



# **MANUAL FOR RABIES CONTROL AND ANIMAL BITE MANAGEMENT**



**ARIZONA DEPARTMENT  
OF HEALTH SERVICES**

# Manual for Rabies Control and Bite Management

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## **Objectives**

This manual provides guidance to public health, veterinarians, animal control officers, wildlife biologists, wildlife rehabilitators, and other agencies regarding rabies surveillance and control, as well as best practices for animal bite management in Arizona. These recommendations are based on the [Compendium of Animal Rabies Prevention and Control, 2016](#), the [Advisory Committee on Immunization Practices Guidelines, 2010](#), [Arizona's laws \(Arizona Revised Statutes - Article 6 sections 11-1001 through 11-1027](#), and the [Arizona Administrative Code - Communicable Disease Rules R9-6-501-503](#)).

## **Introduction**

Rabies is a preventable viral disease most often transmitted through the bite of a rabid animal. The rabies virus attacks the central nervous system, causing encephalitis in humans and animals. It is always fatal once symptoms appear. In Arizona, the principal rabies hosts are bats, skunks, and foxes. These animals carry their own distinct rabies virus variants or "strains". When rabies activity within these animal groups increases, rabies can "spillover" into other mammal species, such as bobcats, coyotes, javelina, cats, dogs, horses, cows, etc.

Bats are consistently the most common source of rabies exposures to humans in Arizona because rabid bats often fall to the ground where they are easily accessible to people and pets. Bats are generally not aggressive. Exposure to rabid bats usually occurs when people pick up or handle a sick or dead bat. Other rabies exposures in Arizona occur when people try to approach or feed wild animals, or in some cases, are attacked by rabid animals such as foxes, bobcats, and skunks. Most rabies exposures can be avoided by simply leaving bats and other wild animals alone. Every year, approximately 30 people are exposed to rabid animals in Arizona. Prompt administration of rabies post exposure prophylaxis (immune globulin and anti-rabies vaccine) should be initiated to prevent rabies from developing after a person has had contact with or has been bitten by a rabid animal. The last documented human rabies case in Arizona, which was also fatal, occurred in 1981.

## Definitions

Confirmed Rabies Case: An animal that has tested positive for the rabies virus by direct fluorescent antibody test (dFA) at the Arizona State Public Health Laboratory, a public health laboratory in another state, a university laboratory (i.e. Arizona Veterinary Diagnostic Laboratory), or the Centers for Disease Control and Prevention Rabies Laboratory, **OR** by direct rapid immunohistochemical testing by USDA Wildlife Services.

### Rabies Exposures:

- 1) Bite: wound from a tooth that penetrates the skin.
- 2) Non-bite: contact with saliva, brain tissue, or cerebral spinal fluid from a potentially rabid animal into an open wound or in the eyes, nose, or mouth, or via a scratch.

Incubation Period: The time from exposure to a disease until the development of clinical signs or symptoms. The incubation period of rabies is longer and more variable among different species and individuals than in other viral diseases. The incubation period of rabies may depend on the virus variant, susceptibility of the exposed species, the location and amount of inoculum, and post exposure management.

Rabies Virus "Shedding Period" (infectious stage): The time that an animal excretes rabies virus in its saliva. During this period, an animal can transmit rabies to another animal or human. Viral shedding tends to occur only during the late stage of the disease, after rabies has affected the brain (just before death).

Shedding Time and Quarantine/Observation Period: The maximum infectious stage of rabies in dogs and cats in the United States is ten days. If a dog or cat remains healthy for 10 days after biting a person, it is safe to assume that rabies was not transmitted. This quarantine/observation period is also 10 day if a person is bitten by a ferret. Rabies shedding periods in wild animals are not known, and they should be tested for rabies rather than quarantined if they expose a person.

Quarantine: Confinement of an animal to a limited, enclosed area in order to restrict exposure of that animal to other animals and to humans, and to facilitate observation of the animal for signs of rabies.

## Rabies Biology

### Characteristics

The rabies virus (Family *Rhabdoviridae*, genus *Lyssavirus*) is fragile and easily inactivated by desiccation, ultra-violet radiation, and detergents. It is rapidly destroyed by temperatures above 50 Centigrade (122° F) and destroyed within a few hours at room temperature. However, the rabies virus may persist for years when frozen.

### Transmission

Rabies can be transmitted when infected saliva, central nervous system tissue, or cerebral spinal fluid penetrates the skin or mucosa of a susceptible mammal. Rabies is usually transmitted by bite wounds, but may involve saliva contact with mucous membranes or a fresh break in the skin. Rabies is not transmitted by contact with blood, urine, feces, petting or touching fur, or being sprayed by a skunk.

### Pathogenesis

After inoculation, the rabies virus progresses from the subcutaneous tissue or muscle into peripheral nerves. The virus then migrates along nerves to the spinal cord and brain. The victim exhibits behavioral changes and clinical signs when the virus reaches the brain. At this point the incubation period is over and the clinical period begins. The virus continues to spread in the infected host, via the nerves, to the salivary glands; in the final phase, rabies can be transmitted to other mammals through infectious saliva.

The infected animal usually dies within a few days after onset of clinical signs. Factors that may contribute to the transmission, incubation period and development or prevention of rabies infection include: the amount of viral inoculum (amount of rabies virus introduced into the body); the anatomic location of the bite or saliva exposure; and post-exposure wound management (washing the wound, rabies immune globulin and vaccination). Head and neck wounds as well as wounds in highly innervated areas such as fingers generally have shorter incubation periods due to the proximity of the viral inoculation to nerve tissue.

### Incubation Period and Duration of Disease in Dogs and Cats\*

- Incubation Period - Average 2-9 weeks; range 9 days - 8.5 months (not >4 months in U.S.)
- Prodromal/Initial stage - 1-3 days
- Excitation (furious) stage - average 1-7 days. Some animals do not exhibit this stage.
- Paralytic stage - 1-4 days duration

\*If a dog or cat has not shown any signs of abnormality on the tenth day after inflicting a bite, it is safe to assume that the animal was not shedding virus in its saliva at the time of the bite.

### Incubation Period and Duration of Disease in Other Animals

**Table 1. Incubation Period and Duration of Disease in Other Animals**

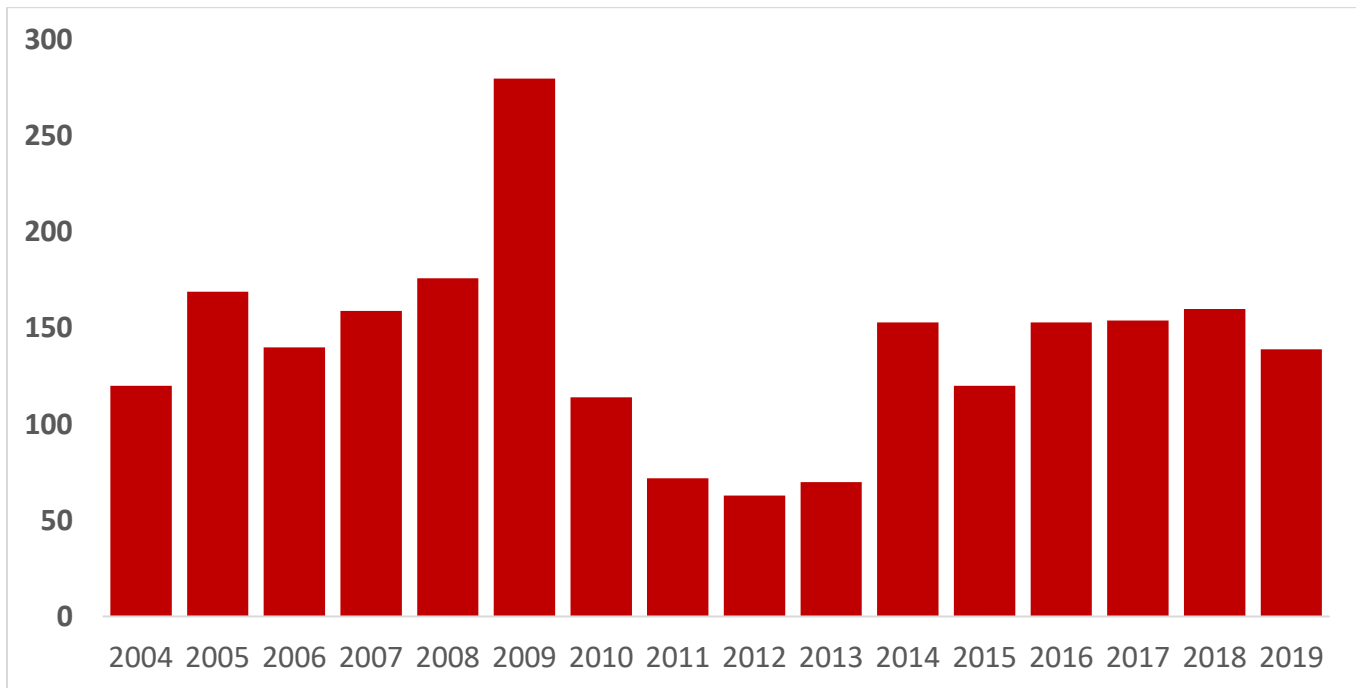
Species	Incubation period	Duration of clinical disease
Cattle	Average 2-15 weeks, range <6 months	Usually 1-6 days, rarely as long as 14 days
Horses/mules	Average 3-14 weeks, range <6 months	2-8 days
Sheep/goats	2-17 weeks	5-7 days
Wild/exotic animals	Unknown	Unknown
Humans	Average 3-16 weeks, range weeks to 6 years	2-21 days

## Epidemiology of Rabies

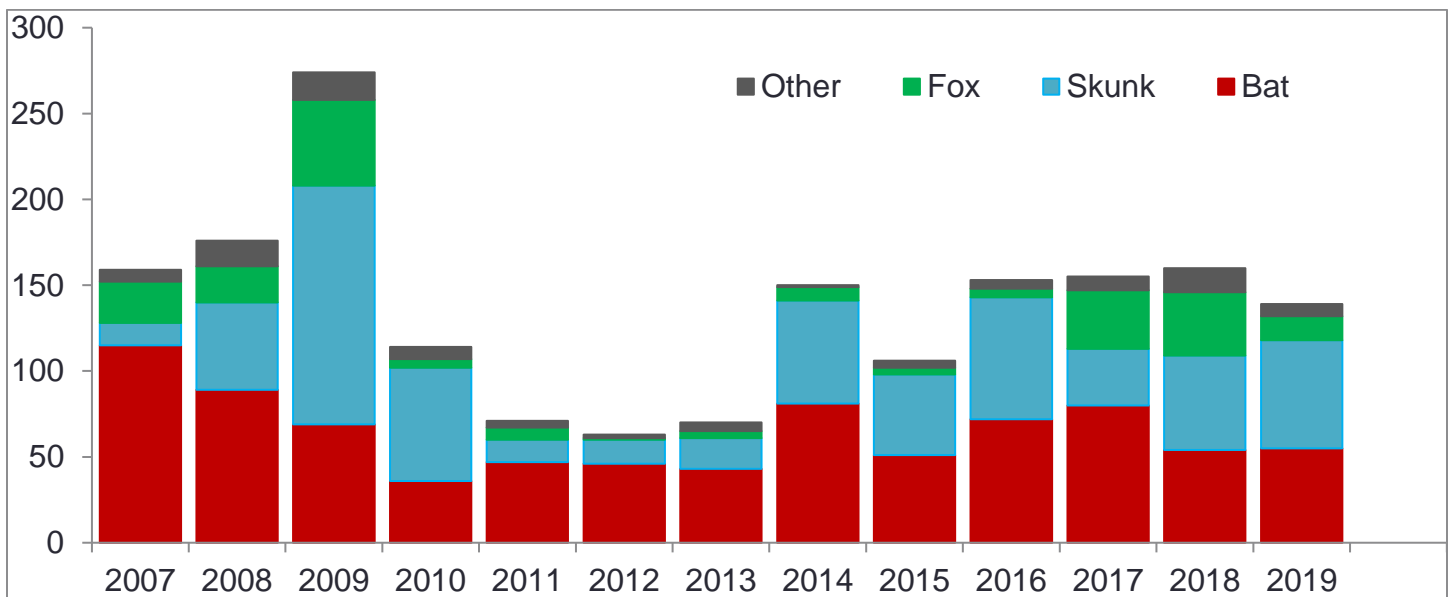
### Arizona

Rabies surveillance in Arizona has been occurring for decades, with testing conducted at the Arizona State Public Health Laboratory as early as the 1940's. The number of confirmed cases of rabies in animals in Arizona fluctuates annually, and has stayed fairly steady over the past few years (Figure 1). The most commonly infected species in Arizona include bats, skunks, and foxes (Figure 2). In 2009, there was an epizootic of skunk rabies in Southern Arizona and an epizootic of fox rabies in Northern Arizona, accounting for the increased count of confirmed positive rabid animals. Additional epizootics in skunks have been seen in Southern Arizona during 2014-2015. A fox epizootic began near the end of 2017 and continued through 2018. Occasionally coyotes, bobcats, ringtails, javelina, and domestic livestock or pets are infected as a result of interaction with the most commonly infected wildlife species. Additional data reports are available [here](#).

**Figure 1. Confirmed Rabies Positive Animals by Year in Arizona, 2004-2019**



**Figure 2. Number of Confirmed Positive Animal Rabies Cases by Year and Species in Arizona**



### United States

Recorded cases of rabies in wild animals throughout the U.S. have increased dramatically over the past twenty years. For more than three decades, wildlife has been the most important potential source of rabies infection in the U.S. for both humans and domestic animals, representing more than 90% of confirmed rabies cases in animals.

Human rabies cases in the United States are rare, with only 1 to 3 cases reported annually. Twenty-three cases of human rabies have been reported in the United States in the past decade (2008-2017). Eight of these were contracted outside of the U.S. and its territories (see more [here](#)).

Over the past 50 years, the incidence of human rabies cases has declined markedly in the United States, paralleling the decrease of rabies in domesticated animals. Widespread vaccination of pet dogs and cats, animal control efforts to reduce stray animals, and effective rabies post-exposure prophylaxis for humans are largely responsible for that progress.

CDC publishes annual reports documenting rabies surveillance and rabies related events in the United States. During 2017, 52 jurisdictions reported 4,454 rabid animals to the CDC, representing a 9.3% decrease from the 4,910 rabid animals reported in 2016. Of the 4,454 cases of animal rabies, 4,055 (91.0%) involved wildlife species. Relative contributions by the major animal groups were as follows: 1,433 (32.2%) bats, 1,275 (28.6%) raccoons, 939 (21.1%) skunks, 314 (7.0%) foxes, 276 (6.2%) cats, 62 (1.4%) dogs, and 36 (0.8%) cattle. There was a 0.4% increase in the number of samples submitted for testing in 2017, compared with the number submitted in 2016. Two human rabies deaths were reported in 2017, compared with none in 2016. The 2017 full report can be found [here](#).

## Rabies in Animals

Signs of rabies in individual animals, even of the same species, can vary widely. They can be either subtle or obvious and occasionally an animal will die suddenly after exhibiting few or no symptoms. Signs of rabies include:

- Initial- lethargy, fever, vomiting, anorexia
- Progressive- cerebral dysfunction (including ataxia, difficulty walking, tremors, disorientation, seizures), weakness, paralysis, difficulty breathing or swallowing, excessive salivation, aggression, self-mutilation, abnormal behavior and vocalization.
- Death usually occurs from three to seven days after onset.

### Other Diseases or Conditions Which Can Resemble Rabies

Many diseases and conditions occur in both wild and domesticated species that can mimic rabies. Table 2 lists these more common diseases/conditions in domestic animals.

**Table 2. Differential diagnoses for rabies in domestic animals**

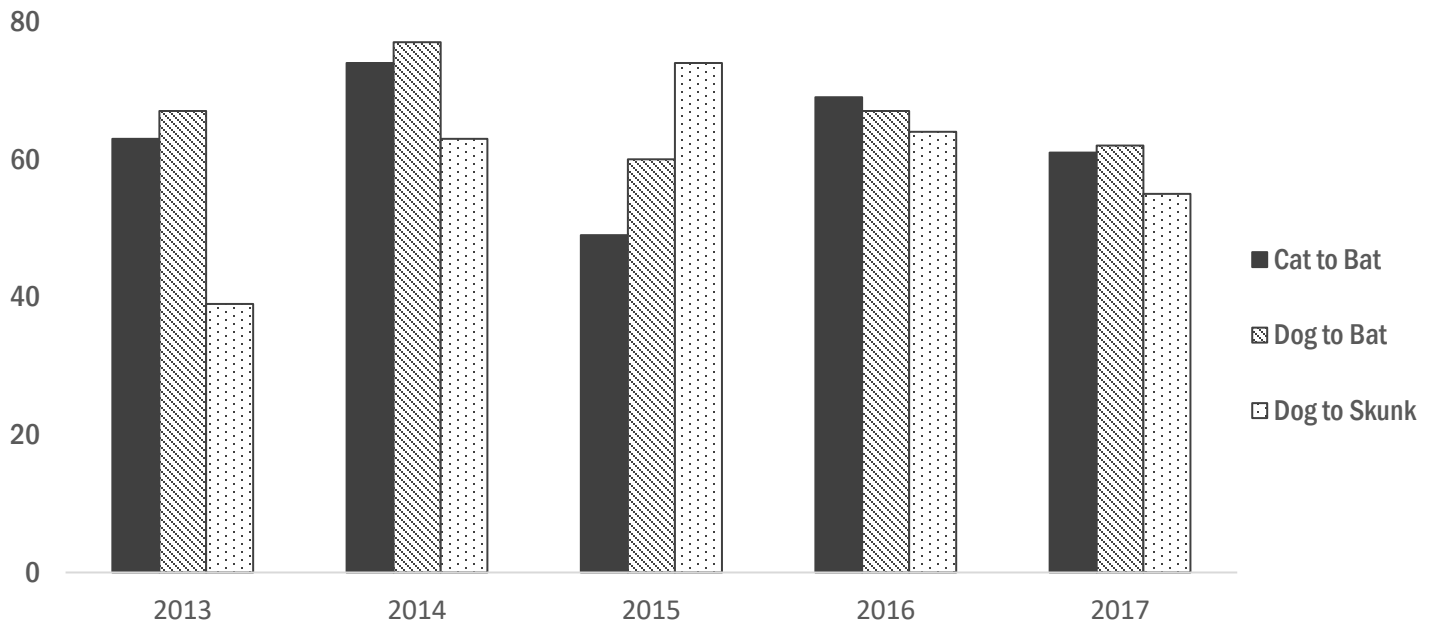
<b>Canine/Feline</b>	<b>Bovine/Equine</b>	<b>Ferret</b>
Distemper	Toxicity	Distemper
Encephalitides (Viral, Bacterial, Protozoal/Parasitic)	Encephalitides (Viral, Bacterial, Protozoal/Parasitic)	Insulinoma
Neuropathy- Vestibular Syndrome	Herpes Virus	
Head/Spinal Cord Trauma	Tetanus	
Brain Tumor	Brain Abscess	
	Listeriosis	
	Localized Lesions/Obstruction	

### Dogs and Cats

Dogs and cats are at risk of being exposed to rabies through wildlife encounters, for example in urban settings where bats are found roosting near people's homes. During the years of 2013-2017, an average of 63 cat - bat encounters, 66 dog - bat encounters, and 59 dog - skunk encounters occurred throughout the state (Figure 3). From 1990 to 2019, four unvaccinated dogs and eleven unvaccinated cats tested positive for rabies in Arizona.



**Figure 3. Cat-bat, dog-bat, and dog-skunk encounters<sup>+</sup> in Arizona, 2013-2017**



<sup>+</sup>The bats and skunks involved in these encounters did not all subsequently test positive for rabies. There is concern that humans can be exposed to rabies through interactions with their domestic pets due to the encounters between dogs, cats, and wildlife reservoirs. In Arizona, domestic animal bites are followed up by animal control agencies. Historically, more dog bites occur than cat bites leading to more testing requests for dogs than cats. To combat this risk, dog owners are required by [Arizona Revised Statutes](#) to have their dogs vaccinated against rabies and licensed. (Refer [ARS Title 11, Chapter 7 Article 6. 11-1010](#)) It is also strongly recommended for cats to be vaccinated against rabies as cats are more likely than other pets to roam and hunt, and therefore be exposed to wildlife.

### **Ferrets**

Ferrets are susceptible to rabies. During the period from 1958 through 1996, more than 22 ferrets were confirmed with rabies infections in the U.S. Common clinical signs of rabies in ferrets include: hyper or hypothermia, ataxia (staggering), lack of appetite, paraparesis (weakness in hind limbs), paralysis, lethargy. Less common signs include vocalization and aggression. There is a licensed rabies vaccine for ferrets. Ferrets should be vaccinated annually. A booster vaccine should be administered immediately if a vaccinated ferret is exposed to a rabid or potentially rabid animal.

### **Livestock**

Rabies vaccines are available for cattle, horses, and sheep (see [Compendium of Animal Rabies Prevention and Control, 2016](#)). There are no rabies vaccines currently licensed for use in swine, goats, camelids (llamas, alpacas), bison, red deer, fallow deer, elk or exotic species of livestock, however rabies vaccines may be used off-label by licensed veterinarians. A veterinarian and livestock owner should decide whether rabies vaccinations are warranted in a herd or in valuable individual animals. In Arizona, livestock maintained in areas with epizootic rabies activity in foxes or skunks should be considered for vaccination.

**Horses:** Occasional cases of rabies in horses occur in Arizona. Recent cases include two horses in Santa Cruz County in 2009 (south central skunk variant), one horse in Maricopa County in 2009 (imported north central skunk variant), one horse in Maricopa County in 2008 (bat-associated variant), and one horse in Santa Cruz County in 2016 (south central skunk-variant).

**Cattle:** Two steers developed rabies in 1999. Both had recently been imported from Mexico, and they were infected with vampire bat rabies virus. One cow in Santa Cruz County developed rabies in 2009 (south

central skunk variant), and more recently in 2018, one cow tested positive for rabies in Pima County (grey fox variant).

**Llamas:** Three llamas on one farm in Yavapai County developed rabies in 2002. They were housed in an area with active wildlife corridors and were infected with the Arizona gray fox variant of rabies virus.

Livestock with behavioral/ neurologic abnormalities that are not explained by an identified disease should be considered for rabies testing, especially if human or animal exposure has occurred. Livestock maintained on rural pastures or grazing land may contract rabies from exposure to wild animals. Livestock that have recently been shipped to Arizona from out of state can be incubating rabies and should be tested if unexplained neurologic disease develops.

**A 14-day quarantine/observation period is required when livestock bite or expose a person.**

If clinical signs develop or the animal dies during the 14-day quarantine/observation period, the animal should be euthanized and submitted for rabies testing. Reports of rabies or suspect rabies infection in livestock, and the quarantine of livestock that bite humans, are handled by the [State Veterinarian's Office with the Arizona Department of Agriculture](#).

**Rodents**

In the US, forty-three groundhogs and beavers, one squirrel and one rabbit tested positive for rabies in 1999. All of these animals were in the northeastern United States and were associated with the ongoing raccoon rabies epizootic. Rodents and rabbits in Arizona are at extremely low risk for rabies infection. There has never been a rodent in the state of Arizona that has tested positive for rabies. Rodents and rabbits should not be submitted for rabies testing unless there was human exposure AND the rodent/rabbit was exhibiting neurologic signs.

Domesticated rodents (i.e. guinea pigs, hamsters, gerbils, mice, and rats) purchased from pet shops, raised in controlled captive breeding situations, and never exposed to carnivorous animals or bats do not pose a risk of rabies infection. Wild rodents in Arizona are at very low risk of rabies infection. Quarantining rodents for rabies observation is unwarranted and rabies testing of wild rodents is offered only in limited circumstances. Call your [local animal control agency](#) or [local health agency](#) with questions.

Bites to humans inflicted by rabbits, squirrels, chipmunks, rats, and mice seldom if ever call for rabies prophylaxis. All animal bites should be thoroughly cleaned and watched for infection. As with other puncture wounds, tetanus immunization may be warranted.

**Exotic Animals**

There are no rabies vaccines licensed for use in other exotic mammals, and quarantine times have not been established. **Reptiles, amphibians, birds, and fish** are not susceptible to natural rabies infection.

**Non-human Primates**

At least sixteen cases of rabies in non-human primates have been confirmed in the United States. Of these, two are suspected to be the result of vaccination with a live attenuated rabies vaccine. Currently, there are no rabies vaccines licensed for use in non-human primates. Primates may carry and transmit many diseases to humans (and vice versa). Macaque monkeys are carriers of a herpes virus that is often fatal in humans. All bites inflicted on people by non-human primates should be assessed by a physician and reported to local animal control agencies and the [Arizona Game and Fish Department](#).

**Canine/Wolf-Hybrids and Feline Hybrids**

Offspring of wildlife and domestic species that bite a person will be considered wildlife and therefore rabies testing (euthanasia and examination of the brain) will be required. Currently, there is no rabies vaccine approved for wildlife, including wolf/dog and wild cat/domestic cat crosses. However, even though the efficacy of the vaccine has not been proven through challenge tests and there are only a limited number of

published reports on serologic responses, killed or vectored vaccines may be used off-label in hybrids and have been found to be safe in wolves and other wildlife species held in zoological collections. Veterinarians administering such vaccines should inform owners of the issues regarding the off-label use of such products as well as the repercussions and responsibilities of owning hybrids.

It is the owner's responsibility to prevent any situation where their hybrid may expose a person to its saliva. Studies have not been performed to determine how long wolf or feline hybrids can excrete virus in their saliva in the advanced stages of rabies. Therefore, quarantine periods for wolf or feline hybrids after they have bitten a person have not been established. Until more data are available, a wolf or feline hybrid should be handled the same as a wild animal in the event of a human exposure, regardless of its vaccination history.

### **Recommended Vaccine Schedule for Animals**

Consult the current [Compendium of Animal Rabies Prevention and Control, 2016](#) for the most recent animal vaccination recommendations.

Per the [Compendium of Animal Rabies Prevention and Control, 2016](#), dogs and cats should be initially immunized at three months of age, re-immunized 12 months after the first vaccination, and given a booster every three years if they are vaccinated with a licensed rabies vaccine and the label indicates three years duration of immunity. If an animal is vaccinated with a one-year rabies vaccine (label indicates one year duration of immunity), then a booster is needed annually. In order to improve rabies vaccination coverage, use of three-year rabies vaccines is encouraged for dogs and cats. However, there is no laboratory or epidemiologic data to support the annual or biennial administration of three-year vaccines following the initial series.

Owners interested in checking their dog's or cat's rabies titer in between vaccinations or following a booster to ensure an immune response was elicited can contact their veterinarian for titer testing. Several laboratories exist that perform rabies titer testing, including Kansas State University. (<http://www.ksvdl.org/rabies-laboratory/>)

Three months is considered to be the minimum age for primary vaccination. As of September 2003, [Arizona Revised Statute Title 11, Chapter 7 Article 6.11-1012](#) was changed so that dogs at large over the age of three months (instead of four months) must be licensed, and thus vaccinated for rabies. Entry requirements for dogs and cats are regulated by the Arizona Department of Agriculture and can be found at <https://agriculture.az.gov/animals/state-veterinarians-office/animal-importation-requirements/importing-dogs>.

Ferrets, horses, and cattle should be vaccinated annually against rabies. The first vaccination of ferrets is recommended at 3 to 4 months of age.

Any animal that has an unknown, undocumented or questionable vaccination history should be vaccinated immediately and then again in 12 months.

For information on vaccine names, manufacturers, schedules, and dosages available for species for which a vaccine has been approved (dogs, cats, cattle, horses, ferrets and sheep) please refer to the current [Compendium of Animal Rabies Prevention and Control, 2016](#).

### **Assessing Current Vaccination Status**

An animal is considered currently immunized against rabies if the following criteria are met:

- The animal was vaccinated with a product that was approved for use in the species.
- The vaccine was listed in the current [Compendium of Animal Rabies Prevention and Control, 2016](#)
- A licensed veterinarian administered the vaccine, and the licensed veterinarian administering the vaccine signed a certificate.
- Vaccines were given at the recommended schedule.
- It is at least 28 days past administration of the first rabies immunization.

Note: Currently, there is no established titer level in dogs or cats that is known to provide adequate protection in the face of all potential rabies virus variants or rabies exposure scenarios. Data is being collected nationwide to determine if there is a minimum titer level that can be established that would indicate an animal would not develop rabies if exposed. Titers are currently used to provide extra proof of previous vaccination when pets are traveling to rabies-free areas (ex. Hawaii). Due to the broad public health implications, titers are not currently valid proof of current adequate rabies protection. It is up to the local animal control agency as to whether or not they will accept a rabies titer in lieu of a rabies vaccination certificate. In scenarios where an animal has had a severe reaction to the rabies vaccine previously, or is immunocompromised (such as undergoing chemotherapy), rabies vaccination might be contraindicated and a conversation should be had between the veterinarian, animal control agency, and pet owner regarding the risks and benefits.

## Quarantine & Observation of Animals

Recommendations for quarantining dogs, cats, and ferrets can vary depending on the rabies vaccination status of the animal, whether the domestic animal was exposed to a potentially rabid animal, or if a human was bitten. Refer to [Arizona Revised Statutes, Title 11, Chapter 7, Article 6. 11-1014](#) and [Arizona Administrative Code, Title 9 Chapter 6 Article 5. Rabies Control](#) for additional information details.

### Protocol for Dog or Cat Bite to Human

Any dog or cat (vaccinated or unvaccinated) that bites a person must be **observed for ten days**. The quarantine period starts on the day of the bite or exposure. If the dog or cat **is currently vaccinated** against rabies, a home quarantine is permitted at the discretion of the animal control official. Owners should be given clear instructions including the clinical signs of rabies to be reported. If the animal is **not currently vaccinated** or has an unknown vaccination status, the quarantine may be done in an animal control facility or veterinary practice.

If an animal **develops signs of rabies infection** during the quarantine period, humanely euthanize the animal and submit the head for testing. If an animal **dies during the quarantine period**, submit the head for rabies testing. If the animal tests positive for rabies infection, start post-exposure prophylaxis for the exposed person(s) immediately and notify animal control or health department officials. What to do if an animal dies after the 10 day quarantine? If it is a sudden death with no symptoms after the 10 days, rabies is unlikely and testing the animal is not needed.

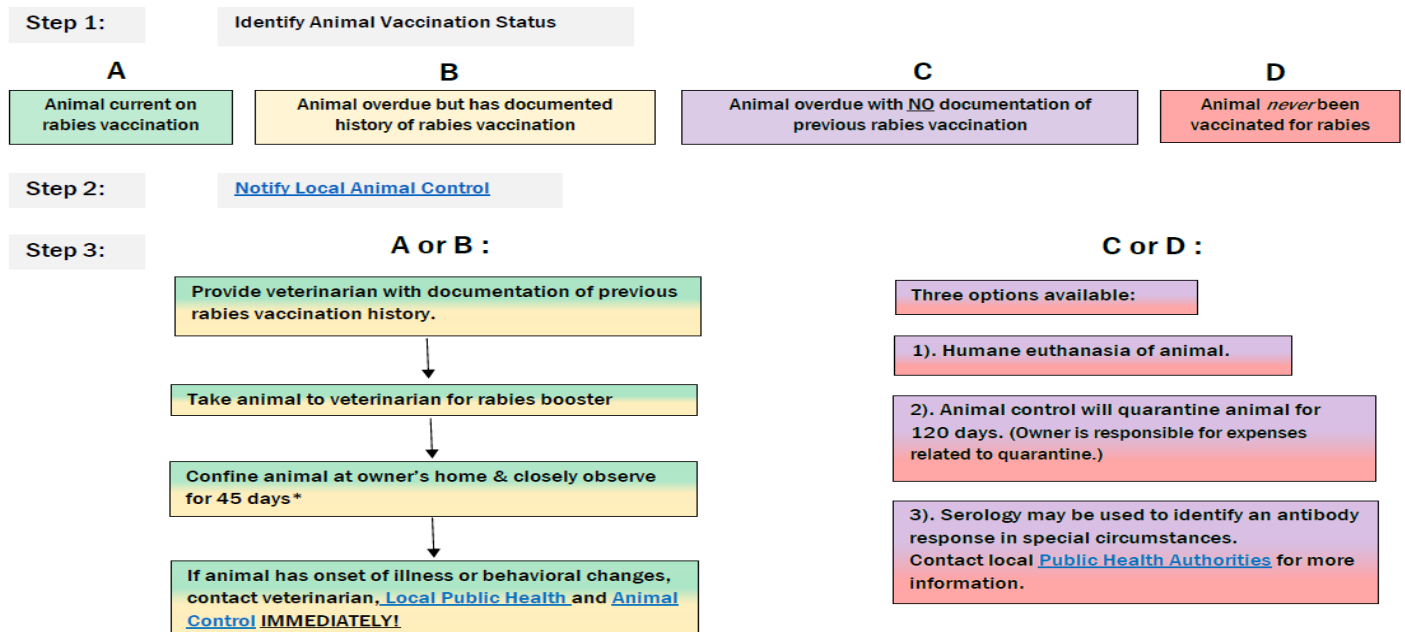
If the animal **does not die or develop clinical signs of rabies** infection during the quarantine period, the dog/cat did not have rabies virus in its saliva at the time of the exposure, and there is no further risk to the person. The person does not need to receive post-exposure treatment.

If the animal is euthanized prior to the completion of the quarantine due to patient clinical condition, owner request, or concerns with cost of the quarantine, animal control agencies should discuss submitting the head for rabies testing with public health.

## Protocol for Dogs and Cats that Have Been Exposed to a Potentially Rabid Animal (Figure 4)

When a domestic animal has direct contact with a rabid or potentially rabid wild animal, it is considered to have had a potential exposure to rabies. It is very important to capture and submit the wild mammal for rabies testing if possible. Wild mammals that are not available for laboratory testing or cannot be tested, should be presumed rabid. **Domestic animals that bite other domestic animals are not usually considered potentially rabid unless they are exhibiting signs compatible with the disease.**

**Figure 4: Algorithm Illustrating Protocol for Dogs and Cats that Have Been Exposed to a Potentially Rabid Animal (full version with working links is in the appendix)**



Determine whether the dog or cat is vaccinated against rabies.

1. Find out if the wild animal to which the dog/cat was exposed is available for rabies testing.
2. If the wild animal is not available for testing, presume the wild animal is positive.
3. If the wild animal tests positive for rabies (or presumed positive), proceed as follows:

If the exposed dog/cat is **currently vaccinated** against rabies or **overdue for a booster vaccination** but has appropriate documentation of previous vaccination regardless of when the previous vaccination was given:

1. Notify local animal control.
2. Immediately take the dog/cat to a veterinarian for medical evaluation and booster vaccination.
3. Owner needs to provide veterinarian with appropriate documentation that show the animal has been previously vaccinated with a USDA-licensed rabies vaccine (See Part I B.5 of [Compendium of Animal Rabies Prevention and Control, 2016](#)).
4. Confine the dog or cat under the owner's control and **observe closely for 45 days**. The animal should be kept in a building, pen, or escape proof enclosure. The animal should only be removed from confinement on a leash and under supervision of a responsible adult (Some town or county ordinances may be more restrictive than state law and not allow home quarantine).
5. At the first sign of illness or behavioral change, the animal should be taken to a veterinarian, and the health department and animal control should be contacted IMMEDIATELY.

If the exposed dog/cat is **overdue for a booster vaccination but does not have documentation** of previous vaccination:

1. Notify local animal control. **Overdue animals for vaccinated should be handled on a case-by-case basis with local animal control agencies as well as local health agencies.**
2. If dog/cat is without appropriate documentation of previous rabies vaccination:

- a. Animal can be treated as unvaccinated, humanely euthanized; OR
- b. Given immediate booster vaccination and placed in 120 day (4 months) strict quarantine;  
**OR**
- c. A veterinarian may request guidance from local public health authorities for the use of serologic monitoring **before** giving the animal a booster vaccine. The 2016 Compendium provides guidance on this new alternative (See Part I B.5 of [Compendium of Animal Rabies Prevention and Control, 2016](#)). Several laboratories exist that perform rabies titer testing, including [Kansas State University](#).

This involves:

- a. Collecting paired (pre- and post-vaccine) blood samples to test for antibody titers indicating prior vaccination. These are used to determine appropriate antibody response to booster vaccination.
- b. If an adequate response is documented, then the animal should be considered overdue for a booster vaccination and treated as currently vaccinated. The animal will then be subject to a 45-day quarantine.
- c. If an inadequate response is documented, then the animal should be considered unvaccinated and will be subject to a 120 day (4 months) quarantine or euthanasia.

If the exposed dog/cat has **never been vaccinated against rabies**:

1. Notify local animal control.
2. Consider immediate humane euthanasia OR;
3. Animal control will **quarantine the animal for 120 days (4 months) in an approved facility** run by either a veterinarian or an animal shelter (this is a new quarantine period set in Part 1 Section B.5 of the [Compendium of Animal Rabies Prevention and Control, 2016](#)).
4. The owner is responsible for payment of all expenses related to the quarantine.
5. A veterinarian should vaccinate the animal against rabies upon entry into isolation or one month prior to release to comply with pre-exposure vaccination recommendations (See Part I B.5 of [Compendium of Animal Rabies Prevention and Control, 2016](#)).
6. The quarantine is completed 120 days after the exposure.
- 7.

### Protocol for Ferrets

**If a ferret bites a human**, regardless of its rabies vaccination status, it should be quarantined and observed for signs of rabies or sudden death for 10 days ([Arizona Revised Statute Title 11 Chapter 7 Article 6 11-1014 C](#)). It is recommended, if signs of rabies develop or the ferret dies during the quarantine period, the ferret should be tested for rabies. Your [local health agency](#) can always be consulted to help determine if a ferret should be submitted for testing.

**If an unvaccinated ferret is exposed to a rabid or suspect rabid animal:**

1. Submit the suspected rabid animal for testing:
  - a. If results are negative, no further action is needed.
  - b. If results are positive or the suspect rabid animal is not available for testing:
    - i. Euthanize the ferret **or**
    - ii. Place the ferret under 180-day quarantine in a veterinary hospital or animal control facility at the owner's expense.

**If a currently vaccinated ferret is exposed to a rabid or suspect rabid animal:**

1. Submit the suspected rabid animal for testing if available:
  - a. If results are negative, no further action is needed.
  - b. If results are positive **or** the suspect rabid animal is not available for testing: Revaccinate the ferret immediately and place it under quarantine for 45 days.

NOTE: A ferret is considered currently vaccinated if it has received a rabies vaccination within the prior 12 months and the vaccine used was approved for use in ferrets.

If a ferret is overdue for a booster vaccination is exposed to a rabid or suspect animal, the case should be evaluated on a case-by-case basis (see [Compendium of Animal Rabies Prevention and Control, 2016](#)).

### **Protocol for Wolf-Hybrids**

#### **If a hybrid is exposed to a suspected rabid animal:**

1. Submit the suspect rabid animal for rabies testing if available.
  - a. If the result is positive, immediately euthanize the hybrid.
  - b. If the result is negative, no further action is required.
  - c. If the other wild animal is not available for testing, it should be considered potentially rabid and the wolf hybrid should be euthanized immediately. \*Also, consult the [Compendium of Animal Rabies Prevention and Control, 2016](#) for the most current recommendations concerning wolf hybrids.

#### **If a hybrid bites a human** (regardless of the hybrid's vaccination history):

1. Humanely euthanize the hybrid and submit the head for rabies testing.
  - a. If the result is negative, no further action is required.
  - b. If the result is positive, start human post-exposure rabies vaccinations for the bite victim.
  - c. If the wolf-hybrid is not available for testing, consider post-exposure treatment for the bite victim.



## Rabies in Wildlife

### **Bats, Skunks, Foxes, Coyotes, Bobcats, and Other Spillover Species**

The public should be encouraged to respect and protect native wildlife. The message should include a warning to the public not to touch, feed, provoke, or attempt to help wildlife. Handling wild animals may lead to a potential rabies exposure, and the animal will have to be humanely euthanized. The public should call the [Arizona Game and Fish Department](#), wildlife rehabilitators or the local Animal Control Department with reports of wild animals that are injured or behaving strangely.

For purposes of rabies exposure assessments, wild animals that have not been tested for rabies must be considered as potentially infected with rabies. Since wild animals incubate and excrete rabies virus for unknown periods, they cannot be considered free of rabies even if purchased from a pet shop, acquired as a baby, or held for a long period of time.

**If a wild mammal other than a rodent is submitted to a veterinary clinic or animal shelter, a thorough history of potential human and animal exposures should be taken before any decision is made about the animal's treatment. Rehabilitation should not be attempted on animals that have potentially exposed humans or other animals to rabies.**

If a sick or injured wild animal is reported and there has not been any contact with another animal or person, the animal may be turned over to a rehabilitator. Sick or injured bats should not be rehabilitated in Arizona because of the high risk of rabies. If a sick or injured wild animal bites or exposes a person or a pet to its saliva, it is not appropriate to rehabilitate or quarantine it. These animals should be humanely euthanized and immediately tested for rabies.

### **If a wild animal (other than a rodent) bites or exposes a human:**

1. Humanely euthanize the animal and submit it for rabies testing.
  - a. If the animal is not available for testing, recommend post-exposure rabies prophylaxis for the bite victim.
  - b. If the wild animal is or may be endangered, protected, threatened or rare, the [Arizona Game and Fish Department](#) and the [Arizona Department of Health Services](#) (602) 364-3676 will consult with local officials on the situation. If it is a zoo animal, the zoo veterinarian will also be consulted.

### **If a wild animal (other than a rodent) bites or exposes a pet or livestock animal:**

1. Humanely euthanize the wild animal and submit it for rabies testing.
  - a. If the wild animal is not available for testing, quarantine or euthanize the exposed animal.

### **Bats**

In Arizona there are 28 species of bats. Some bats are migratory and some are year- round inhabitants of the state. The percentage of bats in the wild that are infected with rabies is very low (less than 1%), but the infection rate is higher in sick and injured bats. In Arizona, an average of 11% of the bats tested at the Arizona State Public Health Laboratory are positive for rabies.

The public should be discouraged from handling bats that are exhibiting abnormal behaviors. Animal control officers, Arizona Game and Fish Department officers, rehabilitators, and veterinarians should carefully assess each situation when deciding whether or not to submit a bat for testing. Whenever a member of the public finds a bat, a very thorough exposure history should be taken.

The possibility of rabies infection should be considered in bats exhibiting the following:

- Grounded, unable to fly (frequently these are flapping around or laying on the ground)
- Erratic behavior (flying around a person or pet during the day or crashing into objects)
- Anorexia (not eating)
- Partial or complete paralysis
- Death

Bats should be submitted to the [Arizona State Public Health Laboratory](#) for rabies testing immediately when:

- There has been direct contact with a human, or rabies contact cannot be ruled out.
- Children have been playing with or near a bat.
- A bat is found in a room with a sleeping individual, a child, an individual under the influence of alcohol or drugs, or someone with sensory or mental impairment.
- A domestic animal has had contact or potential contact with a bat.

The most important message to disseminate to the public is to leave bats alone. Bats are not aggressive animals, and most exposures are preventable. Bats should not be maintained in or near human dwellings or schools. Consult pest control agencies that are licensed by the Arizona Game and Fish Department for exclusion techniques that will not harm the bats. Bats which are seen roosting naturally on buildings, trees, etc. and have not exposed a person or pet should be left alone. Bats that are hanging on buildings, bridges, or natural surfaces (trees, caves, eaves, etc.), or flying in the evening should not be disturbed.

To safely capture a bat in a room, close the windows and doors, and turn on the lights. Wait for the bat to land. Wearing heavy gloves cover the bat with a coffee can or other container. Slide a piece of cardboard between the wall or floor and the container trapping the bat. Tape the cardboard tightly to the container. Immediately contact a local animal control or health official to determine if the bat should be submitted for rabies testing.

### **Skunks**

Rabies is cyclic in skunk populations in southern Arizona. Although the average annual number of skunks confirmed with rabies statewide is usually less than 20, in epizootic years, more than 80 skunks have tested positive. From 2004 to 2013, 426 skunks tested positive for rabies. The most common areas in Arizona for rabies in skunks include Santa Cruz, Cochise, Pima and Pinal counties. In 2001, a very unusual outbreak of rabies in skunks was detected in Flagstaff. The skunks were infected with a bat-associated rabies variant. In 2008, this same variant was again found in skunks and caused an outbreak in foxes. Skunk variants of rabies have been found in cats, badger, horses, and cattle.

### **Foxes**

Arizona has a unique variant of rabies virus that is associated with the Arizona gray fox. Foxes are distributed throughout the state, and rabid foxes have been found in every county except Mohave. The fox variant of rabies is often transmitted to other species including coyotes, bobcats, llamas, horses, javelina, badger, and dogs.

Rabies epizootics in foxes occasionally occur in the state.

### **Raccoons**

A group of raccoons, some of which were incubating rabies, were translocated from Florida to West Virginia and Virginia in the 1970's. This initiated an epizootic of raccoon rabies that has spread throughout the eastern United States. The eastern raccoon rabies epizootic is responsible for thousands of rabies infections in wild animals annually, with spillover into domestic animals (especially cats) and to some large rodents like woodchucks.

Raccoons are native to non-desert areas of Arizona, but the raccoon variant of rabies found in the eastern U.S. has not been found in Arizona. The last reports of rabies in raccoons in Arizona took place between 1968 and 1974 when two raccoons tested positive. In 2005, one raccoon from Pima County tested positive for the south central U.S. skunk variant. In 2018, a raccoon tested positive for the gray fox variant in Coconino County. On average, ten raccoons are submitted for rabies testing to the Arizona State Health Lab annually.

### **Coatimundi (Coatis)**

Rabid coatis are not unusual in Arizona. During the period of 1968-77, for example, eight were reported.

### **Coyote**

From 2006 to 2017, 12 coyotes were confirmed with rabies in Arizona. For those coyotes that were typed, all were found to be infected with the Arizona gray fox variant.

### **Bobcat**

From 2006 to 2017, 42 bobcats tested positive for rabies in Arizona. For those bobcats that were typed, all were found to be infected with the Arizona gray fox variant.

### **Ringtail**

In 2009 a ringtail submitted from Coconino County tested positive for rabies. This ringtail was found to be infected with bat-associated rabies virus. Rabid ringtails were reported 2009 and 2012 as well. Both were from Coconino County. There have been also been sporadic cases of rabies in this species in southern Arizona historically.

### **Javelina**

Historic examples of rabid javelina include a hunter who was attacked and bitten in 1986 in Gila County and a javelina in 2002 found chewing the edge of a private porch also in Gila County. Between 2004 and 2013 two rabid javelina were reported in 2010 from Pima County while another two were reported in 2011, one each in Maricopa and Yavapai Counties. One javelina tested positive for rabies in Coconino County in 2017 and one in 2018. All of these animals were found to be infected with the Arizona gray fox variant of rabies except the Yavapai County case who variant is unknown.

### **Wild rodents and rabbits**

There has never been a wild rodent or rabbit confirmed with rabies infection in Arizona. These small mammals are at low risk of contracting or transmitting rabies. Rodents that bite people do not need to be routinely tested for rabies. Rodents may be submitted for rabies testing if:

1. There has been an unprovoked human exposure AND
2. The rodent is exhibiting signs of possible rabies infection AND
3. The rodent is from a rabies epizootic area.

### **Other wild animals**

Historically, other wild animals infected with rabies in Arizona include a badger, a bear, and a mountain lion.

### **Oral Wildlife Rabies Vaccines**

An oral rabies vaccine that is covered with flavored bait has been developed for use in some wild carnivores. At this time, the vaccine does not effectively immunize skunks, and oral rabies vaccines are not being considered for this specific purpose at this time. However, oral rabies vaccine has been used in the past in Northern Arizona to immunize foxes that were associated with an unusual epizootic involving bat-associated rabies virus variant. USDA has prioritized eliminating the raccoon rabies variant in the United States, therefore oral rabies vaccine for foxes in Arizona is not currently being pursued. The oral vaccine is not available commercially.

## Human Rabies Immunoglobulin, Pre-exposure and Post-Exposure Prophylaxis

### Human Pre-Exposure Immunization

Rabies pre-exposure vaccinations are administered to individuals such as veterinarians and their staff, wildlife biologists, rehabilitators, and animal control officers who routinely have contact with stray domestic, exotic, and/or wild animals. Pre-exposure immunization consists of three cell culture rabies vaccinations given on days 0, 7, and 21 or 28. Pre-exposure immunization produces an immune response that is measurable by serum neutralizing antibody titers. Pre-exposure immunization may not provide optimal protection in the event of a rabies exposure. In the event of an exposure to a rabid or suspect rabid animal, vaccinated individuals should always receive two post-exposure vaccine doses on days 0 and 3. Day 0 should always be the day of the first vaccination, not the day of exposure (although could occur on the same day). Immunoglobulin should not be administered.

Two years after a person receives the initial series of pre-exposure rabies vaccinations, a serum sample should be drawn to measure serum-neutralizing antibodies. If the titer is below a 1:5 serum dilution, and the person has continuing potential rabies exposures, a single dose of rabies vaccine should be administered. Neutralizing antibody titers should be checked every two years. For humans, the rapid fluorescent focus inhibition test (RFFIT) is recommended by the Advisory Committee on Immunization Practices (ACIP). Serology via enzyme linked immunosorbent assay (ELISA) is not recommended. The RFFIT is the only valid method at this time to verify rabies virus neutralizing antibodies.

There are two laboratories in the United States that provide RFFIT testing, including [Kansas State Veterinary Diagnostic Laboratory](#) and [Atlanta Health Associates](#). Additional details about RFFIT can be found [here](#).

### Rabies Post-Exposure Prophylaxis (Immune Globulin and Vaccines)

Rabies vaccinations or rabies post-exposure prophylaxis (rPEP), should be administered after consultation with public health determine if rPEP is warranted based on the type of exposure (Figures 5-8). Physicians and providers who administer rabies post-exposure prophylaxis in Arizona are required to report each case to the [local health department](#). Rabies vaccination should be administered according to the most current ACIP recommendations.

Individuals who are bitten by an animal should be encouraged to wash the wound thoroughly for 10-15 minutes with soap and water, and seek medical care. The appropriate protocol for post-exposure prophylaxis depends on the exposed patient's previous rabies vaccination history. Once in tissues at the entry site, rabies virus can be neutralized by passively administered human rabies immune globulin (HRIG). HRIG is manufactured by plasmapheresis of blood from hyper-immunized volunteers, and provides immediate antibodies until the body can respond to the vaccine HRIG can be administered up to 7 days after the first dose of the vaccination. It is not recommended beyond day 7 since an antibody response to the vaccine is presumed to have occurred. HRIG should be infiltrated one time into the wound and surrounding area at a recommended dose of 20 IU/kg body weight for all age groups. The remaining volume should be injected intramuscularly. If there is no wound, such as following a bat-in-the-bedroom exposure, then administer the entire dose of HRIG in the quadriceps or deltoids.

Active immunization with rabies vaccine stimulates the immune system, and, as a result, virus-neutralizing antibodies are produced approximately 7-10 days after initiation of vaccination. By approximately day 14-28 (after administration of 4 vaccine doses), virus-neutralizing antibodies peak. Additional resources can be found in the appendix.

Post-exposure protocol for people who have **never been vaccinated against rabies:**

1. **One dose (20 IU/kg body weight) of human rabies immune globulin (HRIG)** is administered on day 0. Infiltrate as much of the HRIG into the wound site as possible, and administer any remaining HRIG intramuscularly. HRIG should never be administered in the same syringe as the rabies vaccine, or at the same site of injection. If HRIG is not readily available, it may be given up to seven days after the post-exposure vaccine series is initiated. After seven days

(3 vaccinations), vaccine induced immunity should be initiated and administration of HRIG is contraindicated.

- i. Equine rabies immune-globulin may be available in developing countries when HRIG is not. It is less expensive than HRIG with a recommended dose of 40 IU/kg body weight.
2. **Four doses of cell culture rabies vaccine** at 1 ml/dose administered intramuscularly in the deltoid muscle on **days 0, 3, 7, and 14**. The anterolateral aspect of the upper thigh can be used in infants/children. Administration of the vaccine in the gluteal region should be avoided.
3. For patients who are **immunosuppressed**, **five doses** of vaccine should be administered on days **0, 3, 7, 14 and 28**. After completing the vaccination series, an immunosuppressed person should have serum tested for rabies virus neutralizing antibody to ensure an acceptable antibody response developed.

Post-exposure protocol for **previously immunized individuals** who have had cell culture rabies vaccinations:

1. Two doses of cell culture rabies vaccine at 1ml/dose administered intramuscularly in the deltoid muscle on **days 0 and 3** after a rabies exposure.
2. HRIG is not indicated if the pre-exposure vaccination was done with cell culture vaccines (available in the U.S. after 1980). If the exposed patient was previously immunized with an older vaccine (e.g. Duck Embryo, Suckling Mouse Brain, Inactivated Nerve Tissue) that was not produced in cell culture, then complete post-exposure prophylaxis treatment, including HRIG, should be administered.

Adverse reactions associated with post-exposure prophylaxis:

1. HRIG: local pain and low-grade fever.
2. EQUINE-RIG: low (0.8%–6.0%), and most reactions are minor. However, such products are not regulated by the Food and Drug Administration, and their use cannot be recommended unequivocally. In addition, unpurified anti-rabies serum of equine origin might still be used in some countries where neither human nor equine RIG is available. The use of this anti-rabies serum is associated with higher rates of serious adverse reactions, including anaphylaxis and serum sickness.
3. Rabies cell culture vaccine: mild, transient, local reactions (erythema, pain, itching, and swelling) have been reported. Occasional systemic reactions include headache, nausea, abdominal pain, muscle aches, and dizziness (see attached ACIP guidelines for more on reactions). Prophylaxis should not be discontinued due to reactions without considering the patient's risk of acquiring rabies. Any unusual or severe adverse reactions attributed to vaccines or HRIG should be reported to the [Arizona Department of Health Services](#) (602) 364-3676 and to the vaccine manufacturer.

## **Vaccine and HRIG Types and Availability**

Two inactivated, cell culture rabies vaccines are currently available in the United States for rabies prophylaxis in humans: human diploid cell vaccine (HDCV) or purified chick embryo cell vaccine (PCEC). Both are considered equally safe and efficacious. These vaccines can be interchangeable if necessary. It is recommended that a vaccine series be initiated and completed with the same vaccine product; however, decreased efficacy or increased frequency of adverse reactions have not been documented when the series is initiated with one vaccine product and completed with another. The rabies vaccine series induces an active immune response that requires 7 to 10 days to develop and persists for many years. Some, but not all, of the local health agencies in Arizona have rabies vaccines and immunoglobulin, and are prepared to administer it. Many hospital pharmacies stock it, as do military bases.

Three human rabies immune globulin (HRIG) products are available in the United States.

## **Rabies Vaccine**

- [RabAvert](#) rabies vaccine (produced by GlaxoSmithKline [GSK]) is now available following a shortage earlier this year. GSK has no ordering restrictions for RabAvert as of December 12, 2019.
- [IMOVAX](#) rabies vaccine (produced by Sanofi Pasteur) is now available, following a shortage earlier this year. Sanofi Pasteur began shipping IMOVAX on October 28, 2019. IMOVAX is available from wholesalers, distributors, and directly from the manufacturer. Call Sanofi Pasteur at 1-800-VACCINE if IMOVAX is not available from your wholesaler or distributor.

**Human Rabies Immune Globulin**

- [KEDRAB](#) (produced by Kedrion Biopharma) is available with no restrictions.
- [HyperRab](#) (produced by Grifols) is available with no restrictions. (HyperRab® is a more potent version of the previously licensed [HyperRab™ S/D](#) and requires a smaller volume to achieve the recommended 20 IU/kg dose.)
- [Imogam](#) (produced by Sanofi Pasteur) is currently experiencing a temporary shortage and is **only available to healthcare providers who have a patient with current suspected rabies exposure requiring immediate PEP**. Providers can obtain Imogam directly from the manufacturer by faxing a completed Rabies Post-Exposure Form found at [vaccineshoppe.com](http://vaccineshoppe.com) to 1-877-287-9391 (Attn: Sanofi Pasteur Customer Service).

CDC updates the availability or shortage of products here:  
<https://www.cdc.gov/rabies/resources/availability.html>

For the rabies exposure that occurs abroad, the patient will likely receive one of the vaccine and HRIG available internationally (see table below). All cell-culture vaccines are interchangeable with each other. If the series is started with one, they can continue with another, for example if PEP is started in a foreign country and finished in the United States.

**A table of international rabies vaccines and producers is below:**

Vaccine*	Brand	Producer	Country	Cell line	WHO Pre-qualified	Type
PVRV	NA	Butantan Institute	Brazil	Vero cells	NO	Liquid
HDCV	Chengdu Kanghua	Changdu Kanghua	China	Human diploid cells	NO	Lyoph
PVRV	SPEEDA	Liaoning Chengda co., LTD	China	Vero cells	NO	Lyoph
PVRV	NA	Changchun Changsheng Life Sciences Ltd.	China	Vero cells	NO	Lyoph
PVRV	NA	Guangzhou Nuocheng biological products co., LTD	China	Vero cells	NO	Lyoph
PVRV	NA	Ningbo Rong An biological	China	Vero cells	NO	Lyoph

		pharmaceutica l co., LTD				
PVRV	NA	Jilin Maifeng biological pharmaceutica l co., LTD	China	Vero cells	NO	Liquid
PPHKCV	NA	Zhongke biological pharmaceutica l co., LTD	China	Hamster Kidney Cells	NO	Liquid
PPHKCV	NA	Henan Yuanda biological pharmaceutica l co., LTD	China	Hamster Kidney Cells	NO	Liquid
PIKA rabies vaccine, inactivated , with a TLR3- based adjuvant		Yisheng Biopharma Inc	China	Vero cell	NO	?
PVRV	Verorab	Sanofi Pasteur	France	Vero cells	YES	Lyoph
HDCV	Imovax	Sanofi Pasteur	France	Human diploid cells	NO	Lyoph
PCECV	Rabavert	GSK	Germany	Chick embryo cells	YES	Lyoph
PCECV	Rabipur	GSK	India	Chick embryo cells	YES	Lyoph
HDCV	Rabivax	Serum Institute of India	India	Human diploid cells	NO	Liquid
PDEV	Lyssavac-N /Vaxirab	Zydus-Cadila	India	Duck embryo cells	Productio n stopped	Lyoph
PCECV	Vaxirab-N	Zydus-Cadila	India	Chick embryo cells	NO, successor of Vaxirab	Lyoph
PVRV	Indirab	Bharat Biotech	India	Vero cells	NO	Lyoph
PVRV	Abhayrab	Indian Immunological s	India	Vero cells	NO	Lyoph
BHKV	'Вакцинация КОКАВ	Tarasevich Institute	USSR	BHK	NO	??
NTV	?	?	Bolivia	Mouse brain	NO	Liquid?
NTV	?	Pasteur Institute Algiers	Algeria	Mouse brain	NO	Liquid?
NTV	?	Ethiopian Public Health Institute	Ethiopia	Sheep brain?	NO	Liquid?
NTV	?	?	Argentina	Sheep	NO	Liquid?

				brain?		
PVRV	NA	Changchun Changsheng Life Sciences Ltd.	China	Vero cells	NO	Lyoph
PVRV	NA	Guangzhou Nuocheng biological products co., LTD	China	Vero cells	NO	Lyoph

\*Purified chick embryo cell vaccine (PCECV), Purified vero cell vaccine (PVRV), Human diploid cell vaccine (HDCV), Purified duck embryo cell vaccine (PDEV), baby hamster kidney cells (BHKV), Purified Vaccine of Primary Hamster Kidney Cells (PPHKCV). **NOTE: All cell-culture vaccines are interchangeable with each other. If the series is started with one, they can continue with another, for example if PEP is started in a foreign country and finished in the United States.**

**A table of international rabies immunoglobulin products and producers is below:**

Category	RIG product name or brand name	formulation per ml / per vial	Vial size	Company name	Country
eRIG	Anti-rabies serum	N/A	N/A	Butantan Institute	Brazil
eRIG	CARIG (enzyme refine)	300 IU/ml	4 ml	Cadila Pharma	India
eRIG	Rabix-IG	200 IU/ml	5 ml	Incepta Pharmaceuticals	India
eRIG	Abhay-RIG	300 IU/ml	5 ml	Indian Immunological	India
eRIG	Anti-rabies serum	300 IU/ml	5 ml	Haffkine	India
eRIG	EquiRab	300 IU/ml	5 ml	Bharat Serums and Vaccines	India
eRIG	Pars	200 IU/ml	5 ml	Newgen (Cadila Pharmaceuticals Ltd.)	India
eRIG	Anti-rabies serum	300 IU/ml	5 ml	Serum Institute of India	India
eRIG	Anti-rabies serum	300 IU/ml	5 ml	Central research Institute Kasauli HP	India
eRIG	Plasmarab	300 IU/ml	5 ml	Premium Serums	India
eRIG	TRCS eRIG	200 IU/ml	5 ml	Queen Saovabha Memorial Institute	Thailand
hRIG	Human Rabies immunoglobulin	100 IU/ml	2 ml or 5 ml	HualanBiologicalBacterin Co. Ltd.	China
hRIG	Human Rabies immunoglobulin	100 IU/ml	1 ml, 2 ml or 5 ml	Sichuan Yuanda Shuyang Pharmaceutical Co. Ltd	China
hRIG	Human Rabies immunoglobulin	100 IU, 200 IU or 500 IU/vial	N/A	China National Biotec Group (Sinopharm subsidiary)	China



hRIG	Human Rabies immunoglobulin	200 IU/Vial	2 ml	China Biologic Product. Inc	China
hRIG	Imogram Rabies-HT	150 IU/ml	2 ml or 10 ml	Sanofi Pasteur	France
hRIG	Pars	150 IU/ml	2 ml	Newgen (Cadila Pharmaceuticals Ltd.)	India
hRIG	Berirab-P	150 IU/ml	2ml or 5 ml	Bharat Serums and Vaccines	India
hRIG	Rabglob	150 IU/ml	2ml or 5 ml	Bharat Biotech International Ltd.	India
hRIG	Kendrab	150 IU/ml	2 ml or 10 ml	Kamada Ltd.	Israel
hRIG	Human Rabies immunoglobulin	150 IU/ml	vials with 500 IU	Bio Products Laboratory Limited	UK
hRIG	Rabigam	150 IU/ml	2 ml	National Bioproducts	South Africa
RmAb	Rabishield	40 IU or 100 IU/ml	2.5 ml	Serum Institute of India	India

Reference: SAGE Working Group on Rabies vaccines and immunoglobulins and the World Health Organization (WHO) Secretariat (2017)

### **Travelers to Foreign Countries That Have Endemic Dog Rabies**

Rabies pre-exposure vaccination is recommended for certain travelers to rabies enzootic areas. Travelers should consult with a travel clinic at least one month prior to leaving. If a traveler is bitten or exposed to a mammal in a rabies endemic area, they should wash the wound with soap and water and seek immediate medical attention. rPEP should be started immediately after an exposure in a high-risk area, and can be discontinued if the 10-day quarantine period is completed and the animal remains healthy, or if testing of the animal concludes that it was not infected with rabies. If the animal is not available for quarantine or testing, completion of the rPEP series should be considered. Many of the rPEP products used internationally are interchangeable with products used in the United States, as indicated above. Public health should be contacted with questions.

### **Ensuring Completion of rPEP Series for Travelers**

If a person has plans to travel in the midst of their rPEP, contact ADHS to coordinate with the other jurisdiction to ensure completion of the series. (For example, Hawaii may not have PEP as readily accessible on the islands).

Figures 5-8 illustrate algorithms for local health departments and healthcare providers regarding initiation of rabies post-exposure prophylaxis after a human exposure to an animal by species (**Note:** the links do not work in the actual images but these algorithms, including a letter for healthcare providers regarding the newest algorithm updates are also available in the appendix with working links).

**Links to referenced agencies are here AND in the versions in the appendix:**

Local health department: <https://azdhs.gov/preparedness/epidemiology-disease-control/index.php#resources-county>

Arizona Department of Health Services: <https://www.azdhs.gov/preparedness/epidemiology-disease-control/infectious-disease-services/index.php#contact>

Arizona Department of Agriculture: <https://agriculture.az.gov/about-us/divisions/animal-services>

Arizona State Public Health Laboratory: <https://azdhs.gov/preparedness/state-laboratory/public-health-microbiology/index.php#virology-rabies-testing>

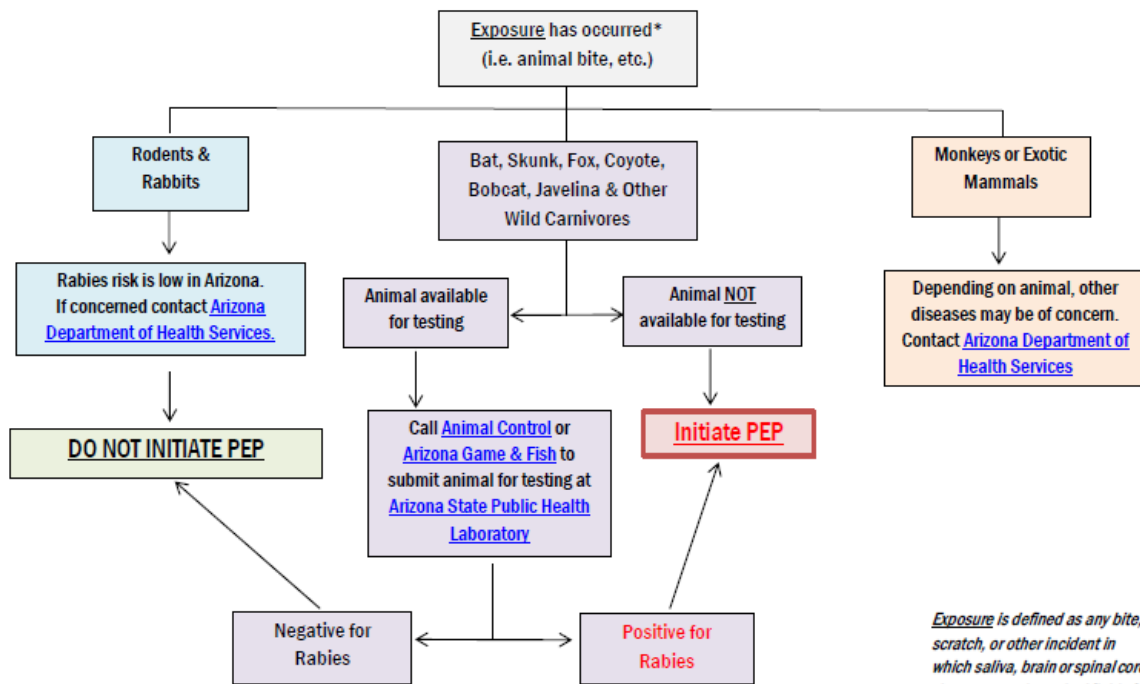
Arizona Game & Fish: <https://www.azgfd.com/wildlife/diseases/>

Animal Control: <https://azdhs.gov/preparedness/epidemiology-disease-control/rabies/index.php#animal-control-offices>

**Figure 5:** Local Health Department Algorithm for Rabies Post Exposure Prophylaxis (PEP): Human Exposure to Wildlife or Exotic Animal



**Rabies Post Exposure Prophylaxis: Human Exposure to Wildlife or Exotic Animal**



*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of an individual.*

\*Note: Presence of bats within closed spaces where people are dwelling or residing is considered an exposure. Most people who are bitten by bats are not aware or the bite is so small that there are no marks visible. (Example: If someone wakes up to find a bat in their bedroom, this is considered an exposure warrants PEP).

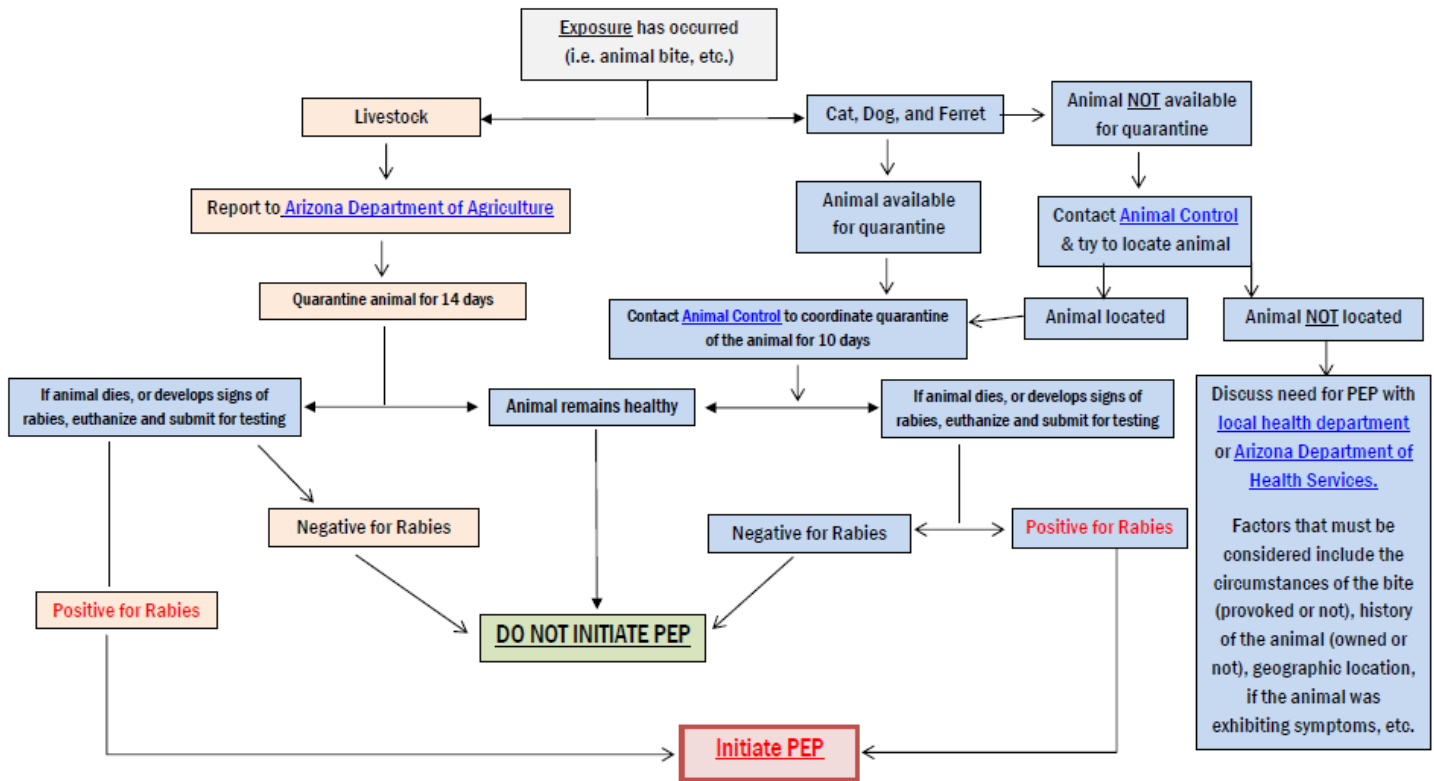
Reptiles, amphibians, birds, & fish are NOT susceptible to natural rabies infection.

Please refer to the [ADHS Manual for Rabies Control and Bite Management](#) for more information.

**Figure 6:** Local Health Department Algorithm for Rabies Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock



**Rabies Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock**



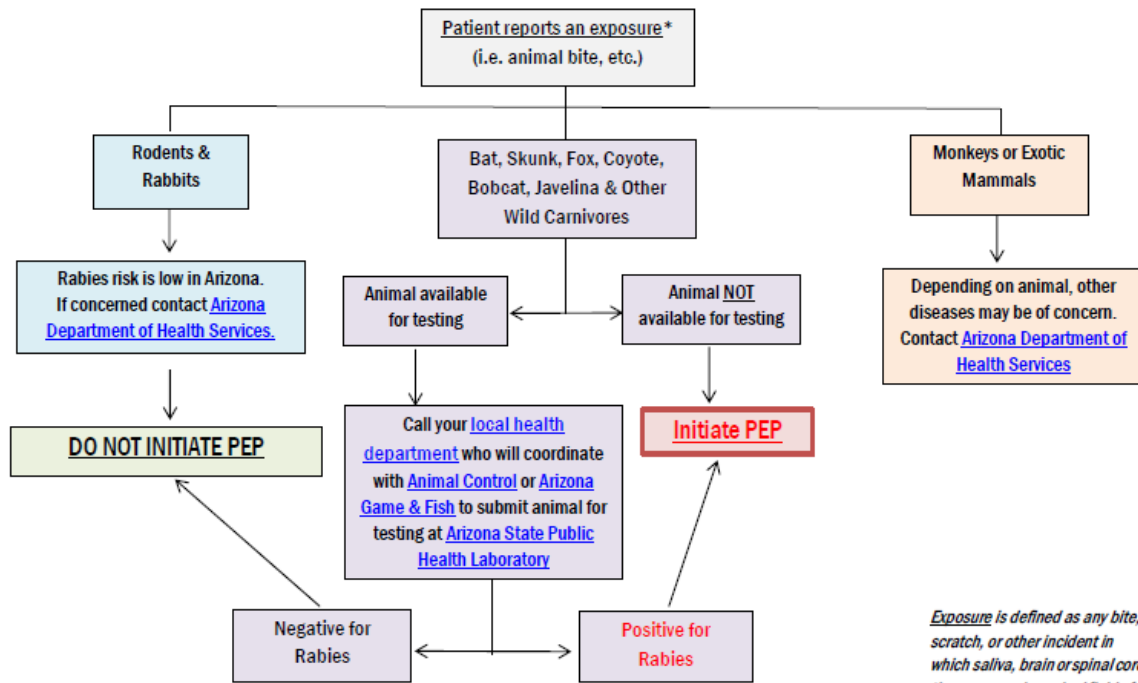
*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of an individual.*

Please refer to the [ADHS Manual for Rabies Control and Bite Management](#) for more information.

**Figure 7:** Healthcare Provider Algorithm for Rabies Post Exposure Prophylaxis (PEP): Human Exposure to Wildlife or Exotic Animal



**Rabies Post Exposure Prophylaxis: Human Exposure to Wildlife or Exotic Animal**



*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of an individual.*

\*Note: Presence of bats within closed spaces where people are dwelling or residing is considered an exposure. Most people who are bitten by bats are not aware or the bite is so small that there are no marks visible. (Example: If someone wakes up to find a bat in their bedroom, this is considered an exposure warrants PEP).

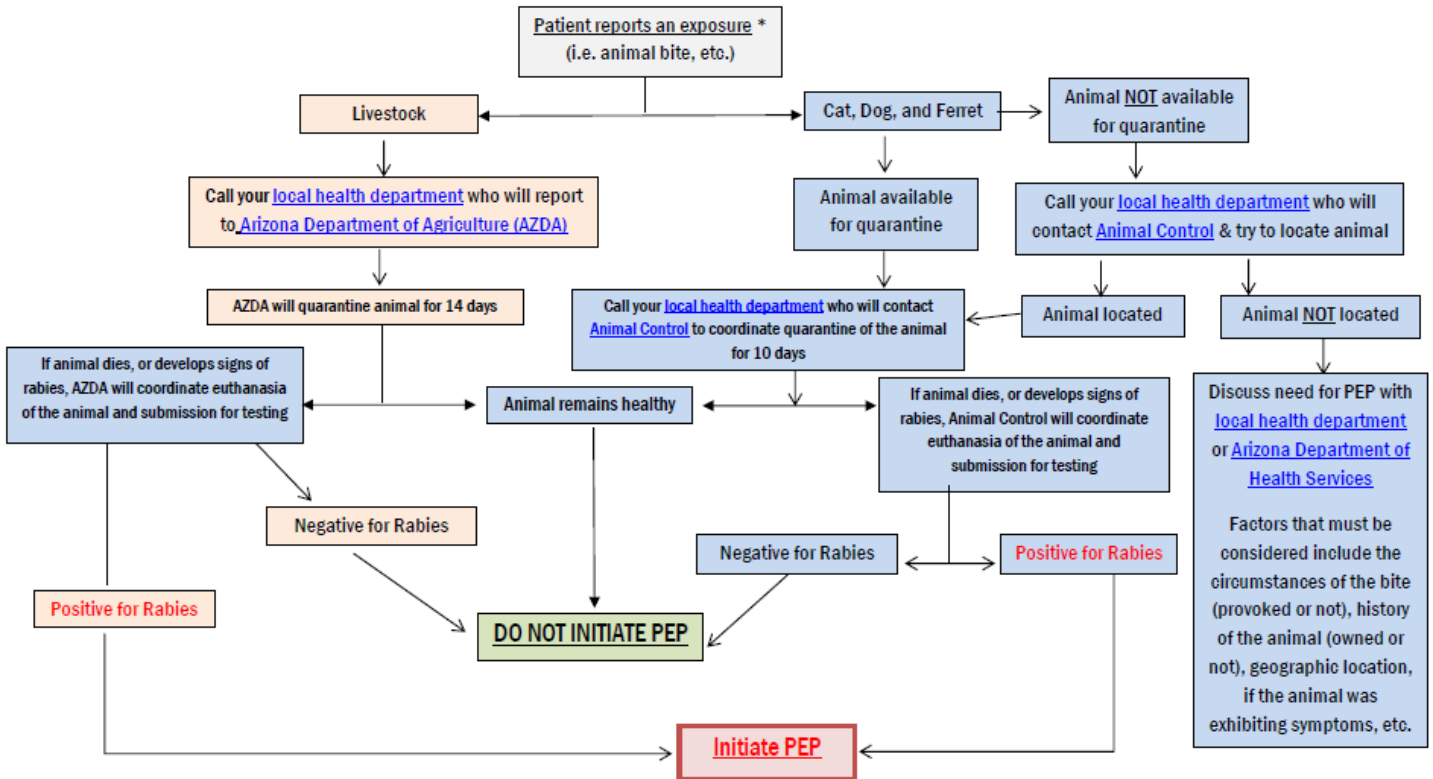
Reptiles, amphibians, birds, & fish are NOT susceptible to natural rabies infection.

Please refer to the [ADHS Manual for Rabies Control and Bite Management](#) for more information.

**Figure 8:** Healthcare Provider Algorithm for Rabies Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock



**Rabies Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock**



*\*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of*

Please refer to the [ADHS Manual for Rabies Control and Bite Management](#) for more information.

## Management of Rabies-Related Humans Exposures

### Exposure

Any bite, scratch, or other incident in which saliva, central nervous system (brain or spinal cord) tissue, or cerebral spinal fluid of a potentially rabid animal enters an open, fresh wound, or comes in contact with mucous membranes by entering the eye, mouth, nose.

The species of the animal involved must be considered when determining if an exposure has occurred. For instance, a bite from a healthy caged rodent is not considered a rabies exposure while a bite or saliva into wound contact from an untested or rabies positive skunk, bat, or wild carnivore is always considered an exposure. Children that have had direct contact with a bat or have been sleeping in a room with a bat should be considered as exposed unless the bat tests negative for rabies at the Arizona State Health Laboratory.

People who have been bitten by or exposed to dogs in countries that are endemic for canine rabies should consider prophylaxis unless the dog has tested negative for rabies or a 10-day quarantine has passed and the dog remained healthy. Consult your [local health agency](#) if you have any questions regarding a potential rabies exposure.

### Not an Exposure

1. Petting or touching the body/fur of a potentially rabid animal (as long as contact with the head is ruled out).
2. Touching an inanimate object that has had contact with a rabid animal does NOT constitute an exposure unless wet saliva or CNS tissue entered a fresh, open wound or contacted a mucous membrane.
3. Being sprayed by a skunk.
4. Having contact with blood, urine, or feces of a rabid or suspect rabid animal does not constitute an exposure.
5. Being in the vicinity of a rabid animal; rabies is not transmitted by aerosols.

### Bat Exposures

Bats are increasingly implicated as significant wildlife reservoirs for variants of rabies transmitted to humans in the U.S. Recent epidemiologic data suggest that seemingly insignificant physical contact with bats may result in viral transmission, even without a clear history of animal bite. In all instances of bat-human contact where rabies transmission is under consideration, the bat in question should be collected if possible, and submitted for rabies testing.

Rabies post exposure prophylaxis is recommended for all individuals with bite, scratch, or mucous membrane exposure to a bat, unless the bat tests negative for rabies. The inability of health care providers to solicit information surrounding potential exposures may be influenced by the limited injury inflicted by a bat bite (in comparison to lesions inflicted by terrestrial carnivores) or by circumstances that hinder accurate recall of events.

### Mass Rabies Exposures

In the event of a large number of people being potentially exposed to a source of rabies (example: bats in a cabin used for a summer camp with new attendees on a weekly basis, university campus dormitories, school auditoriums), the determination will be made to categorize the risk of those potentially exposed to no, low, and high risk. Post-exposure prophylaxis will likely not be recommended for all individuals in the event of a mass exposure, therefore risk assessments will be performed by public health for each person. Additionally, testing of animals may or may not be performed depending on the timeframe of exposure to prevent over- or under-estimation of rabies risk. Example reports include a [mass bat exposure at a university sorority house](#) and [at a research facility in a national park](#).

## Domestic Animal Exposures

Dogs and cats are occasionally infected with rabies in Arizona. It is important to collect information about the animal (e.g. stray vs. owned), and the circumstances of the bite or exposure (provoked vs. unprovoked) to assess the risk of rabies and the potential need for post-exposure prophylaxis. If the dog/cat is available, it should be quarantined and observed for ten days. If the animal can be observed, rabies post-exposure prophylaxis is not warranted unless the animal dies and tests positive for rabies during the observation period. Please refer to the algorithm(s) in the appendix of this manual for assistance in working with a potential exposure. Consult your local health agency if you have any questions regarding a potential rabies exposure.

## Human Exposure Risk Reduction

Often animal bites occur when people feed, pet, or attempt to pick up or catch wildlife or unfamiliar, domesticated animals. The majority of animal bites to humans are preventable. Public education should emphasize the following preventive measures:

- Do NOT pick up, touch, or feed wild or unfamiliar animals, especially sick or wounded animals. Teach children to keep a safe distance from wildlife and strays.
- Keep pets from having contact with wild animals.
- Vaccinate all cats and dogs against rabies.
- Do not leave pet food outside and use only animal-proof trashcans.
- Do not "rescue" seemingly abandoned young wild animals. Usually the mother will return. If the mother is dead or has not returned in many hours, call the Arizona Game and Fish Department.
- Do not keep wild or exotic animals as pets.
- Cap chimneys, seal openings around foundations and eaves, and cut tree branches that provide access to buildings.
- Report sick or injured animals to a local animal control officer.
- If an individual is bitten or scratched by any animal, promptly wash wounds with soapy water for 10 minutes and see a doctor immediately. Report all bites to the local animal control agency.
- If a pet is bitten or scratched by another animal, wear gloves while cleansing the wound. Contact a veterinarian to determine if the pet requires treatment, including a rabies booster.

Special considerations for hunters:

- Avoid animals which are acting strangely or that appear to be sick, including those that are aggressive, paralyzed, walking abnormally, appear to be unhealthy or are unusually tame.
- Do not skin road kills.
- Wear rubber gloves, eye protection, and an apron while skinning and handling animals.
- Regularly wash hands with soap and warm water.
- Take special care to avoid contact with saliva when skinning around the head and mouth region.
- Do not prepare meat with equipment used for skinning, preparing heads, hides, or antlers.
- Clean and disinfect knives, skinning boards, cutting surfaces and other equipment with a solution of bleach and water (1 part bleach: 9 parts water). Allow 10 minutes of contact time.
- Rabies virus is concentrated in saliva, nerve tissue, brain, and spinal cord and generally not in the muscle tissue.

## Humane Euthanasia of Animals

The AVMA Guidelines on Euthanasia is available at: <https://www.avma.org/KB/Policies/Pages/Euthanasia-Guidelines.aspx>. Euthanasia techniques are discussed within the report and tabulated in appendices. The appendices list acceptable and conditionally acceptable agents and methods of euthanasia. Proper interpretation of the tables is only possible when used in context with the text of the report. An example of an unacceptable method is injection of euthanasia solution into the heart without prior sedation. Consultation with a local veterinarian is recommended to ensure euthanasia is being provided appropriately and humanely. Arizona Revised Statute Title 11 Chapter 7 Article 6.1 11-1021 lists which agents can be used when an "animal is destroyed while impounded in a county, city or town pound".

Bats submitted to the Arizona State Public Health Laboratory for rabies testing must be submitted dead. Freezing is not considered humane or a reliable form of euthanasia. Methods of humane euthanasia of bats include the following:

1. Carbon dioxide or carbon monoxide in compressed gas cylinders, usually administered within an enclosed chamber;
2. Inhalant anesthetics, halothane, enflurane or isoflurane, usually administered within an enclosed chamber via vaporizer or anesthetic soaked gauze or cotton;
3. Euthanasia solution or barbiturate solutions, administered intraperitoneally, intracardiac only if animal is anesthetized.

Whatever method is chosen, personnel should avoid physical contact with materials that may contain brain, spinal cord or saliva to avoid possible exposure to rabies.

Death should be confirmed before shipping a bat to the Arizona State Public Health Laboratory to avoid exposure to laboratory personnel.



## Guidelines for the Submission of Specimens for Rabies Testing

The [Arizona State Public Health Laboratory](#), located in Phoenix, is the only laboratory in the state that is able to confirm rabies infection in animals where exposures to humans or animal have occurred. Testing is performed using direct fluorescent antibody (dFA). Fresh brain tissue is required for this test. Three areas of the brain are tested (brainstem, cerebellum, and hippocampus). It is important that brain tissue be maintained fresh or frozen in good condition. Tissues should not be submitted in formalin or alcohol. Potentially decomposed or destroyed brains should be submitted to the laboratory for evaluation of whether they can be tested if there was a human or pet exposure. Any animal that is excreting rabies virus in their saliva should have detectable virus in the brain by dFA examination.

Currently, there are no reliable, standardized ante-mortem (live animal) tests that can be used to confirm whether an animal is infected with rabies. Animals that should be submitted for testing are:

1. Wild animals involved in human or pet exposures or
2. Domestic animals showing neurological symptoms of rabies that have become ill or died during quarantine.

As of June 1, 2011- All domestic animal specimens must have approval by the appropriate public health agency after a rabies risk assessment has been conducted. This is usually done at ADHS, however, first review of specimens may be delegated to the epidemiology staff at a local health department after they have been given training by ADHS. Contact the ADHS Vector-Borne and Zoonotic Disease Program ([vbzd@azdhs.gov](mailto:vbzd@azdhs.gov) or 602-364-3676) to approve submission for testing.

Caged rodents such as hamsters and gerbils should NOT be submitted for testing, since these animals have no chance for contracting rabies.

Figure 4 (above or in the appendix) can assist in determining whether a domestic animal should be submitted for testing. The following questions are important to consider.

1. If an animal bites a human, and the animal is healthy, it should be quarantined- not euthanized.
2. Was the animal currently vaccinated for rabies?
3. Did the animal have the opportunity to come in contact with a potentially rabid wild animal in the past six months?
4. Was the animal exhibiting signs consistent with rabies infection?
5. Is the animal from an urban or rural area?

When there is very low suspicion of rabies or when there are no human or pet exposures, a domestic animal does not need to be submitted for rabies testing. In the case of a vaccinated, indoor only animal that has bitten someone or an animal exhibiting neurologic signs consistent with rabies but without exposure, the animal can be submitted to an [alternative lab](#) at a cost to the submitter.

For wild animals that have been found dead or have shown signs consistent with rabies and have not exposed any humans or animals, the [United States Department of Agriculture's Wildlife Services Division](#) can perform direct Rapid Immunohistochemical Test (dRIT). This is a rapid test used in the field for surveillance purposes only. Animal heads being submitted to the [United States Department of Agriculture's Wildlife Services Division](#) for rabies testing should be frozen as the dRIT testing may be delayed 1-4 weeks. To submit a specimen for dRIT testing, call (602) 870-2081.

## Removal of Animal Heads

Only veterinarians, animal control officers, Arizona Game and Fish officials, and others who have been appropriately trained and have pre-exposure prophylaxis should remove animal heads. The rest of the body should be incinerated. Bats should be submitted intact. Other animals should be decapitated and only the head submitted.

## Refrigeration versus freezing head

Refrigeration and immediate shipment is preferred. The head of a freshly euthanized/killed animal will store well in a refrigerator for 3-4 days. If shipment will be delayed due to weekend or holidays, refrigeration of the head and shipment with ample ice on Monday for receipt by Tuesday is recommended. If the animal is starting to decompose or has been dead for more than one day, has not been refrigerated and shipping will be delayed, then freezing the head is recommended. Freezing of the head will only delay the results due to allowance for thawing at the lab. Freezing should not affect the performance of the dFA test, as long as the head has not been repeatedly frozen and thawed.

## Supplies

Sharp knife and sharpener (optional-sharp hacksaw, dehorner, shears, or brush cutters)

Protective clothing:

- Waterproof gloves (disposable or disinfect after use)
- Face mask
- Safety glasses or goggles
- Optional coverall, waterproof apron (a large plastic garbage bag with holes for arms and head)
- Cleaning supplies:
  - water
  - detergent
  - disinfectant with virucidal activity (bleach)
  - paper towels
  - plastic trash bags

## Procedure

CAUTION: The brain, spinal cord, salivary glands, and saliva of the animal may contain rabies virus. If an exposure occurs during the process of removal of the head, it should be noted on the laboratory submission form for the animal. Do not use an axe or power saw because infected material may become aerosolized. Always wear protective gear (waterproof gloves, a facemask and eye protection) and exercise caution with the use of knives and other sharp objects during the procedure.

Packing, storing and shipping samples:

1. The head of the animal (except bats which should be submitted whole) should be removed from the body and placed in a plastic bag. Seal the bag. NOTE: The specimen should be refrigerated until time of shipment.
2. Place the bag containing the animal head inside a larger plastic bag.
3. Place at least two FROZEN gel packs on top of the specimen and seal this bag.
4. Place the double-bagged head in a sturdy, LEAKPROOF container (preferably metal or styrofoam).
5. Fill out the [submission form](#). Place it in an envelope and tape onto the outside of the container/box (NOT on the inside of box). Address the box.
6. Specimens should be shipped or delivered to the lab as quickly as possible (overnight mail or same-day bus service are commonly used transport methods).
7. Notify the lab when high priority (human or pet exposure) specimens are being shipped (phone number below).

### **Clean up**

Instruments and contaminated surfaces should be washed with detergent and water and then disinfected. Disinfect with a freshly prepared solution of bleach (1 part bleach in 9 parts water), alcohol (40- 70% ethanol), iodine (25ppm) or quaternary ammonium (200 ppm) compounds. The disinfectant should remain in contact with the contaminated surfaces for a minimum of 10 minutes.

### **Specimen Submission & Shipping**

A rabies risk assessment form must be sent to the Vector-Borne and Zoonotic Disease program at [vbzd@azdhs.gov](mailto:vbzd@azdhs.gov) before an animal is submitted for testing. The form can be found [here](#).

The following minimal information must accompany all specimens to the [Arizona State Public Health Laboratory](#):

1. Name, address, and phone number of the submitter
2. Date of death and location where collected (street address or closest cross streets)
3. Species of animal
4. Owner of animal - Name, address, and phone number
5. Person(s) or animal(s) exposed; date of exposure
6. Rabies vaccination status of animal, if known
7. Description of exposure(s)

Routine submissions can be received at the laboratory between 8AM and 4:30PM Monday - Friday. Rabies testing is done by one laboratory in Arizona. Ship specimens to:

[Arizona State Public Health Laboratory](#)

VIROLOGY RECEIVING

250 N. 17<sup>th</sup> Ave  
Phoenix, AZ 85007  
(602) 542-6134

After hours and weekend rabies testing: Samples can be submitted after hours and on weekends only if there is human exposure to a suspected rabid animal. Contact ADHS at (602) 364-3676 and listen to the instructions regarding the after-hours answering service.

## Appendix

The following documents are included in the appendix.

All remaining information can be found at [www.azhealth.gov/rabies](http://www.azhealth.gov/rabies).

1. Fact Sheet on Rabies (English and Spanish)
2. Rabies Quick Tips for Public Health
3. Protocol for Dogs & Cats that Have Been Exposed to a Potentially Rabid Animal
4. Rabies Post-Exposure Prophylaxis Management 1-pager
5. Rabies Post-Exposure Prophylaxis Infographic
6. Rabies Algorithm Cover Letter for Healthcare Providers
7. LHD Algorithm for Post Exposure Prophylaxis: Human Exposure to Wildlife or Exotic Animal & Algorithm for Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock
8. HCP Algorithm for Post Exposure Prophylaxis: Human Exposure to Wildlife or Exotic Animal & Algorithm for Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock
9. Arizona Rabies Risk Assessment & Submission Form
10. Contact Lists for Local Animal Control Agencies

# RABIES in Arizona



## What is rabies?

Rabies is a virus that attacks the central nervous system. Infection is preventable, but always fatal once symptoms appear. All mammals including humans are susceptible. Rabies is spread by contact with saliva of an infected animal, usually through a bite wound. Brain tissue can also be infectious and should not be handled.

## Which animals might have rabies?

In Arizona, rabies is found mainly in wild animals such as bats, skunks, and foxes. Sometimes, coyotes, bobcats, javelinas, and domestic animals, such as dogs, cats, and horses, can become infected with rabies if a rabid wild animal bites them. Rabbits and rodents, such as rats and squirrels, are not likely to be infected with rabies.

## How do I know if an animal has rabies?

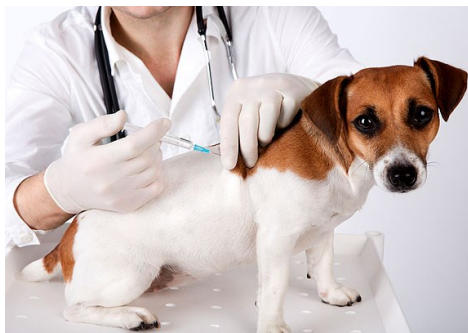
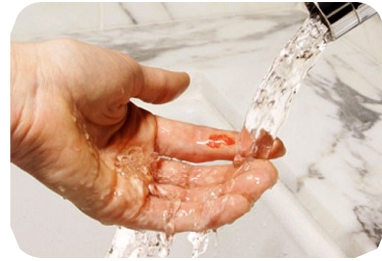
The first sign of rabies is usually a change in the animal's behavior. Nocturnal animals might be active during the day, stagger when walking, act more aggressive, or appear weak, paralyzed, or agitated. Bats might be found on the ground, unable to fly. If a wild animal is acting strangely or does not run away when you approach, it might be sick or injured.

**Do not try to help or touch the animal!  
Stay away and call your local animal control office.**



## What if a wild animal bites me?

- ◆ Immediately wash the bite wound with soap and water.
- ◆ Report the animal bite to your local health department.
- ◆ Visit your doctor for medical care and discuss anti-rabies treatment.
- ◆ Notify local animal control to capture the animal for rabies testing.
- ◆ Take precautions if trying to capture the animal.
- ◆ Do not damage the head or risk further exposure.



## How can I prevent rabies?

- ◆ **Do not pick up, touch, or feed wild or unfamiliar animals, especially sick or wounded ones.**
- ◆ **Keep pets away from wild animals.**
- ◆ **Vaccinate all dogs and cats against rabies.**
- ◆ Do not "rescue" abandoned young wild animals.
- ◆ Do not try to separate two fighting animals. Wear gloves if you handle your pet after a fight with a wild animal.
- ◆ Take precautions when camping, hunting or fishing. Avoid sleeping on the open ground without the protection of a closed tent or camper.
- ◆ Do not disturb roosting bats.
- ◆ If you find a bat on the ground, don't touch it. Place a box over the bat to contain it. Report the bat and its location to animal control or health officials.
- ◆ Teach children not to handle or touch sick or injured animals including bats.

For more information on rabies in Arizona, please visit [azhealth.gov/rabies](http://azhealth.gov/rabies) or contact the Vector-borne & Zoonotic Disease team at [vbzd@azdhs.gov](mailto:vbzd@azdhs.gov) or 602-364-3676.



ARIZONA DEPARTMENT  
OF HEALTH SERVICES

# La RABIA en Arizona



## ¿Qué es la rabia?

La rabia es un virus que ataca al sistema nervioso central. Se puede prevenir la infección, pero siempre es fatal una vez que los síntomas aparecen. Todos los mamíferos, incluso los humanos, son susceptibles. La rabia se propaga por el contacto con la saliva de un animal infectado, generalmente por una mordedura. El tejido cerebral también puede ser infeccioso y no debe de ser manipulado.

## ¿Cuales animales pueden tener la rabia?

En Arizona, la rabia se encuentra principalmente en los animales salvajes, tales como murciélagos, zorrillos, y zorros. A veces, coyotes, lince, pecarís, y animales domesticados, tales como perros, gatos, y caballos, se pueden infectar con la rabia si un animal salvaje los muerde. Conejos y roedores, como ratas y ardillas, no suelen estar infectados por la rabia.

## ¿Cómo se sabe si un animal tiene la rabia?

El primer signo de la rabia generalmente es un cambio del comportamiento del animal. Los animales nocturnos pueden estar activos durante el día, se tambalean cuando caminan, se comportan más agresivos, o parecen débil, paralizados, o agitados. Los murciélagos se pueden encontrar en el suelo, incapaz de volar. Si un animal salvaje se comporta extrañamente o no huye cuando te acercas, puede estar enfermo o herido.

**¡No trate de ayudar o tocar el animal!  
Aléjese y llame a su oficina local de control animal.**



## ¿Qué pasa si un animal salvaje me muerde?

- ◆ Lave la mordedura inmediatamente con agua y jabón.
- ◆ Reporte la mordedura a su departamento de salud local.
- ◆ Visite a su médico para obtener atención médica y hable con él del tratamiento contra la rabia.
- ◆ Notifique al control de animal local para capturar el animal para hacer un análisis de la rabia.
- ◆ Tome precauciones si intenta de capturar el animal.
- ◆ No le haga daño a la cabeza o arriesgue ser expuesto de nuevo.



## ¿Cómo se puede prevenir la rabia?

- ◆ **No recoja, toque, o alimente a animales salvajes o desconocidos, especialmente los que están enfermos o heridos.**
- ◆ **Mantenga las mascotas lejos de animales salvajes.**
- ◆ **Vacune todos los perros y gatos contra la rabia.**
- ◆ No "rescate" animales salvajes jóvenes y abandonados.
- ◆ No intente separar dos animales que pelean. Utilice guantes si maneja su mascota después de una pelea con un animal salvaje.
- ◆ Tome precauciones cuando acampa, caza, o pesca. Evite dormir en campo abierto sin la protección de una tienda de campaña cerrada o una caravana.
- ◆ No perturba murciélagos en reposo.
- ◆ Si encuentra un murciélago en el suelo, no lo toque. Coloque una caja sobre el murciélago para contenerlo. Reporte el murciélago y la ubicación al control de animal o funcionarios de salud.
- ◆ Enseñe a los niños que no deben manejar o tocar animales enfermos o heridos, incluso murciélagos.

Para más información sobre la rabia en Arizona, por favor visite [azhealth.gov/rabies](http://azhealth.gov/rabies) o contacte el equipo de Enfermedades Transmitidas por Vectores y Zoonóticos a [vbzd@azdhs.gov](mailto:vbzd@azdhs.gov) o 602-364-3676.



ARIZONA DEPARTMENT  
OF HEALTH SERVICES





# Public Health Quick Tips:

## RABIES

### About:

Human rabies cases are rare, but once clinical signs appear, the disease is considered to be 100% fatal.

Rabies is preventable and post-exposure prophylaxis should be administered to people exposed to a potentially rabid animal.

Rabies is spread by direct contact with saliva, central nervous system tissue or fluids, usually by bite wounds.

### Diagnosis & Treatment:

Clinicians can elect for supportive therapy or an aggressive treatment plan.

Ante-mortem testing in humans requires saliva, serum, spinal fluid samples, and skin biopsies of hair follicles at the nape of the neck.

Several tests are necessary; a single test type is insufficient.

### Investigation Highlights:

Epidemiologic investigations should begin immediately following suspicion of exposure.

Contact the Vector-borne/Zoonotic Disease team.

Enter suspect case in MEDSIS, request medical records and obtain detailed exposure history.

Coordinate collection and submission of samples through the Arizona State Laboratory to CDC.

Advise clinicians on personal protective equipment use and proper infection prevention when interacting with the patient.

Evaluate level of risk of exposure for patient contacts, and, if indicated, arrange for prophylaxis.

### Resources:

[www.cdc.gov/rabies](http://www.cdc.gov/rabies)

[www.cdc.gov/rabies/medical\\_care/index.html](http://www.cdc.gov/rabies/medical_care/index.html)

[www.cdc.gov/rabies/resources/specimen-submission-guidelines.html](http://www.cdc.gov/rabies/resources/specimen-submission-guidelines.html)

<https://academic.oup.com/cid/article/36/1/60/283656/Management-of-Rabies-in-Humans>

Image by CDC

### Symptoms:

Early stage:

-usually 2-10 days

-general weakness, discomfort, fever, or headache

Late stage:

-discomfort/itching/pricking

sensation at site of the bite

-progress to cerebral dysfunction, anxiety, confusion, agitation.

-delirium, abnormal behaviors,

seizures, hallucinations, and

insomnia

### Animal Bites & Rabies:

The most common rabies reservoirs

in Arizona include bats, skunks, and

foxes. Refer to ADHS Rabies Manual

for guidance on animal bites,

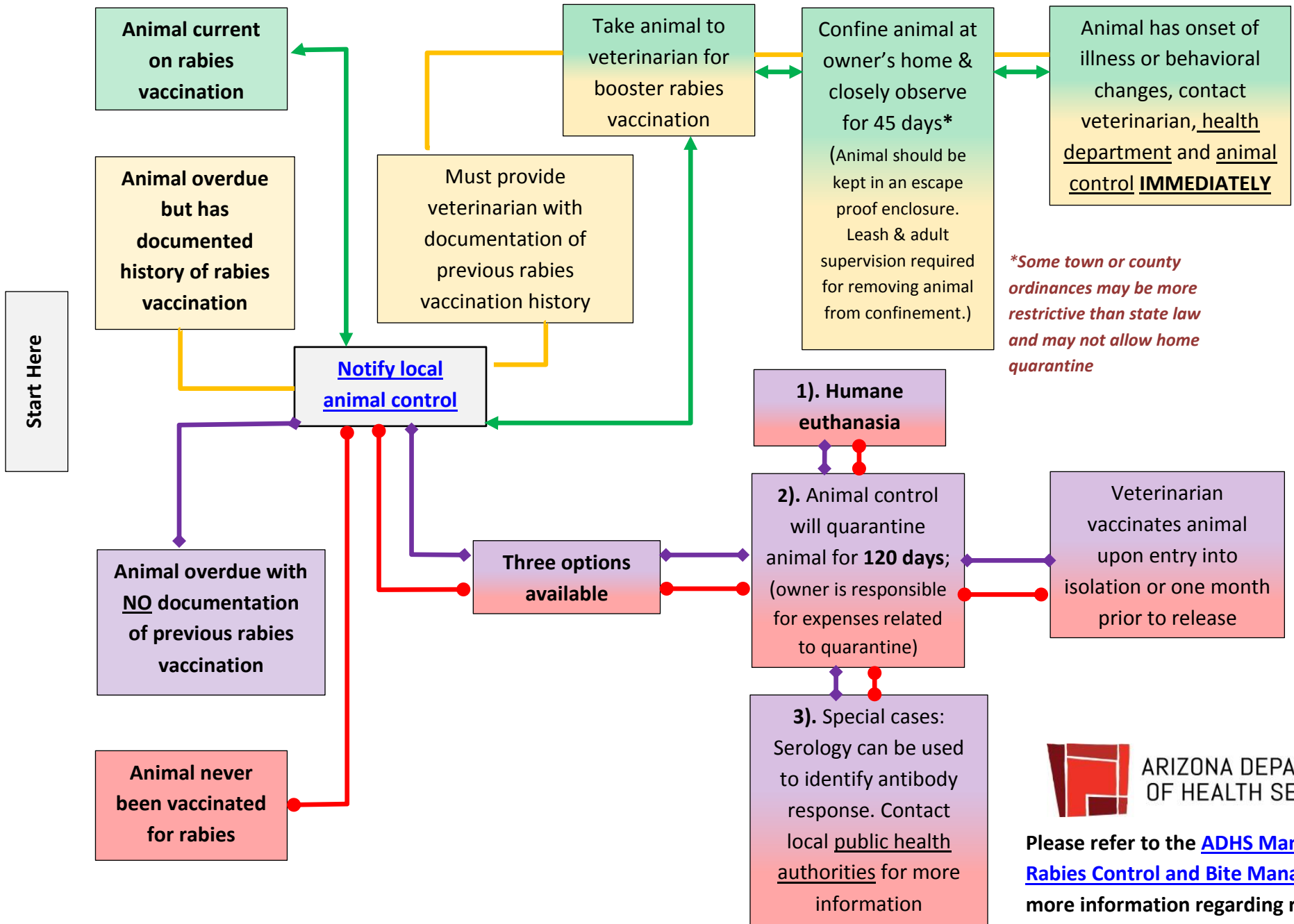
exposure prophylaxis, and

submission of animal specimens for

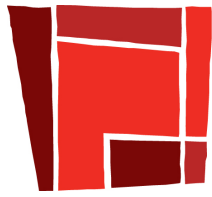
rabies testing.

[azhealth.gov/rabies](http://azhealth.gov/rabies)

# Protocol for Dogs & Cats that Have Been Exposed to Potentially Rabid Animal



Please refer to the [ADHS Manual For Rabies Control and Bite Management](#) for more information regarding rabies and rabies situations



# ARIZONA DEPARTMENT OF HEALTH SERVICES

## PREPAREDNESS

### RABIES POSTEXPOSURE MANAGEMENT

Rabies vaccine & human rabies immune globulin should be administered according to the most current recommendations from the [Advisory Committee on Immunizations Practices Human Rabies Prevention- United States, 2008](#) and [Advisory Committee on Immunization Practices \(ACIP\) Provisional Recommendations for Prevention of Rabies](#).

Treatment	Regimen <span style="float: right;"><i>Day 0= day of initiation of treatment</i></span>
Wound Cleansing	All wounds should be washed immediately and thoroughly with soap and water for 10-15 minutes AND irrigated with a virucidal agent such as povidone iodine solution. Tetanus prophylaxis and measures to control bacterial infections should be used as indicated.
HRIG	Human rabies immune globulin (HRIG) <b>is administered only once</b> , at the beginning of anti-rabies prophylaxis, to previously unvaccinated persons. This will provide immediate antibodies until the body can respond to the vaccine by actively producing antibodies of its own. If possible, the full dose of HRIG should be thoroughly infiltrated in the area around and into the wounds. Any remaining volume should be injected intramuscularly at a site distant from vaccine administration. <b>HRIG should never be administered in the same syringe or in the same anatomical site as the first vaccine dose.</b> However, subsequent doses of vaccine in the four-dose series can be administered in the same anatomic location where the HRIG dose was administered. If HRIG was not administered when vaccination was begun, it can be administered up to seven days after the administration of the first dose of vaccine. Beyond the seventh day, HRIG is not recommended since an antibody response to the vaccine is presumed to have occurred. Because HRIG can partially suppress active production of antibody, no more than the recommended dose should be administered. The recommended dose of <b>HRIG is 20 IU/kg body weight</b> . This formula is applicable to all age groups, including children. For <b>previously vaccinated/immunized individuals, HRIG should NOT be administered.</b> Previously vaccinated persons are those who have received one of the recommended preexposure or postexposure regimens of HDCV, RVA, or PCECV, or those who received another vaccine and had a documented rabies antibody titer. RIG is unnecessary and should not be administered to these persons because an anamnestic response will follow the administration of a booster regardless of the pre-booster antibody titer.
Vaccine	A regimen of four 1-mL doses of HDCV or PCEC vaccines should be administered intramuscularly to previously unvaccinated persons. The first dose of the four-dose course should be administered as soon as possible after exposure. Additional doses should be administered on days 3, 7, and 14 after the first vaccination. For adults, the vaccination should always be administered intramuscularly in the deltoid area (arm). For children, the anterolateral aspect of the thigh is also acceptable. The gluteal area should never be used for rabies vaccine injections because observations suggest administration in this area results in lower neutralizing antibody titers. <b>Dose: HDCV or PCECV 1.0 mL, IM (deltoid area), one each on days 0, 3, 7, and 14.</b> For previously immunized/vaccinated individuals, vaccine should only be administered one each on days 0 and 3. For persons with immunosuppression, rabies vaccine should be administered using a 5-dose vaccine regimen (i.e., 1 dose of vaccine on days 0, 3, 7, 14, and 28).

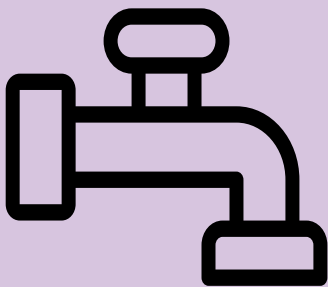
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Douglas A. Ducey | Governor    Cara M. Christ, MD, MS | Director

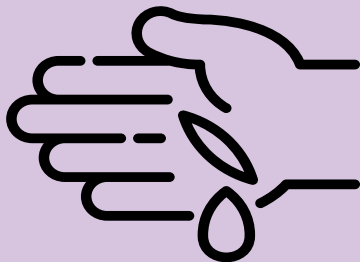
# Rabies Post-Exposure Prophylaxis Guidelines



Contact public health to assess patient need for post-exposure prophylaxis



Clean exposure area thoroughly with soap and water



Administer HRIG\* directly into exposure area (20 IU/kg body weight) and give remaining in deltoid



Administer vaccine in the opposite deltoid from HRIG on days 0, 3, 7, and 14

\*Human Rabies Immune Globulin

## Special Considerations

Previously vaccinated  
Immunocompromised

Do not administer HRIG, vaccinate on days 0 and 3  
Administer 5 doses of vaccine on days 0, 3, 7, 14, and 28



February 25, 2020

The Arizona Department of Health Services has updated our **algorithms for rabies post-exposure prophylaxis (PEP) recommendations** when a human has been exposed to the saliva of wildlife, an exotic animal, a domestic animal, or livestock.

The main **change** directs healthcare providers to discuss the need for rabies PEP with local and state health departments **in the event that a domestic animal or livestock is unable to be located by Animal Control for quarantine**. Factors that must be considered include the circumstances of the animal encounter (known bite or not, provoked or not), history of the animal (owned or not, vaccinated or not, etc.), geographic location due to the epidemiology of the disease and if the animal was exhibiting symptoms.

These changes will strengthen current processes regarding PEP recommendations. Please contact us if you have any questions.

Sincerely,

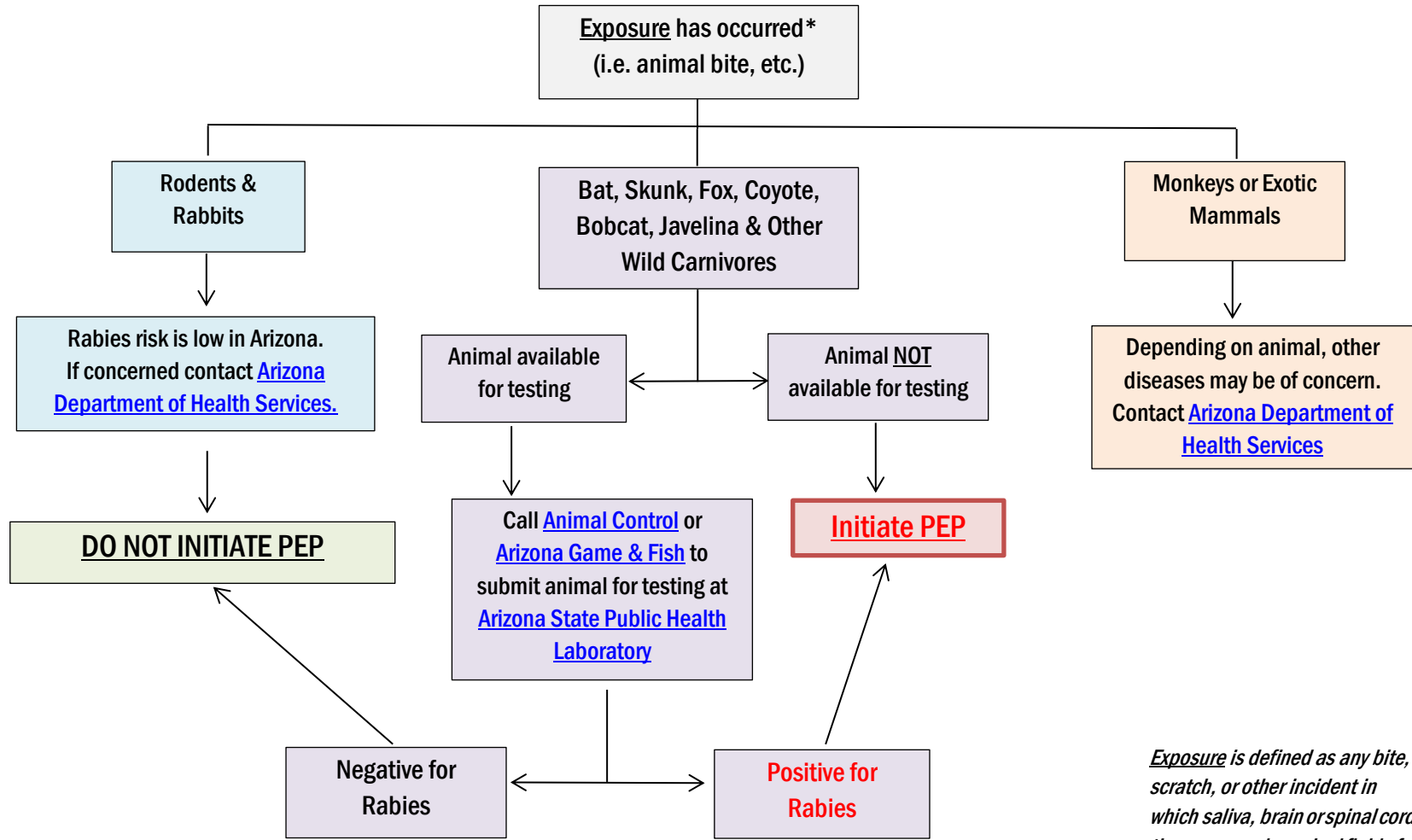
Handwritten signature of R. Nicholas Staab in black ink.

**R. Nicholas Staab, MD, MSPH**  
Medical Director, Bureau of  
Epidemiology & Disease Control  
Arizona Department of Health Services  
[150 North 18th Avenue, Suite 100,](#)  
[Phoenix, AZ 85007](#)  
Direct 602-364-3116  
Mobile 480-387-0784  
Email [robert.staab@azdhs.gov](mailto:robert.staab@azdhs.gov)

Handwritten signature of Heather Venkat in black ink.

**Heather Venkat, DVM, MPH, DACVPM**  
CDC Career Epidemiology Field Officer  
State Public Health Veterinarian  
Arizona Department of Health Services  
150 North 18th Avenue, Suite 140,  
Phoenix, AZ 85007  
Direct 602-542-8960  
Mobile 480-273-6162  
Email [heather.venkat@azdhs.gov](mailto:heather.venkat@azdhs.gov)

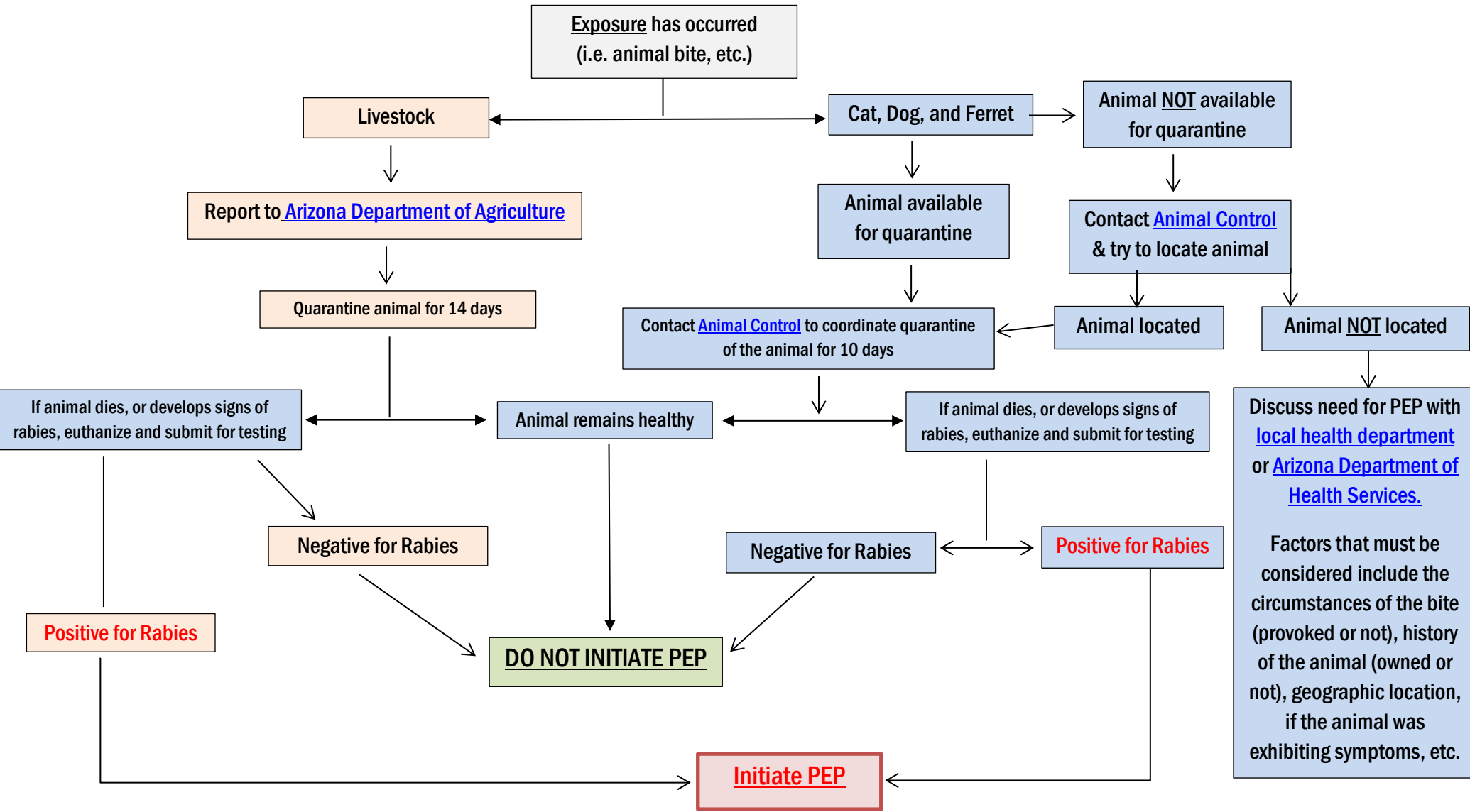
## Rabies Post Exposure Prophylaxis: Human Exposure to Wildlife or Exotic Animal



*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of an individual.*

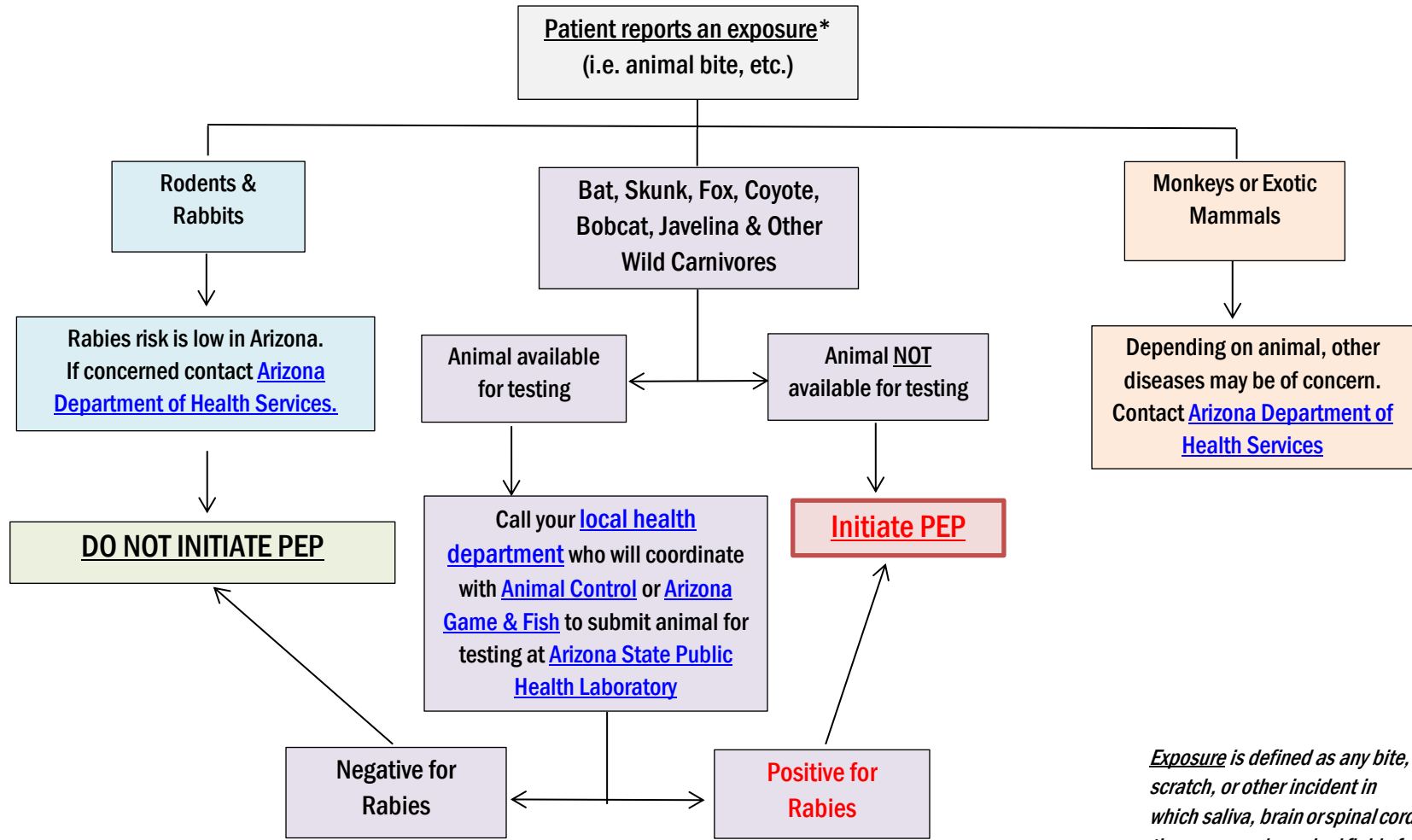
\*Note: Presence of bats within closed spaces where people are dwelling or residing is considered an exposure. Most people who are bitten by bats are not aware or the bite is so small that there are no marks visible. (Example: If someone wakes up to find a bat in their bedroom, this is considered an exposure warrants PEP).

## Rabies Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock



*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of an individual.*

# Rabies Post Exposure Prophylaxis: Human Exposure to Wildlife or Exotic Animal

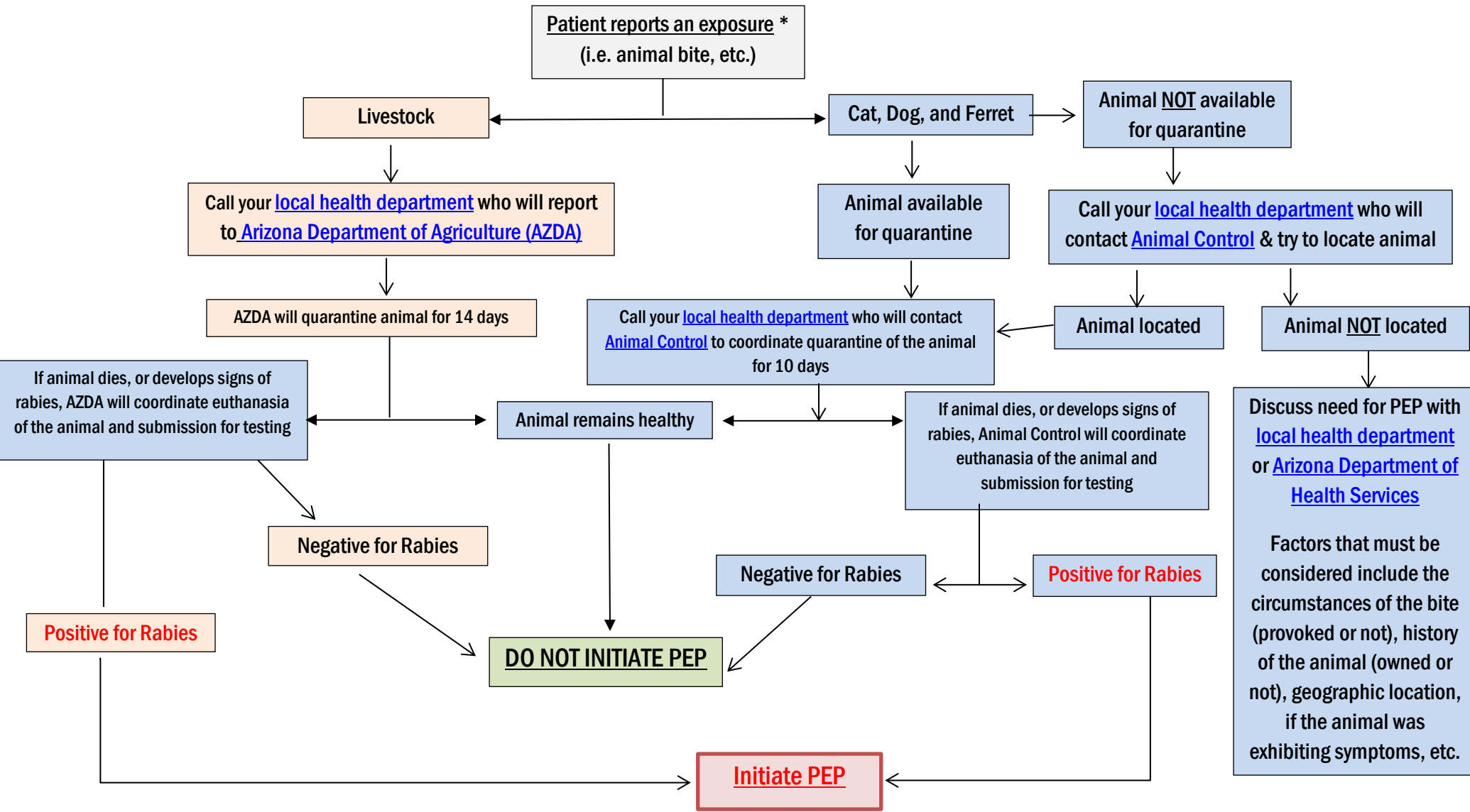


*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of an individual.*

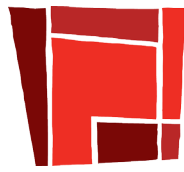
\*Note: Presence of bats within closed spaces where people are dwelling or residing is considered an exposure. Most people who are bitten by bats are not aware or the bite is so small that there are no marks visible. (Example: If someone wakes up to find a bat in their bedroom, this is considered an exposure warrants PEP).



## Rabies Post Exposure Prophylaxis (PEP): Human Exposure to a Domestic Animal or Livestock



*\*Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebrospinal fluid of a potentially rabid animal comes in contact with an open wound, or the eyes, mouth or nose of*



# ARIZONA DEPARTMENT OF HEALTH SERVICES

PREPAREDNESS

## RABIES RISK ASSESSMENT & LABORATORY SUBMISSION FORM

To: ADHS Rabies Team [vbzd@azdhs.gov](mailto:vbzd@azdhs.gov) Ph# (602) 364-3676 Fax#: (602) 364-3198

County: \_\_\_\_\_

### Submitter

Agency: \_\_\_\_\_ Contact name: \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ St: \_\_\_\_\_ Zipcode: \_\_\_\_\_

Ph# \_\_\_\_\_ Email: \_\_\_\_\_

Veterinarian  Animal Control Officer  Police Officer  Other: \_\_\_\_\_

Collecting Agency/Collector name: \_\_\_\_\_ Collector ph#: \_\_\_\_\_

### Suspected Rabid Animal

Animal ID# \_\_\_\_\_

Type: \_\_\_\_\_

Other: \_\_\_\_\_

Species: \_\_\_\_\_

Onset date: \_\_\_\_\_

Date collected: \_\_\_\_\_

Approximate age: \_\_\_\_\_

Gender:  M  F  Unk

Vaccine status: \_\_\_\_\_

Mortality status: \_\_\_\_\_

Reason for submitting: \_\_\_\_\_

Quarantine Status: \_\_\_\_\_

Quarantine not observed because \_\_\_\_\_

Exposure was: \_\_\_\_\_ Neurological symptoms? \_\_\_\_\_ Select neurologic symptoms

Hydrophobia  Unable to swallow  Fever  Lethargy  Loss of appetite  Biting  Restless

Change in behavior  Change in tone of bark/meow  Chewing at bite site  Mean/aggressive

Breaks teeth/injures itself biting objects  Constant growling  Dilated pupils  Seizures  Choking

Disorientation  Paralysis of jaw/throat/chewing muscles  Uncontrollable

Foaming at mouth  Sudden unexplained death  Other: \_\_\_\_\_

Owner contact information: \_\_\_\_\_

### Human Exposure

Exposure date: \_\_\_\_\_

Number of humans exposed: \_\_\_\_\_

Type of exposure: \_\_\_\_\_

Location of exposure: \_\_\_\_\_

Contact information:

Name: \_\_\_\_\_ Gender: \_\_\_\_\_

Address: \_\_\_\_\_

Phone/Email: \_\_\_\_\_

### Domestic Animal Exposure

Exposure date: \_\_\_\_\_

Number of animals exposed: \_\_\_\_\_

Owner contact information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone/Email: \_\_\_\_\_

### Location of Exposure Unk

GPS Coordinates:

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Closest cross streets: \_\_\_\_\_

Rural  Suburban  Public  Unk

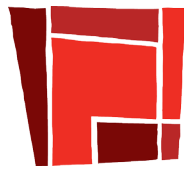
Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ AZ Zipcode: \_\_\_\_\_

Describe human/domestic animal exposure in detail:

Douglas A. Ducey | Governor Cara M. Christ, MD, MS | Director



# ARIZONA DEPARTMENT OF HEALTH SERVICES

## PREPAREDNESS

Email this completed submission form to [vbzd@azdhs.gov](mailto:vbzd@azdhs.gov) for approval prior to shipping the specimen.

If you receive approval, send the specimen to:

Arizona State Public Health Laboratory at 250 N. 17<sup>th</sup> Ave. Phoenix, AZ 85007 Attn: Lab Receiving/Rabies

### Recommendations:

County Approval

Send sample  Do not send sample  Priority

Not a priority  Send to another lab

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Notes: \_\_\_\_\_

ADHS/State Approval

Send sample  Do not send sample  Priority

Not a priority  Send to another lab

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

Notes: \_\_\_\_\_

### Results:

ASPHL ID# \_\_\_\_\_ Species: \_\_\_\_\_

Results: \_\_\_\_\_ Date: \_\_\_\_\_

Notes: \_\_\_\_\_

### ----- FOR LABORATORY USE ONLY -----

**Victim:** Last: \_\_\_\_\_ First: \_\_\_\_\_ MI: \_\_\_\_\_ Bite# \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

Patient ID#: \_\_\_\_\_

**Owner:** Last: \_\_\_\_\_ First: \_\_\_\_\_ MI: \_\_\_\_\_ Bite# \_\_\_\_\_

Address: \_\_\_\_\_ City: \_\_\_\_\_ St: \_\_\_\_\_ Zip: \_\_\_\_\_

### Specimen:

Submitting Organization ID# \_\_\_\_\_ Submitting organization: \_\_\_\_\_

Date bitten: \_\_\_\_\_ Animal Type: \_\_\_\_\_

Date collected: \_\_\_\_\_ Time: \_\_\_\_\_ Activity type: \_\_\_\_\_ Collector ph#: \_\_\_\_\_

Exposure: \_\_\_\_\_ Date received: \_\_\_\_\_ Time: \_\_\_\_\_

Caption	Response	Comments
Number of individuals exposed		
Bite/Exposure		
Where was person bitten or exposed (body part)?		
Animal mortality status	<input type="checkbox"/> Alive <input type="checkbox"/> Died	
Was animal vaccinated?		
Was bite provoked?		
Animal quarantined?		
Animal species		
Location or address of exposure		
Was animal found in public space?		
Closest cross streets		
Describe how and why the patient was bitten		
Other exposure to human (non-bite)?		
If wild animal, any domestic animals exposed?		
Agency that collected the animal (different than submitter)		

Douglas A. Ducey | Governor Cara M. Christ, MD, MS | Director

**Contact List for AZ Animal Control Offices**  
(also found at [www.azhealth.gov/animalcontrol](http://www.azhealth.gov/animalcontrol))

**Apache County**

Eager Police Department Animal Control

PO Box 1300  
Eager AZ 85925  
(928) 333-4127 Ext 362

Navajo Department of Fish & Wildlife- Navajo Nation Animal Control Program

PO Box 1480  
Window Rock AZ 86515  
(928) 871-7066  
Ft. Defiance (928) 729-4023  
Many Farms (928) 731-4380  
Shiprock (505) 368-1235  
Tuba City (928) 283-3089  
Crownpoint (928) 871-6450

Springerville Police Department - Animal Control

418 E. Main St.  
Springerville AZ 85938  
(928) 333-4240 Ext 327

St. John's Police Department - Animal Control

(928) 337-2440  
1200 W. Cleveland  
St. Johns AZ 85936

**Cochise County**

Benson Animal Shelter

104 E. Harvest Way  
Benson AZ 85602  
(520) 586-3600  
(520) 586-2211

Bisbee Police Department - Animal Control

1 W. Highway 92  
Bisbee AZ 85603  
(520) 432-2261

(520) 432-6020 animal shelter  
(520) 432-6055 after hours emergency

Cochise County Sheriff's Office - Animal Control

205 N. Judd Dr.  
Bisbee AZ 85603  
(520) 432-9500

Douglas Police Department - Animal Control

300 W.14th St.  
Douglas AZ 85607-1694  
(520) 417-5767

Huachuca City Police Department - Animal Shelter

500 N. Gonzales Blvd.  
Huachuca City AZ 85616  
(520) 456-1337  
(520) 456-1353

Sierra Vista Animal Control

6799 E. Highway 90  
Sierra Vista AZ 85635  
(520) 458-4151  
(520) 452-7060

Tombstone Marshall's Office - Animal Control

315 E. Fremont St.  
Tombstone AZ 85638  
(520) 457-3144

Willcox Police Humane Division

320 W. Rex Allen Dr  
Willcox AZ 85643  
(520) 384-0163  
(520) 384-4673

**Coconino County**

Coconino County Public Health Services District Animal Management

2625 N. King Street  
Flagstaff, AZ 86004

(928) 679-8756

(928) 679-7272

(877) 679-7272

Flagstaff Police Department - Animal Control

Coconino County Sheriff's Office

911 E. Sawmill Rd.

Flagstaff AZ 86001

(928) 774-1414

(800) 338-7888

(928) 779-2701 dispatch

(928) 679-8756

(928) 774-4523 after hours

Havasupai Tribal Community - Animal Control

PO Box 10

Supai, AZ 86435

(928) 448-2731

(928) 448-2161

Page Police Department - Animal Control

808 Copper Mine Rd.

Page AZ 86040

(928) 645-4362

(928) 645-2463

Sedona Police Department - Animal Control

102 Roadrunner Rd.

Sedona AZ 86336

(928) 203-5009

(928) 282-3100

Williams Police - Animal Control

501 W. Route 66

Williams, AZ 86046

(928) 635-4461

**Gila County**

Gila County Rabies Control

700 Hackney Ave Globe AZ 85501

(928) 425-5882  
107 W. Frontier St. Ste. A Payson AZ 85541  
(928) 474-7178

Globe Police Department - Animal Control

150 N. Pine St.  
Globe AZ 85501  
(928) 425-5751

Payson Police - Animal Control

303 N. Beeline Hwy  
Payson, AZ 85541  
(928) 474-4558

San Carlos Apache Police - DHHS

Box 0  
San Carlos, AZ 85550  
(928) 475-2798

**Tonto Apache Tribe Police Department**

Tonto Apache Reservation #30  
Payson, AZ 85541  
(928) 474-5000

**Winkelman Animal Control**

206 Griffin Ave.  
Winkelman AZ 85292  
(520) 356-7854

**Graham County**

Graham County Animal Shelter

300 Old Country Club Rd.  
Safford AZ 84456  
(928) 348-6676

Safford Animal Control

525 10th Ave.  
Safford AZ 85546  
(928) 428-6884

(928) 348-3190

(928) 432-4100

**Greenlee County**

**Clifton Animal Control**

210 N. Coronado Blvd

Clifton, AZ 85533

(928) 865-4145

Greenlee County Animal Control

840 Coronado Blvd.

Clifton AZ 85533

(928) 865-2720

(928) 865-4417

(928) 865-2604

(928) 865-4149 Sheriff

(928) 865-4566 Clifton PD

**La Paz County**

Colorado River Indian Tribes

Fish & Game Department

26600 Mohave Rd

Parker AZ 85344

(928) 669-9285

**La Paz County Animal Control**

Parker Police Department

309 7th St.

Parker AZ 85344

(928) 669-8774

(928) 669-2281, 24-Hour Emergency

(928) 669-9265

Parker Police Department - Animal Control

1314 11th St

Parker, AZ 85344

(928) 669-8774

**Quartzsite Police Department - Animal Control**

305 N. Plymouth Ave.



Quartzsite AZ 85346  
(928) 927-3000

**Maricopa County**

[Apache Junction Police Department - Animal Control](#)

725 E. Baseline Rd.  
Apache Junction AZ 85219  
(480) 983-4405  
(480) 474-8530

[Avondale Police Department- Animal Control](#)

11485 W. Civic Center  
Avondale AZ 85323  
(623) 333-7001 main line  
(623) 333-7012 bites  
(623) 333-4268  
(623) 764-2067  
(623) 333-7345 hotline

[Buckeye Police Department - Animal Control](#)

100 N. Apache Rd. Ste. D  
Buckeye AZ 85326  
(623) 349-6400  
(623) 386-4380

[Fort McDowell Tribal Police Department](#)

10755 N. Ft. McDowell Rd  
Fort McDowell AZ 85264  
(480) 816-7506  
(480) 837-1091

[Maricopa County Animal Care & Control](#)

2323 S. 35th Ave.  
Phoenix AZ 85009  
(602) 506-7387 Bite line

[Mesa Police Department - Animal Control](#)

200 S. Center St. Bldg. 2  
Mesa AZ 85201

(480) 644-2268 Animal complaints  
(480) 644-2211 Non-emergency police

Peoria Police Department - Animal Control

8351 W. Cinnebar  
Peoria AZ 85345  
(623) 773-7019  
(623) 773-7090  
(623) 773-7004  
(623) 773-8311

Surprise Police Department - Animal Control

14312 W. Tierra Buena Ln.  
Surprise AZ 85374  
(623) 583-1085 Ext 7438  
(623) 222-4000 Opt 3

Tohono O'Odham Indian Community - San Lucy District- Animal Control

PO Box GG  
Gila Bend AZ 85337  
(928) 683-2913 Ext. 21  
(520) 383-2298

Wickenburg Police Department - Animal Control

155 N. Tegner Ste. C  
Wickenburg AZ 85390  
(928) 684-5411

**Mohave County**

Bullhead City Police Department - Animal Control

2270 Trane Rd.  
Bullhead City AZ 86442  
(928) 763-6000  
(623) 763-1999 after hours

**Fort Mojave Tribal Police**

7500 Dike Rd  
Mohave Valley AZ 86440  
(928) 330-3000

Hualapai Indian Community - Animal Control

924 Rodeo Way  
Peach Springs AZ 86434  
(928) 769-2205  
(928) 769-2490 main  
(928) 269-2220  
(928) 769-2656

Lake Havasu City Police Department

2360 McCulloch Blvd  
Lake Havasu City, AZ 86403  
(928) 680-5403

Kingman Police Department - Animal Control

2730 E. Andy DeVine  
Kingman AZ 86401  
(928) 753-2191

Western Arizona Humane Society

1100 Empire Dr  
Lake Havasu AZ 85604  
(928) 855-5083

**Navajo County**

Holbrook Police Department - Animal Control

120 E. Buffalo  
Holbrook AZ 86025  
(928) 524-4266

Humane Society of the White Mountains

3212 N. Porter Mountain Rd.  
Lakeside AZ 85929  
(928) 368-5295 shelter  
(928) 205-7415 PAWS clinic

Kayenta Animal Control

PO Box 1118  
Kayenta, AZ 86033  
(928) 697-3939

### **Navajo County Animal Care & Control**

117 E. Buffalo St  
Holbrook AZ 86025  
(928) 524-4266  
(928) 524-4163  
(928) 524-4750

### **Navajo County Sheriff's Office**

PO Box 668  
Holbrook, AZ 86025  
(928) 524-4163

### **Pinetop-Lakeside Animal Control**

1360 N. Niels Hansen  
Lakeside AZ 85929  
(928) 368-8696 voice  
(928) 368-8800 24-hour

### **Show Low Animal Control**

1181 E. Thornton Ave.  
Show Low AZ 85901  
(928) 537-4365

### **Snowflake - Taylor Police - Animal Control**

602 S. Main St.  
Snowflake AZ 85937  
(928) 536-7688  
(928) 536-7500

### **White Mountain Apache Tribe - Animal Control**

PO Box 1210  
Whiteriver, AZ 85941  
(928) 338-4955

### **Winslow Police - Animal Care Facility**

548 Barrigan Rd.  
Winslow AZ 86047  
(928) 289-3232  
(928) 289-2431 after hours

**Pima County****Pima Animal Care Center**

4000 N. Silverbell Rd.  
Tucson AZ 85745  
(520) 243-5900  
(520) 243-5902

**Pascua Yaqui Police Department**

7474 S. Camino De Oeste  
Tucson, AZ 85746  
(520) 879-5502

**Town of Marana Animal Services**

11555 W. Civic Center Drive  
Marana, AZ 85653  
(520) 382-8020 P  
(520) 382-8021 F

**Pinal County****Ak-Chin Indian Community**

42507 W. Peters & Nall Rd.  
Maricopa AZ 85239  
(520) 568-1151

**Casa Grande Animal Control**

373 E. Val Vista  
Casa Grande AZ 85122  
(520) 426-9300

**Coolidge Animal Control**

131 W. Pinkley Ave  
Coolidge, AZ 85128  
(520) 723-6075

**Eloy Police Department - Animal Control**

630 N. Main St  
Eloy AZ 85231  
(520) 466-4152  
(520) 466-7324

Gila River Indian Community Animal Control

Old Hospital Compound  
PO Box 147  
Sacaton AZ 85247  
(520) 562-5100 Ext. 247  
(520) 562-3193  
(520) 562-3194  
(520) 562-5177

Pinal County Animal Care & Control

1150 S. Eleven Mile Corner Rd.  
Casa Grande AZ 85122  
(520) 866-7609  
(520) 509-3555

Superior Police Department - Animal Care

734 Main St.  
Superior AZ 85273  
(520) 689-5254

**Town of Marana Animal Services**

11555 W. Civic Center Drive  
Marana, AZ 85653  
(520) 382-8020 P  
(520) 382-8021 F

**Santa Cruz County**

**Patagonia Marshal's Office - Animal Control**

310 Mckeown Ave.  
Patagonia AZ 85624  
(520) 394-2091  
(520) 394-2229

**Santa Cruz County Animal Care & Control Services**

2150 N. Congress Dr.  
Nogales AZ 85621  
(520) 761-7860

**Yavapai County**

Camp Verde Marshal's Office - Animal Control

646 S. 1st St  
Came Verde, AZ 86322  
(928) 567-6621

Chino Valley Police Department - Animal Control

1950 Voss Dr  
Chino Valley AZ 86323  
(928) 636-4223

Clarkdale Police Department - Animal Control

49 N. 9th St.  
Clarkdale AZ 86324  
(928) 634-7240  
(928) 634-2921 non-emergency animal control  
(928) 649-7700 main police line

Cottonwood Police Department - Animal Control

199 S. 6th St.  
Cottonwood AZ 86326  
(928) 634-4246  
(928) 649-1397 dispatch

**Prescott Animal Control Center**

Yavapai Humane Society  
1605 Sundog Ranch Rd.  
Prescott AZ 86301  
(928) 777-1135  
(928) 636-4223 Chino Valley PD  
(928) 771-3260 Yavapai County Sheriff  
(928) 445-2666

Prescott Police Department - Animal Control

222 S. Marina Dr  
Prescott, AZ 86303  
(928) 777-1982  
(928) 777-1935

Prescott Valley Animal Control

7601 E. Civic  
Prescott AZ 86314  
(928) 772-5180

Yavapai County Sheriff - Animal Control

255 E. Gurley St.  
Prescott AZ 86301  
(928) 771-3294

Yavapai Prescott Indian Tribe Animal Control

530 E. Merritt Ave.  
Prescott AZ 86301  
(928) 445-7723  
(928) 777-9423  
(928) 445-2666 Prescott  
(928) 634-7387 Cottonwood

**Yuma County**

**Arizona Game and Fish Department**

Region IV - Yuma  
9140 E. 28th St.  
Yuma, AZ 85365  
(928) 342-0091

**Quechan Tribal Police Department**

PO Box 1899  
Yuma, AZ 85364  
(760) 572-2933

San Luis Police Department - Animal Control

PO Box 1170  
San Luis, AZ 85349  
(928) 941-6623]

Yuma County Humane Society

285 N Figueroa Ave  
Yuma, AZ 85364  
(928) 782-1621



Yuma Police Department- Animal Control

1500 S. 1st Ave

Yuma, AZ 85364

(928) 373-4795