Dog Attacks: Human Nurture or Dog Nature?

The Erlanger Trauma Symposium
10th Annual Trauma Symposium
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Chattanooga Convention Center

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Outline & Objectives

1. Historical perspective
   ◦ Understand the history of human-dog interactions,

2. Current Problem
   ◦ Understand the current magnitude of dog bite morbidity & mortality

3. Current treatment
   ◦ Understand expected/accepted medical and surgical strategies for dog bites

4. Prevention Strategies
   ◦ Understand success and failures of prevention strategies and future directions

5. Conclusion and Questions
Man’s Best Friend

- Unknown time of domestication
  - Long history of loyal cooperation
- Uses in warfare, hunting, herding, protection, pest control
- Intense mutual cooperation and affection
- Dogs can interpret human emotion from facial expression.
- Follow unique human signals--pointing
- 1885 – Rabies Vaccine!
Dear Mr. Terhune:

I am in receipt of a copy of your article “Beware of the Dog,” as published in the Readers’ Digest. It was sent to me by a young woman dog owner, who was formerly a student of science.

Although we agree with your praises of the animal, the statement discussing the possibilities of rabies infection is perhaps misleading. In many communities a real hazard is present in each dog bite due to the endemicity of rabies. Fortunately this condition does not exist in New York City or in San Francisco. It does, however, even today, exist in many other localities.

Furthermore, your advice “to paint the wound with carbolic acid instead of iodine” is rather poor, as the former is quite a real escharotic and dangerous in the hands of the inexperienced, while both are useless in the treatment of rabies. Fuming nitric acid is usually used by the medical profession. Better advice would be to have a physician take charge of the treatment.

Trusting you will understand my motive in writing and assuring you we have enjoyed many of your stories, I am

Cordially yours,

J. C. Geiger, M. D.,
Director of Public Health.
Back to the Future – 1959

- $5 million/year in US medical costs for animal bite treatment
- Pittsburgh area bites examined Summer 1958
- Detailed questionnaires sent to all practitioners
- 947 dog bites in two month period (1.2%/year boys and 0.5%/year girls)

Parrish 1959
Back to the Future – 1959

76% of victims < 20
- 18% < 5 years old
- 31% 5 – 9 years old
- 27% 10 – 19 years of age

Children and youths less than 20 years of age have the highest rate because they are intimately associated with dogs as pets, they are often abusive to pets, and, in many instances, they do not know how to care for pets properly. In addition, persons less than 20

Parrish 1959
before the victims reach 5 years of age. Perhaps the high incidence of dog bites among males results from their more aggressive behavior and the fact that males are more likely to have dogs as pets. Generally, females prefer cats or other small animals as pets. Males had higher rates of dog bites in practically every age group (table 1).
Back to the Future – 1959

Victim Characteristics
- Proximity and occupational risk
- 76% bites to extremities
- 16% (n = 151) to head & neck (children < 12)

Wound Severity
- 2% No injury
- 88% Minor
- 1% Severe
- 0% Fatal

Head & Neck bites
- Higher proportion required plastic surgery

Parrish 1959
Back to the Future – 1959

Attack Characteristics

- Summer months in afternoons/evenings (79%)
- Urban and residential areas
- 1/3 unprovoked
- 1/3 during play or petting the dog
- 1/3 provoked with other human activities

Parrish 1959
Back to the Future – 1959

Dog Characteristics

- Most events (65%) occurred near dog’s home
- 81% Known
- More commonly female dogs
- Most dogs < 5 years old
- “Working breeds” were disproportionately represented—collies, “eskimo dogs”, Saint Bernard, Doberman pinscher

Parrish 1959
Pediatric Bite Prevention in 1959

1. No dogs for children < 6 years (↓18%)
2. Teach dog manners/care (↓10%)
3. No interaction when eating or fighting (↓10%)
4. Avoid situations when dog is vulnerable
   ◦ (sick, sleeping, new puppies) (↓3%)
5. Avoid holding face next to a dog's

Proposed 40 – 50% Bite Rate Reduction

Parrish 1959
Urban Dog Bites in 1970s

- 38% families owned dogs (1 for every 6 persons)
- Registration of larger breeds increased in 1960s & 70s.
  - Response to urban crime (guard dogs)
- “Dog and animal control problems” a “top complaint”

- NYC Bites up 33% from 1960 to 1965.
- 2% of 5 – 9 year olds bitten annually
- 500 bites for 100,000 people
  <50% of bites reported
“Dogs that are under direct supervision or control are healthier, live longer, and appear to be better adjusted, perhaps because a pet's real social group includes its owner...

It is now time for urban dwellers as well to have a more balanced view of the man-dog relationship so that man and dog can live together in health and peace.”

Beck 1975
Fatal Attacks from 1980s

- Newspaper survey and literature review
- 74 fatal dog attacks (51 in five years)
- Most by pet dogs
  - No prior history of viciousness
  - Most without provocation
- Most deaths—Infants < 1 year
- Also young children and elderly women.

(Pinckney and Kennedy 1982)
Fatal Attacks from 1980s

Dog Characteristics
- Sixteen breeds
  - Usually large (G. Shepherds, MC AKC)
- Bullterrier* highest deaths vs small n (↑Popularity)

Victim Characteristics
- 83% children
- 47% of attacks unwitnessed
- Head and neck most common sites

Incidence of fatal dog attack:
- 1 human death / 5 million dogs/year

(Pinckney and Kennedy 1982)

*Author Specifically Describes Using Term “Bullterrier to refer to “pitbulls”
“Ten infants were attacked inside a crib; most of the other attacks occurred on a bed, sofa, playpen, or floor.”

- 23 victims < 1 year old
- 14 victims < 6 weeks old
- Sleeping and alone

**Present adult—a deterrent?**

(Pinckney and Kennedy 1982)
“Severe” and Fatal Attacks from 1980s

- Severe attack: "repeatedly bit or vigorously shook its victim, and the victim or the person intervening had extreme difficulty terminating the attack."
  - Parallels accounts of human fatalities
  - Not Severity of injury

Wright 1985
“Severe” and Fatal Attacks from 1980s

- Health department records
  - (5700 bites, 750K people, SC)
- Clarified by interviews with officials
  - 1st hand knowledge
- 16 Severe Attacks
  - Includes 1 Fatal Attack

Wright 1985
“Severe” and Fatal Attacks from 1980s

Dog Characteristics
- All reproductively intact  
  (63% prior aggression)
- Average age of 3
- AST terriers (pitbulls), St. Bernards, & C. spaniels.

Victim Characteristics
- Median age 8 (Fatality, age 3)
- 75% were family or had prior contact
- Bite injuries MC head, neck, and shoulders.

Wright 1985
“Severe” and Fatal Attacks from 1980s

Attack Characteristics

- 44% victims reported contact with dog prior
- 44% reported no warning signs from dog
- 50% dogs escaped from restraint (collar, chain)

Wright 1985
“Severe” and Fatal Attacks from 1980s

- Estimate risk of 2 fatalities per 1,000 reported dog bites
- Proposed preventions:
  - Change dog behavior
  - Change victim behavior
"Severe" and Fatal Attacks from the 1980s

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.

Wright 1985
Dog Bites in 1990s

- 146 consecutive patients British PRS unit
- Dog Characteristics
  - Male
  - SBT (15 cases), JRT (13), medium mixed (10), and Alsatians (nine)
  - SBT most severe (injury) and sustained (multiple) attacks
- Patient Characteristics
  - 61% were 10 years old or less.
  - Playing, petting, walking
- Attack Setting
  - Familiar Setting (75% friend, neighbor, relative’s home)
  - Unprovoked
  - Usually in dog’s home

Shewell 1991
Dog Bites in 1990s

Shewell 1991
Sinclair 1997

- Study of animal bites in Indiana, ‘91 – ’92
  - Public health records (mandatory reporting)
  - Breeds deliberately not presented
    - (misidentification, unknown denominator)
- Children disproportionately affected
  - (5 – 9 year olds, boys)
- Spring time, Urban counties
- Extremity MC overall, H & N for youngsters

Sinclair 1997
New Study in 1996, Same Story as 1982

- Dogs in 35% US households 1994
  - Dog population > 50 million
  - Bite incidence 18/1000 (1 – 2%)
- 50% school children bitten by 12th grade
  - 17% medical attention
  - Medical attention 3X for children
- 50% of attacks unprovoked.
  - Children lack judgement & insight
  - Small stature—dog dominance

Sacks 1996
# Bites By Species

Table 1. Animal bites reported in all Indiana counties, 1990–92, by type of animal

<table>
<thead>
<tr>
<th>Animal</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogs</td>
<td>18,452</td>
<td>78</td>
</tr>
<tr>
<td>Cats</td>
<td>3,746</td>
<td>16</td>
</tr>
<tr>
<td>All other species</td>
<td>1,574</td>
<td>6</td>
</tr>
<tr>
<td>Squirrels</td>
<td>1,677</td>
<td></td>
</tr>
<tr>
<td>Mice, rats</td>
<td>227</td>
<td></td>
</tr>
<tr>
<td>Pets</td>
<td>247</td>
<td></td>
</tr>
<tr>
<td>Raccoons</td>
<td>202</td>
<td></td>
</tr>
<tr>
<td>Bats</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Foxes</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Skunks</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Horses</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>Other farm animals</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>All other species or not specified</td>
<td>538</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23,772</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2. Average annual incidence of animal bites by age group and sex, Indiana, 1990–92

<table>
<thead>
<tr>
<th>Age group (years)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger than 5</td>
<td>245</td>
<td>230</td>
<td>475</td>
</tr>
<tr>
<td>5–9</td>
<td>360</td>
<td>253</td>
<td>613</td>
</tr>
<tr>
<td>10–14</td>
<td>283</td>
<td>179</td>
<td>462</td>
</tr>
<tr>
<td>15–18</td>
<td>82</td>
<td>69</td>
<td>151</td>
</tr>
<tr>
<td>19–25</td>
<td>126</td>
<td>108</td>
<td>234</td>
</tr>
<tr>
<td>26–40</td>
<td>79</td>
<td>73</td>
<td>152</td>
</tr>
<tr>
<td>41–60</td>
<td>55</td>
<td>56</td>
<td>111</td>
</tr>
<tr>
<td>Older than 60</td>
<td>43</td>
<td>38</td>
<td>81</td>
</tr>
</tbody>
</table>

1. Average annual incidence = reported cases per 100,000 persons for 3 years.
Dog Bites by Season

Figure 1. Average annual incidence of reported animal bites of children by age group and season, Indiana, 1990–92

- Bites per 100,000 children
- Age groups: 0–4 years, 5–9 years, 10–14 years

Note: Marion County excluded.

Sinclair 1997
CURRENT DOG BITE EPIDEMIOLOGY
### Table 3: Dog breeds involved in a sample of dog bite cases, El Paso County, Texas, 1995 (N = 285)

<table>
<thead>
<tr>
<th>Breed</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>German shepherd</td>
<td>72</td>
<td>25.2</td>
</tr>
<tr>
<td>Chow chow</td>
<td>53</td>
<td>18.5</td>
</tr>
<tr>
<td>Terrier</td>
<td>17</td>
<td>5.9</td>
</tr>
<tr>
<td>Cocker spaniel</td>
<td>14</td>
<td>4.9</td>
</tr>
<tr>
<td>Pit bull terrier</td>
<td>13</td>
<td>4.5</td>
</tr>
<tr>
<td>Rottweiler</td>
<td>12</td>
<td>4.2</td>
</tr>
<tr>
<td>Poodle</td>
<td>11</td>
<td>3.8</td>
</tr>
<tr>
<td>Doberman</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td>Husky</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td>Labrador retriever</td>
<td>9</td>
<td>3.1</td>
</tr>
<tr>
<td>Other</td>
<td>47</td>
<td>16.5</td>
</tr>
<tr>
<td>Unidentified</td>
<td>19</td>
<td>6.6</td>
</tr>
</tbody>
</table>

Note: Breed categories included dogs of mixed genetic background; animals were assigned to categories according to their predominant physical traits.

Note: Percentages do not add to 100 due to rounding errors.
(Patrick/O’rourke 1998)

More of the same:

- Male dogs perpetrators
- Children at risk
- Head/neck popular bite location.
- Top biters most common unprovoked attacks
- Medium/large breeds worst bites
Current Trends

- 4.5 million dog bites in annually
- 885,000 seek medical care
- 370,000 seen in ED
- Average of 16 fatalities
- Children
  - Vulnerable/Large percentage bite victims
  - More likely to have medical attention for injuries
  - 70% of all bite-related fatalities
- 47% estimated decline from 1994 to 2003

Dixon 2012 & Gilchrist 2008
...For Comparison

- Roughly 70 million Children in US
- **Cancer**
  - 16,000 new diagnoses/year
  - 2000 deaths/year
- **Pediatric Appendicitis**
  - 70,000 cases/year
  - Mortality 0.1 – 1%
  - 70 – 700 deaths/year
- **Dog Bites (~2% Incidence)**
  - 1.4 Million bites/year
  - 15 deaths/year (20 total, 75% pediatric)
Dog Bite Cost/Morbidity

~ $235 to 250 million ($62.5 hosp adm.)

- Pain (100%), Disfigurement, Infection (16%)
- Time lost from school or work
- Fear and anxiety
  - (50% ATSD 1 month post bite)
- UN Children’s Fund/Alliance for Safe Children
  - #2 reason for medical care or time lost
- ASPS Data: 30,000 reconstructions in 2009

Dixon 2012
Dog Bite Mortality

- Canada 1990 – 2007
  - 24 of 28 fatal dog bites in children < 12
- U.S. 1979 - 1998, 238 DBRF from 25 breeds
  - Pitbull-type dogs and Rottweilers involved in >50% of events (Sacks 2000)
- Estimate risk of 2 fatalities per 1,000 reported dog bites (Wright 1985)
Retrospective review at CH, Denver

- Identified 537 pediatric dog bites
- Similar findings—except in BSL county
- Dog is known to victim
- Young children at higher risk
- Attack is in familiar setting
- 47% percent unprovoked
- Head & neck, most common injury site

(Chen 2013)
Data from BSL Area Children’s Hospital

Table 2 Breeds of dogs involved in attacks

<table>
<thead>
<tr>
<th>Breed</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known</td>
<td>366 (68)</td>
</tr>
<tr>
<td>Mixed breed</td>
<td>84 (23)</td>
</tr>
<tr>
<td>Labrador retriever</td>
<td>50 (14)</td>
</tr>
<tr>
<td>Rottweiler</td>
<td>18 (5)</td>
</tr>
<tr>
<td>German shepherd</td>
<td>16 (4)</td>
</tr>
<tr>
<td>Golden retriever</td>
<td>11 (3)</td>
</tr>
<tr>
<td>Pit bull</td>
<td>11 (3)</td>
</tr>
<tr>
<td>Cocker spaniel</td>
<td>11 (3)</td>
</tr>
<tr>
<td>Collie</td>
<td>10 (3)</td>
</tr>
<tr>
<td>Chow</td>
<td>9 (2)</td>
</tr>
<tr>
<td>Terrier, unknown type</td>
<td>9 (2)</td>
</tr>
<tr>
<td>Husky</td>
<td>8 (2)</td>
</tr>
</tbody>
</table>
Recent Study

“Our study found 11 victims of pit bull bites from 2003 to 2008, including the patient who suffered the most extensive injuries and the longest hospitalization of our entire population, indicating that despite legislation, pit bull bites continue to be a public health concern.”

(Chen 2013)
Pro-Dog Perspective

- 419 dog bites in Toronto, 1993
- Dogs known to victims
- Bites occur at dog’s home
- Children only 25%
- All bite injuries minor(?)
  - 80% medical care
  - 20% requiring sutures
  - 17% no treatment

Bandow 1996
Pro-Dog Perspective

- 75% during playing, petting, “disturbing” the dog while eating
- Three proposed reasons why dogs bite:
  1. Dog intentionally or inadvertently provoked
  2. Owner ignorant about characteristics and behavior of the dog breed
  3. Dog not properly controlled (confinement, socialization)

Bandow 1996
Pro-Dog Perspective

- Problems with breed legislation:
  - Difficulty identifying pitbulls (generic/visual cues)
  - Pitbulls are not only biting dogs
  - “Bans don’t work” (pitbulls for outlaws)

- Failure in NYC; early problems in Winnipeg

Bandow 1996
Impossible to Identify?

Official Standard of the American Staffordshire Terrier

**General Impression:** The American Staffordshire Terrier should give the impression of great strength for his size, a well put-together dog, muscular, but agile and graceful, keenly alive to his surroundings. He should be stocky, not long-legged or racy in outline. His courage is proverbial.

**Head:** Medium length, deep through, broad skull, very pronounced cheek muscles, distinct stop; and ears are set high. **Ears** - Cropped or uncropped, the latter preferred. Uncropped ears should be short and held rose or half prick. Full drop to be penalized. **Eyes** - Dark and round, low down in skull and set far apart. No pink eyelids. **Muzzle** - Medium length, rounded on upper side to fall away abruptly below eyes. Jaws well defined. Underjaw to be strong and have biting power. Lips close and even, no looseness. Upper teeth to meet tightly outside lower teeth in front. Nose definitely black.
Pro-Dog Perspective

“A dog's personality is derived from a combination of genetics, treatment, training and socialization.”

• Bandow’s approach to prevention:
  1. Owners must train dogs not to bite
  2. Children should not be left alone with dogs
  3. Dog Owner’s Liability Act (Ontario)
  4. Only cure—banning all dogs

Bandow 1996
Seven breeds (12.9% of registered dogs) represent 27% of biting dogs

1. German Shepherd
2. Pit Bull Terrier
3. Rottweiler
4. Collie
5. Doberman Pinscher
6. Great Dane
7. Poodle
CURRENT MANAGEMENT DOG BITES
Acute Management

- Clean and debride to minimize infection
- Recommended against closure of puncture wounds
  - Inadequate washout
- Antibiotic prophylaxis for high risk wounds
  - Amox/Clav for 3 – 5 days
- Rabies prophylaxis—case by case basis
- Hand infections improved with prophylaxis

Sabheny 2012
# Acute Management

<table>
<thead>
<tr>
<th>HISTORY OF ABSORBED TETANUS TOXOID (DOSES)</th>
<th>TETANUS PROPHYLAXIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 3 or unknown</td>
<td>Td Yes</td>
</tr>
<tr>
<td>≥ 3</td>
<td>No* No</td>
</tr>
</tbody>
</table>

Td—tetanus-diphtheria toxoids, TIG—tetanus immune globulin.

*Yes, if ≥ 5 years since last dose.

Adapted from American Academy of Pediatrics.¹²

Sabheny 2012
Pediatric Dog bites

Frequency
- 3-4% of all pediatric emergency visits (40% peds traumas)

Medical Intervention
- Antibiotic prophylaxis reduces infections

Surgical Intervention
- PRS scar revisions as high as 77% (5th MC ICD-9 code)
- 1° closure avoids morbidity of healing by 2° intention

Complications: similar across interventions
- No closure (6%)
- Repaired ED (8%)
- Repaired in OR (10%)

animals also have bacteria in their mouth their teeth are very sharp, and they leave bacteria in the small puncture wounds

This leads to an abscess (the bacteria walls itself off)
an abscess needs to be drained and treated with antibiotics

O bri en 2015
Head & Neck Bite Treatment

- Single center, retrospective (2012 – 13)
  - Query for all bite-related diagnoses
- 334 unique dog bites (101 head & neck)
- Mean age of victim 15
- 8 different breeds; 1/3 of attacks by PBT
- Average follow-up 1.3 (± 2.4) visits
- Average specialty follow-up of 3.1 (± 3.5)

Obrien 2015
PBT Subgroup Analysis

- More severe bites
  - Mean DBCI of 3.2 (others, 2.3 (p<0.0001)
- Higher rates of consultation (p< 0.0001)
- More specialty care (94% vs 50%)
- 5X, operative repair (p< 0.05)
- “More likely to bite a stranger without provocation.”

Obrien 2015
DOG ATTACK PREVENTION
ER Screening Tool

- AAP, CDC, Humane Society Guidelines
- 2 surveys for parent/child knowledge of dog safety.
  - 43% children failed
  - Older children, older parents, white parents
  - No other associations (dog ownership, prior bites)
- 70% had no dog bite education
  - 88% of parents wanted it.

Dixon 2012
Teaching Dog Safety to Children

- Multiple studies
- Most focus on teaching interventions for children
- Children improve with teaching
  - Generalization & Retention tend to be poor
  - Stuffed toys & diagrams don’t readily translate
- Websites are a popular teaching medium
- Cochrane review declares methods ineffectual

Lakestani 2015, Gielen 2012, Schwebel 2015
All you ever wanted to know about dogs

Welcome to the Blue Dog!

The Blue Dog answers all you ever wanted to know about dogs: from having a dog in the family to acquiring, ensuring good health, or recognising good

- Truth or Myth? -
Most dog bites occur in the street by an unfamiliar dog

Materials for Professionals
Can my dog bite?

A dog in the family provides many benefits to human health and child development. However, the risks of injuries due to dog bites are significant.

So-called dangerous breeds

Media and governments often focus on the so-called dangerous breeds. In fact, all breeds of dog have the potential to bite. No breed can be regarded as more likely or less likely to bite. Many factors can influence a dog’s tendency to bite.

A particular threat to young children

Young children between 3 and 7 years old are twice as likely to be bitten as adults. They also have a higher incidence of serious head and neck injuries. Most bites occur within the home by a familiar dog.
Don’t do these things. The dog might bite you.

1. Don’t pet without asking.

2. Don’t pet on top of the head.

3. Don’t hug.

Let a dog eat its food.
Don’t pet, poke or pull a dog when it is eating.

Deja comer tranquilo a un perro.
No lo acaricies, lo golpees ni lo jales mientras esté comiendo.
10 Easy to Remember Tips for Responsible Pit Bull Owners

2. Never leave pit bulls alone with other dogs (or any animal)
   - “Known for animal aggression”
   - “Never trust your Pit Bull not to fight”

5. Supervise your dog with small children.
   - “This is a must”

7. Train your dog
   - “This is very important for Pit Bull owners”
   - “If you can not control your dog bad things will eventually happen”

8. Avoid dog parks.
   - “Dog parks are a breeding ground for disaster”
   - “Young dogs have been killed in dog parks by bigger dogs”
   - “Taking your dog to a dog park is simply not a good idea at all”

10. Keep your dog properly confined
    - “Great escape artist”
    - “Installing a six foot privacy fence is not a bad idea either”
Dangerous Dogs or Not?

- Common assertions in PB defense:
  - Breed cannot be visually identified
  - Pitbull is a generic term
  - Pitbull is no more aggressive than other dogs

- Common accusations:
  - Unpredictable
  - More aggressive
  - Vicious/”Locking” bite
  - Tenacious
  - More severe injuries
  - More deaths

Mutually Exclusive?
Breed Specific Legislation

- Aka “Pitbull Bans”, other breeds targeted to lesser extent
- Lowers Pitbull related attacks (resulting in overall less severe attacks/bites)
- Questionable whether it lowers total dog bite incidence
- Veterinary and Humane groups are uniformly opposed
- Medical organizations seem to be neutral or favorable for BSL
4. Pitbull Restrictions (and other bully breeds)

If you own a pitbull or other bully breed or mix as defined below you will be required to properly leash and muzzle your dog whenever he is outside, unless he is in a securely fenced yard. If you don’t have a fenced yard your dog will be required to be leashed, muzzled, and in control of a person 19 years of age or older any time he is outside your house.

In order to license your pitbull you must be 19 years old and show proof of $100,000 liability coverage. If you don’t follow these regulations you will be guilty of a first strike toward a reckless owner designation.

This portion of the ordinance went into effect October 15, 2008.
Below is a comparison of Pit Bull bites from 2008-2009, and 2010 through August:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008 Pit Bull bites</td>
<td>121</td>
<td>52</td>
<td>58</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>2009 Pit Bull bites</td>
<td>73</td>
<td>49</td>
<td>17</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2010 (through August) Pit Bull bites</td>
<td>28</td>
<td>19</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Down 75%, two years from initiation

Nebraska Humane Society Report
September 2010
Dangerous/Vicious Dog Statute in Chattanooga

- “Dangerous” or “Potentially Dangerous” Designations are Applied to Individual Dogs After Demonstrating Such Behaviors
- Such dogs may be impounded, owners fined
- “Potentially dangerous” 1 attack/18 months
- “Dangerous” 2 attacks/18 months
- Designation automatically removed if no repeat behavior in 18 months
TWO YEARS OF DOG BITES: SAMPLE CASES
3 yo male

- Playing outside at neighbors house
- Known mix breed attacked
- Initially unwitnessed
- Tore upper and lower lids with their lacrimal ducts
- Taken to OR for repair
18 yo female

- Sitting in face-to-face with friend’s Labrador
- Forehead repaired in ER
- Nose treated by secondary intention
85 yo male

- At neighbor’s house
- Not interacting with dog. Previously familiar.
- Pitbull attacked, jumping up to the face
- Fell 10 feet off the deck
- Emergency spine decompression for fractured L1
CONCLUSION
Summary

- Dog bites are very common, but usually minor.
- Children are disproportionately affected.
  - Education is crucial.
- Bites to head/neck among the most common.
  - More often requiring intervention.
- Frequency decreasing in recent years.
- All dogs have the propensity to bite.
- Some breeds are more dangerous* than others (PBT, Rottweiler, German Shepherd, Chow).
- Fatalities rare, but catastrophic.

*Not a comment on “temperament”
Call to Action

- Educate public about dog safety
- Educate schools, patients, and trauma system about prevention strategies
- Advocate for accurate reporting to facilitate further research
- Community action
  - Improve existing “aggressive dog” legislation
  - Breed specific legislation for Chattanooga/Southeast Tennessee
References

- [PubMed: 18836045]
- Lakestani N, Donaldson ML. Dog Bite Prevention: Effect of a Short Educational Intervention for Preschool Children. PLOS ONE. August 2015. DOI:10.1371/journal.pone.0134319
Thank you

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QUESTIONS?