

# Severe Attacks by Dogs: Characteristics of the Dogs, the Victims, and the Attack Settings

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## Synopsis . .

*Sixteen incidents involving dog bites fitting the description "severe" were identified among 5,711 dog bite incidents reported to health departments in five South Carolina counties (population 750,912 in 1980) between July 1, 1979, and June 30, 1982. A "severe" attack was defined as one in which the dog "repeatedly bit or vigorously shook its victim, and the victim or the person intervening had extreme difficulty terminating the attack."*

*Information from health department records was clarified by interviews with animal control officers, health*

and police officials, and persons with firsthand knowledge of the events.

Investigation disclosed that the dogs involved in the 16 severe attacks were reproductively intact males. The median age of the dogs was 3 years. A majority of the attacks were by American Staffordshire terriers, St. Bernards, and cocker spaniels. Ten of the dogs had been aggressive toward people or other dogs before the incident that was investigated.

Ten of the 16 victims of severe attacks were 10 years of age or younger; the median age of all 16 victims was 8 years. Twelve of the victims either were members of the family that owned the attacking dog or had had contact with the dog before the attack. Eleven of the victims were bitten on the head, neck, or shoulders.

In 88 percent of the cases, the attacks took place in the owner's yard or home, or in the adjoining yard. In 10 of the 16 incidents, members of the victims' families witnessed the attacks.

The characteristics of these attacks, only one of which proved fatal, were similar in many respects to those that have been reported for other dog bite incidents that resulted in fatalities. On the basis of this study, the author estimates that a risk of 2 fatalities per 1,000 reported dog bites may exist nationwide. Suggestions made for the prevention of severe attacks focus on changing the behavior of both potential canine attackers and potential victims.

REPORTS OF OBSERVED ATTACKS by dogs that resulted in human fatalities indicate that (a) the typical dog making such an attack repeatedly bites or vigorously shakes its victim until the victim no longer moves (1), and (b) human intervention is frequently less effective in stopping this type of event than in stopping less severe attacks (1-3).

In the most comprehensive study of fatal attacks to date, Pinckney and Kennedy (2) cited 74 cases that occurred from March 1966 through June 1980. The data

were collected from accounts of fatal dog bites published in newspapers throughout the United States and included the 11 cases cited by Winkler (3). Although 36 of the 74 attacks were not observed, in 75 percent of the witnessed cases someone tried to intervene; in 67 percent of these cases, the person intervening had difficulty stopping the attack.

The typical fatal attack, then, is characterized by repeated and uninhibited biting, and the dog is relatively unresponsive to attempts to terminate the attack. Other

Characteristics of severe attacks by dogs

Case number	Breed	Dog				
		Sex	Age (years)	Previous aggression against— <sup>2</sup>	Obedience trained	Rabies vaccination
1	American Staffordshire terrier <sup>1</sup>	M	3.50	FM,AQ,ST,D	No	No
2	Rottweiler	M	1.50	No	Yes	Yes
3	St. Bernard	M	0.67	No	No	Yes
4	Siberian husky	M	2.00	?	No	Yes
5	Cocker spaniel	M	0.67	AQ	No	No
6	St. Bernard-German shepherd mixed-breed	M	5.00	AQ,ST	No	Yes
7	St. Bernard	M	3.00	ST	No	Yes
8	American Staffordshire terrier	M	2.50	AQ,ST,D	Yes	Yes
9	American bulldog <sup>1</sup>	M	3.00	AQ,D	No	Yes
10	American Staffordshire terrier	M	2.50	?	No	No
11	Cockapoo	M	4.50	ST	No	Yes
12	American Staffordshire terrier <sup>1</sup>	M	5.00	No	No	Yes
13	St. Bernard	M	3.50	D	No	Yes
14	American Staffordshire terrier <sup>1</sup>	M	10.50	D	No	Yes
15	Irish setter	M	2.00	No	No	No
16	Cocker spaniel	M	2.50	AQ,ST,D	Yes	Yes

<sup>1</sup> Although the owner would not admit that the dog was used in pit fighting, the investigating animal control officer reported evidence to the contrary (for example,

lesions and scars about the head and extremities).

<sup>2</sup> FM = family member; AQ = acquaintance; ST = stranger; D = dog.

dog attacks fitting this behavioral description may belong in the same category as fatal dog bites, whether the attack results in the victim's death or not. Such "severe" attacks were the focus of this investigation. This study was done (a) to estimate the proportion of severe attacks among total reported dog bites and (b) to determine the characteristics of the dog, victim, and setting associated with severe dog bite events.

## Methods

Severe attacks were identified among records of 5,711 dog bite incidents that were reported to five county health departments (population, 750,912 in 1980) in the Piedmont area of South Carolina between July 1, 1979, and June 30, 1982. A "severe" attack was defined as one in which the dog "repeatedly bit or vigorously shook its victim, and the victim or the person intervening had extreme difficulty terminating the attack."

Information gathered during interviews with animal control officers, health and police officials, and persons with firsthand knowledge of specific dog bite events helped to identify those attacks that qualified as "severe." The amount of physical damage resulting from the bite was not a discriminating variable. For example, an 8-year-old boy's ear was severed by the boy's pet Doberman while the two were wrestling in the front yard of their home. The dog bit the boy's ear at the same time the boy pulled away from the dog, and the injury resulted. No further attack was elicited. The boy incurred "severe" physical damage; however, because the incident

did not have the characteristics of a severe attack as defined, it was not classified as severe for the purposes of this study.

## Results

**Dogs.** Of the 5,711 dog bite incidents reported to the five South Carolina health departments during the 3-year period of this study, 16 attacks were classified as severe. The 16 dogs involved were reproductively intact males (median age, 3 years; age range, .67 to 10.5 years).

Five attacks were by American Staffordshire or American pit bull terriers; three by St. Bernards and one by a St. Bernard-German shepherd mixed-breed; two by cocker spaniels and one by a cocker spaniel-poodle mixed-breed (cockapoo). The remaining four attacks were by a bulldog, an Irish setter, a rottweiler, and a Siberian husky. No attempt was made to determine American Kennel Club registration.

All 16 dogs reportedly were kept as pets or watch dogs or both (none were strays); however, there was evidence that the bulldog and three of the Staffordshire terriers were used for "pit" fighting (table). In general, the dogs seemed well cared for; only four had not been vaccinated for rabies, and three had been obedience trained. Reports from dog owners and animal control officers indicated that 10 of the dogs had a history of aggression toward people or other dogs before the severe-bite episode (table).

**Victims.** The 10 male and 6 female victims of severe attacks ranged in age from 2½ to 72 years (median age, 8

Characteristics of severe attacks by dogs (continued)

Sex	Victim				Setting				Victim interaction with dog	Attack warning by dog
	Age (years)	Relationship to dog <sup>2</sup>	Bite location <sup>3</sup>	Dragged to ground	Location of attack	Family member present	Dog chained			
F	4.0	FM	H,U	Yes	In yard	Yes	No	Yes	Yes	No
F	8.0	AQ	H	Yes	In new home	No	No	No	No	No
M	4.0	AQ	H	Yes	In yard	Yes	No	No	Yes	No
F	8.0	ST	H	Yes	In new home	No	No	No	Yes	No
M	2.5	AQ	H	Yes	In yard	Yes	No	Yes	Yes	Yes
M	30.0	AQ	L	Yes	In yard	Yes	No	No <sup>4</sup>	No	Yes
M	3.5	AQ	H	Yes	In yard	Yes	No	No	No	No
F	25.0	AQ	L,T	Yes	In yard	Yes	No	No <sup>4</sup>	No	Yes
M	72.0	ST	H,U,L,T	Yes	Adjoining road	No	No	No <sup>4</sup>	No	Yes
M	3.0	FM	H	Yes	In yard, road	No	Yes	Yes	?	No
F	66.0	ST	L	No	Adjoining road	Yes	No	No	No	Yes
M	10.0	FM	T	No	In yard	Yes	No	Yes	No	No
F	42.0	ST	H,U,L,T	Yes	4 houses away	No	Yes <sup>5</sup>	No	Yes	No
M	4.0	FM	H,T	Yes	In yard	Yes	No	Yes	Yes	No
M	47.0	FM	U	No	In yard	No	No	No	Yes	Yes
M	3.0	AQ	H,T	Yes	In yard	Yes	No	No	No	Yes

<sup>3</sup> H = head, neck, shoulders; U = upper extremities; L = lower extremities; T = torso, buttocks.

<sup>4</sup> Broke chain to attack victim.

<sup>5</sup> Other dog not involved in attack.

body before the dog's female owner pulled the animal off by its harness.

**Case 10.** A 2½-year-old Staffordshire terrier slipped out of its collar and attacked its owner's 3-year-old child 90 meters from the family's trailer. Flesh was consumed from the child's neck. The mother, who had been next to the trailer, went for help but was not in time to save the child, who was fatally injured. A small 6-month-old terrier mixed-breed (with the same owner) took part in the attack but, because of the absence of smaller bite marks on the child's body, was not judged a "severe" biter.

**Case 11.** When its owner opened the front door, a 4½-year-old cockapoo escaped from the house, ran barking to the street, and attacked a 66-year-old woman. The woman reached out with her hand, but the dog bit the calf of her leg, held on to it, and shook it until the woman finally beat the animal off with her purse. The dog had bitten a child 4 months before this attack.

**Case 12.** A 5-year-old Staffordshire terrier was chained in a yard where chickens were roaming. The dog had killed and was eating a chicken. The 10-year-old son of the terrier's owner, who was outside with his 12-year-old brother, got too close to the dog, and the animal dragged the boy to the ground by his buttocks. The owner, hearing the child scream, ran from the house and pried open the dog's mouth with a knife.

**Case 13.** A 3½-year-old St. Bernard, four houses away from its home, attacked another dog by the throat. When the owner of the attacked dog, a 42-year-old woman, beat the St. Bernard with a hose, the animal knocked her down and bit her on all parts of her body. The woman fainted. A motorist, who saw her being bitten and dragged to the road, succeeded in chasing the dog away.

**Case 14.** A chained 10½-year-old Staffordshire terrier attacked its owner's 4-year-old son after the boy hit it with a newspaper. The dog pinned the child to the ground and bit him about the torso, head, and neck. The owner pulled the boy to safety after beating the dog with a log.

**Case 15.** A 2-year-old Irish setter growled at its 47-year-old owner, who had returned home from a 5-day absence. The owner reached out to pet the dog, which bit him on the hand, continued to shake the hand, and would not release it until hit with a nearby log.

**Case 16.** A 2½-year-old cocker spaniel, housed in a backyard pen, attacked its owner's visiting 3-year-old nephew when he and his aunt entered the pen. The dog

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knocked the child down on his stomach and repeatedly bit him on the back and shoulders. The owner picked the boy up and kicked the dog (which was hanging on to the child's clothes and raised off the ground) until it let go.

## Discussion

These events were similar in many respects to those reported by Pinckney and Kennedy (2):

- In neither this sample nor theirs were attacks by stray dogs recorded.
- At least 88 percent of the bites in both samples occurred in or adjacent to the owners' yards or in their homes.
- More than 60 percent of the dogs in both samples had records of previous aggression.
- The majority of the victims were children 8 years of age or younger, with 1- to 8-year-old males predominating at least 2:1 over females.
- The most frequent location of bites was the head and neck region (more than 68 percent in both samples).

The sex and age of the dogs in the Pinckney and Kennedy survey were not reported. It would have been informative to determine whether young, reproductively intact males constituted a large proportion of the dogs in their study also.

The most striking difference between the two samples was in the percentage of infants attacked. In the Pinckney and Kennedy sample, 31 percent of the victims were 1 year of age or younger, while none was in this sample.

In addition, in the earlier sample, 16 attacks (22 percent) were by German shepherds, compared with 1 attack by a shepherd mixed-breed in this study. Regional distributions of breeds may explain some of this discrepancy; however, determining dog populations—much less breed representation in a community—is extremely difficult (4,5).

Only 1 of the 16 dog attacks (case 10) resulted in fatality. However, the most frequent site of bite injuries was the head and neck region in both this sample (11 of 16 cases) and the Pinckney and Kennedy sample (33 of the 41 cases for which injury location was specified). In

## Prevention

Efforts to prevent severe dog bites should be focused primarily at the level of the owner. Information concerning the factors that contribute to a severe bite must be made available to dog owners so that the appropriate preventive measures can be taken. The following steps are suggested:

1. As a starting point, people should know that previous signs of aggression by a dog may be predictive of a severe attack. In this study, there were 14 cases in which previous incidents of aggression could be determined. In eight of these cases, the dogs involved had bitten, lunged at, or snapped at people previously. In two other cases, the attacking animals had previously been reported for aggression against other male dogs. Owners should be educated about and sensitized to the potential seriousness of any early signs of aggression in their pets. Young, reproductively intact males would seem to be especially dangerous. Perhaps local health departments, veterinary associations, or humane societies could take the initiative in providing their communities with appropriate information.

2. Once sensitized to the potential dangers of an aggressive dog, owners should be encouraged to seek help from specialists formally trained in the diagnosis and treatment of animal behavior problems. Recent reports have described successful procedures for the diagnosis and treatment of different kinds of aggression in dogs (6–9). The treatments may include combinations of surgical, pharmacological, and behavioral therapies and are quite different from attempts to control aggressive behavior through obedience training.

3. Additional efforts to reduce dog bite incidents should be focused at the level of the potential victim. A program of education in dog-bite avoidance, directed toward likely victims, has been suggested elsewhere (1). One merely has to listen to a victim's or witnesses' attribution of the causes of a dog bite to discover how unaware the general public is of the danger signs that are associated with attacks by dogs.

Apart from shedding some light on the characteristics of severe attacks by dogs, this survey raises many questions that as yet remain unanswered. For example:

- Only seven victims reported interacting with the dog before the attack. What are the properties of victims' behaviors that elicit an attack?
- Only seven victims reported a warning of attack by the dogs involved. Do dogs provide danger signs or signals,

*'Do dogs provide danger signs or signals, before an attack, that the victims do not recognize or respond to appropriately? Do victims maintain an attack by continuing to move or struggle?'*

the latter study, information concerning bite location and corresponding cause of death was not presented, although hemorrhage and shock were reported to be the causes of death in most of the patients (2a).

In this study, "severe" dog attacks were selected on the basis of their behavioral similarity to attacks resulting in fatality. The incidence of severe attacks (16 cases) among total reported attacks (5,711 cases) was approximately 2.8 per 1,000. Approximately 70 percent of these severe attacks involved bites on the head and neck, a location for which death because of hemorrhage and shock is likely. Thus, if these figures are representative, a potential for 2 fatalities per 1,000 dog bites may exist nationwide.

Among the 16 severe attacks reported on here, there was only 1 fatality (case 10), although the number of deaths one would predict, based on a risk of 2 fatalities per 1,000 dog bites, is approximately 11. Whether a severe attack results in death, however, may depend on whether an adult is present to intervene. In case 10, death occurred before the 3-year-old victim's pregnant mother could solicit help to rescue her child. In each of the other 15 cases, either the victim or an intervening adult successfully stopped the attack, albeit with extreme difficulty (for example, by beating the dog with a log, kicking, or shooting it).

Borchelt and associates (1) have suggested that, unlike less serious attacks, attacks that result in death usually occur when no one but the victim is present. Of the four cases they investigated, the only nonfatal attack involved an 11-year-old boy who had been dragged to the ground and repeatedly bitten by a pack of dogs. The dogs stopped their attack when a motorist intervened and pulled the boy to safety. In the other three cases, the victims—an 81-year-old female invalid, a 10-year-old girl, and a 14-year-old boy—were alone at the time of the attacks. Taken together, these data seem to indicate that 2 fatalities per 1,000 dog bites is a reasonable estimate if the victims are physically unable to stop the attack or if adults are not in a position to intervene.

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• In 8 of the 16 cases, the dog involved either was chained or broke loose from its chain to attack its victim. Does restricting a dog in this manner actually increase the chances of a severe bite?

Clearly, more detailed study is necessary to clarify the behavioral sequence preceding severe attacks.

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