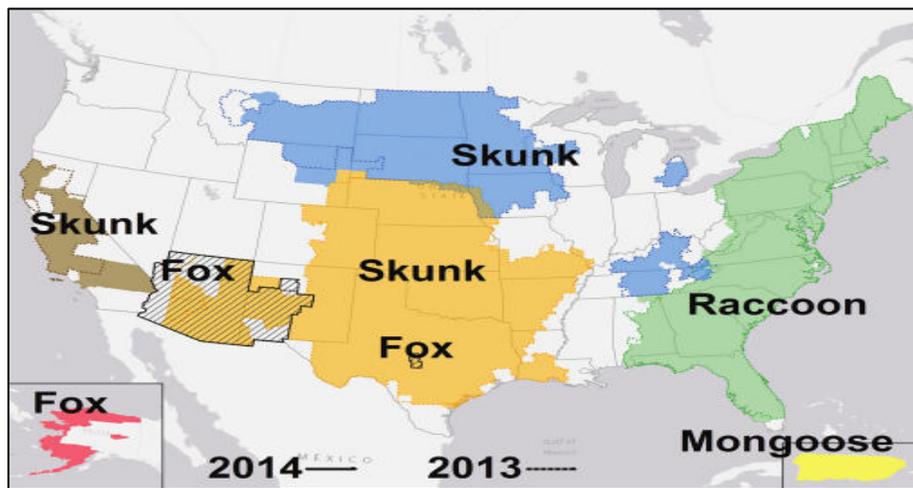
Rabies is a worldwide problem, particularly in countries such as Africa and Asia where rabies prevention efforts are not widely practiced.<sup>2</sup> (see section RABIES PREVENTION). In the United States, active vaccination campaigns for dogs, cats, ferrets, horses, and certain farm animal species have successfully reduced the geographic distribution of rabies in domestic animals. Oral rabies vaccine programs (bait-based vaccines) have had some success in reducing wildlife reservoirs of rabies in specific geographic areas.<sup>3</sup> Hawaii, because it is an island, has reported no rabid animals to date. Most rabies exposures in the continental United States are linked to infected wildlife, although there is still some risk associated with unvaccinated and feral domestic animals.

Genetically distinct variants of the rabies virus exist across the United States (*e.g.*, bat: silver-haired, bat: free-tailed, fox: artic, fox: gray, fox: red, etc.). The distribution of terrestrial rabies virus variants, which include all rabies variants except those associated with bats, varies by region and is shown in Figure 2.<sup>2</sup> The distribution of rabid bats in the United States during 2014 is shown in Figure 3.<sup>2</sup> Although virus variants are most often associated with certain reservoir animal species, viruses can cross, or spillover, into other mammalian species, including humans.<sup>2</sup> Many examples exist, however, a noteworthy spillover of one species variant into another species was demonstrated in Flagstaff Arizona during a 2001 epizootic (animal outbreak) of rabies in skunks. The skunks were diagnosed with a bat variant of rabies virus.<sup>12</sup>

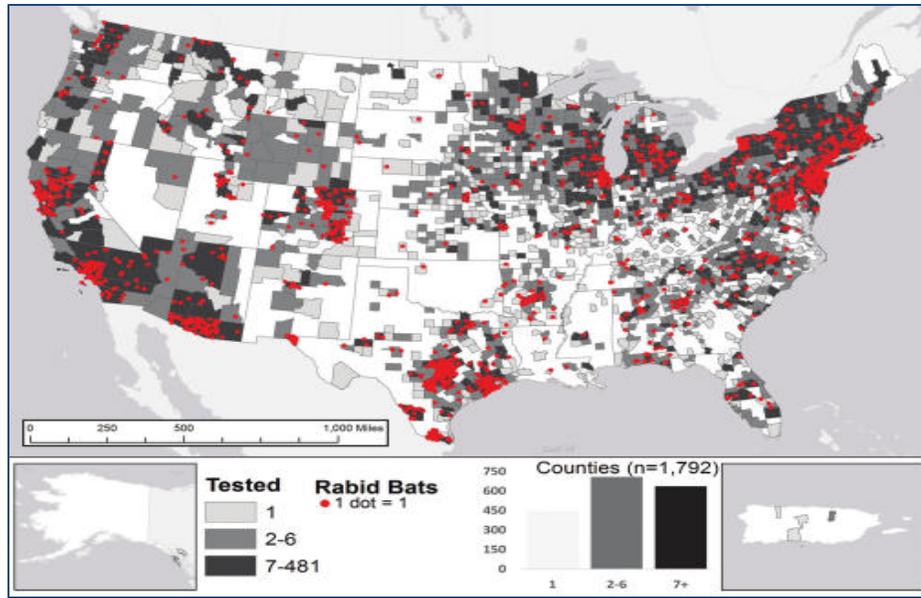
CDC formally declared canine rabies virus variants eliminated in the United States on September 7, 2007.<sup>2</sup> This declaration was supported by results of national animal rabies surveillance efforts.

"The elimination of canine rabies in the United States represents one of the major public health success stories in the last 50 years," stated Dr. Charles Rupprecht, Chief of the CDC Rabies Program at the time. "The elimination of dog-to-dog transmission of rabies does not mean that people in the U.S. can stop vaccinating their pets against rabies," warns Rupprecht. "Rabies is ever-present in wildlife and can be transmitted to dogs or other pets. We need to stay vigilant." Aggressive canine vaccination programs should remain intact because canine rabies can return to the United States through migration up from Mexico or importation of rabid animals at any time."

[http://www.cdc.gov/media/pressrel/2007/r070907.htm?s\\_cid=mediarel\\_r070907](http://www.cdc.gov/media/pressrel/2007/r070907.htm?s_cid=mediarel_r070907)



**Figure 2.** Map of terrestrial rabies reservoirs in the United States during 2014.  
[http://www.cdc.gov/rabies/location/usa/surveillance/wild\\_animals.html](http://www.cdc.gov/rabies/location/usa/surveillance/wild_animals.html)



**Figure 3.** Rabid bats reported in the United States, 2014.  
<http://avmajournals.avma.org/doi/pdfplus/10.2460/javma.248.7.777>

**c) Transmission between animals:**

Animals can get rabies from other animals, and then can potentially pass the virus on to people. Rabies can spread within wild animal populations and readily move from wildlife to domestic animals, particularly those that are unvaccinated. The virus can take hold in a new geographic area by many mechanisms including viral adaptation to new animal species, by introduction through natural migration, and intentional importation of potentially infected rabies-susceptible species (*e.g.*, raccoons, skunks, and foxes). An unvaccinated pet population can increase the likelihood of local spread.

**d) Ten day observation period:**

Dogs, cats, and ferrets are held in confinement for 10 days after biting someone to determine if they will develop clinical signs of rabies. This holds true whether the animal is currently vaccinated against rabies or not. The rabies virus is present in saliva of infected animals only for a few days before they appear ill and throughout the duration of their illness, until death. Dogs, cats, and ferrets usually develop clinical signs of rabies and die within 7–10 days of onset of illness. This time frame is known with some certainty for these species, and is the basis for the 10-day observation period. The incubation periods and virus shedding patterns are less well understood for other animal species. Wild animals (including bats) are not held for a 10 day observation period, like dogs, cats, and ferrets; it is preferable to euthanize these other species humanely<sup>13</sup> and test them for rabies if a plausible exposure occurs (see 10 DAY OBSERVATION definition, see section LABORATORY SUBMISSIONS).

**e) Vaccination:**

The recommended vaccination schedules and the USDA licensed animal vaccines are listed in the latest Rabies Compendium.<sup>3</sup> Inadequate vaccination coverage of domestic animals can play a key role in rabies maintenance in a community. Keeping dogs, cats, and ferrets current on their rabies vaccination (see section RABIES PREVENTION) and managing stray pet populations (vaccination campaigns) makes good sense for a successful rabies control program.<sup>3</sup> Tough decisions regarding extended quarantine or euthanasia of pets that are exposed to rabies could be avoided if all dogs, cats, and ferrets remained current on their rabies vaccinations. Pets who are past-due for their rabies vaccinations, with proof of prior vaccination adequate for the age and species, would be considered current on their vaccination schedules once boosted, regardless of the delay.<sup>3</sup> Vaccines are also recommended for horses, cattle, and sheep; particularly those animals with frequent public exposure, such as those in petting zoos, fairs, and other public exhibitions.<sup>3,14</sup> Rabies vaccination for cats, dogs, and ferrets, although not mandated statewide in Idaho, may be required by local ordinance. Rabies ordinances vary by locale and the appropriate city clerk should be contacted to learn more about local rabies vaccination requirements. (see section LEGAL, OTHER).

**7. ANIMAL RABIES: BATS**

Bats are considered a significant wildlife reservoir for rabies virus across the United States (Figure 3); including Idaho. Not all bats carry rabies; however, direct contact with a bat should be avoided. In a typical year, approximately 10% of bats submitted to the Idaho Bureau of Laboratories (IBL) are found to be rabid. The bats that are tested by IBL are a subset of the larger bat population; they potentially exposed a person or animal to rabies, and are generally easier to catch for testing because of some illness, injury or location inside a dwelling. The prevalence of rabies in the bat population at-large, although unknown, is probably significantly less than 10%.

**a) Bat exposures:**

Human and animal exposures to bats must be taken seriously. According to CDC, bats cause the most domestically-acquired human rabies cases in the United States.<sup>1,2</sup> Transmission of rabies virus can occur from minor, seemingly insignificant, or unapparent bat bites. The limited injury inflicted by a bat bite, in contrast to wounds caused by larger carnivores, and an often inaccurate recollection of the exact exposure history, can limit the ability of a health care provider to determine the risk of rabies resulting from an encounter with a bat.

The use of rPEP may be appropriate for some situations, even in the absence of an obvious bite, scratch, or mucous membrane exposure from a bat.<sup>1,2</sup> Situations in which there is reasonable probability that a bat exposure occurred include the following:

- a sleeping individual awoke to find a bat in the room; or,

- an adult witnessed a bat in the room with a previously unattended child, mentally challenged person, or intoxicated individual.

The likely effectiveness of rPEP in these settings needs to be balanced against the risk such exposures appear to present.<sup>1</sup>

In all instances of potential human or animal exposure involving bats, the bat in question should be safely collected without touching the bat with bare hands or damaging the animals head. Appropriate samples should be submitted to IBL for rabies testing (see section [LABORATORY SUBMISSIONS](#)). Use of rPEP is appropriate for all persons with a bat bite, scratch, or mucous membrane exposure to bat saliva, unless the bat is available for testing and tests negative for the rabies virus as described in [PROTOCOL C](#). Animals exposed to a bat should be managed as described in [PROTOCOL E](#).

- b) Bats should be appropriately excluded from structures. To learn more, see Appendix C: BAT EXCLUSION definition.
- c) To learn more about bats, see Appendix C: BATS definition.

## 8. RABIES PREVENTION

### a) General prevention measures:

Without early medical attention after an exposure, rabies is, with rare exception, fatal.<sup>1,2</sup> All persons bitten or otherwise exposed to a suspected or confirmed rabid animal should be referred to a health care provider for evaluation. It is the responsibility of the health care provider and patient to make decisions regarding the necessity for rPEP, in consultation with a state BCDP or local PHD epidemiologist. The public health official will provide information on the epidemiology of rabies in Idaho to assist the health care provider in making an informed decision about rPEP usage. According to the Rabies Compendium<sup>3</sup> and the ACIP Human Rabies Prevention guidance documents<sup>1,4</sup> essential components of rabies prevention and control include the following:

- Aggressive wound management.
- Appropriate and timely use of rPEP.
- Prompt reporting of potential rabies exposures to medical professionals and local public health authorities.
- Ongoing efforts to increase public awareness about rabies transmission routes in order to reduce bite and non-bite exposures to wild animals and unvaccinated domestic animals.
- Responsible pet and livestock ownership including the use of routine, timely rabies vaccination.
- Appropriate veterinary care during a confirmed or suspected rabies exposure.
- Continuing veterinary and medical education.

**b) Specific prevention measures** Avoiding a rabies exposure in the first place is ideal. However; situations arise where a potential exposure might be unavoidable, such as an unprovoked dog bite or waking to find a bat in the bedroom. One or more fatal human rabies cases occur annually in the United States, usually due to an unrecognized need for early medical intervention. Human cases most often occur in individuals with either an unrecognized bat exposure or an animal bite acquired while visiting a country with endemic terrestrial rabies, a lack of knowledge regarding the serious nature of the exposure, and a lack of early medical care.

**i. Wound management:**

Immediate and thorough cleansing of bite wounds and scratches is an important first step to prevent rabies infection.<sup>1</sup> Wound management is covered in detail in the “Treatment of Wounds” section of the ACIP document.<sup>1</sup>

**ii. Medical intervention:**

Rabies prophylaxis is categorized as pre-exposure or post-exposure.

- **Rabies Pre-exposure Prophylaxis:** According to the ACIP guidance document<sup>1</sup>, pre-exposure prophylaxis (vaccination) is given as a preventive measure prior to an exposure for those working in high-risk occupations (*e.g.* rabies laboratorians, veterinarians, animal rehabilitators, zoo employees working with mammals) or to individuals traveling to parts of the world for long periods of time where rabies is common and medical attention is not.
- **Rabies Post-exposure Prophylaxis (rPEP):** rPEP is given to individuals in response to a suspected or confirmed rabies exposure. According to the ACIP guidance documents<sup>1,4</sup>, use of rPEP is a medical urgency, not a medical emergency; but consultation with a healthcare provider should not be unduly delayed. ACIP<sup>1</sup> stresses that, should there be a delay in discovering that an exposure had occurred, (*e.g.*, weeks later), rPEP should still be considered as long as signs of rabies are absent (there have been exceedingly long incubation periods described). Details on rPEP usage are found in the ACIP documents, and vary for individuals who have or have not already received the pre-exposure prophylaxis vaccination series.<sup>4</sup>
  - a. **For previously UNvaccinated persons:** rPEP includes the use of rabies immune globulin (RIG) and 4-doses of rabies vaccine, given over a 14-day period on days 0, 3, 7, and 14.<sup>4</sup> RIG is typically given on day 0 at the same time the initial vaccination is given, but can be given up to 7 days after day 0. RIG provides passive immunity and is not recommended if >7 days after the day 0 vaccination have passed.
  - b. **For previously vaccinated individuals:** Persons who have already received the pre-exposure prophylaxis (vaccine) series still receive rPEP for a rabies exposure, regardless of their serostatus (see RFITT results in the SEROLOGY section). The rPEP course is abbreviated for previously

vaccinated individuals, with only two vaccinations given and no RIG required.<sup>1,4</sup>

**iii.** *rPEP use and animal test results:*

rPEP use is a critical aspect of rabies prevention. The necessity for rPEP is evaluated for each exposure scenario. If the epidemiology suggests a low risk for rabies, a delay in rPEP use in anticipation of timely animal test results may be considered by the healthcare provider. However, animal test results must be available  $\leq 10$  days from the date of exposure if a delay in rPEP usage is even considered. This does NOT imply that the rPEP should always be delayed until animal test results are available. If the risk for rabies transmission is considered high, or the exposure is close to the person's head or a highly innervated area, such as a child's fingertip, the use of rPEP should NOT be delayed, even if testing of an animal is under way. If test results on the animal then return as negative for rabies, rPEP can be discontinued.<sup>1,4</sup> To learn more, review the ACIP guidelines.<sup>1,4</sup>

**iv.** *Access to rPEP:* rPEP is life-saving.

▪ *Hospital settings:*

- Most large hospitals have a small reserve of RIG and vaccine available, or can order the products in a timely fashion. The initial use of RIG and the first vaccination in the series are often given by emergency department staff. However, the completion of the full vaccination series (or the two dose abbreviated series for previously vaccinated persons not requiring RIG) may occur outside the ED setting if arrangements are made.
- Hospital travel clinics or outpatient vaccination clinics exist in some communities, and might be a good resource for rPEP.

▪ *Community rPEP Resources:* NOTE: Every community is different.

- Private healthcare providers may order rabies vaccine into their offices in a timely manner to complete the vaccination series, if given adequate notice of the need.
- Some public health districts offer rabies vaccinations for a reasonable cost, compared to other healthcare settings. Contact the public health district in your area to determine vaccine availability.
- Pharmacists in Idaho have the authority to administer vaccinations in accordance with IDAPA 27.01.01 (<http://adminrules.idaho.gov/rules/current/27/0101.pdf>) and might be a cost effective alternative to the hospital setting for the completion of the rPEP series. However, not all pharmacists are willing or able to administer the rabies vaccine series, so it is necessary to call ahead to make arrangements. Pharmacies do NOT typically stock the vaccine and would need to order a supply from the local vaccine distributor if the pharmacist agrees to provide the service. This typically only takes one day. Vaccinations must be administered in accordance with the ACIP guidance; and the entire series must be

completed. If using a pharmacist, discuss with them how to complete the series on the appropriate time schedule.

- *Patient assistance programs (PAP)*: PAPs exist through specific vaccine manufacturers who may provide vaccine free of charge, if accessed early in the rPEP course and financial need is demonstrated. To learn more, visit: [http://www.cdc.gov/rabies/medical\\_care/programs.html](http://www.cdc.gov/rabies/medical_care/programs.html)

## 9. RABIES IN IDAHO

Healthcare providers managing a person with a suspected or confirmed exposure to rabies are encouraged to discuss the epidemiology of rabies in Idaho with PHD or BCDP epidemiologists to fully inform their decision to use rPEP.

### a) Idaho-specific data:

Web access to current and archived Idaho rabies data is found at <http://www.rabies.dhw.idaho.gov>

### b) Human rabies:

The last human case of rabies in Idaho, which was fatal, was reported in 1979 in someone that received a contaminated corneal transplant.<sup>5</sup>

### c) Animal rabies

- i. *Bats*: Bats are the only known natural reservoir of rabies in Idaho; terrestrial rabies virus variants (*e.g.*, raccoon, fox, skunk) are not known to be present in the state. Between 2002 and 2015 an average of 15 bats (range 7–38) per year tested positive for rabies by IBL (Table 1). Over the last 14 years an average of 10.1% of bat submissions to IBL (range: 4.6% –18.2%) tested positive annually. Rabid bats have been reported from almost all parts of Idaho and have been detected from March through November.

Detection Year	Number of Rabid Bats Detected
2015	10
2014	11
2013	27
2012	23
2011	8
2010	11
2009	8
2008	10
2007	12
2006	26
2005	12
2004	7
2003	15
2002	38

**Table 1.** Rabid bats detected by IBL, by year—Idaho, 2002–2015.

- ii. *Other species:* The IBL has also detected a handful of other animal species with rabies over the years; most were determined to be infected with a bat variant rabies virus (Table 2). Because other mammals have tested positive for rabies, the risk of rabies exposures from bite and non-bite exposures from mammals other than bats must not be ignored.

Year of Detection	Animal Type	Rabies Variant
2014	Skunk	Bat
2004	Skunk	Bat
2001	Bobcat	Bat
1999	Horse	Bat
1992	Cat	Bat
1991	Cat	Bat
1968	Raccoon	Unknown
1967	Cat	Unknown
1967	Skunk	Unknown

**Table 2.** Non-bat rabid animals detected by IBL are shown by year of detection, animal type, and rabies variant. Data are current through the end of 2015.

## 10. REPORTING REQUIREMENTS

### a) Public Health:

Rabies in both humans and animals and rPEP initiation in humans are all reportable conditions in Idaho. The Idaho Reportable Diseases (IDAPA 16.02.10) are found here <http://adminrules.idaho.gov/rules/current/16/0210.pdf>. All reports are maintained in the NBS (National Electronic Disease Surveillance System [NEDSS] Base System); the BCDP Epidemiology Program’s reportable disease database.

1. Rabies in humans: Reporting of a suspected or confirmed case of rabies in a human must occur immediately, day or night. All rabies cases in humans will be investigated thoroughly by public health officials to determine the source of infection and to discuss appropriate public health interventions with the healthcare provider.
2. Rabies in animals: All rabid animals are reportable to public health within 24 hours of detection. The only testing laboratory for animals in Idaho is IBL, so reporting is assured (see section LABORATORY SUBMISSION).
3. rPEP: Use of rPEP is reportable in Idaho within three working days of series initiation. Reporting of rPEP alerts public health officials that a possible exposure occurred, and gives them the opportunity to determine if others with a similar exposure might also need to seek medical evaluation.

**b) Agriculture:**

ISDA rules governing animal industry can be found at <http://adminrules.idaho.gov/rules/current/02/0403.pdf>. These rules include animal rabies reporting and the ISDA authority to inspect, quarantine, treat, condemn, slaughter, and dispose of any animal affected or infected with, or exposed to, rabies; quarantine, clean, and disinfect all premises where such animals have been kept; and call upon sheriffs, constables, and other peace officers to assist them in the discharge of their duties. Veterinarians and pet owners/caretakers are required to report all cases of rabies in animals to ISDA within 48 hours.

**11. LEGAL, OTHER: NOTE: THIS IS NOT AN EXHAUSTIVE LIST FOR IDAHO.**

- a) *Idaho statewide vaccination requirement:* There is no statewide requirement for rabies vaccination of resident animals for any species in Idaho. Exceptions exist in certain settings and locales.
- b) *Location-specific vaccination requirements:* Specific rabies ordinances exist in many Idaho cities; some ordinances require proof of rabies vaccination in order to acquire or renew a pet license. To find out about local ordinances, search the city in question on the internet.
- c) *Prevention of rabies importation into the United States:* The rules for dog and cat importation vaccination requirements are mentioned in U.S. regulation 42 CFR 71.51. <http://www.gpo.gov/fdsys/pkg/CFR-2003-title42-vol1/xml/CFR-2003-title42-vol1-sec71-51.xml>. Dogs must have a certificate of rabies vaccination (showing vaccination at least 30 days prior to travel) upon entry into the United States. Unvaccinated dogs (such as puppies too young to be vaccinated against rabies) must be accompanied by a CDC Confinement Agreement form (CDC Form 75.37), which outlines the vaccination expectations and confinement duration for these dogs. More on dog importation can be found at the CDC website: <http://www.cdc.gov/animalimportation/dogs.html>
- d) *Prevention of rabies importation into Idaho:* The ISDA is concerned about the introduction of rabies into the state:
  - 1. IDAPA: 02.04.03, Rules Governing Animal Industry  
<http://adminrules.idaho.gov/rules/current/02/0403.pdf>

“In order to prevent the introduction or dissemination of rabies among the animals of the state, the Administrator is authorized to develop and implement a plan for rabies control in any portion of this state.”

- 2. The Rules Governing the Importation of Animals into Idaho:  
<http://adminrules.idaho.gov/rules/current/02/0421.pdf> Proof of vaccination requirements for dogs and cats coming into the state of Idaho are found on the following ISDA website:  
<http://www.agri.idaho.gov/Categories/Animals/importExport/importdogcat.php>

- All dogs require a current Certificate of Veterinary Inspection. All dogs 3 months (12 weeks) of age or older require a current Rabies vaccination.
  - All cats require a current Certificate of Veterinary Inspection. All cats 3 months (12 weeks) of age or older require a current Rabies vaccination.
- e) *Prevention of importation of rabies reservoir wildlife species into Idaho:* Rabies reservoir species, including fox, skunk, and raccoon, are not allowed to be imported into Idaho without proper licensing and approval by IDFG.
1. IDFG IDAPA 13.01.10, Rules Governing the Importation, Possession, Release, Sale, or Salvage of Wildlife  
<http://adminrules.idaho.gov/rules/current/13/0110.pdf>
- “No person shall import any species of live wildlife without a license approved by the director or his designee. The decision on whether import and possession will be allowed shall be in the director’s discretion, based on the protection of Idaho’s wildlife from habitat degradation, genetic contamination, competition, or disease.”
- f) *Child care settings:* Rabies vaccination is required for all domestic animals and pets associated with child care facilities or their non-vocational work assignment locations. See section 756, 846, and of the Rules Governing Child Care Licensing (IDAPA 16.06.02) <http://adminrules.idaho.gov/rules/current/16/0602.pdf>
- g) *Veterinary confidentiality:* Sharing veterinary records with public health officials is allowed. The Code of Professional Conduct in the Rules of the State of Idaho Board of Veterinary Medicine, IDAPA 46.01.01.151.08  
<http://adminrules.idaho.gov/rules/2011/46/0101.pdf> states,

“**Confidentiality.** A veterinarian shall maintain a confidential relationship with his clients, except as otherwise provided by law or required by considerations related to public health and animal health.”

## 12. LABORATORY TESTING

### a) DECISION MAKING PROCESS:

- i. **Human Testing:** Should a healthcare provider suspect they are managing a human case of rabies, they are to consult a BCDP epidemiologist at once to arrange for human testing. If a healthcare provider needs to contact an epidemiologist after normal business hours they should use the State Communications hotline at 1-800-632-8000. A BCDP epidemiologist will be contacted to discuss sampling and shipping options with both the CDC and the healthcare provider during the consultation.
- ii. **Animal Testing:** Review the appropriate protocol in section **15 PROTOCOLS FOR RABIES POSTEXPOSURE PROPHYLAXIS AND ANIMAL MANAGEMENT** (below) to determine the need for animal testing (domestic

or wild). Rabies testing of animals in Idaho is conducted in support of public health investigations. Due to resource constraints, animals will generally not be tested for rabies if they are not part of a scenario involving a human or animal exposure. Exceptions to this practice may be considered on a case-by-case basis. All scenarios, where animals are considered for testing must be discussed with either PHD or BCDP epidemiologists; all animal testing requires PRIOR APPROVAL from either PHD or BCDP epidemiologists.

**b) SAMPLE SUBMISSION PROCESS:**

Testing delays for animal samples are undesirable. Samples must be sent to IBL as soon as possible after an exposure has occurred in order to rapidly determine the rabies status of the sample, the need for rPEP in exposed persons, and the appropriate management course for exposed animals. Testing should ideally be completed no later than 10 days after the exposure has occurred, so test approval, capture, euthanasia, shipping, and testing considerations have to be measured against the testing deadline. Testing after 10 days can be arranged; testing in a timely manner is critical to proper rabies exposure management. The use of rPEP in people may be initiated PRIOR to the completion of animal testing if the exposure risk is considered high (see section RABIES PREVENTION). Testing over the weekend is discouraged. Please make every effort to gain test approval from PHD or BCDP epidemiologists and coordinate shipment of the body/head for testing to coincide with a normal work day.

**i. TEST APPROVAL:**

Rabies test approval must be granted by PHD or BCDP epidemiologists prior to sample submission. The local PHD epidemiologist should be contacted to gain test approval. If a PHD epidemiologist is unavailable to discuss the scenario, a BCDP epidemiologist may be consulted to determine if a sample will be approved for testing by calling (208) 334-5939. The appropriate PROTOCOL(S) (section 15) will be reviewed with the caller to determine the circumstances of the bite/exposure in order to decide if testing is appropriate.

**ii. ANIMAL COLLECTION:**

A 10 day observation period is preferable over testing of domestic animals, whenever possible. If the decision has been made to test an animal and the necessary approvals have been granted, efforts should be made to collect, humanely euthanize, properly ship, and test the wild or domestic animal in question. Caution must be exercised to avoid bites and exposures to an eye, open cut, or mucous membrane when attempting to collect a bat or other animal for testing. Avoiding additional potential rabies exposures is critical.

- a. Domestic small and large animals: Veterinarians are generally the professionals involved with euthanizing domestic animals and removing the head or brain for rabies testing. The PHD and state health department will not euthanize animals.

**Information for Veterinarians:** DO NOT submit only one hemisphere for testing, to learn more about the proper sampling protocol, see section LABORATORY TESTING. For all animal species a cross-section of brain is required for virus detection. It is possible for virus to tract disproportionately to one side of the brain or the other, so submitting only one hemisphere will not prove diagnostic.

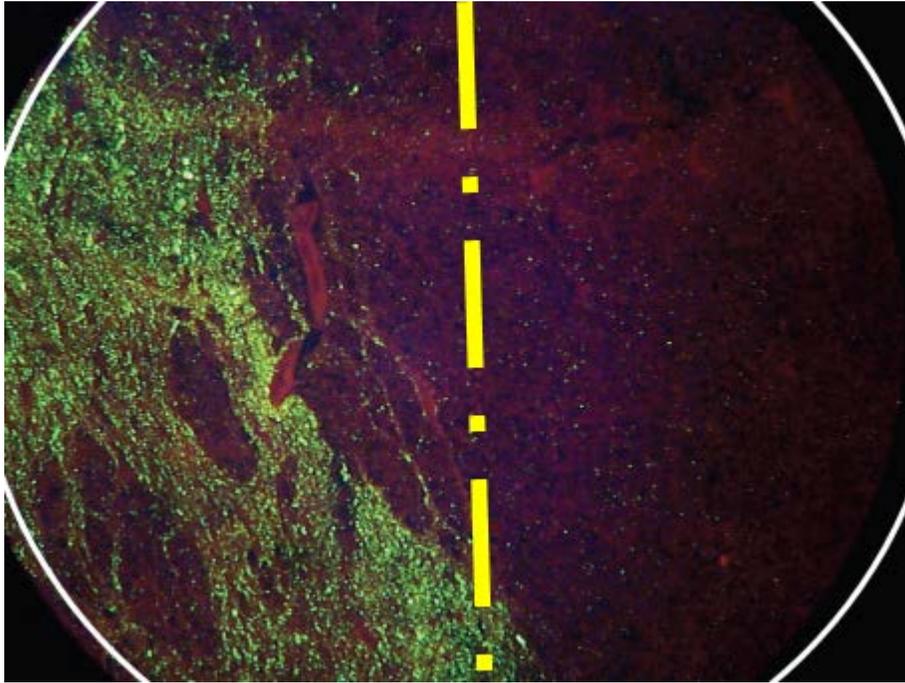


Image of standard DFA protocol on a donkey brain (source CDC).

Disproportionate fluorescence is seen only in the left hemisphere of the donkey brain impression shown above. If brain impressions were only made from the right hemisphere, it is likely that no antigen would be detected and the animal's rabies status would remain unknown or incorrectly interpreted as negative. Therefore, if samples from only a single hemisphere are submitted for testing, a result will not be reported.

- b. Bats: Bats are not held for a 10 day observation period. A bat should never be handled with bare hands or without eye protection because of the potential risk for rabies transmission. Live bats should never be submitted to IBL for testing. Bats may be collected in a coffee can with a lid or other box or jar, provided small air holes are created. Never touch the bat bare handed; and always wear leather or other thick gloves when attempting to capture the bat in the container. Bats must be humanely euthanized prior to shipment for testing, sparing the head, as damaged heads are often untestable. Freezing or drowning of bats (or any animal) is NOT an acceptable method of euthanasia.<sup>13</sup> Veterinarians may be willing to assist with euthanasia and/or shipment of bats for testing. However, veterinarians must be

contacted to determine their willingness to assist in this important public health prevention activity. Veterinarians may charge for their services. Veterinarians and PHD staff may need to coordinate shipping activities so rabies testing is completed in a timely manner. Bats involved with an exposure might be testable even if they were dead when found (e.g., a cat brings in dead bat, a bat is found dead in a bedroom). Contact the PHD epidemiologist for more guidance on when testing a dead bat might be appropriate and when it would not be useful.

- c. *Wild animals*: IDFG may facilitate capture and shipment of wild animals for rabies testing through one of their regional offices. These animals are accepted for testing on a case-by-case basis. Contact the nearest regional IDFG office if questions arise about capturing, euthanasia, and shipment of a wild animal for rabies testing. Visit the following web site for a list of regional IDFG offices: <http://fishandgame.idaho.gov/public/about/offices/>

PHD epidemiologists should be consulted regarding shipping and testing of wild animals; however, this typically only applies to bats. NOTE: PHD staff will NOT assist in animal collection or euthanasia. For a list of PHDs visit <http://www.healthandwelfare.idaho.gov/Health/HealthDistricts/tabid/97/Default.aspx>

**PLEASE CALL THE PHD OFFICE PRIOR TO ANY TESTING.  
DO NOT SHOW UP WITH OR DROP OFF ANY ANIMAL FOR  
RABIES TESTING WITHOUT A PRIOR PHONE DISCUSSION  
WITH AN EPIDEMIOLOGIST.**

**iii. ANIMAL EUTHANASIA:**

Veterinarians or their designees, and others, must euthanize animals humanely in accordance with AVMA recommendations.<sup>13</sup>

**iv. PREPARING THE BODY/HEAD FOR SHIPMENT:**

Testing domestic and wild animals (including bats) for rabies is done on the brain of dead animals. There is NO reliable blood test for rabies available for live animals (see section SEROLOGIC TESTING/ANIMAL SEROLOGY).

Contact a local veterinarian for assistance with euthanasia. Ideally the head should not be damaged, as damage to the brain can make the sample difficult to test or untestable, and exposure to brain tissue can increase the likelihood of additional human exposures to the rabies virus. Removal of the head from the body prior to submission is required for animals weighing more than 8 lbs (see APPENDIX A: RABIES TEST REQUEST FORM to review weight limitations). Head removal should be done by a veterinary professional, using proper safety precautions, and in a way that preserves the skull and brain. If the capacity to remove the brain exists in the veterinary clinic, this should be done

by the veterinarian prior to shipment. Dead bats are submitted for testing in their entirety. Dead mammals weighing less than 8 lbs, may be submitted in their entirety; however, removal of the brain by a veterinarian before submission is strongly preferred. If brains of large animals, (*e.g.* horses or cattle) are removed, they should be submitted whole (BOTH HEMISPHERES included). If only a portion of the brain is submitted for testing, the entire cerebellum and a generous portion of spinal cord must be included to be considered diagnostic (See PROTOCOL-15D or -15F, depending on the situation).

**v. PACKAGING AND SHIPPING:**

Diagnostic samples must be packaged and labeled in accordance with current shipping regulations. It is the shipper's responsibility to package the sample correctly to assure there are no leaks and that the package is in compliance with any current shipping safety regulations. The shipping company used for delivery (*e.g.*, UPS, FedEx, USPS, etc) will have web access to the current packaging regulations. Improper labeling and packaging might lead to delays in shipping and testing, as well as significant financial penalties for the shipper. Prolonged delays in shipping might affect the integrity of the shipped sample. For example, overheating and decay can ultimately lead to an untestable sample which could complicate the decision to use rPEP. In general, it is important to keep head or whole body samples cold, ideally not frozen, double bagged, and wrapped in absorbent material. Properly packaged heads or bodies are to be shipped in a rigid container with enough chill packs (NO WET ICE) to assure the specimen remains cool during shipment. There must be **NO LEAKING BOXES**. Samples can be frozen if there is a delay of a day or two before shipping (*e.g.*, over a weekend). The process of thawing samples could delay testing of samples at IBL by a day. Normally, shipping costs are incurred by the submitter. Should the submitter be unable or unwilling to pay shipment costs, options may be available on a case-by-case basis through the local PHD or regional IDFG office. Rabies is a potentially fatal illness, so inability to pay should not impede rabies testing.

Please note PHDs may be willing to assist with shipping of samples to IBL if a courier system is in place. Not all PHDs have regular courier systems, so contact the local PHD office to determine availability and frequency of courier runs. For a list of PHDs visit:

<http://www.healthandwelfare.idaho.gov/Health/HealthDistricts/tabid/97/Default.aspx>

**vi. RABIES TEST REQUEST FORM: (see APPENDIX A)**

All samples must be accompanied by an Idaho Rabies Test Request Form. Details regarding the exposure must be provided on the submission form. Specifics on shipping and acceptable samples are also found on the form: [http://healthandwelfare.idaho.gov/Portals/0/Health/Labs/Rabies\\_Test\\_Request\\_Form.pdf](http://healthandwelfare.idaho.gov/Portals/0/Health/Labs/Rabies_Test_Request_Form.pdf)

**vii. WHERE TO SHIP:**

All rabies-suspect samples go to the Idaho Bureau of Laboratories, Rabies Laboratory. Details of what and where to ship samples for rabies testing in Idaho are found in the Rabies Submission Form (Appendix A)

For questions: contact IBL: 208-334-0593, Virology Section

**13. RABIES TESTING OF AN APPROPRIATELY SUBMITTED SAMPLE AND COMMUNICATION OF RESULTS:**

**a) THE DIRECT FLUORESCENT ANTIBODY (DFA) TEST:**

The DFA test is done on brain tissue. The rabies DFA test is only done at IBL; commercial laboratories do not offer the DFA rabies test. IBL follows the CDC guidelines “Protocol for Postmortem Diagnosis of Rabies in Animals by Direct Fluorescent Antibody Testing, A Minimum Standard for Rabies Diagnosis in the United States.” The document is found at the following website:

<http://www.cdc.gov/rabies/pdf/RabiesDFASpV2.pdf> . Brain tissue samples demonstrate a green fluorescence under the microscope when positive. The DFA rabies test is considered the gold standard, or optimal choice, for rabies testing.

**b) TESTING COSTS:**

There are no specific costs associated with the actual rabies test performed by IBL, for samples with prior APPROVAL. However, there may be local veterinary costs associated with euthanasia, head and brain removal, packaging, shipping and disposal costs depending on the size of the animal. (see details in the RABIES SUBMISSION FORM, APPENDIX A). If questions arise regarding the size of the animal for submission, contact the IBL Rabies Laboratory at 208-334-0593 for more information. Finally, charges from IBL may occur if no exposures are noted but testing is still requested (see PROTOCOL-H for an explanation of fee-for-service options). Testing in the absence of an exposure is not encouraged.

**c) TESTING TIME FRAME:**

The goal is to complete wild or domestic animal testing no later than 10 days after the exposure; consider this time frame when coordinating shipments for rabies testing. Once shipments have been received by IBL the following activities generally ensue, taking two to three days to complete:

**i. Laboratory Day 1:**

- Samples are accepted 8 am to 5 pm (Lab day 1).
- If necessary, laboratory personnel remove the brain (bats, other mammals), if the sample is not frozen, otherwise a 1-day delay may occur to allow for thawing time. If samples arrive late in the day, there might be a 1 day delay for brain removal.

- IBL laboratory personnel make brain tissue slides, which are fixed overnight in acetone for processing on lab day 2. Fixation can be done during the same day with completion of testing on the same day, if started early.

**ii. Laboratory Day 2:**

- Tissue slides are stained, dried, and examined under a fluorescent microscope for apple green fluorescence, indicative of a positive finding. This is the direct fluorescent antibody (DFA) test.
- Results (positive and negative) are typically ready by the afternoon.
- Results are disseminated in a timely manner (See COMMUNICATION OF RESULTS section).
- Positive test results are reported to the BCDP Epidemiology Program, as required by rule, and are maintained electronically (See REPORTING section, see COMMUNICATION OF RESULTS section).
- All test results (positive and negative) are cataloged into the IBL LIMS (the Laboratory Information Management System), typically no later than Lab day 3.

**d) COMMUNICATION OF TEST RESULTS:**

IBL will communicate test results to the PHD involved in the situation, BCDP Epidemiology, and to the sample submitter listed on the Rabies Test Request Form (*i.e.*, healthcare provider or veterinarian) in a timely manner. Laboratory personnel will refer all queries from healthcare providers, veterinarians, or the public regarding rabies exposure management to PHD or BCDP epidemiology staff.

- If results are generated during the work week, IBL will share the results the same day as they are generated.
- If results are generated over the weekend, which would be rare as weekend testing is discouraged, plans should have been established ahead of time to share all test results over the weekend.
- The PHD staff will follow up with the exposed person(s) to discuss the situation further. Depending on the scenario, other involved parties, such as ISDA or IDFG, may also be contacted by PHD or BCDP epidemiology staff.

**14. SEROLOGIC TESTING**

Although NOT diagnostic, serologic testing can be used for humans and animals to determine if their immune systems respond appropriately to vaccination. There are at least two commercial laboratories which perform either the rapid fluorescent focus inhibition test (RFFIT) or fluorescent antibody virus neutralization (FAVN) test. Additional information on serologic testing can be found on the CDC Website [http://www.cdc.gov/rabies/specific\\_groups/doctors/serology.html](http://www.cdc.gov/rabies/specific_groups/doctors/serology.html)

**a) HUMAN SEROLOGY:**

According to CDC, there is no "protective" titer defined against rabies virus infection.<sup>2</sup> Serologic testing of humans is used to determine immune response to

rabies vaccination, typically in those receiving the pre-exposure series, not for diagnosis of a rabies infection.<sup>2</sup> According to CDC:

“Rabies virus neutralizing antibody tests, such as the RFFIT, are used to monitor antibody levels in persons that may have an occupational risk of rabies virus exposure (*e.g.*, veterinarians, rabies virus laboratory workers, bat rehabilitators, *etc.*) and have received the rabies pre-exposure vaccination series. In some cases, such serological testing is used to check the immune response of a person undergoing rabies post-exposure prophylaxis when major deviations in the vaccination schedule occur, or there are concerns about a patient's immune status”.

[https://www.cdc.gov/rabies/specific\\_groups/doctors/serology.html](https://www.cdc.gov/rabies/specific_groups/doctors/serology.html)

Healthcare providers can learn more about managing a previously vaccinated person who experiences a suspected or confirmed rabies exposure by reviewing the ACIP guidance document.<sup>1,4</sup> Regardless, of serologic findings, rPEP is administered to all individuals with a plausible rabies exposure. Locations for RFFIT testing for humans include the following:

**Atlanta Health Associates**

309 Pirkle Ferry Road, Suite D300

Cumming, GA 30040

Phone: 770-205-9091 or 800-717-5612, Fax: 770-204-9021

[www.atlantahealth.net](http://www.atlantahealth.net)

**Kansas State University\***

1800 Denison Avenue

Manhattan, KS 66506-5600

Phone: 785-532-4483

<http://www.vet.k-state.edu/depts/dmp/service/rabies/rffit.htm>

[http://www.vet.k-](http://www.vet.k-state.edu/depts/dmp/service/rabies/pdf/RFFIT_Human_Submission_form.PDF)

[state.edu/depts/dmp/service/rabies/pdf/RFFIT\\_Human\\_Submission\\_form.PDF](http://www.vet.k-state.edu/depts/dmp/service/rabies/pdf/RFFIT_Human_Submission_form.PDF)

\*Testing at KSU may also be requested through Quest Labs as “Rabies Vaccine Response End Point Titer” (order # 5789).

**b) ANIMAL SEROLOGY:**

It is not common to determine a domestic animal's ability to mount an immune response to the rabies vaccine. Usually, the request is associated with rabies titer documentation requirements associated with international travel to certain countries. Some countries or regions, considered rabies-free, require documentation of an immune response to the rabies vaccine in pets upon entry into that country. Proper evidence of immunity is likely to reduce the duration of quarantine of animals. It is important to check with the destination authority to verify pet importation requirements well in advance of travel; examples of island

states and countries where titers are required for entry include Hawaii, Guam, Japan, Australia, France, and the United Kingdom. A good starting place to determine animal testing requirements, by country, prior to travel is the USDA Regulations and Assessments page: <http://www.aphis.usda.gov/regulations/vs/iregs/animals/>

**Animal tests offered by Kansas State University Rabies Laboratory**

1800 Denison Avenue

Manhattan, KS 66506-5600

Phone: 785-532-4483

<http://www.ksvdl.org/rabies-laboratory/>

- i. **FAVN test:** The FAVN test is a virus neutralization test which measures the response of an animal's immune system to the rabies vaccine in a standardized fashion. NOTE: testing can take 3–4 weeks so planning ahead is KEY. This is NOT a test to determine if an animal has rabies. Kansas State University offers FAVN testing through licensed veterinarians.  
<http://www.ksvdl.org/rabies-laboratory/favn-test/>
- ii. **RFFIT test:** The RFFIT test measures the ability of rabies specific antibodies to neutralize rabies virus in a laboratory sample. The animal RFFIT test may be used as an alternative to the FAVN test. The submission form is found on the KSU webpage.  
<http://www.ksvdl.org/rabies-laboratory/rffit-test/>

**Prospective Serologic Monitoring:** The 2016 Rabies Compendium<sup>3</sup> describes a prospective serologic monitoring protocol (APPENDIX D). The use of this protocol should be considered for animals when the owner reports previous vaccination, but has no rabies certificate to document that claim. This would come into play when the duration of confinement after exposure to a suspected or confirmed rabid animal is being considered; 45 days for previously vaccinated (current or out-of-date/boosted) animals vs. 4 months for “never” vaccinated animals. The prospective serologic monitoring protocol is used to provide evidence of an anamnestic response to booster vaccination, demonstrating prior vaccination.

## 15. PROTOCOLS FOR RABIES POSTEXPOSURE PROPHYLAXIS AND ANIMAL MANAGEMENT

Rabies is an important public health and animal health disease. Numerous scenarios related to suspected or confirmed rabies exposures are described below. Suggested management approaches appropriate to each scenario are presented. Additional scenarios are possible and should be handled on a case-by-case basis, which typically includes consultation with PHD or BCDP epidemiologists.

### A. A DOG, CAT, OR FERRET BITES A PERSON

All mammals, including dogs, cats, and ferrets, have the potential to carry and transmit rabies. Review sections ANIMAL RABIES: GENERAL INFORMATION, and RABIES IN IDAHO to learn more about the epidemiology of rabies in Idaho.

#### i. Managing a Human Exposure

- a) Review section RABIES PREVENTION
- b) Recommend thorough wound cleansing, if a wound is present.
- c) Recommend the exposed person seek medical attention promptly to discuss the need for rPEP.
- d) The healthcare provider should discuss the epidemiology of rabies in Idaho with a PHD or BCDP epidemiologist. If it is after normal business hours, healthcare providers can call the State Communications Hotline (1-800-632-8000) and a PHD epidemiologist will be paged for consultation. The Idaho Rabies web site (<http://rabies.dhw.idaho.gov>) and RABIES IN IDAHO section contains epidemiologic information which can help inform the healthcare provider's decision-making processes.

The healthcare provider and the patient make the decision to use rPEP together, based on the scenario. Use of rPEP is a medical urgency, not a medical emergency; however, the medical consultation should never be unduly delayed.<sup>1,4</sup> If suspicion for rabies is low (for example, it was a provoked attack with a bite on the foot or the animal has a history of aggression and is fully vaccinated), the healthcare provider may choose to briefly delay rPEP initiation if results of the 10-day animal observation period or results of animal rabies testing become available within 10 days of the exposure. If the suspicion for rabies is high (e.g., the bite is close to the head, or highly innervated area on a child such as a fingertip), or the animal is unavailable for testing, or unavailable for a 10 day observation period, the healthcare provider may choose to initiate rPEP right away. rPEP can always be initiated and then discontinued if the animal tests negative for rabies or is healthy after the 10-day observation period.<sup>1,4</sup>

Rabies can be clinically indistinguishable from other neurologic diseases (initially). Any time a rabies-susceptible animal (mammal) dies or is euthanized due to an undiagnosed neurological illness, rabies infection should be considered

as a possible reason for the illness. For domestic animals, veterinary staff or owners exposure risks must be considered in this context.

**ii. Managing the animal that bites a person:**

Regardless if the bite was provoked or unprovoked, the dog, cat, or ferret should be:

- a) *Examined by a licensed veterinarian*, ideally within 24 to 48 hours of the incident;
  - 1) If the animal is exhibiting clinical signs consistent with rabies at that time of the examination, euthanasia and rabies testing should be strongly considered. If the animal is being considered for rabies testing, the PHD epidemiologist is consulted as soon as possible to gain RABIES TEST APPROVAL (see Section LABORATORY TESTING).
  - 2) If the animal is NOT exhibiting clinical signs consistent with rabies upon initial examination, the animal will enter a 10 day observation period, counting from the date of the bite. Observation will occur, regardless of the animal's rabies vaccination status.
- b) *Held for a 10 day observation period:*

During the 10 day observation period the animal is observed daily for any illness or behavioral change consistent with rabies (see section ANIMAL RABIES: GENERAL INFORMATION).

Confinement can occur at home or in a veterinary office, as long as the animal is available upon request for observation by the veterinarian. Any costs incurred are the burden of the animal owner.

The animal is NOT vaccinated against rabies at the start of, or during the 10 day observation period because adverse vaccine reactions, although rare, could be mistaken for rabies causing the unwarranted decision for euthanasia. The animal should be brought up-to-date on rabies vaccination as soon as the 10 day observation period is complete.

- 1) If there IS evidence of illness or unusual behavior in the domestic animal during the 10 day observation period, a licensed veterinarian should examine the animal immediately and decide if the illness or behavior change is clinically compatible with rabies. Animals demonstrating a clinically-compatible rabies-like illness should be humanely euthanized and submitted for rabies testing, regardless of their vaccination status (see Section LABORATORY TESTING). The veterinarian will communicate information on any illness in the animal consistent with rabies to the local PHD epidemiologist or state level epidemiologist at once. If the animal is being considered for rabies testing, the PHD or state-level epidemiologist should be consulted as soon as possible to gain RABIES TEST APPROVAL (see Section LABORATORY TESTING).

- 2) If the animal dies during the 10 day observation period for any reason, it should be tested for rabies regardless of its vaccination status. The veterinarian will communicate information on the animal's death to the local PHD epidemiologist at once to gain RABIES TEST APPROVAL (see Section LABORATORY TESTING).
  - 3) If, at the end of the 10 day observation period, the animal remains healthy, it was NOT shedding the rabies virus during the suspected exposure and can be released from observation. NOTE: if the animal is not current on its rabies vaccination, it should receive a rabies booster at the END of the observation period, to be considered currently vaccinated.
- c) *Euthanasia instead of 10 day observation period:*  
Instead of conducting a 10 day observation period, the owner or agent for the animal may opt to have the animal euthanized AND tested for rabies after a bite incident, regardless of the animal's vaccination status. This is not recommended; however, this alternative approach might be chosen if the animal is unduly aggressive or unpredictable on a regular basis. Also, if the animal is euthanized prior to the completion of the 10 day observation period, testing must be done to remove any doubt regarding the animal's rabies status, even if the animal was up-to-date on their rabies vaccinations. If the animal is being considered for rabies testing, the PHD epidemiologist should be consulted as soon as possible to gain RABIES TEST APPROVAL (see Section LABORATORY TESTING). Alternatively, if euthanasia is the goal, euthanasia can be accomplished after successful completion of the 10 day observation period, removing the necessity for rabies testing.
- d) *Stray animals:*  
Situations involving seemingly stray animals should be dealt with on a case-by-case basis, as some animals might actually have owners. Rabies is exceedingly rare in domestic animals in Idaho, so opting for a 10 day observation period is always preferable, even for strays. The Rabies Compendium<sup>3</sup> recommends a minimum 3 day holding period prior to euthanasia and testing, if euthanasia is chosen over the 10 day holding period. This allows some time to determine if the animal has an owner. It might be that the apparently stray or feral animal has a chip or other means of identification, the owner can ultimately be located, the vaccination status determined, and the 10 day observation period completed. Local ordinances might address stray animal populations and should be explored. Some communities may opt for a 10 day observe-vaccinate-and-release program, associated with the management of a feral cat colony. Taking into account the nature of the attack; provoked or unprovoked, may drive the euthanize and test option over the 10 day observation option. These animals should be current on their rabies vaccinations prior to release back into the environment. NOTE: See the Rabies Compendium<sup>3</sup> for more information on managing stray animals.

## **B. A WILD ANIMAL OR WILDLIFE BITES A HUMAN**

All mammals have the potential to carry and transmit rabies. Review Section ANIMAL RABIES: GENERAL INFORMATION, and Section RABIES IN IDAHO to learn more. See PROTOCOL C below for management of BAT EXPOSURES.

Little risk is known to exist of contracting rabies from bites from rodents, lagomorphs (rabbits), or opossums; therefore, situations involving these animals should be managed on a case-by-case basis taking into consideration the scenario. It is important to realize that, although extremely rare, rabies in these species has been documented.

i. **Managing a Human Exposure**

- a) Review Section RABIES PREVENTION
- b) Recommend thorough wound cleansing, if a wound is present.
- c) Recommend the exposed person seek medical attention promptly to discuss the need for rPEP.
- d) The healthcare provider should discuss the epidemiology of rabies in Idaho with a PHD or BCDP epidemiologist. If it is after normal business hours, healthcare providers can call the State Communications Hotline (1-800-632-8000) and a PHD epidemiologist will be paged for consultation. The Idaho Rabies website (<http://rabies.dhw.idaho.gov>) and section RABIES IN IDAHO contains epidemiologic information which can help inform the healthcare provider's decision-making process.

The healthcare provider and the patient make the decision to use rPEP together, based on the scenario. Use of rPEP is a medical urgency, not a medical emergency; however, the medical consultation should never be unduly delayed.<sup>1,4</sup>

If suspicion for rabies is low, the healthcare provider may choose to briefly delay rPEP initiation if results of the animal testing become available within 10 days of the exposure. If the suspicion for rabies is high (e.g., the bite is close to the head, or highly innervated area on a child such as a fingertip, the animal was acting aggressive and/or strange for the species) the healthcare provider may choose to initiate rPEP right away. The use of rPEP should not be delayed for animal test results in high risk scenarios. rPEP can always be initiated and then discontinued if the animal tests negative for rabies.<sup>1,4</sup>

ii. **Managing the Animal**

- a) The wild animal or wildlife IS available for testing
  - 1) Submit the wild animal for rabies testing by following guidance found in Section LABORATORY TESTING.
  - 2) Animals that are maintained in USDA-licensed research facilities or accredited zoological parks that bite a person should be evaluated and managed on a case-by-case basis. Contact the PHD or BCDP epidemiologist to discuss the situation.

- b) *The wild animal is NOT available for testing*  
See **Managing a Human Exposure**, above.

### C. **BAT EXPOSURES**

**Any bite or non-bite exposure to a bat is considered a rabies exposure until determined otherwise.** Bats are found to be rabid more than any other animal in Idaho, and bats are the rabies reservoir in the state (see Section ANIMAL RABIES: BATS, and Section RABIES IN IDAHO, and section BATS definition).

#### i. **Managing a Human Exposure**

- a) Review Section RABIES PREVENTION
- b) Recommend thorough wound cleansing, if a wound is present.
- c) Recommend the exposed person seek medical attention promptly to discuss the need for rPEP.
- d) Any bite or non-bite exposure to a bat is considered a rabies exposure until determined otherwise. The healthcare provider should discuss the epidemiology of rabies in Idaho with a PHD or BCDP epidemiologist and the exposed person. If it is after normal business hours, healthcare providers can call the State Communications Hotline (1-800-632-8000) and a PHD or state-level epidemiologist will be paged for consultation. The Idaho Rabies web site (<http://rabies.dhw.idaho.gov>) and section RABIES IN IDAHO contains epidemiologic information which can help inform the healthcare provider's decision-making processes.

The healthcare provider and the patient make the decision to use rPEP together, based on the scenario. Use of rPEP is a medical urgency, not a medical emergency; however, the medical consultation should never be unduly delayed.<sup>1,4</sup>

If suspicion for rabies is low, the healthcare provider may choose to briefly delay rPEP initiation if results of the animal testing become available within 10 days of the exposure. If the suspicion for rabies is high (e.g., the bite is close to the head, or highly innervated area on a child, such as a fingertip) the healthcare provider may choose to initiate rPEP right away. The use of rPEP should not be delayed for animal test results in high risk scenarios. rPEP can always be initiated and then discontinued if the animal tests negative for rabies.<sup>1,4</sup>

#### ii. **Bat Testing:**

**BATS THAT EXPOSE A PERSON SHOULD ALWAYS BE TESTED FOR RABIES.**

- a) *If the bat is available for testing* and the possibility of an exposure cannot be excluded:
  - 1) Review Section RABIES PREVENTION
  - 2) Submit the bat for rabies testing, by following guidance found in Section LABORATORY TESTING.

- 3) Consider initiating rPEP if there is a delay in testing of the bat; rPEP can be initiated and then discontinued if the bat tests negative for rabies.

b) If the bat is NOT available for testing

- 1) See **Managing a Human Exposure** above.
- 2) If a bat was not available for testing, rPEP should be strongly considered, given the epidemiology of rabies in Idaho. Any bite or non-bite exposure to a bat is considered a rabies exposure.

**D. A POTENTIALLY RABID LIVESTOCK ANIMAL EXPOSES A HUMAN**

All mammals, including livestock, have the potential to carry and transmit rabies. Livestock can clinically present with a furious or dumb form of rabies. Review Section ANIMAL RABIES, GENERAL INFORMATION and Section RABIES IN IDAHO, to learn more.

i. **Managing a human exposure**

Bites from livestock are not common, but a rabid animal can become aggressive and cause injury.

- a) Review Section RABIES PREVENTION
- b) Recommend thorough wound cleansing, if a wound is present.
- c) Recommend the exposed person seek medical attention promptly to discuss the need for rPEP.
- d) The healthcare provider should discuss the epidemiology of rabies in Idaho with a PHD or BCDP epidemiologist and the exposed person. If it is after normal business hours, healthcare providers can call the State Communications Hotline (1-800-632-8000) and a PHD epidemiologist will be paged for consultation. The Idaho Rabies web site (<http://rabies.dhw.idaho.gov>) and section RABIES IN IDAHO contains epidemiologic information which can help inform the healthcare provider's decision-making processes.

The healthcare provider and the patient make the decision to use rPEP together, based on the scenario. Use of rPEP is a medical urgency, not a medical emergency; however, the medical consultation should never be unduly delayed.<sup>1,4</sup> If suspicion for rabies is low, the healthcare provider may choose to briefly delay rPEP initiation if results of the animal testing become available within 10 days of the exposure. If the suspicion for rabies is high (e.g., the bite is close to the head, or highly innervated area on a child, such as a fingertip) the healthcare provider may choose to initiate rPEP right away. The use of rPEP should not be delayed for animal test results in high risk scenarios. rPEP can always be initiated and then discontinued if the animal tests negative for rabies.<sup>1,4</sup>

ii. **Managing the Animal**

a) The animal IS available for testing

The veterinarian involved should contact the ISDA, Division of Animal Industries, at (208) 332-8540 to discuss the situation and management of other exposed herd/pasture mates. According to the Rabies Compendium,<sup>3</sup> rabies transmission from herbivore-to-herbivore is considered uncommon. Therefore, herd restrictions would likely not be necessary, but should be considered on a case-by-case basis as multiple exposures to a rabid animal might have occurred in a herd setting. If the illness in the livestock animal is considered consistent with rabies, a veterinarian should provide humane euthanasia, gain test approval from either a PHD or BCDP epidemiologist, and ship the appropriate sample (brain) to IBL for rabies testing (see section LABORATORY TESTING).

CDC is very interested in milk and mammary tissue from lactating rabid animals, to further the scientific understanding of rabies and lactation. Should a lactating dairy animal be the animal in question, BCDP epidemiology staff or PHD epidemiologists will work with the veterinarian to facilitate the collection of unpasteurized milk and mammary tissue for testing from a rabid lactating animal at the time the brain is being collected. If the animal is determined to be rabid, tissues and products (such as milk) are not to be consumed by animals or people.<sup>3</sup>

b) *The animal is NOT available for testing.*

See **Managing a Human Exposure** above.

It is unlikely in this scenario that a livestock animal would not be available for testing, but situations may arise, such as free roaming cattle, or an individual animal in a herd not easily differentiated from other herd-mates, all of the same color, where this section is applicable.

**E. A WILD ANIMAL OR WILDLIFE (INCLUDING BATS) BITES OR OTHERWISE EXPOSES A DOMESTIC ANIMAL (DOG, CAT, OR FERRET)**

All mammals have the potential to carry and transmit rabies. Review Section ANIMAL RABIES, GENERAL INFORMATION and Section RABIES IN IDAHO, to learn more. Bites from rodents and opossum are considered low risk, but should be handled on a case-by-case basis.

i. *The wild animal or wildlife (including a bat) IS available for testing.*

- a) Submit the wild animal (including bat) for rabies testing, by following guidance found in Section LABORATORY TESTING. Results are generally available within 48 to 72 hours, once the brain is received by IBL for rabies testing. Testing is generally not done over the weekend (see section RABIES TESTING, subsection 'rabies testing time frame') and frozen tissues can prolong the length of time from receipt to test result.
- b) Bring the domestic animal to a veterinarian for wound care, assess vaccination status (vaccinate all animals with overdue rabies vaccinations), and place the

bitten domestic animal under the owners control (see OWNERS CONTROL definition) while awaiting test results on the wild animal/bat.

NOTE: There is NO REASON to euthanize and test the domestic animal at this point.

1) **If the rabies test of the wild animal or wildlife (including a bat) is NEGATIVE (-):**

- i. Assure that the domestic animal is currently vaccinated against rabies as described above and outlined in the Rabies Compendium.<sup>3</sup>
- ii. Release the animal from the owner's control.

2) **If the rabies test of the wild animal or wildlife (including a bat) is POSITIVE (+), check the vaccination status of the domestic animal and manage accordingly, as described below:**

- i. If the exposed dog, cat, or ferret IS considered current with their rabies vaccination: (see OVERDUE VACCINATIONS definition):
  - a) The dog, cat, or ferret must be examined by a licensed veterinarian, and, if the animal was not vaccinated while awaiting test results, then re-vaccinated (boosted) by the veterinarian against rabies at once, regardless if the animal's vaccination status is considered current or expired. NOTE: Previously vaccinated animals overdue for their vaccinations are considered 'current' once they receive a booster dose in accordance with manufacturer's recommendations. See section ANIMAL RABIES: GENERAL INFORMATION/VACCINATION.
  - b) Place the animal under the owner's control for 45 days.<sup>3</sup>
  - c) For details on dealing with animals where owners report previous rabies vaccination but are unable to provide a rabies certificate or other proof, see section 14 SEROLOGIC TESTING/ANIMAL SEROLOGY/PROSPECTIVE SEROLOGIC MONITORING. If there is no evidence (through documentation or evidence of an anamnestic response), the animal will be managed as an unvaccinated animal.
- ii. If the exposed dog, cat, or ferret has NEVER been vaccinated against rabies:
  - a) The dog, cat, or ferret must be examined by a licensed veterinarian.
  - b) The animal should be vaccinated against rabies in accordance with American Veterinary Medical Association (AVMA) recommendations for the age and species of animal.<sup>3</sup>
  - c) After discussion between BCDP and PHD epidemiologists, the animal will likely be placed in 4 months of strict isolation in a humane, ISDA-approved home-quarantine structure. A veterinarian with ISDA may assist with the development of an appropriate home-quarantine situation (See APPENDIX B, ISDA isolation letter). One month prior to the end of

the evaluation period (at 3 months of confinement), the animal must be re-examined ideally by the same licensed veterinarian, and again at the end of the isolation period, prior to release. If the animal develops signs consistent with rabies at any time during confinement, the animal should be humanely euthanized and tested for rabies (see section LABORATORY SUBMISSIONS).

- d) Alternatively, unvaccinated (never vaccinated against rabies) dogs, cats, and ferrets exposed to a laboratory-confirmed rabid animal may be euthanized humanely by a veterinarian in accordance with AVMA euthanasia guidelines.<sup>13</sup> Although, testing is available upon request, there is no need to test the head of these animals if they are euthanized right away. This is because the rabies virus will not have had time to migrate to the brain or to the salivary glands, as the process takes weeks to months. If there is any question about THIS animal also biting a person or another animal, rabies testing will be available, upon request and approval (see PROTOCOL 15A).

ii. **The wild animal is NOT available for testing.**

If the wild animal, including a bat, is not available for testing, any dog, cat, or ferret potentially exposed to that animal should be regarded as having been exposed to rabies, with some exceptions (*e.g.*, rodents, lagomorphs). The domestic animal should be handled as described in #2 above for vaccinated and unvaccinated animals, taking into consideration the following:

- a) Exposures to wild animals can be considered high or low risk; exposure to bats is of most concern, exposure to rodents of least concern.
- b) The veterinarian is encouraged to discuss the epidemiology of rabies in Idaho with a PHD or BCDP epidemiologists before determining a management plan for these “exposed” domestic animals.

**F. A WILD ANIMAL OR WILDLIFE (INCLUDING BATS) BITES OR OTHERWISE EXPOSES LIVESTOCK**

Call the Idaho State Department of Agriculture, Division of Animal Industries, at (208) 332-8540, for appropriate action.

i. *The biting animal IS available for testing:*

Testing of the wild animal will be done as described in LABORATORY TESTING.

ii. *The biting animal is NOT available for testing:*

The veterinarian should discuss the epidemiology of rabies in Idaho with a PHD or BCDP epidemiologist. If it is after normal business hours, veterinarians can call the State Communications Hotline (1-800-632-8000) and a PHD or BCDP epidemiologist will be paged for consultation. The Idaho Rabies web site (<http://rabies.dhw.idaho.gov>) and section RABIES IN IDAHO contains

epidemiologic information which can help inform the veterinarian's management decisions.

Horses should be vaccinated routinely against rabies, as it is considered a core vaccine by the American Association of Equine Practitioners. The Rabies Compendium<sup>3</sup> states that animals that have frequent contact with humans (*e.g.*, in petting zoo, fairs, and other public exhibitions) and horses traveling interstate should be currently vaccinated against rabies.

The Rabies Compendium<sup>3</sup> describes vaccination and observation procedures for currently vaccinated and unvaccinated livestock.

According to the Rabies Compendium<sup>3</sup>:

If livestock are exposed to a rabid animal and are currently vaccinated, the animal should be revaccinated immediately and observed for 45 days for signs of rabies.

If livestock are exposed to a rabid animal and are unvaccinated, they are either euthanized immediately or confined for close observation for 4 months on a case-by-case basis.<sup>3</sup>

The Rabies Compendium<sup>3</sup> states that herbivore-to-herbivore transmission is unlikely, so restricting movement of herd-mates is usually unnecessary, but should be evaluated on a case-by-case basis.

Handling and consumption of tissues from food animals exposed to a rabid animal is discussed in some detail in the Rabies Compendium.<sup>3</sup> Consult the Rabies Compendium<sup>3</sup> to learn more about risks associated with a food animal exposed to a rabid animal, and how to handle the milk or meat.

#### **G. A WILD RABIES-SUSCEPTIBLE ANIMAL (CAPTIVE OR NOT) OR WILDLIFE (INCLUDING BATS) BITES OR OTHERWISE EXPOSES A CAPTIVE WILD ANIMAL**

Animals in zoo collections, "species of special concern", and endangered species with a potential rabies exposure will be evaluated and managed on a case-by-case basis.<sup>3</sup>

*i. The biting animal IS available for testing*

The victim-animal should be impounded until it can be determined whether the animal that bit the victim-animal is infected or free of rabies.

- a) If the animal inflicting the wound or exposure is tested and found to be negative for rabies, the victim-animal may be released from impoundment.
- b) If the animal inflicting the bite/exposure is found to be positive for rabies, the victim-animal should be euthanized at once OR evaluated and managed on a case-by-case basis. Contact BCDP epidemiologists to discuss the situation and

BCDP will consult with the appropriate state or federal agency responsible for the captive wild animal species involved.

ii. *The biting animal is NOT available for testing*

Animals in zoo collections, “species of special concern”, and endangered species with a potential rabies exposure will be evaluated and managed on a case-by-case basis.<sup>3</sup> If the animal inflicting the bite/exposure is not available for testing, the epidemiology of rabies in Idaho should be taken into consideration when discussing management options for the victim-animal. See section RABIES IN IDAHO and visit the Rabies web site <http://rabies.dhw.idaho.gov> to learn more. BCDP will refer management decisions to the appropriate state or federal agency responsible for the captive wild animal species involved.

## **H. AN ANIMAL EXHIBITS UNUSUAL BEHAVIOR, BUT NO CONTACT OR BITE OCCURRED**

### **Rabies testing of any animal in the absence of an exposure:**

Testing of domestic or wild animals that are not associated with any kind of human or animal exposure will result in a fee being charged. Scenarios involving rabies testing are often complex. Responding to positive rabies test results in the absence of specific exposure information can be even more complex.

IDHW discourages testing of any rabies-susceptible animal for rabies in the absence of a suspected or confirmed exposure scenario. However, each situation brought to the attention of PHD or BCDP is evaluated on a case-by-case basis.

Fees for IBL testing are not charged, when exposures ARE suspected or confirmed. However, if no discernible exposure is associated with the animal in question, but testing is still requested, fees will be assessed from the submitter (or other responsible party, determined PRIOR to test approval) in accordance with Idaho Rule 16.02.25 IBL current fees: <http://adminrules.idaho.gov/rules/2012/16/0225.pdf>

Scenarios where testing may be considered, but require PRIOR approval, include a rule-out of rapidly fatal neurologic disease in a domestic animal or livestock as part of a veterinary differential diagnosis, or testing a sampling of animals associated with an apparent epizootic with rapidly fatal neurologic features. Any positive findings could still lead to a public health investigation, depending on the circumstances. Samples will NOT be accepted, under any circumstances, without PRIOR TEST APPROVAL from BCDP epidemiologists; for walk-in submissions IBL scientists will consult with BCDP epidemiologists prior to testing to assure that sample testing is appropriate. Approved samples must be accompanied by a RABIES TEST REQUEST FORM (see APPENDIX A) and, a pre-identified party to receive the testing invoice.

## 16. REFERENCES AND CREDITS

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13. AVMA 2013 Euthanasia Guidelines  
<https://www.avma.org/KB/Policies/Documents/euthanasia.pdf>
14. Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2013 and the Animals in Public Settings Toolkit:  
<http://nasphv.org/documentsCompendiumAnimals.html>  
National Association of State Public Health Veterinarians Compendium
15. Michael, CM, Rolan DD, Qing, K, et al. Comparison of anamnestic responses to rabies vaccination in dogs and cats with current and out-of-date vaccination status. January 15, 2015, Vol. 246, No. 2, Pages 205-211  
<http://avmajournals.avma.org/doi/full/10.2460/javma.246.2.205>

**17. APPENDICES:**

**A: Rabies Test Request Form**

**B. ISDA Confinement Letter**

**C. Definitions**

**D. Prospective serologic monitoring protocol (NASPHV-2016)**

**E. Rabies Management Flow Charts**



**APPENDIX A  
RABIES TEST REQUEST FORM, 2015**

A fillable form is found on the following website:

[http://healthandwelfare.idaho.gov/Portals/0/Health/Labs/Rabies\\_Test\\_Request\\_Form.pdf](http://healthandwelfare.idaho.gov/Portals/0/Health/Labs/Rabies_Test_Request_Form.pdf)

Please call the Idaho Bureau of Laboratories (208-334-0593) if there are questions surrounding the use of the form. Submit one completed copy with the sample and the submitter should keep one copy. Results will be sent to state and local public health, the veterinarian, and the submitter, if different than the veterinarian.

 IDAHO DEPARTMENT OF HEALTH & WELFARE DIVISION OF PUBLIC HEALTH	<b>State of Idaho</b> <b>Rabies Test Request Form</b>
Date Submitted: _____ Carrier: USPS ( <input type="radio"/> ) UPS ( <input type="radio"/> ) FEDEX ( <input type="radio"/> ) Other: _____ Notify virology lab prior to shipment: (208) 334-0593 or statelab@dhw.idaho.gov	SHIP TO: Idaho Bureau of Laboratories Rabies Laboratory 2220 Old Penitentiary Road Boise, ID 83712 (208) 334-0593
<b>VETERINARIAN:</b> _____ (Name) _____ (Address) _____ (City, State, County) Phone: _____	<b>OWNER/SUBMITTER:</b> _____ (Name) _____ (Address) _____ (City, State, County) Phone: _____
<b>BITING ANIMAL INFORMATION:</b> Species: _____ Vaccine Date: _____	
<b>EXPOSURE INFORMATION: DATE OF EXPOSURE:</b> (required) _____ Person/s exposed: _____ Phone: _____ Animal/s exposed: _____ Species: _____ Vaccine status: _____ <input type="checkbox"/> Provoked attack <input type="checkbox"/> Bite <input type="checkbox"/> Scratch <input type="checkbox"/> Saliva contamination of: <input type="checkbox"/> Unprovoked attack <input type="checkbox"/> Handled Bat <input type="checkbox"/> Woke with bat in room <input type="checkbox"/> Mucous membranes <input type="checkbox"/> Open wounds Body Part exposed: _____ <b>ADDITIONAL INFORMATION:</b> _____ _____ _____	
<b>GENERAL INFORMATION:</b> All Positive results will be immediately called to the appropriate people. In order to facilitate decisions regarding treatment it is critical that the specimen be tested as soon as possible. In Idaho, nearly all cases of animal rabies have occurred in bats. Often when humans are infected with rabies from bats, no bite is known to have occurred. For this reason <b>BAT EXPOSURES MUST BE GIVEN HIGHEST PRIORITY</b> and even casual exposures to bats must be carefully evaluated. <b>PACKING INFORMATION:</b> Only the head should be submitted if the animal weighs over 8 lbs. No whole skunk bodies will be accepted regardless of weight. The head must be kept cold until testing. For animals weighing between 8-20 lbs, there will be a charge of \$50.00 to dispose of the carcass. No "whole" animals weighing over 20 lbs. will be accepted. 1. Double bag specimen in heavy plastic bags and wrap in absorbent material. 2. Place in a rigid insulated container with appropriate number of "blue ice" blocks to assure the package remains cool until it reaches the lab. Freezing does not invalidate the results but may delay testing. 3. Ship to Idaho Bureau of Laboratories, Rabies Lab, 2220 Old Penitentiary Road, Boise, ID 83712. It is the responsibility of the shipper to ensure proper packaging and shipping of potentially infectious and biological substances.	
For added information call: IDAHO STATE BUREAU OF LABORATORIES (208) 334-0593 IDAHO STATE OFFICE OF EPIDEMIOLOGY (208) 334-5941	

Revised 4/24/2015

## APPENDIX B

Copy of Idaho State Department of Agriculture Quarantine Notification Letter  
(8/16/16)



# STATE OF IDAHO

C.L. "BUTCH" OTTER  
Governor  
Celia R. Gould  
Director

DEPARTMENT OF AGRICULTURE  
DIVISION OF ANIMAL INDUSTRIES

2270 Old Penitentiary Road  
P.O. Box 7249  
Boise, Idaho 83707  
Ph: 208-332-8540 Fax: 208-334-4062

(Date)

(Name)  
(Address)

Dear

As a result of your animal being exposed to a rabid animal, this letter is being sent to you detailing the conditions under which a rabies-exposed pet could be quarantined at home. This allowance will be subject to an on-site inspection by the Idaho Dept. of Health & Welfare, Idaho Dept. of Agriculture, the local Health District or other person (veterinarian) designated by these agencies.

The requirements for an approved quarantine facility include:

1. Solid sides or double fencing on the cages so that no inadvertent human or animal contact is possible. *(Note: When double-fencing, the outer cage fencing should be of tight gauge wire such as chicken wire, and should be spaced far enough from the inner cage fencing so that children, adults or other animals cannot put their fingers or paws through and contact the quarantined animal)*
2. Solid or substantial flooring so the animal cannot dig out; a roof or walls of adequate height and material so animal cannot climb or jump out.
3. A lock on the gate so only authorized people can open the pen.
4. A plan for veterinary oversight of the quarantined animal so that the health of the animal can be documented.
5. Rabies is a potentially deadly disease for humans and animals. Therefore, there must be no human contact with the quarantined animal(s) for the duration of the quarantine period. Please take proper precautions while feeding and caring for your other pets so that no direct contact with the quarantined animal(s) occurs during the quarantine period.
6. If your animal shows any signs of illness, you will report the problem to your veterinarian and to the State Veterinarian's office immediately.
7. Periodic site inspections may be conducted by the Department of Agriculture or Public Health District personnel or their designee.



If your pet was exposed to a **suspected or confirmed rabid animal**, and if your pet was adequately vaccinated against rabies or previously vaccinated (with documentation), your pet must still receive a rabies booster and be held under the owners control for a period of 45 days from the time of rabies exposure to be sure they don't develop rabies.

Release Date:

If your pet was never vaccinated against rabies:

- The quarantine period is 4 months from the exposure, and under strict quarantine.
- After a rabies exposure, your animal must be vaccinated for rabies by a licensed veterinarian ideally within 96 hours of exposure.
- The animal must be inspected by a veterinarian at the beginning, at the end of the quarantine period, prior to official release from quarantine, and at any time if the animal develops signs consistent with rabies.
- At the end of the quarantine period, please have the veterinarian call our office or send a copy of the final inspection to our office.

If this plan for home quarantine is acceptable to you, please sign this letter and return it to the State Veterinarian's office or person that inspected your facility within 5 days.

If you have any further questions, please don't hesitate to contact us.

Sincerely,

Scott Leibsle, DVM  
Deputy State Veterinarian  
Idaho State Department of Agriculture  
208 332-8540

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(Signature of Owner and Date)

cc: State Veterinarian  
ISDA Animal Health Inspector  
Idaho Department of Health & Welfare  
Local District Health Department  
Veterinary Medical Provider

## **APPENDIX C**

### **DEFINITIONS AND ADDITIONAL INFORMATION**

**Abortive rabies infection:** an exceedingly rare situation where an individual with rabies recovers completely or survives with only residual symptoms such as pareses or paralysis.

**ACIP:** The Advisory Committee on Immunization Practices (ACIP) is a multi-agency national working group which produces guidance documents for vaccine-preventable diseases. There are two rabies-specific ACIP guidance documents currently in use.<sup>1,4</sup>

**Appropriately vaccinated animal:** Rabies vaccination must be performed by or under the direct supervision of a veterinarian who is licensed to practice veterinary medicine. The Compendium of Animal Rabies Prevention and Control<sup>3</sup> lists species-specific vaccine formulations, their appropriate usage, detailed information on proper immunization status, and the use of boosters. According to the Compendium<sup>3</sup> dogs, cats, and ferrets are species that will be considered appropriately vaccinated for the purpose of rabies control when the owner has documented that the animal:

- is older than 3 months (older than 2 months for certain vaccine formulations); and
- had been vaccinated by a licensed veterinarian with a rabies vaccine approved by USDA for use in that species; and,
- had received the appropriate number of vaccinations for its age as specified in the current Rabies Compendium.

#### *SPECIAL NOTES REGARDING VACCINATION OF ANIMALS*

- **CATS:** According to the Rabies Compendium<sup>3</sup>, more rabid cats are reported annually than dogs in the United States, so vaccination of cats is strongly encouraged.
- **WOLF/DOG OR WILD CAT/DOMESTIC CAT HYBRIDS:** Such hybrid animals are not approved candidates for rabies vaccination.
- **HORSES:** The American Association of Equine Practitioners recommends that the rabies vaccine be a core vaccine for all equids (<http://www.aaep.org/rabies.htm>). Owners must review equine health certificate requirements with a licensed veterinarian prior to interstate travel.
- **LIVESTOCK:** Vaccination of valuable livestock, such as sheep or cattle or animals that might have frequent contact with humans<sup>14</sup> (e.g., petting zoos, fairs, and other public exhibitions) should be strongly considered. Refer to the current Rabies Compendium for appropriate vaccine selection, by species.<sup>3</sup>
- **ZOO ANIMALS:** Review the current Rabies Compendium<sup>3</sup> recommendations regarding management of zoo animals, limit public exposure to zoo animals, particularly rabies-susceptible species, and consider rabies vaccination of staff working with rabies-susceptible species.

- The NASPHV Rabies Compendium committee recommends that animal shelters and animal control authorities establish policies to ensure that adopted animals are appropriately vaccinated against rabies.<sup>3</sup>

See **Overdue Animal Vaccinations**

**Attacks:** Attacks are generally categorized as provoked or unprovoked. These categorizations can influence management decisions:

- **Provoked attack:** An attack is considered provoked if an animal is placed in a situation such that an expected reaction would be to bite or attack. This might include, but not be limited to the invasion of an animal's territory, attempting to pet or handle an unfamiliar animal, startling an animal, assisting an injured animal, trying to capture an animal, or removing food, water, or other objects in the animal's possession. Although provoked attacks might be explained by normal animal behavior, a thorough investigation should always occur to determine if the attack was provoked or unprovoked.
- **Unprovoked attack:** An unprovoked attack or bite occurs when an animal strikes for no apparent reason. The behavior should be considered unusual for the particular animal or species. A confirmation of chronic aggressive behavior would reduce the likelihood that a bite would be considered unprovoked or due to a rabies infection.

**AVMA Model Rabies Control Ordinance and AVMA Policy Statements and Guidelines:** According to the Rabies Compendium<sup>3</sup>, local governments should initiate and maintain effective programs to assure vaccination of all dogs, cats, and ferrets and to manage stray and unwanted animals either by removal or vaccination. Such procedures in the United States have reduced laboratory confirmed cases of rabies in dogs significantly since the 1940s; there were 6,949 rabid dogs in 1947 compared to 59 rabid dogs in 2014.<sup>2</sup> AVMA recommends the use of the AVMA Model Rabies Ordinance as a guide for local authorities and other government entities to set rabies control policies.

<https://www.avma.org/KB/Policies/Pages/Rabies-Policy.aspx>

**Bat exclusion:** To reduce the chance of a bat encounter in a home or cabin, bats should be excluded from dwellings by following suggestions found on the CDC website (<http://www.cdc.gov/rabies/bats/management/index.html>). Bats tend to live seasonally in homes, rearing their young during the summer months, then migrating away. Exclusion of bats from homes should take into consideration the bat nursery and migratory seasonal patterns. Bats should never be excluded when young are present; locking them in may increase the likelihood that they will die in the attic or find their way into human living areas. Winter is the best time to conduct bat proofing of homes, to prevent bats from entering the dwelling the following spring. Eradication of bat populations in Idaho is not feasible or desirable.

**Bats:** Bats are beneficial to the environment and consume large quantities of mosquitoes and other pest insects. They should be appreciated, but preferably from a distance. Idaho has approximately 12 species of bats. Hoary, Silver-haired, Big- and Little Brown bats are the most common species determined rabid in Idaho, but all species are considered rabies-susceptible. Bats are nocturnal creatures, most active at night. Although it is not generally considered normal behavior for bats to be overly active during daylight hours, migrating bats may be seen resting on trees or buildings during day light hours. Bats might rarely be seen resting in shady places during the day, but in general go unnoticed during the daylight hours. Bats are considered a significant wildlife reservoir for rabies virus in the United States; Idaho is no exception.

- The CDC website on bats and rabies can be found here: <http://www.cdc.gov/rabies/bats/index.html>
- To learn more about bats and rabies in Idaho, visit: <http://rabies.dhw.idaho.gov>
- To learn more about Idaho bat species, read the Bureau of Land Management publication, Idaho's Bats; Description, Habitats, and Conservation <http://www.blm.gov/pgdata/etc/medialib/blm/id/wildlife/mammals/bats.Par.21992.File.dat/bat%20publication.pdf>

**Bat rehabilitation/rehabilitators:** Injured bats can be submitted to bat rehabilitation experts for their recovery. Wildlife rehabilitation permits are required by IDFG prior to possession of wildlife, including bats. Regional IDFG offices should be familiar with rehabilitators across the state. Wildlife rehabilitators should review the rabies risks found in this document and on the CDC rabies website<sup>2</sup> when receiving or renewing their permits and before handling any bat.

Individuals participating in bat rehabilitation are considered to be participating in an activity with an inherent risk for rabies exposure.

According to ACIP<sup>1</sup>, individuals participating in risky activities (such as bat rehabilitation) should:

- Receive the full rabies pre-exposure vaccination series prior to working with bats. For vaccination strategies for bat handlers see table 6 of the ACIP guidance.<sup>1</sup> The “frequent-risk” category includes persons who frequently handle bats.
- Have anti-rabies antibody titers checked every 2 years, as recommended by the ACIP guidance document.<sup>1</sup> Persons in the “frequent-risk” group should have a serum sample tested for rabies virus neutralizing antibody every 2 years. If the titer provides less than complete neutralization at a 1:5 serum dilution by the RFFIT, the person also should receive a single booster dose of vaccine (See SEROLOGY section). NOTE: adequate titers are meant to assist in protection during an unrecognized rabies exposure; however, all bites from known rabid animals, regardless of serum titer levels, should be followed by post-exposure prophylaxis for previously vaccinated individuals.
- Receive post-exposure boosters if an exposure to a suspected or confirmed rabid animal occurred. This is recommended for previously vaccinated individuals; even

those with adequate  $\geq 1:5$  RFFIT values. The recommendations are found in the ACIP document.<sup>1</sup>

- Never handle any bat without gloves, even though vaccinated. Gloves should be made of leather or other thick material to avoid a bite or direct skin puncture/contact.
- Wash hands thoroughly after handling bats, even after wearing gloves.
- Avoid mucous membrane contact (*e.g.*, eyes, mouth) during and after handling bats. Eye protection is recommended when working with bats.

Those involved with bat rehabilitation should limit bat-related activities to themselves and others who have similarly received the pre-exposure vaccination series. Bat rehabilitators receiving an exposure from a bat considered potentially rabid should submit the bat for rabies testing, to determine if they had an exposure to rabies.

Bat rehabilitators should always advise members of the general public which have handled or been exposed to bats, or are requesting assistance with bat rehabilitation that bats may be a source of rabies. They should strongly encourage any member of the public with a bat exposure to discuss the exposure with their PHD epidemiologist or healthcare provider. Whenever any situation arises where a rabies exposure is suspected or confirmed, the PHD must be notified and the bat should be tested for rabies, if available. A 10-day observation period has NOT been established for bats.

Information on bat exposures and general rabies educational materials are available through the Idaho Department of Health and Welfare rabies website:

<http://www.rabies.dhw.idaho.gov>

**Bite or other exposure:** Refers to a bite, scratch or exposure (see EXPOSURE definition) to saliva or neural (brain/spinal cord) tissue from a rabies-susceptible animal (see RABIES SUSCEPTIBLE ANIMAL). The actual witnessing of a bite or attack by a potentially rabid animal is not required for an exposure to have occurred (see ANIMAL RABIES); sometimes people awake to the presence of a bat and are not sure if an exposure happened. Animal attacks can be categorized as provoked or unprovoked (see ATTACKS definition).

**CDC:** Centers for Disease Control and Prevention.

**Confinement:** Containment, the act of restraining an animal's liberty. This concept includes the restriction of an animal's movements during the 10-day observation period, owner's control, and strict quarantine.

**Domestic animal:** A dog, cat, or ferret, or domestic livestock, as defined by the current Rabies Compendium.<sup>3</sup>

**Euthanasia, humane:** Euthanasia should be conducted in accordance with the 2013 American Veterinary Medical Association (AVMA) Euthanasia Guidelines.<sup>13</sup> If euthanasia is the only option, according to the scenarios outlined in this rabies guidance

document, then the animal must be euthanized in the most humane method possible. Methods to avoid damaging the head are to be employed so brain tissue is available for rabies testing. Note: Freezing is NOT considered a humane method for euthanasia for bats or any other species. Euthanasia of species of special concern, threatened species, and endangered species cannot occur without prior approval by the IDFG, Wildlife Bureau. Situations involving species of special concern will be managed on a case-by-case basis.

**Exposure:** According to ACIP<sup>1</sup>, the rabies virus is found in concentrations sufficient for infection only in saliva, salivary glands, and central nervous system tissue of rabid animals; urine, blood, and feces are not considered a source of rabies virus. The exposure risk associated with consumption of milk from a rabid animal is still under investigation.<sup>1</sup> The rabies virus, found in saliva and neural tissue, can be introduced by bite and non-bite routes. Special consideration must be taken regarding bats (see BATS AND RABIES section above).

- **Bite:** Skin has been penetrated by an animal's teeth. Bites can be deep, such as those from cats or dogs, or relatively insignificant or unrecognized, such as those from a bat. All bite or potential bite situations should be evaluated by a healthcare provider to determine the need for rPEP.
- **Non-bite:** Saliva or neural tissue from an animal has come into contact with an open wound, abrasion, scratch, or mucous membrane. Rare non-bite exposures have included organ and tissue transplantation, laboratory exposure, and airborne exposure in bat caves.

**FAVN** (fluorescent antibody virus neutralization) test; see section 14b, SEROLOGIC TESTING

**Idaho Bureau of Laboratories:** Idaho Department of Health and Welfare, Bureau of Laboratories, Virology section, Boise (208) 334-0593

**Impounded:** kept in an enclosure, in the case of rabies management, kept in a manner that reduces direct public contact.

**Isolation:** See "Strict Isolation".

**Livestock:** Cattle, domestic bison, swine, horses, mules, asses, domestic cervidae, sheep, goats, and camelids, or other mammals determined to be livestock by the Idaho State Department of Agriculture.

**Observation:** see 10-day observation period.

**Overdue Vaccinations:** According to the rabies compendium<sup>3</sup> If a previously vaccinated animal (with proof of past vaccination) is overdue for a booster, it should be revaccinated. Immediately after the booster, the animal is then considered currently vaccinated and should be placed on a booster schedule, depending on the labeled

duration of the vaccine used. If the owner states that the animal was previously vaccinated against rabies but there is no proof, consider using the ‘prospective serologic monitoring protocol’ to prove past vaccination through demonstration of a robust anamnestic response. The protocol is found here:

[http://nasphv.org/Documents/NASPHV\\_Serologic\\_Monitoring\\_2016.pdf](http://nasphv.org/Documents/NASPHV_Serologic_Monitoring_2016.pdf)

**Owner’s Control:** Dogs, cats, or ferrets that are current on their rabies vaccine and are exposed to a confirmed or suspected rabid animal, are kept under the owner’s control for a 45-day period. The animal must be kept in a manner so that the animal cannot escape the owner’s control for the duration of the confinement. This form of confinement is less strict than “strict quarantine”.

**Petting zoos and other public settings where animals are displayed:** The risks associated with animals in public displays (such as petting zoos) are described in the “Compendium of Measures to Prevent Disease Associated with Animals in Public Settings – 2013”.<sup>14</sup> This document is updated periodically. The current version is found on the following website:

<http://www.nasphv.org/Documents/AnimalContactCompendium2013.pdf> **Post-exposure prophylaxis, rabies (rPEP):** See **RABIES PREVENTION** (Section 8-b).

**Pre-exposure prophylaxis, rabies:** See **RABIES PREVENTION** (Section 8-b).

**Quarantine:** See **CONFINEMENT**.

**Rabies Compendium:** The Compendium of Animal Rabies Prevention and Control<sup>3</sup> is a document updated frequently by the National Association of State Public Health Veterinarians (NASPHV). This document is the definitive reference on animal rabies control issues. This version of the Idaho rabies protocol refers to information found in the 2016 Rabies Compendium<sup>3</sup> available at

<http://www.nasphv.org/documents/Compendia.html>

Decisions on animal rabies control issues in Idaho should always reference the most recent edition of the NASPHV Rabies Compendium.

**Rabies vaccination exemption:** (see **VACCINE WAIVERS** section)

**Rabies-susceptible animal:** All warm-blooded animals are susceptible to rabies infection. Reptiles, birds, amphibians, insects, and arachnids are not rabies-susceptible species. Rodents are thought to be less likely to become infected; however, there has been documentation of rabies in these species; Wyoming reported a rabid squirrel in 2000 infected with a bat strain of rabies. Opossums are believed to be fairly resistant to infection; however, a small number of rabid opossums are reported in the United States most years. Therefore, interaction with these species is considered a rabies risk, but the management should be handled on a case-by-case basis. To review the most recent rabies surveillance data for the United States visit the CDC rabies page:

<http://www.cdc.gov/rabies/location/usa/surveillance/index.html>

**RFFIT (Rapid Fluorescent Focus Inhibition Test) antibody testing:** see HUMAN SEROLOGY, section 14-a.

**Species of Special Concern:** Contact the Idaho Department of Fish and Game to learn more. The Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal native to a state that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated (no longer present, exterminated) from the State or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

**State Agencies**

- Idaho State Department of Agriculture, Animal Industries: State Veterinarian, (208)332-8540.
- Idaho Department of Fish and Game: State Wildlife Veterinarian, (208) 454-7646.
- Idaho Department of Health and Welfare, Bureau of Communicable Disease Prevention, Epidemiology Program: (208) 334-5939

**State Public Health Laboratory:** see Idaho Bureau of Laboratories.

**Strict quarantine:** Refers to the isolation of an unvaccinated animal (one which has never been vaccinated against rabies), exposed to a suspected or confirmed rabid animal, in a manner that ensures no contact with the public or other animals, other than the caretaker, can occur for the duration of the isolation period. Strict isolation generally occurs at the owner’s home or premises. ISDA can approve a structure or situation developed on site to humanely care for the animal during strict isolation. ISDA has developed a home quarantine protocol to facilitate strict quarantine, as outlined in the sample letter to owners; see APPENDIX B. The owner is responsible for all costs associated with strict quarantine. Unvaccinated dogs and cats are vaccinated and then maintained in strict quarantine for 4 months (6 months for ferrets); the Rabies Compendium<sup>3</sup> recommends that this happen within 96 hours of exposure. Animals that are currently or have been previously vaccinated against rabies (see OVERDUE VACCINATIONS) are NOT held in strict quarantine, they are to be revaccinated immediately and kept under the “owner’s control” for 45 days (see OWNER’S CONTROL).

**Ten (10)-day observation period:** Also known as 10 day quarantine or 10 day confinement. In accordance with the Rabies Compendium<sup>3</sup>, any dog, cat, or ferret, regardless of rabies vaccination status, that potentially exposes a person or animal to rabies will be confined for 10 days from the time of the incident and observed daily for signs consistent with rabies. In accordance with IDAPA 16.02.01, the 10 day observation period should be conducted in a manner to prevent contact with the public or other animals. Any illness during the confinement period must be evaluated by a veterinarian and reported to public health. If signs are suggestive of rabies, the animal should be euthanized and tested for rabies. Animals should not be vaccinated against rabies during the 10 day observation period, as adverse vaccine reactions could be confused with rabies infection. If the animal is due for rabies vaccination, vaccinate the animal at the end of the observation period, but prior to release. If animals appear healthy at the end of the 10-day confinement period, they are considered not to have rabies.

**USDA:** United States Department of Agriculture. Boise office: (208) 373-1620.

**Vaccination, Rabies:** According to the rabies compendium<sup>3</sup>, rabies vaccination can only be administered by a currently licensed veterinarian or by a designee under direct supervision by the veterinarian on premises. The veterinarian signing the certificate must also indicate on the rabies certificate the name of the person who administered the vaccine.

**Vaccine Waiver:** A rabies vaccination exemption (waiver) may be considered for a dog, cat, or ferret for which the veterinarian determines that vaccination would endanger the animal's life because of disease or other considerations. Although the American Veterinary Medical Association (AVMA) strongly endorses rabies vaccination, they recognize the possibility of adverse events in some animals. For this reason AVMA created a "Model Vaccine Waiver Form" for use by VETERINARIANS ONLY. Because there are no statewide rabies vaccination laws in Idaho, the endorsement of waiver usage falls to the local governmental authorities, NOT the public health authorities, and would be used in accordance with local rabies vaccination ordinances.

**Wild animal:** an animal species not ever domesticated by man (influenced by selective breeding programs) and not living under human supervision or control.

**Wild animals, wildlife, and hybrids:** The 2016 Rabies Compendium<sup>3</sup> states that there are NO parenteral (injectable) rabies vaccines currently licensed for use in wildlife or wildlife/domestic hybrids. Zoos or research institutions may establish vaccination programs in an attempt to protect valuable animals that may have rabies exposures due to the open nature of their enclosures, but these vaccinations should not replace appropriate activities to protect humans that work with the rabies-susceptible animal or visit the zoo.<sup>3</sup> It is recommended that handlers receive the pre- and post-exposure series, as needed, to reduce the need for euthanasia of captive animals that expose handlers<sup>1</sup> and visitors should not be allowed direct contact with bats.<sup>1</sup> Oral rabies vaccine programs (baited vaccine)

have been implemented in certain areas of the United States in an attempt to reduce the presence of rabies in certain wildlife species (such as raccoons, skunks or coyotes).

**Wildlife:** Captive and free-ranging wild animals.

**Wolf:** The IDFG (IDAPA 13.01.10) defines a wolf as a canid with the following characteristics:

1. The eyes shine greenish orange.
2. The ears are rounded and smaller in proportion to those of the coyote.
3. Snout is broad with the nose pad wider than 1 (one) inch thick.
4. Legs are long, an adult would stand approximately 26 to 32 inches at the shoulder.
5. Length is typically 4.5 to 6 feet from the tip of the nose to the tip of the tail.
6. An adult typically weighs at least 80 pounds.
7. The tail is carried high or straight out when running.
8. The fur is long and coarse, varies from white to black but is generally grayish in coloration resembling the coyote. The underparts are not as white and the legs and feet are not as red as those of the coyote.

According to IDAPA 13.01.10

"Any person who obtains or possesses a canine exhibiting primary wolf characteristics or who captures a wolf alive or possesses or obtains a wolf that was born or held in captivity for any purpose must apply for a license for each animal within three (3) days of possession, capture or commencement of captivity". Application for a license for each animal shall be made on a form prescribed by the IDFG and must be completed and returned to the IDFG within two (2) weeks of application. Each captive animal so identified as a wolf must be individually identified with a tattoo on the right flank or inside the right ear by a qualified veterinarian. All animals over the age of 6 months must be tattooed. Applicants shall have each animal properly tattooed by a qualified veterinarian. The veterinarian shall certify that the animal has been tattooed on the license application." An annual license is required in Idaho through the IDFG Regional Office. Call the local IDFG regional office for more details.

**Wolf hybrid/ wild/domestic animal hybrid:** A wolf hybrid is a cross between a pure wolf and a dog or another wolf/dog hybrid, usually crossed with large-breed dogs. Hybrids tend to be heavier and taller than wolves. The owners are responsible for declaring an animal a wolf-hybrid. The 2016 Rabies Compendium<sup>3</sup> states that no parenteral (injectable) rabies vaccine is licensed for use in wildlife/domestic hybrids. There is no known literature differentiating wolf-hybrid management based on the variable percentage of wolf in a hybrid animal.

According to the 2016 Rabies Compendium<sup>3</sup>, euthanasia and rabies testing should be considered for wild mammals and other hybrids that bite or otherwise potentially expose persons, pets, or livestock to rabies. Because of the epidemiology of rabies in Idaho, management of hybrids that bite a person or are bitten by a rabid animal will be conducted on a case-by-case basis.