

## **Rabies**

Agent: Rabies virus, a rhabdovirus of the genus Lyssavirus

Mode of Transmission: Most commonly transmitted through the bite of an infected animal, but may be transmitted through any method by which virus-infected saliva or central nervous system tissue enters the body.

Signs/Symptoms: Vary widely, but in people, symptoms often include an initial headache, fever and apprehension which progresses to paralysis, spasms of the muscles used for swallowing, delirium and convulsions. Once symptoms appear, rabies is almost invariably fatal.

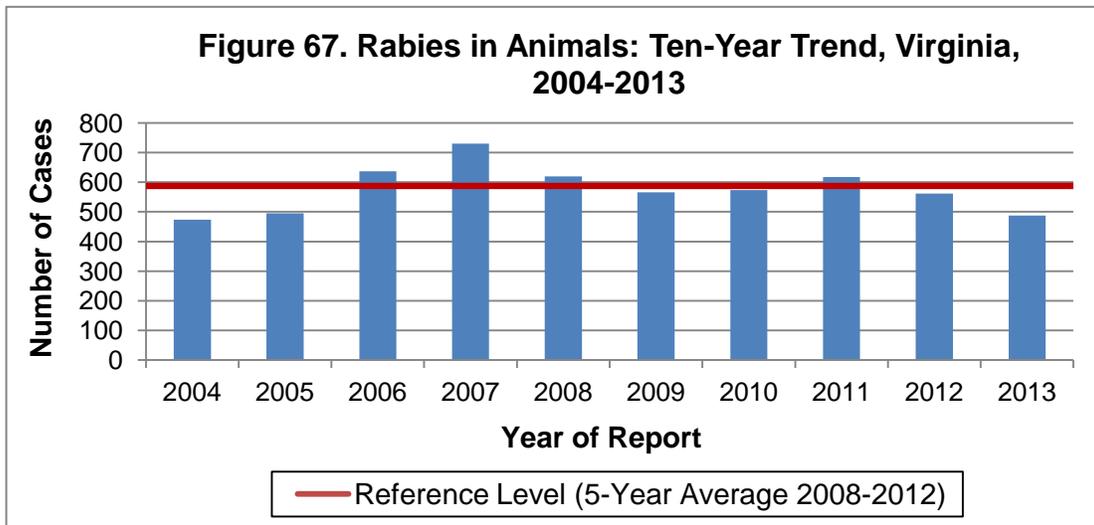
Prevention: Important prevention methods include vaccinating cats, dogs, and ferrets; using animal control to remove stray animals; and avoiding handling wildlife. A series of vaccines is recommended for people whose occupations increase their likelihood of being exposed to rabies (e.g., veterinarians and laboratorians working with rabies virus) and a vaccine series is also available for people who have been exposed.

Other Important Information: The main reservoir of rabies in the United States is wildlife. In most other countries, the main reservoir is dogs. Not everyone who meets the health department's definition of possible exposure to rabies is required to undergo the rabies vaccination series, also known as post-exposure prophylaxis (PEP). A person may receive PEP if he is considered exposed to rabies and the animal associated with the exposure is either not available or tests positive for rabies.

## **Human**

No human rabies cases were reported in Virginia in 2013. The last case of human rabies in Virginia occurred in 2009 in an adult male who was infected with the Indian canine variant of the rabies virus and was thought to have been exposed during an encounter with a dog while traveling in India. The patient died as a result of this infection.

In 2013, 1,483 people were reported as having received rabies post-exposure prophylaxis in Virginia. This represents a statewide rate of 18.1 per 100,000 people receiving PEP and is a small increase from the previous year when 1,465 persons were reported as having received PEP. While Fairfax health district had the highest number, with 236 people receiving PEP, the highest rate was reported from the Eastern Shore health district, where treatment of 27 people resulted in a rate of 59.3 per 100,000. Rates in the remaining districts ranged from 3.4 per 100,000 (Chickahominy health district, 5 people) to 38.0 per 100,000 (Thomas Jefferson health district, 91 people). The number of people receiving PEP by region ranged from 171 (9.3 per 100,000) in the eastern region to 464 (19.8 per 100,000) in the northern region. Health districts that recorded exposures by species reported that among those receiving PEP, slightly more than 33% of people received PEP due to exposure to a wildlife species, about 33% received PEP in response to an exposure to a dog, and about 25% received PEP in response to a cat exposure. Only eight people received PEP due to livestock exposure. Most potential human exposures to rabies reported to the health department each year are associated with dogs and cats.



## Animal

In 2013, health districts investigated over 18,000 incidents where either an animal potentially exposed a person to rabies or the animal itself was potentially exposed to rabies. Over half of these incidents involved dogs. For all the incidents investigated, only 3,943 animals were submitted for rabies testing, and of these animals, 488 (12%) were laboratory confirmed as positive for rabies. This is slightly below the range of 13-16% of animals testing positive that has been observed over the last 10 years. The 488 animals testing positive for rabies in 2013 was a 15% decrease from the 562 that tested positive in 2012 (Figure 67). The largest number of laboratory-confirmed rabid animals was reported from the northwest region (130 animals, 27%), followed by the southwest region (112 animals, 23%). The remaining regions had 76 to 88 laboratory-confirmed rabid animals. By district, the largest number of rabid animals was from the Fairfax health district (47 animals, 10%), followed by the Loudoun health district (37 animals, 8%) and Rappahannock/Rapidan health district (32 animals, 7%). Cats remain the domestic animal most commonly diagnosed with rabies, and raccoons remain the most common wild animal to test positive; these trends have been consistent for over 10 years.

Among all species tested for rabies, cats were the most commonly tested animal, with 968 cats tested, but only 4% were positive (Table 11). Bats were the most commonly tested wildlife species, with 821 specimens submitted, but only 2% were positive. Skunks had the overall highest percentage of positive test results (56%), followed by bobcats (50%), and foxes (42%). Of the 488 animals positive for rabies in Virginia in 2013, raccoons accounted for over half (51%) of all positive results, followed by skunks (24%), and foxes (11%). Cattle account for the largest proportion (11%) of livestock testing positive for rabies. All small rodents submitted for testing were negative.

**Table 11. Animals Testing Positive for Rabies by Species, Virginia, 2013**

Animal Species	Number of Animals Tested	Positive	
		Number	Percent
Alpaca	1	0	0%
Bat	821	16	2%
Bear	1	0	0%
Beaver	5	0	0%
Bobcat	2	1	50%
Camel	1	0	0%
Cat	968	37	4%
Chipmunk	6	0	0%
Cow	81	9	11%
Coyote	6	0	0%
Deer	5	0	0%
Dog	582	1	0%
Ferret	1	0	0%
Fox	130	55	42%
Gazelle	1	0	0%
Goat	38	1	3%
Groundhog	129	2	2%
Hamster	1	0	0%
Horse	28	0	0%
Kinkajou	1	0	0%
Llama	4	0	0%
Mole	1	0	0%
Mouse	10	0	0%
Muskrat	4	0	0%
New Kent	1	0	0%
Opossum	170	0	0%
Pig	1	0	0%
Rabbit	12	0	0%
Raccoon	600	249	42%
Rat	3	0	0%
Rodent	10	0	0%
Sheep	16	1	6%
Skunk	206	115	56%
Small Rodent	5	0	0%
Squirrel	88	0	0%
Vole	2	0	0%
Wolf Hybrid	1	0	0%
Zebu	1	0	0%
<b>Total for 2013</b>	<b>3943</b>	<b>488</b>	<b>12%</b>

The largest proportion of animals were submitted for rabies testing during the late spring and summer months, while the fewest animals were submitted for testing during the winter months (Figure 68). This seasonal pattern is likely a result of increased domestic animal and human interaction with wildlife during warmer months. No seasonal pattern was observed in the number of animals testing positive for rabies, but April had the highest number of any month, with 56 animals testing positive.

