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Dog-Bite-Related Fatalities -- United States, 1995-1996

From 1979 through 1994, attacks by dogs resulted in 279 deaths of humans in the United States (1,2). Such attacks have prompted widespread review of existing local and state dangerous-dog laws, including proposals for adoption of breed-specific restrictions to prevent such episodes (3). To further characterize this problem and the involvement of specific breeds, CDC analyzed data from the Humane Society of the United States (HSUS) and media accounts in the NEXIS database *. This report presents three recent cases of dog-bite-related fatalities (DBRFs), summarizes characteristics of such deaths during 1995-1996, and provides breed-specific data for DBRFs during 1979-1996. The findings in this report indicate that most DBRFs occurred among children and suggest approaches for prevention.

In January 1995, a 2-year-old boy in South Dakota wandered into a neighbor's yard, where he was attacked and killed by two chained wolf-German shepherd hybrids. In September 1995, a 3-week-old girl in Pennsylvania was killed in her crib by the family Chow Chow while her parents slept in the next room. In March 1996, an 86-year-old woman in Tennessee went outside of her home to check the weather and was fatally mauled by two rottweilers owned by a neighbor; the dogs had attacked and injured the woman 1 month before the fatal attack.

The HSUS attempts to identify all DBRFs (1,2) and maintains a registry of these incidents. A DBRF was defined as a death caused by acute trauma from a dog attack. Case reports in the registry include details such as date of death, age and sex of decedent, city and state of attack, number and breeds of dogs involved, and circumstances. To supplement HSUS reports, CDC included data from the NEXIS database and death certificates. However, death-certificate data were not available for 1995-1996. Deaths associated with infection secondary to dog bites were excluded.

Data from HSUS and NEXIS were merged to maximize detection of cases and avoid duplicate reports. Because news media accounts can inaccurately report breeds of dogs involved in DBRFs, only breed data from the HSUS were used (4). When multiple dogs of the same breed were involved in a fatality, that breed was counted only once. When crossbred animals were involved in a fatality, each breed in the dog's parentage was counted once. Dogs were also classified as on or off the owner's property and whether they were restrained (e.g., chained or leashed) at the time of the attack.

During 1995-1996, at least 25 persons died as the result of dog attacks (11 in 1995 and 14 in 1996). Of the 25 DBRFs, 20 (80%) occurred among children (three were aged less than or equal to 30 days {neonates}, one was aged 5 months, 10 were aged 1-4 years, and six were aged 5-11 years), and five occurred among adults (ages 39, 60, 75, 81, and 86 years). Most (18 {72%}) DBRFs occurred among males.

Of 23 deaths with sufficient information for classification, seven (30%) involved an unrestrained dog off

the owner's property, five (22%) involved a restrained dog on the owner's property, and 11 (48%) involved an unrestrained dog on the owner's property. Of the 25 deaths, nine (36%) involved one dog, nine (36%) involved two dogs, two (8%) involved three dogs, and five (20%) involved six to 11 dogs. All the attacks by unrestrained dogs off the owner's property involved more than one dog. Of the three deaths among neonates, all occurred on the dog owner's property and involved one dog and a sleeping child.

During 1995-1996, rottweilers were the most commonly reported breed involved in fatal attacks ([Table 1](#)). Fatal attacks were reported from 14 states (California {four deaths}; Florida and Pennsylvania {three each}; Arizona, Arkansas, Colorado, and South Dakota {two each}; and Connecticut, Massachusetts, Missouri, North Carolina, Ohio, Tennessee, and Washington {one each}).

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Editorial Note

Editorial Note: During 1979-1996, fatal dog attacks occurred in 45 states ([Figure 1](#)). In 1986, nonfatal dog bites resulted in an estimated 585,000 injuries that required medical attention or restricted activity; in that year, dog bites ranked 12th among the leading causes of nonfatal injury in the United States (5). In 1994, an estimated 4.7 million persons (1.8% of the U.S. population) sustained a dog bite; of these, approximately 800,000 (0.3%) sought medical care for the bite (6).

The findings in this report are subject to at least two limitations. First, because death-certificate data were not available, the two sources used for case finding in 1995-1996 probably underestimated the number of DBRFs and may represent only 74% of actual cases (1,2). Second, to definitively determine whether certain breeds are disproportionately represented, breed-specific fatality rates should be calculated. The numerator for such rates requires complete ascertainment of deaths and an accurate determination of the breed involved, and the denominator requires reliable breed-specific population data (i.e., number of deaths involving a given breed divided by number of dogs of that breed). However, such denominator data are not available, and official registration or licensing data cannot be used because owners of certain breeds may be less likely than those owning other breeds to register or license their animals (3).

Three categories of strategies can be considered for preventing dog bites:

1. Owner and public education. Dog owners, through proper selection, socialization, training, care, and treatment of a dog, can reduce the likelihood of owning a dog that will eventually bite (7). Male and unspayed/unneutered dogs are more likely to bite than are female and spayed/neutered dogs (7). Educational and prevention efforts should be directed at parents and children. Veterinarians and pediatricians should address strategies for bite prevention, including the need for appropriate supervision of children. Other strategies include dissemination of information on preventing bites (see box([Table B1](#))), school-based educational programs on bite prevention and canine behavior, and educational programs regarding responsible dog selection, ownership, and training.
2. Animal control at the community level. Animal-control programs should be supported, and laws for regulating dangerous or vicious dogs should be promulgated and enforced vigorously (8). For example, in this report, 30% of DBRFs resulted from groups of owned dogs that were free roaming off the owner's property. Some of these deaths might have been prevented through more stringent animal-control laws and enforcement. Although some breeds were disproportionately represented in the fatal attacks described in this report, the representation of breeds changes over time ([Table 1](#)). As a result, targeting a specific breed

may be unproductive; a more effective approach may be to target chronically irresponsible dog owners (9).

3. Bite reporting. Evaluation of prevention efforts requires improved surveillance for dog bites. Dog bites should be reported as required by local or state ordinances, and reports of such incidents should include information about the circumstances of the bite; ownership, breed, sex, age, spay/neuter status, and history of prior aggression of the animal; and the nature of restraint before the bite incident.

Dogs provide many health and social benefits (10). Most of the approximately 55 million dogs in the United States never bite or kill humans. However, the findings in this report indicate that DBRFs continue to occur and that most are preventable. HSUS and the U.S. Postal Service have designated June 9-13, 1997, as National Dog Bite Prevention Week. Additional information about preventing dog bites is available from HSUS, 100 L Street, NW, Washington, DC 20037; telephone (202) 452-1100; or on the World-Wide Web at <http://www.hsus.org>.

References

1. Sacks JJ, Sattin RW, Bonzo SE. Dog bite-related fatalities from 1979 through 1988. *JAMA* 1989;262:1489-92.
2. Sacks JJ, Lockwood R, Hornreich J, Sattin RW. Fatal dog attacks, 1989-1994. *Pediatrics* 1996;97:891-5.
3. Lockwood R. Humane concerns about dangerous dog laws. *University of Dayton Law Review* 1988;13:267-77.
4. Lockwood R, Rindy K. Are "pit bulls" different? An analysis of the pit bull terrier controversy. *Anthrozoos* 1987;1:2-8.
5. Sosin DM, Sacks JJ, Sattin RW. Causes of nonfatal injuries in the United States, 1986. *Accid Anal Prev* 1992;24:685-7.
6. Sacks JJ, Kresnow M, Houston B. Dog bites: how big a problem? *Injury Prev* 1996;2:52-4.
7. Gershman KA, Sacks JJ, Wright JC. Which dogs bite? A case-control study of risk factors. *Pediatrics* 1994;93:913-7.
8. Companion Animals Section and Division of Higher Education Programs. Guidelines for regulating dangerous or vicious dogs. Washington, DC: Humane Society of the United States, August 1987.
9. Lockwood R. Dangerous dogs revisited. *The Humane Society News* 1992;37:20-2.
10. American Veterinary Medical Association. AVMA Welfare Forum: human-canine interactions. *J Am Vet Med Assoc* 1997;210:1121-54.

* An on-line service containing information from newspapers, magazines, wire services, and broadcast transcripts.

Table_1

Note: To print large tables and graphs users may have to change their printer settings to landscape and use a small font size.

TABLE 1. Dog breeds and crossbreeds* involved in dog-bite-related fatalities, by 2-year period -- United States, 1979-1996 +

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Dog-Bite-Related Fatalities -- United States, 1995-1996

Category	1979-1980	1981-1982	1983-1984	1985-1986	1987-	
1988	1989-1990	1991-1992	1993-1994	1995-1996	Total	
Breed						
"Pit bull"			2	5	10	
9	12	8	6	5	3	60
Rottweiler			0	0	1	
1	3	1	3	10	10	29
German shepherd			2	1	5	
1	1	5	2	0	2	19
"Husky"			2	1	2	
2	0	2	2	1	2	14
Alaskan malamute			2	0	3	
1	0	2	3	1	0	12
Doberman Pinscher			0	1	0	
2	2	2	1	0	0	8
Chow Chow			0	1	0	
0	0	2	3	0	2	8
Great Dane			3	1	0	
0	0	0	0	1	1	6
St. Bernard			1	2	1	
0	0	0	0	0	0	4
Akita			0	0	0	
0	0	1	1	2	0	4
Crossbreed						
Wolf hybrid			0	1	1	
2	1	4	1	2	2	14
German shepherd			0	2	0	
2	2	2	0	1	2	11
"Pit bull"			0	1	0	
2 &	3	1	1	0	10 &	3
"Husky"			0	1	1	
2	1	1	0	0	0	6
Alaskan malamute			0	0	0	
0	0	2	1	0	0	3
Rottweiler			0	0	0	
1 &	1	0	1	1	3 &	0
Chow Chow			0	0	0	
0	0	1	0	1	1	3
No. incidents for which breed known			10	20	27	24
22	35	24	25	22	199	

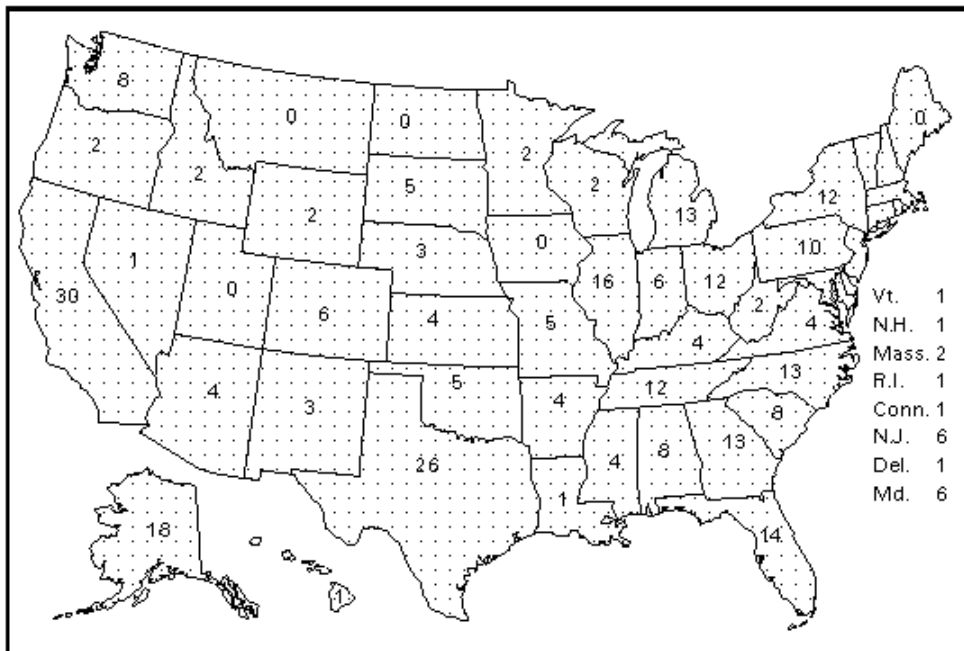
* Data shown only for breeds and crossbreeds involved in four or more fatalities. Each breed contributing to the crossbreed is counted only once.

+ For 1979-1994, data obtained from the Humane Society of the United States registry, NEXIS database accounts, and death certificates.

& One fatality also involved a single breed.

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Figure_1

FIGURE 1. Number of dog-bite-related fatalities, by state — United States, 1979–1996*

*For 1979–1994, data obtained from the Humane Society of the United States registry, NEXIS database accounts, and death certificates. For 1995–1996, data from death certificates were not available.

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Table_B1

Note: To print large tables and graphs users may have to change their printer settings to landscape and use a small font size.

Measures for Preventing Dog Bites

- Realistically evaluate environment and lifestyle and consult with a professional (e.g., veterinarian, animal behaviorist, or responsible breeder) to determine suitable breeds of dogs for consideration.
- Dogs with histories of aggression are inappropriate in households with children.
- Be sensitive to cues that a child is fearful or apprehensive about a dog and, if so, delay acquiring a dog.
- Spend time with a dog before buying or adopting it. Use caution when bringing a dog or puppy into the home of an infant or toddler.
- Spay/neuter virtually all dogs (this frequently reduces aggressive tendencies).
- Never leave infants or young children alone with any dog.
- Properly socialize and train any dog entering the household. Teach the dog submissive behaviors (e.g., rolling over to expose abdomen and relinquishing food without growling).
- Immediately seek professional advice (e.g., from veterinarians, animal behaviorists, or responsible breeders) if the dog develops aggressive

or undesirable behaviors.

- Do not play aggressive games with your dog (e.g., wrestling).
- Teach children basic safety around dogs and review regularly:
 - Never approach an unfamiliar dog.
 - Never run from a dog and scream.
 - Remain motionless when approached by an unfamiliar dog (e.g., "be still like a tree").
 - If knocked over by a dog, roll into a ball and lie still (e.g., "be still like a log").
- Never play with a dog unless supervised by an adult.
- Immediately report stray dogs or dogs displaying unusual behavior to an adult.
- Avoid direct eye contact with a dog.
- Do not disturb a dog who is sleeping, eating, or caring for puppies.
- Do not pet a dog without allowing it to see and sniff you first.
- If bitten, immediately report the bite to an adult.

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