

Appendix II

Section 2 Case Information

Section 2 of the questionnaire contained detailed case information on the approximate date of the case; the species, breed, age, and gender of the animal involved; the features that allowed recognition of or raised suspicion of NAI; whether this was a single episode or involved multiple episodes, and the outcome of the case.

Date

The vast majority of the cases submitted did not provide exact dates of when the animals were seen. It was seasons or quarters of the year that were provided along with a few actual months, so the months/seasons/quarters were categorized into quarters 1-4. Some of these NAI cases date back to over 20 years ago, which leads to the assumption that those particular cases stuck in the minds of the veterinarians for whatever reason. Perhaps these were the only NAI cases observed by the respondent or perhaps the cases left an indelible impression with them.

Not every case had a month or year associated with it, but Tables 1-3 summarize the information for those cases that did provide some date information.

Quarter	Number of Cases
1	40
2	20
3	29
4	31

<u>Year</u>	<u>Number of Cases</u>
1979	1
1981	1
1986	2
1987	2
1989	3
1990	5
1991	1
1992	7
1993	5
1994	4
1995	7
1996	10
1997	8
1998	10
1999	13
2000	19
2001	16
2002	62
2003	22

Not every year had a month, quarter or season associated with it. Only those dates that had both a month/quarter/season and a year are included in the following table.

		Quarter of year				Total
		1	2	3	4	
Case year	1989	3	0	0	0	3
	1990	0	1	0	0	1
	1992	1	1	1	1	4
	1993	0	1	0	0	1
	1994	0	0	0	1	1
	1996	0	0	0	1	1
	1997	1	0	0	1	2
	1998	1	1	1	1	4
	1999	1	1	0	2	4
	2000	3	1	2	2	8
	2001	0	0	5	7	12
	2002	8	14	20	15	57
	2003	22	0	0	0	22
Total		40	20	29	31	120

Species and Age Distribution

Table 4 displays the species and age distribution of the suspected NAI cases for both dogs and cats. There were an additional 5 cases involving rabbits. As might be expected, the majority of both dogs and cats were between the ages of 7 months and 2 years when the abuse occurred. This is a peak time when animals are full of energy and owners are training their animals. It is also an age when many animals are dropped off at shelters or the Humane Society because of “behavioral problems” that the owner can’t deal with effectively. Animals have outgrown their cute puppy and kitten stages at that point and thus lose their attractiveness to some families.

Age	Number of cases	
	<u>Dogs</u>	<u>Cats</u>
	Under 12 weeks	10 (7.4%)
3 to 6 months	31 (22.8%)	16 (22.2%)
7 months to 2 years	45 (33.1%)	24 (33.3%)
Over 2 years	41 (30.1%)	15 (20.8%)
Unknown	9 (6.6%)	6 (8.3%)
TOTAL	136	72

Gender Distribution

As for the gender distribution of the animals involved in NAI cases, 80 (nearly 58.8%) of the 136 dogs were males and 51 of the 80 (63.8%) were intact males. Cats did not appear to have a gender bias when it came to abuse and neglect. Remember, however, that this distribution is strictly from the limited number of cases reported by our sample group within the State of Colorado. It cannot be generalized to the pet population as a whole either in Colorado or in the nation. Table 5 displays the gender distribution for both canines and felines involved in NAI cases in this study.

Gender	Number of cases	
	Dogs	Cats
	Female	24
Spayed female	19	16
Male	51	17
Neutered male	29	13
Unknown	13	14
Total	136	72

Breeds with NAI Cases

It is probably of no surprise that Pit Bull terriers were at the top of the most frequently listed dogs in the NAI cases documented in this study since they are often owned by people who are more likely to be involved with gangs and/or illegal activities such as dog fighting. Although generally cared for at home after a dogfight, there were 15 cases of Pit Bulls brought in for treatment at a veterinary clinic.

What may be surprising is that there were an equal number of Labradors or Lab mixes as Pit Bulls. There were 15 each of Labs and Pit Bulls identified out of the 136 dogs documented. Next on the list were 9 dogs of mixed breeds, 7 each of Golden Retrievers and Australian Shepherds, and 6 each of German Shepherds and Cocker Spaniels. Those 6 breeds plus the crossbred dogs totaled nearly half (47.8%) of all the dogs in the study. Popularity of the breed in today's society may be one of the primary reasons that Labs, Golden Retrievers, Australian Shepherds, German Shepherds and Cocker Spaniels were listed so frequently. Behavioral issues in Cocker Spaniels plus high activity levels of the other dogs may also be a factor.

Table 6. Number of cases of NAI in dogs, according to breed	
Breed	<u>Number of cases</u>
Australian Cattle Dog	2
Australian Shepherd	5
Australian Shepherd mix	2
Basenji	1
Basset Hound	1
Beagle	1
Border Collie mix	2
Boston Terrier	2
Boxer	1
Chesapeake Bay Retriever	2
Chihuahua	2
Cocker Spaniel	5
Cocker Spaniel mix	1
Collie	1
Coonhound	1
Dachshund	3
Dachshund mix	1
Doberman	1
German Shepherd	6
German Shorthair Pointer	1
Golden Retriever	7
Irish Setter	1
Italian Greyhound	1
Jack Russell Terrier	2
Lab	7
Lab mix	7
Lab/Australian Shepherd mix	1
Lhasa Apso	1
Malamute	1
Maltese	1
Mini Dachshund	1
Mini Pinscher	1
Mix	9
Pekingese	1
Pit Bull	12
Pit Bull mix	2

Pit bull/Lab mix	1
Pointer mix	1
Pomeranian	3
Poodle	3
Poodle mix	1
Pug	1
Rottweiler	2
Rottweiler mix	1
Samoyed	1
Sharpei	1
Sheltie	1
Shepherd mix	1
Shih Tzu	2
Siberian Husky	1
Siberian Husky mix	1
Spaniel mix	1
Springer Spaniel	1
Terrier	1
Terrier mix	1
Toy Poodle	3
Unknown/unidentified	11
Whippet	1

Features that Raised Suspicion or Allowed Recognition of NAI

In terms of the features that raised suspicion or allowed recognition of NAI, the answers were categorized as follows:

- A particular person was implicated (member of household, owner self-admission, stranger, neighbor, etc.)
- Features in the history presented with the case (lack of explanation, history doesn't match the injuries, witness available, inconsistent stories, etc.)
- Reporting agency involvement (animal control, police, stranger/neighbor)
- Behavior of the owner, the animal or a friend of the owner
- Injuries (type of injury, age of injury, sexual abuse)
- Miscellaneous (failure to seek veterinary attention, Munchausen syndrome by proxy)

Table 7 for dogs and Table 8 for cats list the frequency of responses (not the number of animals) for each of these broad categories. Note that the results of the NAI cases involving rabbits are included in all the tables not specifically related to dogs or cats.

Table 7. Features causing suspicion/allowing recognition of abuse in dogs	
Feature	Number of occasions recorded
A particular person was implicated	
Boyfriend/husband/partner/adult family member	27
Child in family	12
Lodger/neighbor/stranger/other	6
Owner (self admission)	18
Owner's statement, stating NAI but not identifying the perpetrator	2
<i>Total</i>	<i>65</i>
Features in history:	
Discrepant history (e.g., changed with telling or from person to person)	2
History inconsistent with injury (e.g., history too severe for history offered)	25
Lack of explanation for injury	4
Lack of history of road traffic accident/possible accident	1
Previous injury/death in another animal involving same owner/household	6
Violence in the home	11
Witness available	14
<i>Total</i>	<i>63</i>
Reporting agency referral/involvement	
Animal control	2
Police	2
Other rescue person/group (please specify): anonymous/neighbor/stranger	5
<i>Total</i>	<i>9</i>
Behavior of owner/animal	
Owner	6
Animal	2
Friend of owner	1
<i>Total</i>	<i>9</i>
Injuries	
Age of injury	2
Repetitive injury	26
Sexual abuse	4
Type of injury	58
<i>Total</i>	<i>90</i>
Miscellaneous	
Failure to have veterinary attention/not usual veterinarian	10
Suspected Munchausen syndrome by proxy	1
<i>Total</i>	<i>11</i>

Table 8. Features causing suspicion/allowing recognition of abuse in cats	
Feature	Number of occasions recorded
A particular person was implicated	
Boyfriend/husband/partner/adult family member	16
Child in family	11
Lodger/neighbor/stranger/other	7
Owner (self admission)	10
<i>Total</i>	<i>44</i>
Features in history:	
Discrepant history (e.g., changed with telling or from person to person)	1
History inconsistent with injury (e.g., history too severe for history offered)	12
Lack of explanation for injury	4
Lack of history of road traffic accident/possible accident	1
Previous injury/death in another animal involving same owner/household	3
Violence in the home	4
Witness available	6
<i>Total</i>	<i>31</i>
Reporting agency referral/involvement	
Humane Society	1
Other rescue person/group (please specify): anonymous/ neighbor/ stranger	2
<i>Total</i>	<i>3</i>
Behavior of owner/animal	
Friend of owner	1
Injuries	
Repetitive injury	7
Sexual abuse	5
Type of injury	34
<i>Total</i>	<i>46</i>
Miscellaneous	
Failure to have veterinary attention/not usual veterinarian	3

Particular Person Implicated in NAI

Numerous cases noted abusive boyfriends/husbands and in one case it was noted that the wife and her daughter left home due to abuse. A human family member was abused in another case and informed the veterinarian that the dog was also abused. A man battered a baby to death in the same family in which a dog was abused 3 months earlier. Another respondent remembered a particular case because a child later died in the home of abuse/neglect. A daughter's boyfriend admitted to killing multiple cats in her family. One woman begged the veterinarian not to report her husband for kicking their Cocker Spaniel so severely that the dog had to be euthanized because she was afraid her husband

would beat her. A female owner who was bruised and disheveled waited a week to bring in her domestic shorthaired cat with multiple pelvic fractures. An abusive husband or boyfriend was suspected, but the case was lost to follow-up. One woman filed a report against her boyfriend after he beat her German Shepherd dog.

It is not always males who abuse animals. In one case it was the owner's girlfriend who admitted to physically abusing the Pit Bull puppy who was euthanized due to the extent of his injuries (fractures of the skull, ribs, radius and ulna). The girlfriend was later prosecuted, jailed and fined.

A relatively high number of owners (18 involving dogs and 10 involving cats), admitted to causing the injury themselves, mostly in the course of "disciplining" the animal or out of anger. One female owner got mad at her dog, kicked him in the abdomen and killed him. Another admitted to kicking the dog into a wall the previous day to discipline him. A veterinarian confiscated a cat and adopted it when the owner admitted to not feeding it because he didn't want to clean up diarrhea. One owner stabbed his Basset Hound puppy in the head with a steak knife when the puppy stole a steak off the owner's plate. Another man fractured his Terrier puppy's ribs when it ate food that was left on the floor.

A Miniature Dachshund presented with lameness to one leg, but the "owners seemed very concerned about 'internal injuries'. The owner said he was frustrated with the children and that he tossed the dog on a pillow. We believe there were possible fractures of bones in a hind leg, but owner would not allow any diagnostics or treatment. Owner said he would take the dog to his 'regular' vet."

One particularly disturbing case involved a cat brought in by the parents of a 23-year-old male who hanged their cat inside the house and lit it on fire. Younger children in the family found the cat. Up to this point the parents had been trying unsuccessfully to get their son committed. A police report was filed and the son went to court. Fortunately, the cat survived after sustaining burn injuries over most of her body.

Strangers or neighbors were implicated in 6 cases involving dogs and 7 cases involving cats. There was one case of cat mutilation noted where the owners found their cat with its chest and abdomen opened from stern to stern and the bladder and kidneys were removed. The perpetrator was unknown.

A couple of other cases noted problems with the neighbors. A gasoline drenched cat escaped before the neighbor could light it on fire. One neighbor shot a client's dog in its genitalia for attempting to breed his intact female dog that was in heat and chained in the front yard with no fence. The neighbor was charged with cruelty to animals. Another case involved a suspected gang initiation when a pregnant Pit Bull was stabbed in back while confined to her yard. There were no arrests. She gave birth the day after the stabbing. One client found his Lab mix dog dead on his porch with blood around it. He reported having trouble with a neighbor.

Kids stole a female Pit Bull and put her in fights around the neighborhood. They were caught and taken to juvenile court where the veterinarian testified.

It is important to note that 12 children in the cases involving dogs and 11 children in the cases involving cats were implicated as the person causing the injury given that many

perpetrators of child and spousal abuse purposefully injured animals as children. Although exact ages of the children were not known in each case, respondents wrote down their best guess in many cases. There were 5 alleged perpetrators under the age of 6 years, an additional 5 between the ages of 6 and 12 years, and 8 between the ages of 13 and 21 years.

Some of the following illustrations of the cases submitted are examples of a child acting out in response to the family environment. They were angry with a family member and took it out on the young pet. Others cases involved young children who, when left unsupervised with the family pet, injured the animal because they didn't know the consequences of their actions. Yet these instances were all felt to be non-accidental to the reporter. Certainly the adolescents involved in NAI should have known that their actions would result in harm to the animal.

The father was an alcoholic in one case where a young child admitted to kicking the family dog and breaking its ribs. An 11-year-old boy who was mad at his parents beat the family Pug puppy, breaking her femur. A "very sulky" 17-year-old girl admitted twisting and breaking her 3-6-month-old Labrador puppy's leg because she was mad at it. A veterinary staff member adopted a kitten that was purposely sat on by a 2-year-old girl after her 10-year-old brother locked her in the kennel with the kitten.

In another, a 10-12 year old son shook and dropped the family's Jack Russell Terrier puppy, which had to be euthanized after 3 days of intense supportive care due to the injuries sustained. The dog had presented comatose with severe head trauma.

One mother reported her child kicked their kitten then threw it down the stairs. A new family adopted it out of safety concerns for the animal.

A young child intentionally snapped the hind leg of the family's Pomeranian puppy. A 5-year-old tossed her young Cocker Spaniel puppy in the air causing ataxia. Another 5-year-old repeatedly dropped a young Labrador puppy from a third-story window. The puppy was euthanized due to the extent of his injuries.

Adolescent males repeatedly threw a young kitten against a wall resulting in multiple pulmonary contusions, dyspnea and bruises. The kitten recovered and was adopted by another family. One owner's daughter admitted her brother regularly kicked the family's young cat, which died of systemic symptoms consistent with a toxin.

In another case, the children in the family may have been responsible for multiple sex abuse episodes against their elderly dog, which resulted in the dog's euthanization to avoid future episodes.

One case reported a severe head injury to a small kitten allegedly caused by a teenage son of the owner some years ago. The history presented did not make sense to the veterinarian who also noted that a similar episode occurred earlier with a dog in the family. According to the respondent, "this person now regularly beats his common law wife."

One case noted, "Abuse was performed by a child. Parents observed incident after it had occurred. The injuries seemed excessive for the normal child." The child (age unknown) had glued the family kitten's eyes shut with Elmer's Glue, tied a telephone

cord around its neck and legs, and lacerated its ears and neck with scissors. The kitten survived.

Features in the History

Features in the history provided by the person presenting the animal for care are also an important element in the picture when diagnosing NAI cases.

One owner witnessed a child beating his/her young Boxer with a bat causing front leg lameness and bruising. It is unknown to whom the child belonged or the age of the child.

The following are other witnessed abuses:

- One respondent saw an owner kicking his dog, yanking it out of truck bed, and dragging it toward entry door of the clinic.
- A witness saw the owner of a Rottweiler hit the dog on its head and kick him under the chair.
- An owner saw her ex-boyfriend kick her Australian Shepherd dog in the face.
- A neighbor witnessed a rock being dropped on a young Boston Terrier's head.
- Another neighbor witnessed a young Jack Russell Terrier being thrown over the fence and sustaining a fractured femur.
- Some witnesses rescued a young crossbred dog that sustained a fractured femur from being kicked by a group of boys.

Behavior Causing Suspicion

The behavior of the owner, animal or friend of the owner can also be a diagnostic feature of NAI. In most of the cases where behavior was noted as a feature that caused suspicion, it was the owner who aroused suspicion. In one case the owner abandoned his/her Beagle in the exam room. The Beagle, who had 2 puncture wounds in the left shoulder that penetrated the chest cavity, was euthanized and the case was reported to animal control.

Another owner, who gave an inconsistent history, abandoned their Lab mix puppy at the vet's office. The puppy survived its fractured radius and ulna.

In another case, the attitude of the owner and the type of injury (deep bruising on right flank) to a young German Shepherd dog were enough for one respondent to label the case as NAI.

In one case the owner, who was very nervous and crying, stated that his Poodle had fallen down some stairs. The respondent suspected that he had thrown the dog against something that caused the severe head trauma, hyphema and scleral hemorrhage. A friend of the owner initially confirmed the veterinarian's suspicions and the owner later admitted he lost his temper. The dog survived.

A Dachshund puppy died of his injuries caused when the owner's boyfriend threw him against the wall. At the time of the exam, the boyfriend was extremely nervous and said that the puppy fell down the stairs. The puppy's owner called the office later with the

real story. It is believed she filed charges against the boyfriend, but the veterinarian was never called to testify.

One respondent was suspicious when a puppy with 2 unusual fractures to different legs (right front and left hind) in a 6-week period was presented for treatment by an owner with an aggressive temperament. Contact was lost after several weeks, so the long-term outcome to the patient was unknown in that case.

A drunken boyfriend brought in an Australian Shepherd dog with a knife wound to the left thorax. The respondent suspected a domestic dispute where the dog was used to hurt the gay companion.

A Siamese kitten suffered 4 episodes of NAI by the owner's boyfriend/fiancé before it died of its injuries. The initial injury was a radius/ulna fracture followed by 3 episodes of head injuries, the final of which was fatal. The owner was always gone when the injuries occurred and the man had unlikely stories for each episode. According to the veterinarian, she was afraid for the woman who eventually married the man.

One respondent was suspicious due to the location and type of injuries, but also because of the reaction of the owner's roommate when he found out how injured the cat was (fractures of the mandible and ribs, swollen eye and conjunctival/scleral hemorrhage). His story was that he found the cat injured, but he cried and looked guilty. The outcome to the patient remains unknown since they left the clinic to go to another veterinarian because of the cost to treat the injuries.

Type of Injury

As to the specific type of injury that would cause suspicion, Tables 9 and 10 show that most were superficial injuries followed in frequency by fractures or locomotor injuries. There were 2 dogs and 4 cats that were injured by shotguns.

Number of Injuries					
Location	Superficial Lesions	Deeper lesions	Fractures/ locomotor injuries	Internal thoraco-abdominal lesions	Intra-cranial/spinal conditions
Head/neck	34	15	9		13
Eyes	33				
Thorax	13	1	15	8	
Abdomen	16			16	
Limbs	17	3	72		
Skin, widespread	16				
Miscellaneous	20				
Totals	149	19	96	24	13

Number of Injuries					
Location	Superficial Lesions	Deeper lesions	Fractures/ locomotor injuries	Internal thoraco-abdominal lesions	Intracranial/spinal conditions
Head/neck	17	4	8		9
Eyes	23				
Thorax	6	1	6	5	
Abdomen	8			6	
Limbs	10	1	28		
Skin, widespread	8				
Miscellaneous	15				
Totals	87	6	42	11	9

Case Outcome

Table 11 displays the outcomes of the 213 cases submitted. Approximately the same percentage of dogs (67.6%) and cats (66.7%) survived in the cases submitted. A higher percentage of cats (19.4%) than dogs (10.3%) died due to their injuries, but a higher percentage of dogs (13.2%) than cats (2.8%) were euthanized.

Some outcomes were unknown because this question was not answered on the survey.

Table 11. Outcome of all cases of abuse to the animal				
Species	Survived	Died	Euthanized because of injuries	Unknown
Dog (136 total)	92 (67.6%)	14 (10.3%)	18 (13.2%)	12 (8.8%)
Cat (72 total)	48 (66.7%)	14 (19.4%)	2 (2.8%)	8 (11.1%)
Rabbit (5 total)	2 (40%)	2 (40%)		1 (20%)

Specific Injuries in Dogs

The next 5 tables are a list of the superficial, deeper, fracture, thoracoabdominal and other injuries that were submitted for NAI cases involving dogs. Each injury within each section is listed in descending order of frequency found across all canine cases. Both dogs and cats had a higher incidence of superficial injuries than other types of injuries. All of these tables record the number of injuries, not the number of dogs and cats.

Scleral/conjunctival hemorrhage, the most common superficial injury documented, is practically diagnostic of NAI in animals since it occurs when the animal is choked or strangled.

Most of the puncture wounds came from dogfights, although one case involved a pitchfork injury to the abdomen of a young Australian Cattle dog that was seen on 2 occasions. It survived the 2-inch long festering wounds from the first attack, but died at the second follow-up from a large blunt injury to an unspecified section of the body.

One adult Samoyed was abandoned, or as the respondent wrote “released from the ‘care’ of its owners”, undernourished and had maggots infesting wounds on its leg. It survived. It is unknown who presented the animal for treatment.

A very thin Siberian Husky puppy with a poor coat presented with a painful left thorax and bruising after the owner’s boyfriend threw the puppy hard into a wall because it had diarrhea. It survived.

A young Pit Bull mix was found in an airline-type kennel in a backyard. According to the case, “The dog was in such a panic the kennel was rolling around in the yard and down a hill. There were multiple minor injuries that were more likely self-inflicted rather than by an individual directly. Certainly a case of neglect. Was without food or water for several hours. His coat was filthy and covered entirely with diarrhea and urine. He suffered from three broken teeth, multiple lacerations over his cranium, face and gums as well.

Table 12. Superficial injuries and signs of NAI in dogs	
Location	Number of occasions recorded
Head/Neck	
Head injury/trauma (unspecified)	11
Swelling	6
Lacerations	6
Bruising/wounds	4
Collar wound (constriction)	4
Grazes/abrasions	3
Epistaxis	1
Stab wounds	1
Eyes	
Scleral/conjunctival hemorrhage	15
Anisocoria/pupils fixed/dilated	5
Intraocular hemorrhage	2
Pupils constricted	2
Swelling	2
Conjunctival edema	1
Congested conjunctiva	1
Blindness	1
Eyelid edema (strangulation)	1
Hyphema	1
Lacerations	1
Unspecified eye injuries	1
Thorax	
Bruising	5
Stab wounds	4
Lacerations	3
Puncture wounds, multiple	1
Abdomen	
Bruising/wounds	8
Lacerations	3
Stab wounds	2

Abdominal pain	2
Puncture wounds, multiple	1
Limbs	
Lacerations	4
Bruising/wounds	4
Gunshot wounds	2
Grazes/abrasions	2
Swelling	1
Incised wounds	1
Feet	
Lacerations	1
Swelling	1
Generalized	
Multiple puncture wounds	8
Bruising/wounds	3
Coat filthy, covered with diarrhea and urine	1
Large blunt trauma (dog died)	1
Skin, widespread bruising	1
Stab wounds	1
Miscellaneous	
Burns/scalds, unspecified area	1
Diarrhea	1
Wounds infested with maggots	1

Table 13 counts the number of deeper injuries recorded in dogs. Eight of the injuries involved the mouth. One case was noted as probable neglect instead of NAI. A crossbred Pointer, tethered in back yard for long time and found by its owner, was bound by its head, neck and legs trying to chew through the cords. There was tissue necrosis to the head and neck.

In the case involving the chemical burn on a Golden Retriever puppy, the respondent wrote that he/she had received a “tip from another local vet that this family had owned 2 previous Golden Retriever puppies that had died suspiciously. He reported they had gotten a new puppy and may be coming to our practice.” The puppy presented with excoriation on its muzzle, a burn on its tongue, an old small scleral hemorrhage and fractured ribs. The puppy survived.

A young German Shepherd dog used as a watchdog in a junk yard presented with exposed radius and ulna that had necrotic bone conditions. Apparently the dog “injured”

(quotation marks used by veterinarian) the leg some weeks before admission to the animal hospital. Animal cruelty investigators were dispatched. The dog recovered after the leg was amputated. It is unknown who presented the dog for treatment since the case notes indicated that the owners never sought medical attention.

A Sharpei was euthanized due to the extent of the sloughing of skin and muscle down to the bone on both his front legs. The injuries “had to be seen by the owner for several days to weeks for this type of damage” to occur from “some kind of stricture/ligation”.

Table 13. Deeper injuries and signs of NAI in dogs	
Location	Number of occasions recorded
Mouth	
Teeth broken, fractured or damaged	3
Bleeding gums	2
Avulsion of tongue (Pit Bull fight)	1
Lacerations on lips	1
Chemical burns on tongue	1
Neck	
Subluxation	1
Tissue necrosis due to cords	1
Head	
Hematoma	1
Mandibular swelling	1
Osteomyelitis	1
Thorax	
Extremely painful thorax	1
Limbs	
Hematoma	1
Tissue necrosis due to cords	1
Necrosis to radius/ulna due to exposure over period of weeks	1
Muscle/skin sloughed down to bone from stricture/ligation	1

In the cases involving fractures to canines (see Table 14), by far the most common were femoral fractures, followed by tibial and rib fractures. Radius/ulna fractures were

the fourth most common specific fracture listed, but there were 9 unspecified limb fractures.

Table 14. Fractures and locomotor injuries and signed of NAI in dogs	
Location	Number of occasions recorded
Head and Neck	
Skull fracture	4
Mandibular fracture	3
Thorax	
Fractured ribs, new	12
Fractured ribs, both new and old	2
Fractured thoracic/lumbar vertebrae	1
Limbs/Pelvis	
Fractures	
Femur	17
Tibia	13
Radius/ulna	8
Metacarpus	2
Pelvis	2
Fibula	2
Humerus	2
Metatarsus	1
Shot in scapula with nail gun	1
Old factures	
Femur	1
Unspecified fractures	
Limbs	9
Forelimbs	4
Hind limbs	2
Other locomotor injuries	
Lame	5
Amputation of forelimb	1
Unspecified limb injury	1

Dislocated hip	1
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Table 15 describes the internal thoracoabdominal injuries documented in suspected NAI cases involving dogs. It was the nature of the injuries that caused one respondent to declare a case of NAI when a Poodle mix presented with rib fractures penetrating the thorax and damaging the liver. A portion of the liver protruded from the round thoracic wound. The dog died from the injuries.

Table 15. Internal thoracoabdominal injuries and signs of NAI in dogs	
Location	Number of occasions recorded
Thorax	
Pneumothorax	3
Ruptured diaphragm	2
Collapsed lung	1
Harsh lung sounds	1
Pulmonary contusions	1
Abdomen	
Abdominal hemorrhage	5
Liver rupture	3
Bladder rupture	2
Unspecified abdominal injuries	2
Abortion	1
Hematuria	1
Kidney rupture	1
Liver protruding from thoracic wound	1

Table 16 displays the rest of the injuries and signs of NAI in dogs that do not fall into the previous categories. The sexual trauma cases are discussed in a later section (see Sexual Abuse/Bestiality).

Two of the non-sexual trauma cases involved gunshot wounds to the inguinal area. One case involved an elastic band around the scrotum of a 4-month old Lab puppy in an attempt to home neuter.

The dogs that were emaciated involved cases of long-term neglect, which is a passive act of abuse.

Table 16. Other injuries and signs of NAI in dogs	
Location	Number of occasions recorded
Intracranial/spinal conditions	
Comatose/loss of consciousness	5
Concussion	2
Seizures	2
Ataxia	1
Hemorrhage from ears	1
Horner's Syndrome	1
Swelling	1
Miscellaneous	
Non-sexual trauma, male genitalia	3
Emaciated/thin	4
Given drug/poison	2
Sexual trauma, female genitalia	2
Sexual trauma, male genitalia	2
Behavioral signs	
Very timid with humans	1

Specific Injuries in Cats

The next 5 tables are the specific injuries submitted for NAI cases involving cats. *These are the number of injuries recorded, not the number of cats.*

Table 17. Superficial injuries and signs of NAI in cats	
Location	Number of occasions recorded
Head/neck	
Gunshot wounds	3
Head injury/trauma (unspecified)	3
Lacerations	3
Bruising/wounds	2
Burns/scalds	2

Epistaxis	2
Swelling	2
Eyes	
Anisocoria/pupils fixed/dilated	6
Scleral/conjunctival hemorrhage	5
Blindness	2
Swelling around eyes	2
Bupthalmic eye	1
Enucleation/puncture/rupture/loss	1
Eyes glued shut with Elmer's Glue	1
Intraocular hemorrhage	1
Ocular contusion/Blepharospasm with keratitis	1
Prolapse	1
Pupils constricted	1
Severe trauma	1
Thorax	
Bruising/wounds	3
Burns/scalds	1
Elastic band constriction (around entire thorax)	1
Incised wounds	1
Abdominal/ inguinal	
Abdominal pain	2
Bruising/wounds	2
Burns/scalds	2
Incised wounds	1
Lacerations	1
Limbs	
Lacerations	3
Bruising/wounds	2
Burns/scalds	2
Swelling	1
Feet	
Burns	2
Generalized findings	
Generalized bruising/wounds	1

Grazes/abrasions	1
Gunshot wounds	1
Skin, widespread bruising	1
Miscellaneous findings	
Burns/scalds, unspecified area	3

A Siamese mix kitten was rescued from adolescent males who were repeatedly throwing him against a wall. The kitten recovered from multiple pulmonary contusions, bruises and dyspnea and was adopted. “Accidentally stepped on a couple of weeks later, but recovered from that as well! Doing great.”

A young Himalayan mix kitten was brought in unable to walk with a fever over 107 degrees. “When stable sent to orthopedic surgeon for repair of suspected fractures of both hind legs. Multiple bite wounds found on shaving. Both femurs fractured and surrounded with pus. Suspect kitten was pulled forcibly from dog’s mouth. Unknown how she got there, but kids involved (ages approximately 8-14). Injury longstanding without treatment. Relinquished to clinic. One hind leg was amputated and the other pinned. Adopted by a massage therapist. Did beautifully.”

Table 18. Deeper injuries and signs of NAI in cats	
Location	Number of occasions recorded
Mouth	
Bleeding gums	2
Head	
Mandibular swelling	1
Hematoma	1
Abdomen	
Dyspnea	1
Limbs	
Infected dog bites/pus	1

Table 19 shows that, as with dogs, femoral fractures are by far the most common limb fracture found in cats involved in suspected cases of NAI. With smaller, more delicate bones, mandibular and rib fractures were also common. Many of the injuries occurred when the kittens and cats were thrown against walls.

Table 19. Fractures and locomotor injuries and signs of NAI in cats	
Location	Number of occasions recorded
Head/neck	
Mandibular fracture	6
Neck fracture	2
Thorax	
Fractured ribs, new	5
Fractured ribs, both old and new	1
Limbs/Pelvis	
Fractures	
Femur	9
Tibia	3
Pelvis	2
Radius/ulna	2
Foot	1
Humerus	1
Metatarsus	1
Unspecified fractures	
Limbs	2
Forelimbs	2
Hind limbs	2
Locomotor injuries	
Stifle ligament injury	1
Amputation: hind limb	1
Pelvic damage	1

Table 20 displays the internal thoracoabdominal injuries in kittens and cats. One young kitten arrived at the clinic very debilitated and thin, but still purring. She was euthanized due to the extent of her injuries; a ruptured urinary bladder and bruised liver, spleen and lungs were discovered during the necropsy. Questioning of the people who brought her in revealed that a fraternity of athletes had kicked the kitten like a football.

Table 20. Internal thoracoabdominal injuries and signs of NAI in cats	
Location	Number of occasions recorded
Thorax	
Pulmonary contusions	4
Ruptured diaphragm	1
Abdomen	
Bladder rupture	2
Abdominal hemorrhage	1
Kidney rupture	1
Renal/liver impairment	1
Spleen rupture	1

Table 21 lists the intracranial/spinal, tail and miscellaneous injuries and the behavioral signs of distress listed in the cases observed and documented by the veterinarians. Sections 3 and 4 of the survey had some additional injuries (such as more incidents of tail degloving) noted by respondents that are not included in this table because they were not included as cases.

One gasoline-drenched cat, which the neighbor intended to burn (according to the respondent), got away and came home. The cat presented with singed whiskers, but also with systemic illness involving renal/liver impairment, dehydration and anorexia. It survived.

A young, domestic shorthaired, male kitten had “ruptured, everted tissue on scrotum. When anesthetized and shaved, massive bruising around entire posterior noted. Suspect he had been kicked hard; tissue was remnant of testicle. Adolescent males in house admit to playing soccer in basement, but denied knowledge of how kitten came to be injured. Possibly accidental. Kitten was neutered and recovered. Home monitored by clinic for follow up for approximately 2 months. Doing OK.”

Table 21. Other injuries and signs of NAI in cats	
Location	Number of occasions recorded
Intracranial/spinal	
Comatose/loss of consciousness	2
Concussion	2
Brain damage with collapse	1

Cranial nerve deficits	1
Head shakes	1
Seizures	1
Tremors	1
Tail	
Degloving	3
Dislocation	1
Miscellaneous	
Emaciated/thin	3
Sexual trauma, female genitalia	2
Sexual trauma, male genitalia	2
Dehydrated	1
Given drug/poison	1
Non-sexual trauma, female genitalia	1
Non-sexual trauma, male genitalia	1
Strangulation/hanging	1
Behavioral signs	
Depression/dullness	2
Psychological damage	1

Repetitive Injury in Dogs

Sometimes the injuries to an animal are much more serious and repetitive. One Golden Retriever puppy was presented with a swollen muzzle, 2 femoral head fractures, a tibial fracture and a fractured penis. Radiographs also revealed multiple healed rib fractures. After this dog was euthanized, the respondent learned he was seen at another clinic for facial trauma injuries. The respondent reported the client to authorities because the client had 2 other dogs with similar fractures, head trauma and burns. The dogs were never taken away from the owner because no proof was found that someone had actually seen the abuse despite the physical evidence.

One respondent noted that many of the people who abuse animals and take them for veterinary care utilize multiple clinics over time, so it is often difficult to record repetitive injuries in the animals they see. In one case noted in Table 22 the veterinarian learned after the dog was euthanized that it had been seen at another clinic with facial trauma. The owner, who had other dogs with similar fractures and injuries, was reported but not prosecuted despite the physical evidence due to lack of eyewitnesses to the incidents.

There were 32 cases that reported repetitive injuries to puppies and dogs. Four involved puppies less than 12 weeks of age, 10 were 3-6 months old, 8 ranged in age from 7 months to two years, 9 involved dogs 2 years of age and older and in one case the age of the dog was unknown. Of the 32 cases, 16 survived, 4 died of their injuries, 10

were euthanized due to the extent of their injuries and 2 outcomes were unknown. Pit Bulls were involved in 6 of the cases; 5 involved crossbred dogs, 4 involved Golden Retrievers and 2 involved German Shepherd dogs. In at least 5 cases someone was arrested and/or imprisoned.

Case	Age	Sex	Details reported by respondent	Outcome
1	<12 wks	M	Owner said Lab puppy jumped off bed. Extremely scared of men.	Survived
2	<12 wks	M	Reported owner to local animal welfare after three episodes of long bones fractures (both femurs plus radius and ulna)	Survived
3	<12 wks	M	Came in twice one month apart for lameness. Client said kids dropped the crossbred puppy.	Survived
4	< 12 wks	M	Very few details on this case. Pomeranian puppy presented with head trauma, pinpoint pupils and comatose. Parent informed vet that this was case of multiple episodes of NAI.	Euthanized due to injuries
5	3-6 mos	M	Vet believes this to be a case of poor care and neglect rather than NAI. Initially presented with femur or tibia fracture (can't remember which). Leg was splinted. Two weeks later the dog presented with the same leg re-fractured after the splint was damaged. Vet was upset with clients, talked with them and they took good care of the crossbred dog after that.	Survived
6	3-6 mos	M	Crossbred puppy presented with two unusual fractures to different legs in six weeks. Noted aggressive temperament of owner.	Survived
7	3-6 mos	M	Two different fractures three weeks apart in same leg. Had sawdust down first cast.	Survived
8	3-6 mos	M	Cocker Spaniel puppy had broken ribs and scleral and retinal hemorrhages in both incidents. Owners could not explain injuries, so vet refused to return puppy to owners. Puppy adopted by new family.	Survived
9	3-6 mos	M	Pit Bull puppy initially presented with fractured radius/ulna. One month later presented unconscious with multiple skull and rib fractures. Girlfriend of owner admitted to abuse. She was prosecuted, jailed and fined.	Euthanized due to injuries
10	3-6 mos	M	After the Golden Retriever was euthanized, vet found he was seen at another clinic for facial trauma. Dog had multiple episodes of fractures to femur, tibia, penis, ribs and muzzle. Vet reported client, who had two other dogs with similar fractures, head trauma, burns, to authorities. Dogs were never removed from owner due to lack of proof despite physical evidence.	Euthanized due to injuries
11-13	3-6 mos	M	Three different Golden Retriever puppies in same household within six month period had multiple fractures to ribs and limbs, burns, abdominal blunt trauma, facial swelling and scleral hemorrhage. The first two died.	1. Euthanized due to injuries 2. Died of injuries 3. Survived
14	3-6 mos	M	Pit Bull/Lab mix first presented with fractured tibia, followed two weeks later by fractured skull, ribs and teeth plus numerous other injuries.	Euthanized due to injuries
15	7 mos - 2 yrs	SF	Border Collie mix presented with two fractures on separate occasions both caused by owner accidentally.	Survived
16	7 mos - 2 yrs	M	Human family member was also abused and informed us of the crossbred dog's abuse (multiple visits with fractured limbs, abrasions and hematomas).	Survived
17	7 mos - 2 yrs	NM	Pitchfork injury to abdomen first time, followed by large blunt injury second time when the Australian Cattle dog died.	Died of injuries

18	7 mos - 2 yrs	M	Four episodes of trauma to thighs of German Shepherd dog. Twice the same femur was fractured. On the final visit, the dog vomited over one pound of rotten meat and died suddenly of apparent toxic shock.	Died of injuries
19	7 mos - 2 yrs	M	Owner was found guilty of animal cruelty to numerous family dogs (Pit Bull fights) and sexual abuse to his family. He was sent to prison.	Euthanized due to injuries
20	7 mos - 2 yrs	M	Police euthanized Pit Bull, which was used in dogfights. Owner was arrested for operating a dog-fighting ring.	Euthanized due to injuries
21	7 mos - 2 yrs	NM	Both front legs of Whippet were broken two weeks apart while the dog was running in yard.	Unknown
22	7 mos - 2 yrs	F	According to owner Toy Poodle went outside, owner heard scream and dog came in three-legged (radius/ulna fracture) twice in eight-month period.	Survived
23	> 2 yrs	M	Husband arrested for animal sex abuse involving German Shepherd dog.	Survived
24	> 2 yrs	F	Dogfight wounds on Pit Bull. Resulted from illegal dog fighting for sport and profit.	Survived
25	> 2 yrs	NM	Witness saw owner hit the Rottweiler on the head and kick him under the chair.	Survived
26	> 2 yrs	Unkn own	Fenced-in Australian Shepherd had multiple bruises with no history of trauma. Owner works at vet's clinic; her boyfriend abuses her.	Survived
27	> 2 yrs	SF	Lhasa Apso had multiple fractured ribs, pneumothorax, bite wounds to abdomen and bruising on the head. Owner admitted that the boyfriend abused the dog.	Died of injuries
28	> 2 yrs	NM	Elderly crossbred dog presented twice within six months with severe hemorrhage from prepuce caused by insertion of object into it. Owners euthanized the dog because they did not want another episode and did not want to deal with the possibility that the dog was being 'raped', possibly by children in the family.	Euthanized due to injuries
29	> 2 yrs	M	Multiple injuries to this Dachshund over two-month period. Previous pet (whom vet did not see) died suddenly.	Euthanized due to injuries
30	> 2 yrs	F	Police euthanized Pit Bull, which was used in dogfights. Owner was arrested for operating a dog-fighting ring.	Euthanized due to injuries
31	> 2 yrs	SF	Munchausen Syndrome by Proxy case. Owner was giving Maltese doses of Tylenol.	Unknown
32	Un-known	M	Repeat injuries in this Shih Tzu including subconjunctival hemorrhage, leg fracture, rib fracture and ruptured urinary bladder. Adopted by vet; doing well.	Survived

Repetitive Injury in Cats

Table 23 lists the details of 11 NAI cases involving repetitive injury to kittens and cats. Six of those involved kittens that were 3- 6 months old, half of which died of their injuries. In 4 of the 11 cases the animals were not returned to the owners. Four cases involved boyfriends or roommates, 2 mentioned abusive relationships and 2 mentioned the involvement of children. One case involved repetitive sexual abuse of a kitten less than 12 weeks of age.

Case	Age	Sex	Details reported by respondent	Outcome
1	<12 wks	SF	First time boyfriend rolled on kitten while sleeping on fractured her foreleg. Second time boyfriend had another possible but unlikely explanation for the new injury. Owner was not present at the time of either injury.	Survived

2	<12 wks	SF	Taken away from clients after repeat episodes of severe ulceration of anal area and edema and bruising in facial and periorbital areas. Kitten quickly recovered when away from family; now doing great.	Survived
3	3-6 mos	SF	Kitten presented initially with cracked rib from "fall". Shortly after presented for abdominal pain. Finally presented with head trauma. Too many "accidents" within a short period of time. Kitten was not given back to the owner.	Survived
4	3-6 mos	M	Owner admitted to causing multiple injuries, including front and rear limb fractures, during discipline.	Survived
5	3-6 mos	M	Mom said child kicked kitten before throwing it down stairs, which resulted in a broken femur and contusions. Kitten was placed in another home due to safety concerns for animal.	Survived
6	3-6 mos	SF	Within a 3-4 month period, the owner's boyfriend presented the kitten four times (a limb fracture and three head injuries); owner was always gone when injuries occurred.	Died of injuries
7	3-6 mos	F	Kitten initially presented for fractured limb, followed within days by head injury and severe depression. Owners mentioned three other suspicious deaths to cats in the previous six months. Daughter's boyfriend confessed to killing all the cats.	Died of injuries
8	3-6 mos	F	History of severe head injury didn't make sense. Discussed it with teenage suspect's father, who said a similar episode occurred earlier with a dog. Suspect (now an adult) regularly beats his common law wife.	Died of injuries
9	7 mos - 2 yrs	SF	After multiple episodes of fractured ribs and radius and skin abrasions and bruising, cat was relocated to safe home. Female owner also had bruises on face and arms. Suspect abusive boyfriend.	Survived
10	7 mos - 2 yrs	NM	Burn type injuries on abdomen and thighs that owner's roommate couldn't explain. A new home was found for the cat and the roommate was found guilty of animal abuse.	Survived
11	Unkwn	SF	Was a Humane Society rescue and may be a neglect case instead of NAI. Cat was dehydrated and had periocular pain, a Bupthalmic eye, a possible old corneal perforation, and complete corneal opacity.	Survived

Sexual Abuse/Bestiality

There were a total of 8 documented cases of suspected sexual abuse (bestiality) to 4 dogs and 4 cats listed in Table 24. Two of the canine sexual abuse cases were also repetitive injuries included in Table 22. Seven of the animals survived their injuries. The one elderly crossbred canine was euthanized not because of the extent of its injuries, but rather by the parents to prevent future abuse.

Table 24. Sexual abuse injuries to dogs and cats						
Case	Species	Breed	Age	Sex	Details reported by respondent	Outcome
1	Dog	Irish Setter	7 mos - 2 yrs	F	Dog presented for vaginal discharge. Radiogram showed vibrator pieces in vagina.	Survived
2	Dog	German Shepherd	> 2 yrs	M	Husband arrested for animal sex abuse.	Survived
3	Dog	Mix	> 2 yrs	NM	Elderly dog presented twice within six months with severe hemorrhage from prepuce caused by insertion of object into it. Owners euthanized the dog because they did not want another episode and did not want to deal with the possibility that the dog was being 'raped', possibly by children in the family.	Euthanized
4	Dog	Australian Shepherd	> 2 yrs	SF	Farm dog running loose; no one knew how part of broken ink pen got into vagina.	Survived
5	Cat	Domestic Short Hair	3-6 mos	F	Kitten was found with vulva torn and bruised, edema and erythema. Recovered and adopted. Did well. Sweet cat, no temperament problems or sensitivity.	Survived
6	Cat	Domestic Short Hair	7 mos - 2 yrs	SF	Owner found outside cat injured with end of broken stick handle in rectum.	Survived
7-8	Cat	Domestic Short Hair	Un-known	Un-known	Satanic group tortured the cats. Had cuts around rectum and on legs. Feet were burned.	Survived

Section 3

Results from Section 3 are provided in Table 25. Note that although 72 respondents indicated they hadn't seen or experienced NAI in their practice, more than that responded to Section 3 questions because some participants completed both Sections 2 and 3. Therefore, the denominator used for Table 25 is 214, which is the total number of respondents that submitted unique and valid questionnaires.

In many instances, respondents provided comments along with their answers for Section 3. Some of the comments regarding unexplained injuries included examples of the types of injuries seen: choke chain imbedded in neck, chemical induced eye trauma, lameness, head wounds, pellet wounds that the owners didn't know existed, broken jaw, deep bruises, fractures, etc. In some cases, the owners would say they just came home to find their animals injured, while others say the injuries occurred while the animal was playing outside. Others said it was common to treat animals with unexplained injuries.

Seventy-five survey respondents noted that they had seen cases where the history provided was not consistent with the observed injuries. For example, several cases involved indoor-only animals with fractures that require substantial force. One noted "many so-called hit-by-car" (HBC) explanations. Another wrote that the animal "presented with a fractured pelvis consistent with being kicked from rear, not from being HBC. There was no evidence of car tracks, oil, hair loss, etc."

One veterinarian chose to be cautious about labeling a case as NAI without getting another professional’s opinion as to possible other explanations. He/she wrote, “Just recently I saw a dog with limbic hemorrhage that would be consistent w/strangulation yet there was no history of it. Could this be a pathology I’m not familiar with? Absolutely. I referred her to a vet ophthalmologist for second opinion.”

Another said he/she saw mainly lameness with an owner’s excuse of “I don’t know, he was OK yesterday”. One cat "fell" according to the owner, but the fracture was the maxilla, not the mandibular symphysis. A dog “fell” down the stairs and hit his head twice in one month according to the owner. Often there was no history of trauma when trauma was obvious. Another respondent wrote, “In New Mexico, I would often see severely injured Pit Bulls suggestive of dog fights, but I was unable to prove if intentional or not.”

Forty-seven respondents reported that they had seen old rib fractures. One respondent wrote, “This is common in our area around horses and livestock. In many cases where history doesn’t match injury, story is plausible but leaves room for question. Children shot several dogs/cats with BB guns in the eyes.” It is quite possible that rural veterinarians would see a lot more cases of new and old rib fractures than if they were located in a suburban or urban area. The location of the practice is an important consideration when investigating cases of suspected NAI. The same can be said of unexplained injuries and fractures of differing ages. Those types of injuries are more common in companion animals on farms.

Table 25. Responses to questions in Section 3

	Yes	No	No Response
Have you seen or experienced any of the following?			
Unexplained injuries	115 (53.7%)	74 (34.6%)	25 (11.7%)
More than one fracture of differing ages in the animal	33 (15.4%)	159 (74.3%)	22 (10.3%)
Unexplained old rib fractures	47 (22.0%)	146 (68.2%)	21 (9.8%)
History not consistent with injury	75 (35.0%)	113 (52.8%)	26 (12.1%)
Previous history of unexplained injury or death of an animal with the same owner/family	29 (13.6%)	162 (75.7%)	23 (10.7%)

As seen in Table 26, some of the surveys had both Sections 2 and 3 completed. As an example of how to interpret the table, of the 94 respondents who completed one case in Section 2 (i.e., filled in specific NAI case information), 62 of them also completed Sections 3 and/or 4. For some respondents, completion of both sections indicated that they had seen a variety of NAI, but could remember only one or two of the cases enough to write up details on it in Section 2. Some of those injuries are included in the comments in Section 4 below.

Table 26. Number of cases of abuse reported by respondents			
Number of cases	Number of respondents		
	Section 2	Sections 3 and 4	
1	94	62	
2	17	14	
3	10	10	
4	4	3	
5	6	4	
7	1		
*Note: some respondents completed both Sections 2 and 3			

Section 4

Section 4 contained a wide variety of comments plus some injuries not recorded as complete cases in Section 2. A frequent comment was that NAI was probably more prevalent in society than seen by veterinary professionals. Ten respondents wrote that people who abused animals were not likely to seek medical treatment for the injuries they caused. Two thought that the abused animals were probably dropped off at a shelter instead of seeking medical treatment. One respondent who practiced in a low-income area indicated that someone who abuses animals would not bring it in for veterinary care. Two said they practiced in affluent, wealthy and/or highly educated areas, which they believed protected them somewhat from NAI.

One respondent who treated several NAI cases noted, “If the owner was fearful of prosecution they may not have come in!” Another expressed the opinion that it is sometimes difficult to determine accidental versus NAI when there are children or other pets involved or if pets run loose. Six noted they see more neglect than abuse cases and two wrote that by far the most common form of abuse they see is abandonment.

One survey noted, “I think abuse happens, but not nearly as often as many people seem to think. Everyone tells me they adopted an ‘abused’ dog/cat. Usually I think it’s just a lack of socialization.” Another said that the explanation for all dogs with no manners is “he’s been abused.”

Others had experiences involving children inflicting injury to their pets. One wrote, “Appalling to realize all involved kittens and most involved children.” One survey noted, “Often multiple children in a family are unruly and moderately aggressive toward the dog.” Another noted, “...in two cases I suspected the children. Through the efforts of the parents the truth came out and the matter was resolved by strict parental action.” One observer wrote, “A related area is injuries caused by young children to pets: scalding, rubber bands on ears, drop injuries (fractures). This is a form of animal abuse by not supervising children.” This opinion was supported in numerous cases submitted that involved children as young as 5 years of age.

Six respondents observed that it is difficult to isolate or define NAI cases. One felt that education on how to recognize abuse and deal with it would be helpful. Another indicated, "Abuse is hard to prove. Abusive owners are very defensive and turn the tables to blame the vet for the dog's problems ('You didn't fix it good enough the first time'). I've had many more such threats of malpractice or retribution from these people than from any other."

One respondent wrote, "We need some sort of legislation that with suspected abuse these people will be prosecuted. We have turned in people but without physical proof that someone has seen the abuse, the animals go back to the owners to be subjected to further abuse." *NOTE: These cases should still be reported so that if there are other incidents, there will be a record on file. Also, many times, cases CAN be prosecuted on circumstantial evidence.* According to Diane Balkin from the Denver District Attorney's Office, "circumstantial evidence is admissible in every type of case. [The] following is the text of the jury instruction that every jury receives: 'There are two types of evidence from which you may properly find the truth as to the facts of the case. One is direct evidence. The other is circumstantial evidence, that is, the proof of facts from which other facts may reasonably be inferred. The law makes no distinction between direct and circumstantial evidence.'"

Another expressed the valid concern that "These are suspect cases. You need to be very careful how data are interpreted. False accusations of abuse can be quite damaging as well." A few of the documented cases of NAI were used as illustrations of just that point. For example, a young veterinarian hit her Chesapeake Bay Retriever in the head to break up a fight, which caused loss of consciousness and seizures. She worked all night at the clinic to save her dog and succeeded. Another owner kicked his Malamute mix in the abdomen to break up a fight, which ruptured the animal's spleen and killed it. While the acts themselves were intentional in that the owners wanted to stop the dogs from fighting, the resulting injuries were not. This is an important point to remember for anyone who may experience incidents of suspected NAI. Careful diagnosis, keen observation and common sense are needed to avoid potential witch-hunts and extremism. There are other ways to break up a fight, however, and these people should have known better. They knowingly inflicted injury, which could still be considered animal cruelty.

The following are some of the 157 total comments recorded:

- "Have seen numerous gunshot wounds (possibly not entailing livestock attack), intentional antifreeze poison, road traffic accidents where dog was run over (witnessed), cat strangled/decapitated, dog shot with arrow."
- "I have seen a fair amount of verbal abuse as well with huge effect on the animal. Many episodes have occurred in front of me in the exam room."
- "I feel lucky; don't see many traumas suspect of deliberate injury. Have had numerous cases bordering on neglect: bitches whelping puppies outside in winter, dogs/cats with severe dental disease and fractured teeth, severely matted coats"
- "We've seen a few negligent cases in the last 10 years: (1) a Chihuahua who had three consecutive litters. The dog had a severe case of necrotic

mammories that the owner refused to follow up. (2) A couple of cases where pets were severely emaciated and the owners refused follow up.”

- “I’ve seen several cases of suspected neglect which I feel are just as important and relates to child neglect. I reported one man for suspected child abuse, but no evidence of animal abuse other than verbal (I suspect he hit the animal at home).”
- “A man came in to inquire about cost of treating an animal with a stomach ailment, possibly bloat. He said if it were too expensive he would let dog die. We never saw the animal but later were told second hand he threw the dog into a wall when he was angry.”
- “In 38 years of practice I have only been witness to a client punching his pet and the dog had just been euthanized at my office. He punched dog in his post-euthanasia time permitted to be with his pet.”
- “We see a lot of old injuries found on unrelated radiographs. Since so many animals are from shelters, it is impossible to know how the injuries occurred. I would love to see a prospective study on NAI, where I could fill out a form at the time of the case.”
- “I think this is a can of worms that you are trying to make us accountable for. How about the owner of the vicious dog who repeatedly attacks her children? I think that is child abuse.”
- “This may be huge problem where only tip of iceberg is seen. Big portion of solution may be community education, even though it would be hard to initiate and to get offenders to attend.”