	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 1 of 14

## Animal Bites / Injuries Table of Contents

**Animal Bites / Injuries**


**Sample “Letter of Notification” to Quarantine Animal**

**Order of Quarantine for Prevention and Control of Rabies or Zoonotic Disease**

**Order to Euthanize and Test for Prevention and Control of Rabies or Zoonotic Disease**

**Fact Sheet**

**Animal Bite/Injury – Supplemental Case Report**

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 2 of 14

## Animal Bites / Injuries

### Overview

For a complete description of diseases transmitted to humans via animal -inflicted injuries (bites, scratches, etc.) and for additional information, refer to the following sources:

- Control of Communicable Diseases Manual (CCDM) <sup>(1)</sup>
- Red Book, Report of the Committee on Infectious Diseases <sup>(2)</sup>
- The Merck Veterinary Manual <sup>(3)</sup>
- Rabies section of this Manual

### Case Definition


#### *Clinical Description*

The potential for zoonotic (animal-to-human) transmission of disease must be considered in any situation where a person is injured by an animal. Of the approximately 1700 known human pathogens, about 50 percent are zoonotic. Of the 156 emerging pathogens, 73 percent are zoonotic. Of the 14 most likely agents of bioterrorism, 57 percent are zoonotic. In considering the likelihood of disease transmission, many factors must be assessed, such as the species of animal, type of injury, severity of injury, vaccination status of animal and/or human (when applicable), interval between incident and treatment, and various attributes of the injured person (age, underlying health, etc.). Zoonotic diseases can be transmitted by a variety of means such as trauma (bite or scratch), direct contact, arthropod vectors, aerosols, and contamination of food and water. Animal bites are a major mechanism of pathogen conveyance.

#### *Case classification* <sup>(4)</sup>

*Confirmed (reportable):* “Animal bite wound to human” – only bites from mammals are reportable (all mammal bites are reportable). A “bite wound” is defined as breaking of the skin by the teeth of an animal. In some situations, a physician’s assessment might be needed to determine whether a bite wound exists.

Other traumatic exposures of humans to animals (such as a scratch) could result in disease transmission. Local public health agencies (LPHAs) are encouraged to follow up such cases, as circumstances dictate. While not reportable, the Missouri Department of Health and Senior Services (DHSS) will assist LPHAs in investigating such incidents and in devising prevention/control strategies, at the request of the LPHA.

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 3 of 14


## **Disease Risk by Species**

Some of the pathogens transmitted by direct animal trauma include:

- Dogs and Cats: rabies; bacterial infections (*Capnocytophaga canimorsus*, *Pasteurella multocida* and *P. haemolytica*, *Staphylococcus aureus*, streptococci, anaerobes, *Moraxella*, *Corynebacterium*, *Neisseria*, tetanus, tularemia).
- Cats: cat “scratch” fever (*Bartonella henselae*, *B. quintana*); plague.
- Rodents (domestic): bacterial infection.
- Rodents (wild): rabies (from larger rodents such as beavers and groundhogs); bacterial infection (including tetanus and tularemia); rat bite fever – rare (*Streptobacillus moniliformis*, *Spirillum minus*).
- Wild Animals (terrestrial, non-rodent) e.g., skunk, fox, raccoon, opossum: rabies; numerous bacterial pathogens (including tetanus and tularemia).
- Bats: rabies.
- Primates (non-human): rabies; numerous bacterial pathogens (including tetanus); simian B herpesvirus (macaques or non-macaques housed with macaques); hepatitis A, B, and C (certain great apes). Note: Primate exposures generally also require assessment for potential aerosol transmission of tuberculosis.


## **Disposition of Animals in Bite/Injury Incidents**

- Animal Quarantine:
  - The only species for which the 10 -day quarantine is formally recognized are dogs, cats, and ferrets. Wild animals are never quarantined (they are euthanized and tested, with the exception of very low-risk species such as lagomorphs and small rodents). Large domestic animals (cattle, horses, etc.) and captive wild animals (e.g., non-human primates) are handled on a case-by-case basis.
  - If a quarantine is warranted, the LPHA should contact the animal owner to establish quarantine at an animal control facility (if available) or local veterinarian 's clinic (at animal owner’s expense as required in 322.140 RSMo). A home quarantine may be acceptable under some circumstances, as described below.
  - If a secure animal control facility or veterinarian’s clinic is not available/used, the LPHA should present the animal owner with notice (see “Letter of Notification) that the owner must quarantine the animal in a secure location and that they are assuming all liability for the

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 4 of 14


quarantine (including patient medical care if the animal escapes from quarantine and postexposure prophylaxis is required).

- If the owner is unwilling to quarantine the animal, DHSS may issue an “Order of Quarantine” to the local law enforcement official to quarantine the animal.
- Animal Testing:
  - Testing of animals for rabies in lieu of quarantine is indicated in some instances, including:
    - Dogs, cats, and ferrets currently exhibiting symptoms compatible with rabies.
    - Unwanted dogs, cats, and ferrets that would be euthanized following a quarantine (if one was to be accomplished).
    - Wild animals, with the usual exception of lagomorphs and small rodents.
  - Animals are tested for rabies by having the brain tested at the State Public Health Laboratory (SPHL) or the Springfield -Greene County Health Department Laboratory. There are no reliable rabies tests that can be conducted on a living animal.
  - The LPHA should have the person in possession of the animal (owner, animal control officer, etc.) present the animal to a veterinarian for euthanasia, removal of the head, and packaging of the specimen for shipment to the laboratory. These procedures may vary with the species of animal involved, e.g., the entire body of small animals such as puppies and kittens may be shipped to the laboratory in lieu of removing the head; the brain of very large animals (horses, cattle) should be removed from the skull and shipped to the laboratory.
  - The LPHA should advise the veterinarian on matters such as method of packaging specimens, address and point of contact at the laboratory, and courier pick-up points for the SPHL. LPHA staff should not personally euthanize animals nor conduct any invasive procedures needed to ship specimens to the laboratory. Staff may package those specimens where the entire body is submitted, as long as they take precautions against contamination (e.g., use gloves when handling the animal).
  - If the owner is unwilling to have an animal tested for rabies, DHSS may issue an “Order to Euthanize and Test for Rabies” to the local law enforcement official to have the animal presented to a veterinarian so the appropriate specimen can be submitted to the laboratory.

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 5 of 14

### **Determination of Risk in Animal Bite/Injury Incidents**

- In an animal bite/injury incident, the animal is normally either put under a rabies quarantine for ten days or euthanized and the brain submitted for rabies testing. In either situation, the LPHA should monitor the process until it has a successful public health outcome.
  - Quarantine:
    - Veterinary or animal control facility: This is the normal procedure when an animal has not received a rabies vaccination or the vaccination is out of date. The LPHA should ensure that the quarantining official has a point of contact and telephone number at the LPHA so that this individual can be contacted immediately if the animal begins to show signs of rabies. The LPHA should then arrange for the animal to be immediately euthanized and the brain submitted to the laboratory for testing.
    - Home of the animal's owner: A less preferable method of quarantine is at the animal owner's home. This may be an authorized alternative under some local animal control ordinances. In these instances, it is usually reserved for low-risk situations, i.e., animal's rabies vaccination is up-to-date, animal is in apparent good health, owner is able to secure the animal on the premises, and the incident was provoked. Whenever a home quarantine is instituted, the LPHA should present the owner with a notice (see "Letter of Notification") that they must quarantine the animal in a secure location and that they are assuming all liability for the quarantine (including patient medical care if the animal escapes from quarantine and postexposure prophylaxis is required). A "secure" location is defined as being inside the owner's home or in a well fenced-in area outdoors. Tethering the animal outdoors, even for short period, is never a suitable method of securing the animal. The LPHA or other official (law enforcement, animal control) should physically check on the animal beginning, mid, and end of quarantine to ensure that the animal is still securely confined and is in apparent good health. If LPHA staff do not directly conduct this function, they should regularly contact the official who is making these inspections.
  - Rabies testing: If rabies testing is indicated in lieu of quarantine or during a quarantine, the LPHA should use the services of a local veterinarian to ensure that the appropriate specimen is submitted to the laboratory for testing. The LPHA should provide the veterinarian with necessary information and should disseminate final laboratory results to interested parties such as the patient, animal owner, law enforcement, and animal control officials.

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 6 of 14

- The LPHA should, in almost all instances, recommend that an animal bite/injury patient seek medical evaluation. The LPHA should consult with the patient and the patient’s physician to ensure that the physician has all information needed for decision making and that basic wound precautions have been taken (e.g., wound cleansed, need for antibiotics assessed, tetanus vaccination current). In the event that rabies postexposure prophylaxis is needed, the LPHA should provide the physician with product - ordering information if needed and follow up with the patient to ensure that the month-long series of shots is obtained.
- If an animal bite/injury results in the potential transmission of diseases other than rabies (e.g., herpes B virus, tuberculosis), the LPHA should also arrange for the animal and exposed person to receive indicated laboratory tests and appropriate prophylaxis for the person.
- DHSS will work with the LPHA in determining disease risk factors, developing recommendations, facilitating proper animal disposition, and ensuring patient follow up. If routine quarantine procedures do not work, an “Order of Quarantine” may be issued by DHSS. A similar order can be issued to have the animal seized, euthanized, and tested if that should become necessary.

### **Information Needed for Investigation**

**Verify that the person has sustained an injury from an animal.**

**Establish the extent of exposure.** Determine if additional persons (household members, visitors, neighbors, etc.) have been exposed to the animal.

**Determine if the individual’s exposure has been assessed by a physician.** If the wound was recently sustained, advise the person to wash it thoroughly with soap and water for at least 15 minutes. Most individuals should be referred to a physician. Medical personnel should clean the wound further, provide antibiotic therapy and tetanus immunization if needed, and assess for other threats such as rabies.


**Determine the circumstances of the incident.** Obtain information from reliable sources regarding the actions of the animal and injured person at the time of the incident.

**Obtain information about the animal.** This includes information such as physical description, rabies vaccination status (if applicable), apparent health, present location, and animal’s veterinarian (if applicable).

**Contact Veterinary Public Health (573-751-6136) or the Regional Communicable Disease Coordinator to collaborate in the investigation, as needed.**

### **Control Measures**

Control measures vary, depending upon the disease in question. For rabies control, the following four cardinal public health measures should be emphasized to the public (especially children):

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 7 of 14

- Ensure dogs, cats, and ferrets are up -to-date on rabies vaccinations; vaccinations are also available for horses, cattle, and sheep.
- Keep pets under control; do not allow them to run loose.
- Avoid contact with stray pets and wild animals; do not keep wild animals or wild animal crosses as pets..
- Report wild animals exhibiting unusual behavior or stray pets to animal control officials.

### **Laboratory Procedures**


- **Rabies Testing:** Human and animal testing procedures through the SPHL are described in the “Rabies” section of this Manual. Additional information on laboratory procedures can be obtained from Veterinary Public Health, the Regional Communicable Disease Coordinator, or the SPHL. The SPHL telephone number is 573 -751-0633 and the web site is: <http://www.dhss.state.mo.us/Lab/index.htm>. (29 May 2003)
- **Simian B Herpesvirus:** Human and primate (non-human) testing is available through the B Virus Resource Laboratory, Georgia State University, Atlanta, GA. The web site for this laboratory is: <http://www.gsu.edu/~wwwvir> (29 May 2003). The web site provides information on simian B herpesvirus, specimen submission instructions, a case evaluation checklist, etc. The following specimens should be submitted for the bitten human who is being tested: serum collected at the time of the bite, plus two weeks and six weeks post -bite; bite wound culture. The following specimens should be submitted from the non-human primate: serum (antibody testing) and buccal mucosal swab (culture) at the time of the bite.

**Note:** The process of obtaining specimens from non -human primates should be undertaken only by an experienced veterinarian who understands the procedures and risks involved.

**Note:** Macaque bites should be regarded as a medical emergency until suspicion of herpesvirus is disproven. Antiviral prophylaxis must be administered within 24 hours of the bite if it is to be effective. The treating physician should not wait for herpesvirus serology test results to come back on the macaque (these results are used to determine further medical follow up and to help establish the prognosis). Asymptomatic adults are generally prophylaxed with valacyclovir while acyclovir is used for children.

**Note:** Simian B herpesvirus exposure risk assessments are complex, and LPHAs/physicians are encouraged to consult with the Missouri Department of Health and Senior Services.

- **Other Laboratory and Clinical Testing:** Information regarding testing for other pathogens may be obtained from Veterinary Public Health, 573 -751-6136.

	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 8 of 14

## **Reporting Requirements**

Mammalian animal bites are a Category I(A) condition and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services (DHSS) within 24 hours of first knowledge or suspicion by telephone, facsimile or other rapid communication.

1. For all bites, complete a “Disease Case Report” (CD-1) and send the completed form to the DHSS Regional Health Office.
2. For all bites, complete an “Animal Bite/Injury – Supplemental Case Report.”
3. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
4. Send the completed secondary investigation form to the Regional Health Office.
5. All outbreaks or "suspected" outbreaks of zoonotic disease must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
6. Within 90 days of the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.


## **References**

1. Chin, James ed. “Other Infections Associated with Animal Bites.” Control of Communicable Diseases Manual. 17<sup>th</sup> ed. Washington, DC: American Public Health Association, 2000: 89 -90 (refer also to sections on specific diseases).
2. American Academy of Pediatrics. “Bites Wounds”, “*Pasteurella multocida* Infections”, and “Rabies.” In: Pickering, L. 2000 Red Book: Report of the Committee on Infectious Diseases. 25<sup>th</sup> Ed. Elk Grove Village, IL. 2000: 155 -159, 426-427, 475-482.
3. The Merck Veterinary Manual. “Zoonoses.” 8<sup>th</sup> Ed. Ed. Susan E. Aiello. Whitehouse Station, NJ: Merck & Co., Inc., 1998: 2161. <http://www.merckvetmanual.com/mvm/index.jsp> (search “zoonoses”). (29 May 2003)
4. Missouri Department of Health and Senior Services - Section for Communicable Disease Prevention, surveillance case definition.

## **Web Resources and Information**

1. Missouri Revised Statutes, RSMO Chapter 322, “Protection Against Rabies,” August 28, 2002, <http://www.moga.state.mo.us/statutes/c322.htm> (29 May 2003)
2. Rabies vaccination must be given by licensed veterinarian:
  - RSMO 322.010, “Definitions,” August 28, 2002  
<http://www.moga.state.mo.us/statutes/C300-399/3220010.HTM> (29 May 2003)
  - 4 CSR 270-4.031, “Minimum Standards for Practice Techniques,” paragraph (4)(B), <http://www.sos.state.mo.us/adrules/csr/current/4csr/4c270-4.pdf> (29 May 2003)



	Division of Environmental Health and Communicable Disease Prevention	
	<b>Section: 4.0 Diseases and Conditions</b>	Revised 7/03
	Subsection: Animal Bites	Page 9 of 14

3. Centers for Disease Control and Prevention, Division of Viral and Rickettsial Disease, "Rabies Section," March 8, 2001, <http://www.cdc.gov/ncidod/dvrd/rabies/default.htm> (29 May 2003)
4. B Virus Resource Laboratory, Georgia State University, Atlanta, GA. The web site for this laboratory is: <http://www.gsu.edu/~wwwvir> (29 May 2003).

**LPHA or DHSS LETTERHEAD  
SAMPLE LETTER OF NOTIFICATION**

Owner of Animal: \_\_\_\_\_

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

Owner's Address: \_\_\_\_\_  
\_\_\_\_\_

Dear (Owner's Name):

The (insert LPHA name) and Missouri Department of Health and Senior Services received notification that an animal you own bit or otherwise possibly transmitted rabies or other disease to a person. The Revised Statutes of Missouri specify under Section 322.140 that when such an incident report is received an investigation shall be conducted and, based on the investigation, the Missouri Department of Health and Senior Services may order the animal quarantined, isolated, impounded, tested, immunized or disposed of.

The Missouri Department of Health and Senior Services and (insert LPHA name) have completed the investigation and determined that quarantine or isolation is warranted. The animal shall be placed under quarantine for a period beginning \_\_\_\_\_ and ending \_\_\_\_\_. Your assistance in quarantining the animal is requested. The (insert LPHA name) is working in cooperation with the Missouri Department of Health and Senior Services in protecting the public's health and providing information on the requirements for quarantine of the animal.

The quarantine may be accomplished either by having the animal placed with the local government animal control facility or with a licensed veterinary facility. If quarantine is not implemented in the manner described in this letter, isolation of the animal must be provided by the animal owner in a manner that secures the animal and assures that the animal cannot come into contact with other animals and humans until the end of the required observation period. As the owner of the animal, you assume all liability for ensuring the isolation of the animal during the observation period.

Section 322.140.5 RSMo mandates that the "owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease shall be responsible for all costs associated with the incident, including: (1) The cost to test the animal for rabies or zoonotic disease; (2) The cost to test the exposed person for rabies or zoonotic disease; and (3) The cost to treat the person exposed to rabies or zoonotic disease." Further, Section 322.145, RSMo provides that "the owner of an animal that bites or otherwise possibly transmitted rabies or any zoonotic disease shall be liable to an injured party for all damages done by the animal." If treatment is required for a person exposed to rabies, the treatment normally consists of vaccinations over a 28-day period with costs estimated at \$1,500. This treatment can be avoided if the animal is observed through the quarantine period and determined not to have rabies and therefore not to have placed the person at risk for rabies.

Sincerely,

(Name of Official)



Missouri Department of Health and Senior Services  
 P.O. Box 570, Jefferson City, MO 65102-0570 Phone: 573-751-6400 FAX: 573-751-6010  
 RELAY MISSOURI for Hearing and Speech Impaired 1-800-735-2966 VOICE 1-800-735-2466  
**Julia M. Eckstein**  
 Director



## ORDER OF QUARANTINE FOR PREVENTION AND CONTROL OF RABIES OR ZONOTIC DISEASE

Owner of Animal: \_\_\_\_\_ Date: \_\_\_\_\_

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

Owner's Address: \_\_\_\_\_  
 \_\_\_\_\_

Owner's Telephone: \_\_\_\_\_

Animal sought for quarantine: (species, breed, physical description, name)

Under the authority given to the Missouri Department of Health and Senior Services in RSMo. Sections 192.005.2, 192.020, 322.140.1 and 322.140.2 the Missouri Department of Health and Senior Services hereby orders the removal of the \_\_\_\_\_ for the purpose of quarantine and investigation to prevent and control rabies or zoonotic disease. The animal shall be surrendered for the purpose of quarantine at a licensed veterinary facility, the period of which shall end on \_\_\_\_\_ or as soon thereafter as possible.

The owner is further notified under RSMo. Sections 322.140.4 that "it shall be unlawful for the owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease to knowingly fail or refuse to comply with a lawful order of the Department of Health and Senior Services declaring a quarantine, isolation, impounding, testing, immunization or disposal of an animal. It shall also be unlawful for an owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease to sell, give away, transfer, transport to another area or otherwise dispose of an animal until the animal has been released by the Department of Health and Senior Services. A violation of this subsection shall be a class A misdemeanor;" and further, under RSMo. 322.140.5, that "The owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease shall be responsible for all costs associated with the incident including:

- (1) The cost to test the animal for rabies or zoonotic disease;
- (2) The cost to test the exposed person for rabies or zoonotic disease;
- (3) The cost to treat the person exposed to rabies or zoonotic disease."

\_\_\_\_\_  
 (Signature) Title: Director, Division of Environmental Health and Communicable Disease Prevention

Receipt of the above and foregoing order of the Department of Health and Senior Services is hereby acknowledged on this day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_  
 (Signature) Owner

Copy of RSMo. 322.140 attached.

[www.dhss.mo.gov](http://www.dhss.mo.gov)

The Missouri Department of Health and Senior Services protects and promotes quality of life and health for all Missourians by developing and implementing programs and systems that provide: information and education, effective regulation and oversight, quality services, and surveillance of diseases and conditions.

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER: Services provided on a nondiscriminatory basis.



Missouri Department of Health and Senior Services  
 P.O. Box 570, Jefferson City, MO 65102-0570 Phone: 573-751-6400 FAX: 573-751-6010  
 RELAY MISSOURI for Hearing and Speech Impaired 1-800-735-2966 VOICE 1-800-735-2466



**Julia M. Eckstein**  
 Director

## ORDER TO EUTHANIZE AND TEST FOR PREVENTION AND CONTROL OF RABIES OR ZONOTIC DISEASE

Owner of Animal: \_\_\_\_\_ Date: \_\_\_\_\_

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

Owner's Address: \_\_\_\_\_  
 \_\_\_\_\_

Owner's Telephone: \_\_\_\_\_

Animal sought for euthanasia and testing: (species, breed, physical description, name)

Under the authority given to the Missouri Department of Health and Senior Services in RSMo. Sections 192.005.2, 192.020, 322.140.1 and 322.140.2 the Missouri Department of Health and Senior Services hereby orders the removal of the \_\_\_\_\_ for the purpose of euthanasia and testing to prevent and control rabies or other zoonotic disease. The animal shall be surrendered for the purpose of euthanasia at a licensed veterinary facility with subsequent testing of relevant specimens at the State Public Health Laboratory.

The owner is further notified under RSMo. Sections 322.140.4 that "it shall be unlawful for the owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease to knowingly fail or refuse to comply with a lawful order of the Department of Health and Senior Services declaring a quarantine, isolation, impounding, testing, immunization or disposal of an animal. It shall also be unlawful for an owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease to sell, give away, transfer, transport to another area or otherwise dispose of an animal until the animal has been released by the Department of Health and Senior Services. A violation of this subsection shall be a class A misdemeanor," and further, under RSMo. 322.140.5, that "The owner of an animal that bites or otherwise possibly transmits rabies or any zoonotic disease shall be responsible for all costs associated with the incident including:

- (1) The cost to test the animal for rabies or zoonotic disease;
- (2) The cost to test the exposed person for rabies or zoonotic disease;
- (3) The cost to treat the person exposed to rabies or zoonotic disease."

\_\_\_\_\_  
 (Signature) Title: Director, Division of Environmental Health and Communicable Disease Prevention

Receipt of the above and foregoing order of the Department of Health and Senior Services is hereby acknowledged on this day of \_\_\_\_\_ 20\_\_.

\_\_\_\_\_  
 (Signature) Owner

Copy of RSMo. 322.140 attached.

[www.dhss.mo.gov](http://www.dhss.mo.gov)

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AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER: Services provided on a nondiscriminatory basis.

# **ANIMAL BITE/INJURY**

## **FACT SHEET**

### **What is rabies?**

Rabies is a disease caused by a virus that can affect all warm -blooded animals, including people. Once symptoms appear, people infected with the rabies virus almost always die. Rabies is found naturally in a number of animals in Missouri, especially skunks and bats. Wild animals can transmit infection to dogs and cats which then transmit it to people (or people can catch it directly from wild animals).

### **How is rabies transmitted?**

People usually get rabies from the bite of a rabid animal. It is also possible, but quite rare, that people may get rabies if infectious material from a rabid animal, such as saliva, gets directly into their eyes, nose, mouth, or a wound.

### **Can I get rabies in any way other than an animal bite?**

Non-bite exposures to rabies are very rare. Scratches, abrasions, open wounds, or mucous membranes contaminated with saliva from a rabid animal constitute non-bite exposures. These types of exposure only occasionally require postexposure treatment. Spray from a rabid skunk does not contain rabies virus. Other contact, such as petting a rabid animal or contact with the blood, urine or feces (e.g., bat guano) of a rabid animal, does not constitute an exposure and is not an indication for treatment.

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

The first observable symptoms may be changes in personality. For example, a normally friendly, active dog may become shy and sluggish while an animal that is normally quiet and shy may become aggressive and attack other animals or people. A wild animal that is normally active only at night may become active during the daytime. Also, some rabid wild animals lose their natural fear of people and other animals. Other symptoms include: refusal to eat; unusual excitability or restlessness; snarling or growling at moving objects; and excessive drooling and foaming at the mouth. This type of rabies, called “vicious” rabies, ends in paralysis and death within several days. Some animals do not go through this vicious stage. Instead, they develop “dumb” rabies, which is a rapidly progressing paralysis that lasts three to five days and ends in death. A slack or “dropped” jaw is characteristic of dumb rabies.

### **What should I do if an animal bites me?**

Wash the bite wound with soap and water for at least 15 minutes as soon as possible after the bite. Then telephone or see a physician and relate the circumstances of the bite incident. The doctor will decide if treatment is required. If the doctor provides treatment, he/ she will probably cleanse the wound further, provide antibiotics/tetanus immunization if needed, and assess the rabies risk. Also, contact your city or county public health agency so staff can assist in getting animals quarantined or tested and help with other incident follow up.

### **What should be done with the biting animal?**

Try to capture it. If successful, pen or cage the animal where other animals or people cannot come in contact with it. If the suspect animal cannot be captured, it should be killed but DO NOT shoot it in the head. The head of the suspect animal should be removed by a veterinarian and the brain examined for rabies at a laboratory. If the biting animal is a pet

(non-stray) cat, dog, or ferret, health officials will probably require the animal to be quarantined.

### **How long should the animal be confined for observation?**

Dogs, cats, and ferrets should be confined for ten days. If the animal had rabies at the time of biting, it will show signs of rabies and/or die within the ten days. Stray or wild animals should not be held for observation; they should be killed immediately and the brain examined for rabies.

### **Is there a cure for rabies?**

No. Once the symptoms of rabies appear, death usually follows in a few days. However, rabies in humans can be prevented by the administration of postexposure prophylaxis or PEP. This consists of one dose of immune globulin and five doses of rabies vaccine over a 28-day period. Rabies immune globulin and the first dose of rabies vaccine should be given by your health care provider as soon as possible after exposure. Current vaccines are relatively painless and are given in your arm, like an influenza or tetanus immunization. Individuals who have previously received a complete vaccination regimen should not receive immune globulin and should receive only two doses of vaccine three days apart. There have been no vaccine failures in the U.S. (i.e., someone developed rabies) when PEP was given promptly and appropriately after an exposure.

### **How can I protect my pet from rabies?**

There are several things you can do to protect your pet from rabies. First, visit your veterinarian with your pet on a regular basis and keep rabies vaccinations up -to-date for all cats, ferrets, and dogs. Second, maintain control of your pets by keeping cats and ferrets indoors and keeping dogs under direct supervision. Third, spay or neuter your pets to help reduce the number of unwanted pets that may not be properly cared for or vaccinated regularly. Lastly, call animal control to remove all stray animals from your neighborhood since these animals may be unvaccinated or ill.

### **Why does my pet need rabies vaccine?**

Although the majority of rabies cases occur in wildlife, most humans are given rabies vaccine as a result of exposure to domestic animals. While wildlife are more likely to be rabid than are domestic animals, the amount of human contact with domestic animals greatly exceeds the amount of contact with wildlife. Your pets and other domestic animals can be infected when they are bitten by rabid wild animals. When "spillover" rabies occurs in domestic animals, the risk to humans is increased. Pets are therefore vaccinated by your veterinarian to prevent them from acquiring the disease from wildlife, and thereby transmitting it to humans. In Missouri, rabies vaccine can be legally given only by a licensed veterinarian.

For more information on rabies prevention, refer to the Centers for Disease Control and Prevention's "Rabies – Questions and Answers" at <http://www.cdc.gov/ncidod/dvrd/rabies> (29 May 2003)

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