

# Public Veterinary Medicine: Public Health

## Rabies surveillance in the United States during 2004

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**Summary**—During 2004, 49 states and Puerto Rico reported 6,836 cases of rabies in nonhuman animals and 8 cases in human beings to the CDC, representing a 4.6% decrease from the 7,170 cases in nonhuman animals and 3 cases in human beings reported in 2003. Approximately 92% of the cases were in wildlife, and 8% were in domestic animals (compared with 91% and 9%, respectively, in 2003). Relative contributions by the major animal groups were as follows: 2,564 raccoons (37.5%), 1,856 skunks (27.1%), 1,361 bats (19.9%), 389 foxes (5.7%), 281 cats (4.1%), 115 cattle (1.7%), and 94 dogs (1.4%). Compared with the numbers of reported cases in 2003, cases in 2004 decreased among all groups, except bats, cattle, human beings, and “other domestics” (1 llama). Decreases in numbers of rabid raccoons during 2004 were reported by 12 of the 20 eastern states in which raccoon rabies was enzootic. In the East, Massachusetts reported the first cases of raccoon rabies detected beyond the Cape Cod oral rabies vaccine barrier. Along the western edge of the raccoon rabies epizootic (Ohio in the north and Tennessee in the south), cases of rabies were reported from unexpected new foci beyond oral rabies vaccine zones.

On a national level, the number of rabies cases in skunks during 2004 decreased by 12.1% from the number reported in 2003. Once again, Texas reported the greatest number ( $n = 534$ ) of rabid skunks and the greatest overall state total of rabies cases (913). Texas reported only 1 case of rabies in a dog that was infected with the dog/coyote rabies virus variant and only 22 cases associated with the Texas gray fox rabies virus variant (compared with 61 cases in 2003). The total number of cases of rabies reported nationally in foxes and raccoons declined 14.7% and 2.7%, respectively, during 2004. The 1,361 cases of rabies reported in bats during 2004 represented a 12.3% increase over the previous year's total of 1,212 cases for this group of mammals. Cases of rabies reported in cats, dogs, horses and mules, and sheep and goats decreased 12.5%, 19.7%, 31.8%, and 16.7%, respectively, whereas cases reported in cattle increased 17.4%. In Puerto Rico, reported cases of rabies in mongooses decreased 4.1% and rabies in dogs (9 cases) remained unchanged from those reported in 2003.

Among the 8 cases of rabies in human beings, 1 person from Oklahoma and 3 from Texas died following receipt of infected organs and tissues from an Arkansas donor. In California, a person originally from El Salvador and, in Florida, a person originally from Haiti both died of canine rabies infections acquired outside the United States. In Wisconsin, a teenager contracted rabies from a bat bite and became the first known person to survive rabies despite not having received rabies vaccine prior to symptom onset.

**I**n the United States and other developed nations, rabies is primarily a disease that affects and is maintained by wildlife populations (Figure 1). During 2004, wild animals accounted for almost 92% of all cases of rabies reported to the CDC. The most frequently reported rabid wildlife remain raccoons, skunks, bats, and foxes; however, the relative contributions of those species have continued to change in recent decades because of fluctuations in epizootics of rabies among animals infected with several distinct rabies virus variants (Figure 2).<sup>1</sup>

Rabies control programs, including extensive vaccination campaigns, implemented during the 1940s and 1950s caused a substantial decline of rabies in domestic animals in the United States and all but eliminated the circulation of canine variants of the rabies virus in dogs (*Canis lupus*, formerly known as *Canis familiaris*) by the 1960s. Programs initiated to interrupt transmission of a canine variant that reemerged in south Texas during the late 1970s and early 1980s and recent cooperation with Mexico via the Border

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