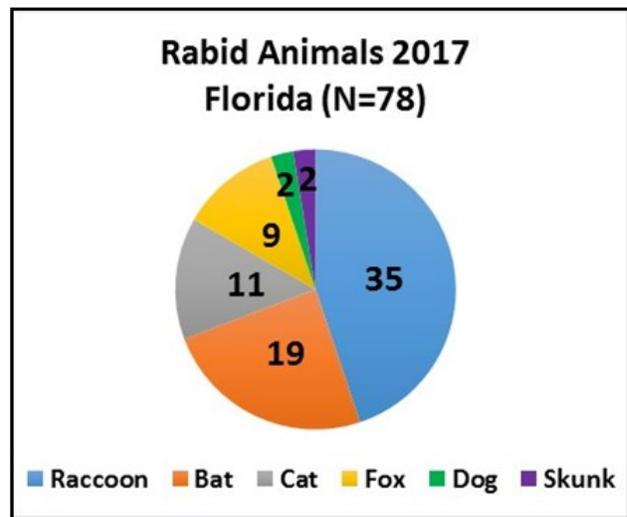
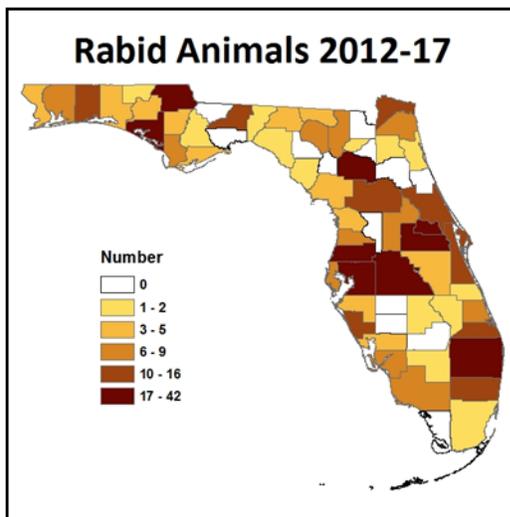




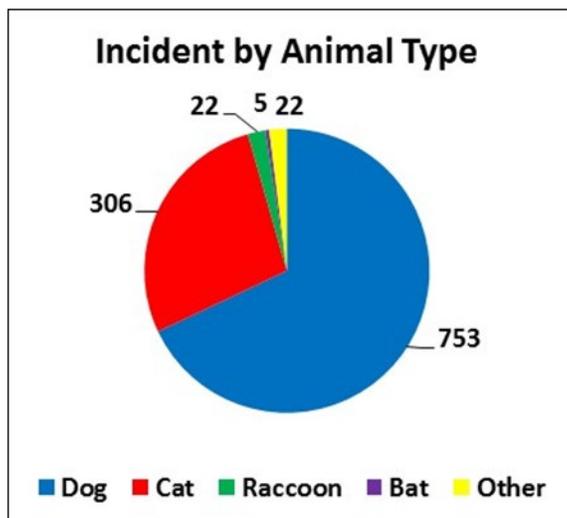
# Special Report

## ANIMAL BITES AND RABIES IN VOLUSIA COUNTY—2017

Rabies is nearly always fatal in humans and other mammals. The virus is present in some wildlife in Florida and can spread to unvaccinated pets, which then pose a high risk to the pet owner and their family. The main wildlife sources of rabies in Florida are raccoons and bats. Infected raccoons and bats can expose people, pets, livestock and other wildlife to rabies, typically through bites. Outside cats are by far the most common domestic animal to have rabies in Florida largely because they are often not kept up-to-date on rabies vaccinations. Dogs, cats and ferrets are required by law to be vaccinated against rabies in the state of Florida.



To assess rabies risk, the Florida Department of Health in Volusia County (DOH-Volusia) investigates all reported animal incidents causing injury. Animal incidents are defined as a bite from a dog, a bite or scratch from a cat or raccoon, any significant bat contact, or a bite from any other mammal. The goal is to prevent a case of human rabies. Recently there have been two human rabies deaths in the state of Florida from bat bites. There had not been a locally acquired human case of rabies in Florida since 1948. In 2017, DOH-Volusia investigated 1,108 reported animal incidents.



- Dogs make up 68 percent of the total incidents investigated.
- Cats make up 28 percent.
- Bites from small mammals such as squirrels, rabbits, rats, and mice are almost never rabid and rarely require prophylaxis.
- Other animal types were: squirrel (11), opossum (2), donkey, goat, guinea pig, kinkajou, rabbit, prairie dog, rat, horse, and wolf-hybrid.

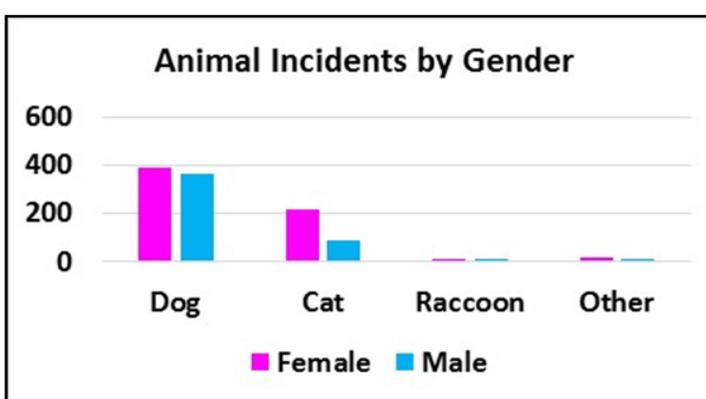
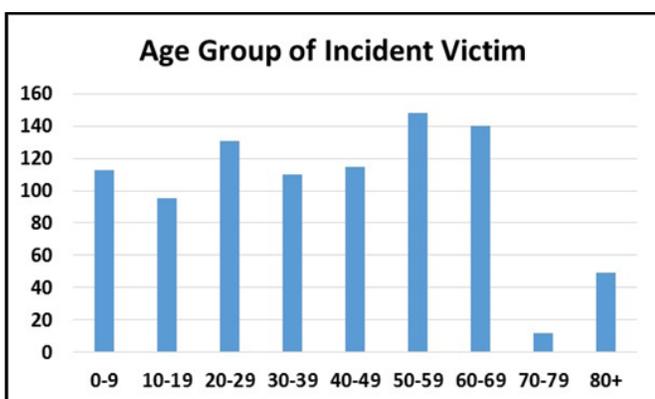
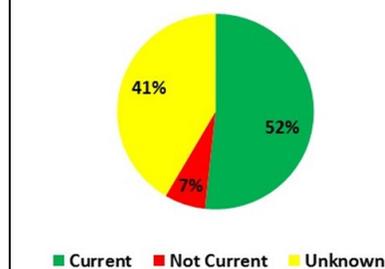
- 92 percent of dog bites were from pets.
- 65 percent of cat bites were from pets.
- Rabies risk is greater from animals that are not known to be pets.

Dog/Cat Bites from Pets/Non-Pets

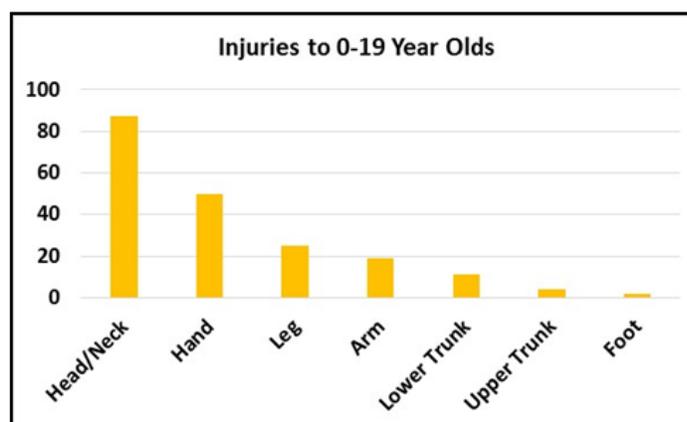
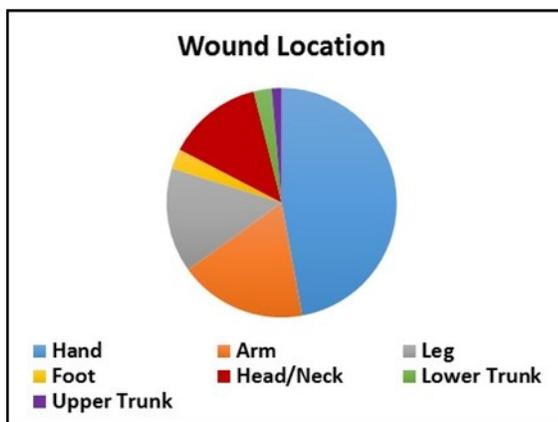
	Total	Dog	Cat
Pet	899	689	200
Non-Pet	211	64	106

- Nearly half of the pets had a current rabies vaccine.
- Many may have been current, but it was unknown at the time of the incident.
- Rabies vaccine status is important for assessing rabies risk.
- Rabies vaccines in dogs, cats, and ferrets have been proven to be highly effective.

Rabies Vaccination Status for Pets



- Incidents were near evenly distributed across age groups.
- Other studies have shown children to be involved more commonly but that was not seen in Volusia in 2017.
- The victim is female in 57 percent of all incidents.
- The victim is female for 53 percent of dog incidents but 70 percent of cat incidents.



- Overall 65 percent of wounds were to the hand or arm.
- In the 0-19 age group, 44 percent of the wounds were to the head or neck compared to 13 percent for all ages.
- Rabies risk is significantly higher and the incubation period is shorter for head and neck wounds.

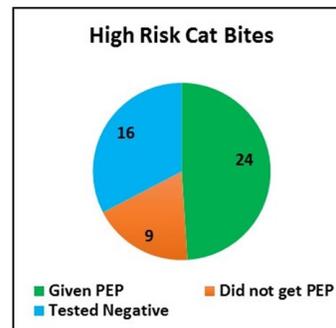
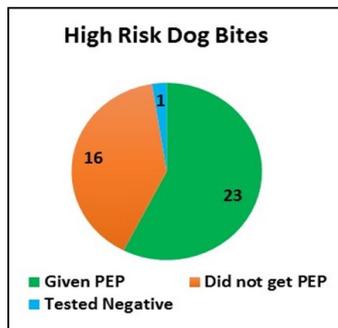
- Rabies post-exposure prophylaxis (PEP) was used 94 times in 2017 for incidents that occurred in Volusia County.
- Nearly 20 percent of the time PEP use was unnecessary.
  - Nine animals were available for observation and were cleared.
  - Four animals were tested and were negative.
  - Three animals were negligible risk.
  - One animal was available for testing, but testing was not conducted.
- Nine times the risk was deemed low but the animal was not available for observation or testing.
- Sixty-eight times PEP was used for exposures deemed high risk.

Rabies PEP Use Volusia County 2017				
Animal	Total	Unnec	Low Risk	High Risk
Dog	37	7	7	23
Cat	31	6	1	24
Raccoon	17	0	0	17
Bat	4	0	0	4
Other	5	4	1	0

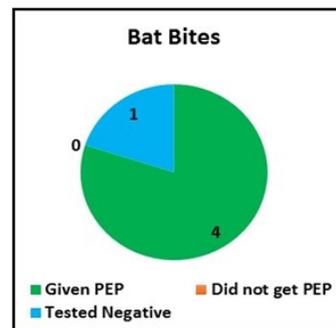
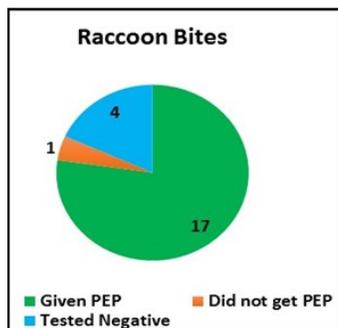
**High Risk Incidents**

Definition:

1. A wound from a wild mammal not deemed to be minimal risk, to include bats, raccoons, foxes, and skunks.
  2. A wound from a dog or cat not identified as a pet that is not available for ten days of observation.
- 40 dog bites, 49 cat bites/scratches, 22 raccoon bites/scratches, and five bat incidents met this definition.
  - All high-risk bites were recommended for rabies PEP unless the animal was available for testing.



- Sixteen patients receiving dog bites were not given PEP: nine did not respond to attempts to contact, six declined PEP and in one case the dog was eventually found.
- Nine patients receiving cat bites were not given PEP: seven did not respond to attempts to contact and two declined PEP.



- One raccoon victim declined to receive PEP.
- All bat bites reported were either given PEP or the bat tested negative

Rabies is endemic throughout Florida, including Volusia County. Human rabies is rare but it is a unique disease in that it is virtually 100 percent fatal but also 100 percent preventable if rabies PEP is given after exposure and prior to symptom onset. It is important that each and every potential exposure be evaluated for rabies risk and steps taken to eliminate that risk.

Rabies is spread from animals to humans when there is exposure to the saliva or nervous tissue of a rabid animal to open wounds, mouth, nose, or eyes. Most of the time this is through a bite but occasionally exposure can occur without a bite. Intact skin provides an effective barrier. Scratches can be considered a risk from cats and raccoons due to their grooming habits. It is possible that the claws could contain wet saliva at the time of the incident.

Bites from small rodents such as squirrels, rats, and mice, as well as rabbits and opossums, are considered minimal risk for rabies. Human infection from bites from these animals has never been documented in the U.S. By contrast otters, woodchucks and beavers could potentially spread the disease to humans. Bites from all of these animals are handled case by case.

DOH-Volusia evaluates each incident to assess the risk of rabies exposure and take appropriate steps to eliminate the risk. There are three ways to ensure there is no risk of a human acquiring rabies from a potentially rabid animal: 1. Dog, cat, or domestic animal – retain the animal for observation for the appropriate time frame and if alive and well at the end, there is no risk. 2. Test the offending animal for rabies. 3. Administer rabies post-exposure prophylaxis (PEP) to the victim any time after the incident but before signs/symptoms of rabies appear.

Incident evaluation first involves identifying the type of animal involved. Stray dogs and cats are considered higher risk than owned animals. Circumstances of the bite and behavior of the animal are also considered when determining risk. If the animal is available for observation, there is generally no reason to immediately start PEP. For dogs and cats, the observation period is 10 days. Invariably, if a dog or cat was able to transmit rabies virus at the time of the bite, they will be dead by 10 days after. For all wild animals, no viral shedding period has been established so there is no observation period. DOH-Volusia personnel work very closely with all animal control agencies/personnel in the county. The goal is to simply contain and observe the offending animal to preclude the need for further action. It is not the intent of animal control officers to impound the animal.

If the animal is available for testing, it will have to be euthanized so that the brain can be examined. Testing is done at the Florida Bureau of Public Laboratory in Jacksonville. Results are usually available within a couple of days.

If rabies cannot be ruled out through animal observation or animal testing, rabies PEP is recommended. Rabies PEP consists of rabies immuno-globulin (RIG) given as much as possible around the wound to provide immediate antibodies, and four doses of rabies vaccine given on days 0, 3, 7, and 14. In some cases, a fifth dose may be given 14 days after the fourth. The vaccine is given in the arm. Cost of the immune-globulin is dependent on the weight of the victim but is likely to be in excess of \$2,000. Cost of the vaccine is at least \$300 a dose. While the RIG given around the wound is painful, the vaccine is no different than any other vaccine with typically only mild local reactions. It is never too late to receive PEP. The incubation period for human rabies can be anywhere from several days for a severe head or neck bite to over a year. If PEP is given any time during the incubation period prior to onset of signs or symptoms, it is effective at preventing the disease.

Dogs and cats that have been appropriately vaccinated for rabies and are current on the vaccine have almost never been known to acquire rabies. It is critically important for people to protect their pets and themselves by keeping their pets' rabies vaccine current.

Bat bites deserve a separate mention. In light of the two recent human deaths from rabies in Florida, it is critically important for anyone who has potentially been bitten by a bat to seek medical attention. Bat bites are usually tiny and do not appear to require medical care. But if the bat is not available for testing, rabies PEP should start immediately.

Some actions people and their families can take to prevent from exposure to rabies include avoiding direct contact with wildlife, not feeding wildlife, consulting with a veterinarian to ensure pets are up-to-date on rabies vaccinations, and supervising pets and young children while outside. If you believe you may have been exposed to rabies, contact your health care provider and your county health department immediately. If an exposure occurred, there is effective treatment that can prevent infections in people if administered in a timely manner.

For more information on rabies:

<http://www.floridahealth.gov/diseases-and-conditions/rabies/index.html>  
<https://www.cdc.gov/rabies/>

**For more information, please contact the Florida Department of Health in Volusia County  
Division of Disease Control at 386-274-0634 or visit our website [www.volusiahealth.com](http://www.volusiahealth.com).**