

Animal Bites - A Serious, Preventable Public Health Threat

In recognition of the fact that animal bites are a rarely acknowledged yet serious and highly preventable public health problem, the second week in June has been designated National Bite Prevention Week. Nationwide, medical costs due to animal bites amount to tens of millions of dollars annually, with bites accounting for approximately 1% of emergency room visits. In Texas, the Zoonosis Control Division of the Texas Department of Health (TDH) maintains surveillance of severe animal attacks and bites through reports voluntarily submitted by local health departments, animal control departments, and emergency health care providers. The following data were obtained from 1,437 reports submitted during the five-year period 1991 through 1995.

Animal Characteristics, Victim Characteristics, Animal-Victim Interaction

Dog bites accounted for the highest percentage of animal bites (Figure 1). The tendency of a dog to bite is a product of many factors, including predisposition to aggression, maltreatment, incomplete socialization to people, quality of care, and behavior of the victim.

Of the 117 dog breeds and breed crosses involved in severe bites, 9 breeds and breed crosses (Chow Chow, Chow cross, Rottweiler, Pit Bull, German Shepherd, Labrador Retriever, mixed, German Shepherd cross, and Heeler) accounted for 60% of the severe bites. Since breed prevalence figures for the state are not available, it is unknown whether these breeds have a predisposition to aggression or whether they simply represent the most popular breeds in Texas. Reports involving small dogs were few because surveillance included only severe bites, and small breeds of dogs are seldom capable of inflicting severe bites.

Severe attack is defined as one in which the animal repeatedly bites or vigorously shakes its victim, and the victim, or a person intervening, has extreme difficulty terminating the attack. **Severe bite** is defined as a puncture or laceration made by an animal's teeth that breaks the skin, resulting in a degree of trauma which would cause most prudent and reasonable people to seek medical care for treatment of the wound without considerations of rabies prevention alone. For purposes of this report, the terms "severe bite" and "severe attack" will be used interchangeably.

TDH data are compatible with those of nationwide studies, which demonstrate that young children are most likely to be bitten by the family pet at home. Children in Texas younger than 11 years of age are almost 5 times as likely to be the victim of a severe bite as are adolescents and adults (Figure 2). Youngsters 5 to 10 years of age are at highest risk because of their behavior: mobility, natural curiosity, lack of inhibition, inexperience with animal behavior, and frequent interaction with animals. Children may not realize that playful actions may cause an angry or defensive reaction from an otherwise friendly pet. When a dog shows its teeth, a child may think it is smiling. As an expression of "canine language," a dog will slowly wave its tail to demonstrate wariness or hostility to other dogs. A youngster may misinterpret this action as a friendly, wagging tail.

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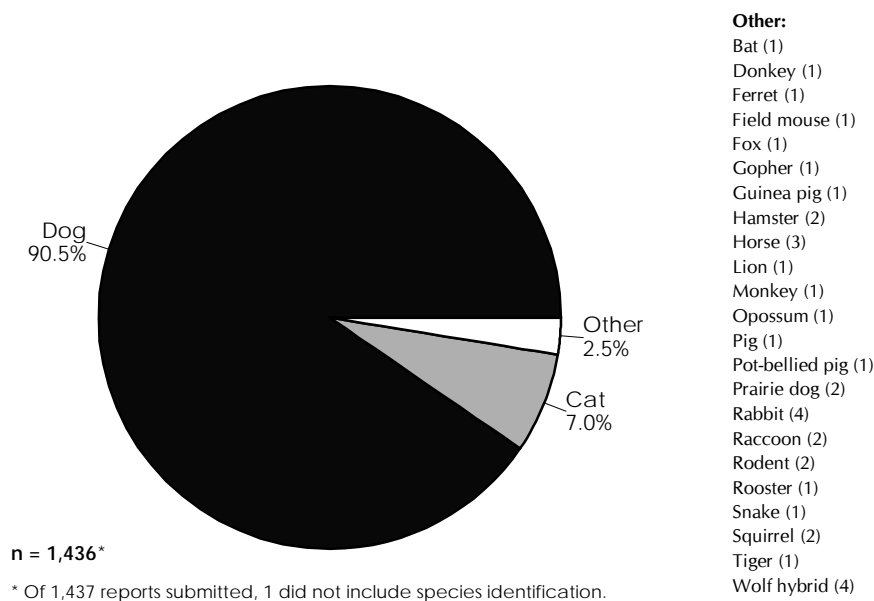
Victim age was included in 1,403 reports and type of injury in 1,427. Children under the age of 11 years accounted for 724/1,403 (52%) of the victims, yet suffered 412/510 (81%) of all head injuries (Figure 3). The anatomic location of dog bites in young children is largely a function of their diminutive stature, which places the head in close proximity to the dog's mouth, and children's tendency to put their faces within the area perceived by dogs to be an intimate and threatening distance. Also, a young child has little defense against an attack because a child's motor skills are not fully developed, and the head is relatively large in comparison with the body. Injuries to the head and neck can result in permanent disfigurement as well as life-threatening injuries involving hemorrhage and cranial trauma.

motivation behind such attacks is best described as "jealousy." Victims are most often attacked while sleeping alone in a crib or bed. The presence of an adult appears to be a deterrent to attack.

Reports which stated whether or not the attack was provoked indicated that 25% of the attacks were considered provoked. Circumstances which provoked the dog to attack included estrus, hunger/eating, puppies/kittens, jealousy, abusive treatment, guarding, injury, being startled, dog fights, teasing, and rough play (including pulling on a body part).

Severe attacks occurred with greatest frequency during mild weather months (May and October), presumably due to increased contact between people and animals. Although not included in TDH's bite surveillance, other studies have demonstrated that unsterilized dogs are up to 3 times as likely to bite people as are dogs that are spayed or castrated.

Figure 1. Severe Bites by Species, 1991-1995



Prevention Strategies

As with most public health efforts, surveillance data are the foundation of prevention strategies. Of these, education and legislation are two key components in reducing the frequency of animal bites.

Education

- ◆ Educational efforts can originate from humane organizations, health departments, animal control departments, schools, family care practitioners, veterinarians, and parents.
- ◆ Because of the seasonal incidence of bites, prevention would best be taught to school children during the spring or fall months.
- ◆ Children should be taught to understand basic canine behavior and to avoid circumstances that may evoke an angry response from a dog.

Infants under 1 year of age are too immature to threaten or provoke a dog to attack, even unintentionally; nevertheless, almost 10% of the dog bite fatalities in Texas since 1980 have involved this age group. Of the 24 people who died as a result of dog bites during this period, 2 were under 1 year of age, and 4 were 1 to 2 years old. The most likely

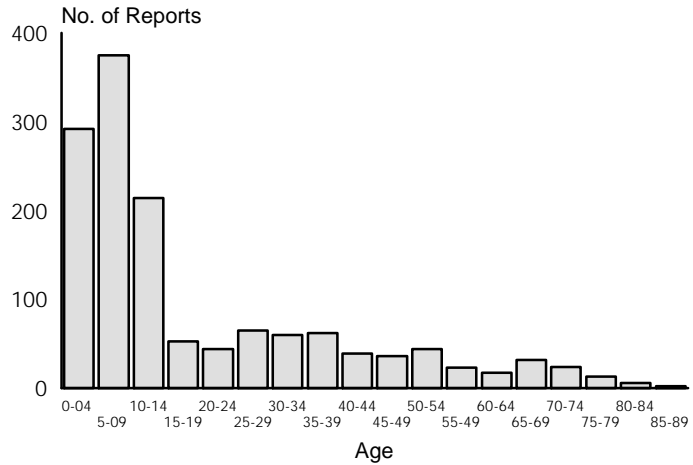
- ◆ Informed pet owners, through their interaction with the pet, are able to reduce the likelihood that their dogs will bite. Lack of socialization, improper training, abuse, and failure to observe early signs of aggression can all contribute to a dog attack.
- ◆ Breeds that have a reputation for being unpredictable or aggressive should be avoided.
- ◆ Obstetricians and pediatricians should advise parents never to leave infants and young children unsupervised around any dog, even the family pet, regardless of how friendly the dog may appear. Extra attention should be lavished on the family dog when a new baby is brought into the home so the pet does not feel that its position is being threatened.
- ◆ Veterinarians should promote spaying and castrating for safety as well as health benefits.

Legislation

- ◆ Chapter 826, *Texas Health and Safety Code* states that failure to vaccinate dogs and cats annually is a Class C misdemeanor. Although reports indicated that the vaccination status of 45% of the biting dogs was not current at the time of the attack, citations were issued in only 5% of these cases. To provide an incentive for pet owners to act responsibly, the state law governing rabies vaccination and existing local animal control laws should be enforced more consistently.
- ◆ Where lacking, local leash and nuisance laws should be enacted.
- ◆ Local law enforcement agencies should enforce the Texas Dangerous Dog Act (Chapter 822, *Texas Health and Safety Code*), which is designed to minimize human exposure to dogs believed to be dangerous.

- ◆ Texas residents need to be encouraged to report all bites (as is mandated by Chapter 826 of the *Texas Health and Safety Code*).

Figure 2. Severe Bites by Victim Age, 1991-1995

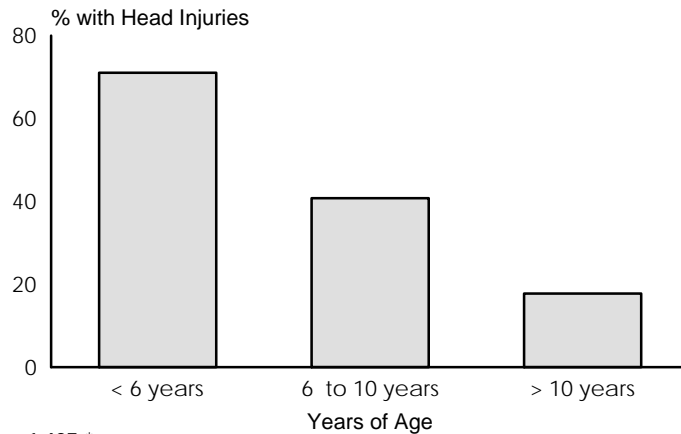


n = 1,403 *

* Of 1,437 reports submitted, 34 did not include victim age.

As with most public health efforts, reported rates influence public health policies, which in this case would include leash laws, the impounding of strays, the amount of money allocated for animal control, and rabies vaccination programs for both pets and people.

Figure 3. Head Injuries versus Victim Ages



n = 1,427 *

* Of 1,437 reports submitted, 10 did not specify type of injury; 510 specified the type as "head injury."



Disease Prevention News (ISSN 1068-7920) is a free, biweekly publication of the Texas Department of Health, Public Health Professional Education, 1100 West 49th Street, Austin, TX 78756-3199, (512) 458-7677. Second-class postage paid at Austin, TX.
<http://www.tdh.state.tx.us/dpnhome.htm>
TDH Healthy Texans BBS: (800) 858-5833

POSTMASTER: Send address changes to *Disease Prevention News*, 1100 West 49th Street, Austin, TX 78756-3199.

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Disease Prevention News
Texas Department of Health
1100 West 49th Street
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- ◆ Chapter 828 of the *Texas Health and Safety Code* requires surgical sterilization of all animals adopted from animal shelters in cities with a population greater than 10,000 and counties with a population greater than 20,000.



Free copies of the 1995 Severe Attack Surveillance Summary, the Severe Attack Report form, and information relating to animal control may be obtained from the TDH Zoonosis Control Division (512) 458-7255 or your regional TDH office.

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Cyclospora and Strawberries

On May 28 the Texas Department of Health and the Houston Department of Health and Human Services began investigating an outbreak of diarrheal illness among people who had attended a conference in Houston. To date 27 cases of illness due to *Cyclospora cayetanensis* have been confirmed in attendees who had consumed strawberries. Results will be published in DPN as soon as the investigation is completed.

Washing strawberries may not eliminate the parasite. Symptoms of cyclospora infection include watery diarrhea, fatigue, loss of appetite, and abdominal cramps; a low-grade fever also may be present. **Stool samples should be tested with an acid-fast stain test, preferably the Ziehl-Neelsen test. Report confirmed cases to TDH at (512) 458-7676 or (800) 252-8239. For treatment guidelines contact Dr. Kate Hendricks at (512) 458-7328; for laboratory information contact Dale Dingley at (512) 458-7560; for videotape, Cyclospora Diagnosis, contact TDH Film library at (512) 458-7260.**