

Epidemiology of Rabies

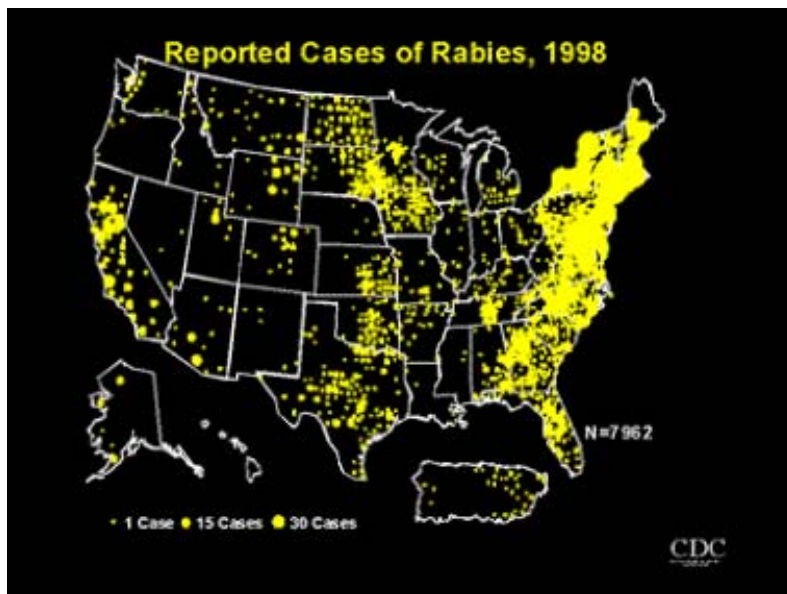
Epidemiology is the study of the distribution and causes of disease in populations. Epidemiologists study how many people or animals have a disease, the outcome of the disease (recovery, death, disability, etc.), and the factors that influence the distribution and outcome of the disease.

The epidemiology of rabies addresses several questions: what animals have rabies and in what regions of the country, how many people get rabies and from what animals, and what are the best strategies for preventing rabies in people and animals. Epidemiologic information is often presented as statistical data (e.g., numbers or percentages represented in graphs and on maps). For example, in 1998, 7962 cases of rabies were reported in the United States. Raccoons accounted for almost 44% of reported cases.

United States rabies surveillance data, 1998

Each year, scientists from the Centers for Disease Control and Prevention (CDC) collect information about animal and human rabies cases from the state health departments and publish the information in a summary report. A recent report, entitled "Rabies surveillance in the United States during 1998," contains the epidemiologic information on rabies for the entire year. This report can be found in its entirety in [Professional Resources](#). Below you will find a brief summary of the surveillance information for 1998, including maps showing the distribution of rabies in the United States.

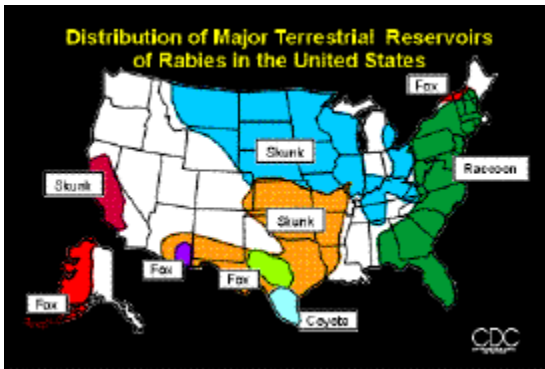
In 1998, 49 states, the District of Columbia, and Puerto Rico reported 7962 cases of rabies in animals and 1 case in humans to CDC (Hawaii is the only state that has never reported an indigenously acquired rabies case in humans or animals). The total number of reported cases decreased by 6.5% from those reported in 1997 (8513 cases).



Wild animals

[Wild animals](#) accounted for nearly 93% of reported cases of rabies in 1998. Raccoons continued to be the most frequently reported rabid wildlife species (44.0% of all animal cases during 1998), followed by skunks (28.5%), bats (12.5%), foxes (5.5%), and other wild animals, including rodents and lagomorphs (1.6%). Reported cases in raccoons and foxes decreased 18.6% and 2.9% respectively from the totals reported in 1997. Whereas cases in skunks, and bats increased 11.4%, and 3.5% respectively from 1997 totals.

Outbreaks of rabies infections in terrestrial mammals like raccoons, skunks, foxes, and coyotes are found in broad geographic regions across the United States. Geographic boundaries of currently recognized reservoirs for rabies in terrestrial mammals are shown on the map below.



Domestic animals

Domestic species accounted for 7.6% of all rabid animals reported in the United States in 1998. The number of reported rabid domestic animals decreased 1.2% from the 610 cases reported in 1997 to 603 in 1998.



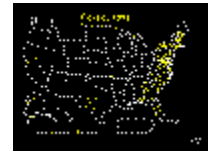
Raccoon rabies



Skunk rabies



Bat rabies



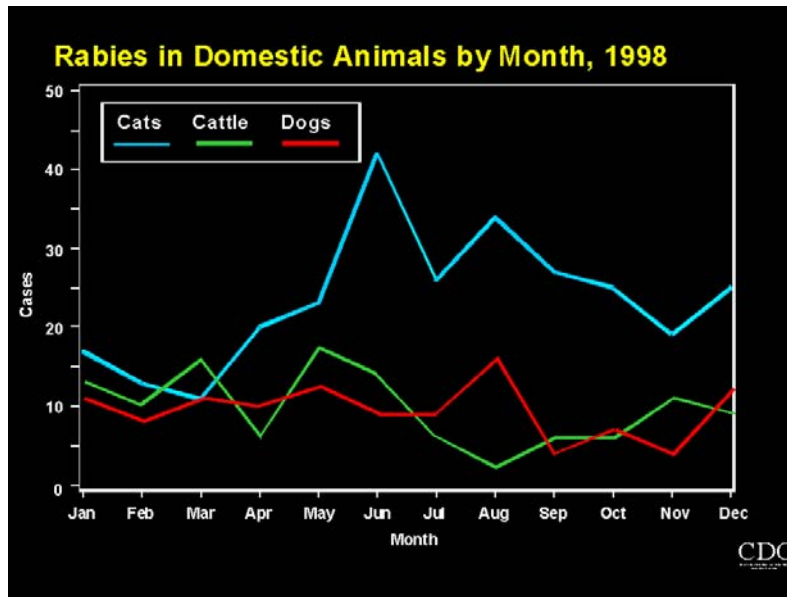
Fox rabies



Coyote rabies



Other wild rabies



In 1998, cases of rabies in dogs, cats and cattle decreased 10.3%, 6.0%, and 4.9% respectively, whereas those in horses and mules increased 74.5%, compared with those reported in 1997. Rabies cases in cats continue to be more than twice as numerous in dogs or cattle. Iowa reported the largest number of rabid domestic animals (70) for any state, followed closely by Pennsylvania (50).



Dog rabies

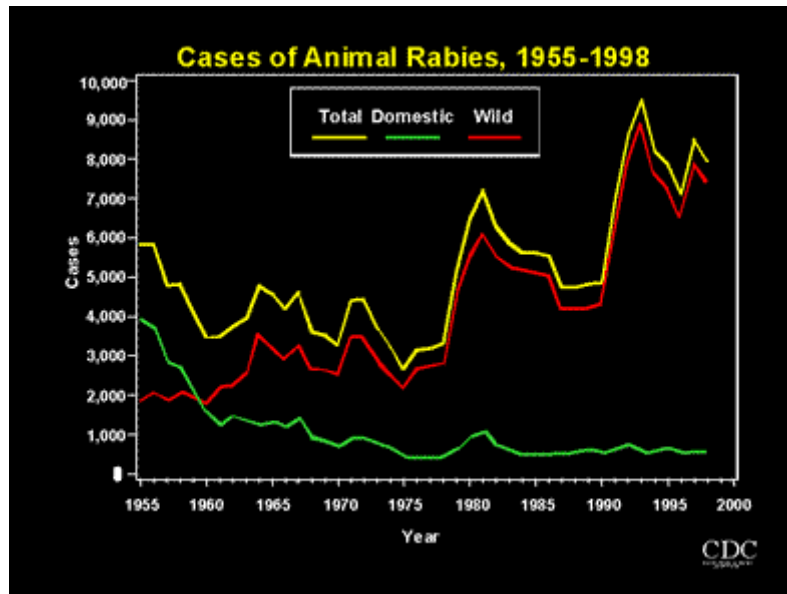


Cat rabies



Cattle rabies

Successful vaccination programs that began in the 1940s caused a decline in dog rabies in this country. But, as the number of cases of rabies in dogs decreased, rabies in wild animals increased, as shown in the graph below.



Human rabies

In this century, the number of human deaths attributed to rabies declined from 100 or more each year to an average of 1 to 2 each year. The decline is due to vaccination and animal control programs begun in the 1940's that have practically eliminated the domestic dog as a reservoir of rabies and to the development of effective human rabies vaccine and immune globulin. Four deaths in human beings as a result of rabies were reported in 1997 and one in 1998.

Below are case histories of the human cases of rabies in 1997 and 1998. All human cases of rabies in the United States from 1981 thru 1998 are summarized in the [table of human rabies cases from 1981-1998](#).

- [Case 1 -Montana - 1997](#)
- [Case 2 -Washington - 1997](#)
- [Case 3 -Texas -1997](#)
- [Case 4 -New Jersey -1997](#)
- [Case 5 - Virginia -1998](#)