

Firefighters Must Distinguish Between Rabies Fact and Fiction

by Battalion Chief Frank C. Montagna

Rabies is not something that Firefighters worry about when performing their jobs. There has not been a case of human rabies in New York City since 1953. In the six years preceding 2009, only one rabid animal was found in the City. However, that record was shattered in 2009 when numerous rabid animals were discovered in the City. Fourteen infected raccoons were located in the Bronx, four were found in Central Park, Manhattan, and one in Queens. In Staten Island, a rabid bat and some kittens were encountered. And, in September 2010, rabid coyotes were discovered in Rockland County. How many more are out there and why should this be a concern for Firefighters?

It is clear that the virus is present in the City and unrestrained dogs or cats can encounter the infected animals. If there is contact between a dog or cat and a rabid animal, the virus could be transmitted and brought home by the pet. An infected pet could transmit the virus to a Firefighter should their paths cross.

A number of years ago, I was in command of an operation where the outside vent Firefighter was bitten by a dog as he traversed the building's rear yard. I contacted the animal's owner and asked if the dog had its rabies vaccination. He said yes, but did not have the papers. He provided the name and address of his vet and I contacted the doctor to ascertain the dog's vaccination status. The vet scoffed at my concern, pointing out that there had not been a case of rabies in New York City in many years, but he did show me the dog's papers and I was satisfied that the Firefighter was safe from the disease.

On my way home that morning, I heard a report on the radio about a rabid raccoon that was found in Staten Island. The animal had hitched a ride on a truck coming from New Jersey. Rabies was present in the City and if rabid animals could hitch a ride on a truck, then the disease could pop up anywhere trucks went.

So how likely is it for Firefighters to encounter a rabies-infected raccoon in New York City? The typical rabies-infected animals encountered in the United States are bats, coyotes, foxes, raccoons and skunks. In New York City, raccoons and bats are the most likely carriers. Although Firefighters may never have encountered a raccoon within the confines of the City, it does not mean that there is none in the area. I recall standing at Engine 52's housewatch desk and seeing a raccoon family of four peeking into the firehouse, waiting for the night's garbage to be thrown out.

Raccoons are out there, but are they infected with the virus? Finding 20 plus infected animals within the five boroughs is proof that some animals in New York City are infected with the disease and the sharp 2009 spike in the number identified, as contrasted with the previous six years, suggests that their numbers are on the rise.

What is rabies and how is it transmitted? Rabies is a deadly viral disease affecting the central nervous system of warm-blooded animals, such as raccoons, skunks, bats, dogs, cats and humans. Usually, it is transmitted through a bite, but can be transmitted by a scratch, a lick and even by the seemingly innocuous act of petting an infected animal. If an infected animal has licked itself and you pet it,

you can pick up and transfer its infected saliva to yourself, via an open wound or a mucus membrane, giving the virus an opportunity to infect you.

Once bitten by a rabid animal and infected, what happens? Rabies enters the nerve cells at the site of the wound and travels along the nerve pathways to the brain and other organs.

How serious is a rabies infection? Once symptoms appear, rabies almost always results in an agonizing death. Before Louis Pasteur developed the vaccination that could prevent its onset, there was no treatment and it was thought that smothering the suffering victim with a pillow was kinder than allowing the afflicted person to suffer the agonizing death that always followed a rabies infection.

Rabies myths

MYTH--A rabid dog will froth at the mouth

FACT--Not necessarily. Dogs can be afflicted by two types of rabies: the dumb or paralytic type and the furious type. A dog with the paralytic type drools constantly, as a result of the paralysis of the jaw muscles. The dog's tongue will hang out of its mouth and saliva will drip continually, creating a frothing appearance. This type of rabies occurs in about 20 percent of the cases. That means that 80 percent of rabies-infected dogs won't froth at the mouth.

MYTH--A rabid dog will be vicious and snap at everything.

FACT--A dog with the furious type of rabies might act in this manner. At first, it will snap at strangers and as the disease progresses, it will even snap at non-existent objects. If the dog is not confined, it will continue to run for miles, snapping at any creature it encounters before it eventually becomes paralyzed and dies.

MYTH--A rabid dog will not drink water and exhibit a fear of water.

FACT--Humans infected with rabies suffer painful muscular spasms when attempting to swallow. This leads to a fear of water or hydrophobia. Rabid dogs do not experience these spasms and can drink large quantities of water.

MYTH--If a dog acts friendly, it is not rabid.

FACT--Infected dogs likely will undergo mood shifts. A vicious dog might act friendly and a friendly dog may exhibit aggressive tendencies. Additionally, an infected dog can transmit the disease three to five days prior to the appearance of any symptoms.

MYTH--Don't worry; the dog was vaccinated. It can't have rabies.

FACT--There are two types of vaccine for dogs: one lasts for one year and the other for three years. After the expiration time of the shot, the dog must have regular booster shots. A dog that has not had a required

booster shot could contract and transmit the disease. You should only accept a written certificate signed by an accredited veterinarian as proof of up-to-date inoculation.

MYTH--You are safe because no cases of rabies have been reported in your area for many years.

FACT--So what? How about the family that brings its unvaccinated dog on vacation to the mountains and then brings it back home, infected with rabies, the result of an encounter with an infected raccoon? How about the unvaccinated dog that runs loose in a local park and encounters a rabid raccoon? The fact that recent cases of rabies



Even house pets can contract rabies from afflicted animals, such as bats and raccoons, and become infected.

Bureau of Health Services (BHS) Animal Bite Policy

Notify the Bureau of Health Services via the Fire Department Operations Center (FDOC) and be guided by the instructions of the Department doctor. Likely, these directions will be as follows:

- Confine the animal if possible.
- Thoroughly clean the wound.
- Initial evaluation and treatment must be received at the emergency room.
- File exposure form, MDX-3, with the following information:
 - o Date and time of incident
 - o Where (address) was Firefighter bitten?
 - o What part of the body was bitten?
 - o Was the animal captured?
 - o How was the animal acting?
- Was it foaming at the mouth?
 - o If known, the name and address of animal's owner and the animal's name
 - o Describe the animal. (Color, type of animal, etc.)
 - o Was member treated at hospital and, if so, where and what was done?
 - o Firefighter's name and telephone number
 - o Has Firefighter had a tetanus shot in the past five years?
- Report to BHS if directed by the Medical Officer.

Members are urged to review "The Facts About Rabies," by Frank C. Montagna, in the February 1995 issue of *Fire Engineering*.

have not been reported in your area is no guarantee that the dog that bit you has not been exposed to rabies.

Avoiding rabies

The following guidelines will help you avoid rabies infection:

- Avoid being bitten. Bunker gear and gloves will provide some protection against a dog bite but, depending on the size of the dog and the location of the bite, you may be at risk. When in the field on Building Inspection Safety Program (BISP) and other duty, you do not have the protection afforded by bunker gear and will be more susceptible to a dog bite. Before entering a building, room or yard, make noise. Shake the gate, rattle the door or bang on the wall with a tool. Hopefully, if there is a dog in the area, it will bark, alerting you to its presence. When confronted with an aggressive dog, consider an alternate route to your assigned position and warn all on the scene of the danger. If a dog prevents you from accomplishing your assigned task, notify your Officer and/or the Incident Commander (IC) of the problem.
- Treat any warm-blooded animal bite or scratch as a potential source of the rabies virus. Don't forget, cats can carry rabies, too. Cats that wander outside, especially in wooded areas where raccoons might be found, can be exposed to the virus.
- Capture or confine the dog. Confine the animal immediately, but use precautions to avoid exposing additional Firefighters or civilians to the animal. You may be able to detain the dog by simply closing a door or gate or it may be necessary to request police or animal control assistance in capturing or destroying an aggressive dog. Extinguishers, hose-lines, ladders and tools may be useful in controlling the animal and discouraging attack.
- Immediately wash a bite or scratch with soap and water to remove the virus. Additionally, washing the wound with a one-percent solution of povidone-iodine or some other virucide might help to prevent infection.
- Notify the Fire Department Medical Officer on duty and local health authorities of any animal bites. (See sidebar above.)
 - o Make notification to the Medical Officer via the Fire Department Operations Center (FDOC) and follow recommendations. The Bureau of Health Services (BHS) will notify the New York City Department of Health (DoH), Animal Bite Unit, and a dog bite number will be assigned to the incident. If the animal is a pet, the Animal Bite Unit sends a letter to its owner, telling him/her to monitor the animal for 10 days, looking for rabies symptoms.
 - o Go to the nearest emergency room to report an animal bite--on or off-duty--and to initiate treatment. The emergency room visit will initiate tracking of the animal. Based on the animal and conditions of the incident, medical authorities at the emergency room may begin treatment for rabies. Treatment currently consists of six injections over a 28-day period. Two injec-

tions are given on the first day; one is the rabies vaccine and the other is the human rabies immune globulin, which is available only through an emergency room. These are followed by four doses of the rabies vaccine given on days three, seven, 14 and 28. Given before the onset of symptoms, this treatment has proved to be very effective. If treatment is started at the hospital, it can be continued at BHS with prior notification to ensure vaccine availability.

- Find out if the animal has rabies. A stray or wild animal, such as a bat or raccoon, should be destroyed and tested immediately, but a pet need not be destroyed, even if the owner can't produce proof of the dog's immunization. Confining and observing the dog for 10 days is sufficient to determine if it is infected. If the animal is in the custody of the DoH, they will do the testing or monitoring. It might be wise to confine and observe even a vaccinated dog that has bitten a Firefighter because even a properly vaccinated animal is not 100 percent immune to the virus. If the dog is not impounded--and this may well be the case for a family pet, especially a vaccinated one--it will be tracked for 10 days by the Animal Bite Unit. If the confined dog or animal exhibits suspect behavior, it will be destroyed and its brain tested. The test for rabies necessitates killing the animal, cutting off its head and examining its brain. Knowing this, a pet owner may hide the animal to save its life. If the dog is unavailable for observation or testing, you have two choices--gamble or take the shots. If you choose to gamble and lose, you don't get to play again. If the test indicates rabies, the person bitten should begin the series of vaccinations. However, after 10 days of observation, if the animal exhibits no symptoms, there is no cause for alarm and treatment need not begin. You will be notified of the results of the observation by BHS.
- The NYPD or Animal Control may be forced to kill the animal on the spot. They should try not to damage the head as it must be intact for the rabies evaluation. You should take appropriate precautions if handling the dog's corpse because of the risk of infection. Use the same precautions you would use when handling a possible HIV carrier. Both rabies and HIV kill. Rabies, however, acts more quickly.
- Decontaminate any gear or tools that have been exposed to the animal's body fluids. Normal firefighting gear may protect against a bite or scratch, but remember, the dog's saliva and other body fluids may be on your gear and might infect you via cross-contamination. Use standard decontamination procedures.

While it would be unusual for a Firefighter to encounter a rabid dog or other animal in the performance of his/her duties, it is not impossible. If, however, it occurs, it must be addressed and dealt with properly and quickly. The possible threat of rabies will not prevent you from doing your job; it is just another of the many dangers Firefighters may face. You must, however, be informed about rabies and know and take appropriate precautions against infection when necessary.



About the Author...

Battalion Chief Frank C. Montagna, a 40-year veteran of the FDNY, is assigned to the Bureau of Training, responsible for Curriculum and Officer Development. He is an adjunct lecturer for John Jay College and lectures on various firefighting topics around the country. He has written numerous articles for Fire Engineering Magazine and is the author of Responding to Routine Emergencies. He is a frequent contributor to WNYF.

