

Appendix I

Methodology

American Humane partnered with the CVMA to distribute the survey to current CVMA members in early March 2003 via fax and mail. Individuals targeted included those in private and corporate practices, shelters and academic settings, which totaled 1109 out of the entire CVMA membership. A reminder fax was sent by CVMA one week after the initial distribution of the surveys.

Based on input from the CVMA that faxed material is the most effective method to convey information to CVMA members, we faxed our survey to the 883 CVMA members who had a current fax numbers on file. The remaining 226 CVMA members who did not have fax numbers of file were mailed the survey via regular U.S. mail. These surveys included a self-addressed stamped envelope to facilitate response. Each survey included a cover letter that explained the purpose of the study, participants' anonymity, and instructions for completing the survey. The letter was signed by Dr. Chris Morris, president of the CVMA; David Gies, executive director of the Animal Assistance Foundation; and Dr. Myles Edwards, director of research at American Humane.

Mail recipients received the original eight-page survey designed by Drs. Munro and Thrusfield. Five of the eight pages collected case-level text data; one page per case.

A four-page version of the survey with one case report page was broadcast faxed to 883 members. The shortened version of the survey had no modifications to the format or the survey items.

We excluded the additional case report sheets in order to decrease the cost of faxing the survey and to ensure successful fax transmission. In the cover sheet of each survey, respondents were encouraged to copy the case report sheet and 37 of the 883 faxes did not transmit successfully. Although those 37 were not mailed a survey, the reminder fax sent one week after the original transmission did generate some follow calls from veterinarians requesting the survey, so 883 was retained as the denominator in determining the return rate.

Surveys were addressed to individual practices and all members of the practice were directed in the cover letter to add their experiences. Each survey represents the practice collectively. Additionally, each version of the survey allowed for a collective response from all the veterinarians within the practice, thus further assuring anonymity of any one individual.

All surveys were totally anonymous. CVMA staff removed all identifying information from the surveys returned via fax in order to maintain the anonymity and confidentiality of each response.

An Access™ database was created for the survey results. Statistical analyses were conducted using SPSS™ version 11.0.

Survey Design

There were four sections in the survey consisting of both closed-ended (yes/no) responses and open-ended (free-form text) questions. The open-ended questions were mainly for comments so that respondents could expand upon their answers to the closed-ended questions. Section 1 had two demographic questions in addition to the questions posed in the Munro/Thrusfield survey. Sections 2-4 were nearly identical in format and content to the Munro/Thrusfield questionnaire.

Section 1

Section 1 of the survey requested demographic information on practice setting and type of organization. Demographic information was kept to a minimal so as to not request any individually identifying characteristics. The demographic questions asked the practice location (rural, suburban, or urban) and the practice setting (private, corporate, shelter, other). These questions were not in the Munro/Thrusfield survey.

Section 1 also inquired as to the respondent's belief in the existence of NAI and if he/she had suspected or seen any NAI injury cases. If the respondent indicated that he/she had either seen or suspected NAI in any of their cases, they were directed to Section 2 to complete individual case details.

Section 2

Section 2 of the survey requested detailed information on individual NAI cases. Initial information requested included approximate date, species (dog or cat), breed, sex (male or female, intact or spayed/neutered, unknown), and age (under 12 weeks, 3-6 months, 7 months – 2 years, over 2 years, unknown). One question also requested free-form information on what made the individual suspect, or allowed them to recognize, NAI. This was followed by an inquiry as to whether this was a single episode or multiple episodes. The majority of the page was sectioned into the categories of head, eyes, thorax, abdomen, limbs and other site to allow the respondent to provide details of each injury. At the bottom of the page was a question asking the outcome to the patient (died of the injuries, euthanized because of the severity of injuries, or survived).

Section 3

If the respondent indicated in Section 1 that he/she had not seen or suspected any NAI, they were directed to Section 3, which asked five questions about features of injuries. Specifically, the respondent was asked if he/she had seen or experienced any of the following in their patients:

- Unexplained injuries;
- More than one fracture of differing ages in the same animal;
- Unexplained old rib fractures;
- History not consistent with injury;
- Previous history of unexplained injury or death of another animal with the same owner/family.

Munro and Thrusfield used these same questions in their study because these are some of the diagnostic features in NAI in children.^{1 2} In addition to the yes/no responses

for these five questions, respondents could also provide additional comments or explanation.

Section 4

Section 4 was a free-form general comments section.

Classification of Lesions

This study used the same child NAI classification scheme³ that Munro and Thrusfield used in their study plus the same modifications to include veterinary terminology. The classifications of injuries include⁴:

- Superficial lesions (including eyes): bruising, burns and scalds, ligatures, avulsed nails, conjunctival hemorrhage, corneal punctures;
- Deeper lesions: epistaxis, hematoma, strangulation (manual/ligature), testicular injury, abdominal muscle rupture, retinal hemorrhage;
- Fractures/other locomotor injuries: old or new fractures, stifle ligament injury, amputation, lameness;
- Internal thoracoabdominal lesions: collapsed lung, pulmonary contusions, diaphragmatic rupture, liver rupture, intestinal rupture, intestinal strangulation;
- Intracranial/spinal conditions: brain trauma, paraplegia;
- Tail lesions: degloving, dislocation;
- Miscellaneous findings: microwave or clothes dryer injuries, poisonings, emaciation, sexual and non-sexual trauma to genitalia,
- Behavioral findings: depression, dullness, psychological damage.

Drilling down from the general categories are the locations of injuries, which included:

- Head/Neck with subcategories of head (includes mandible), neck, mouth, and eyes
- Thorax
- Abdomen
- Limbs with subcategories of limbs/pelvis and feet
- Generalized (or widespread, typically skin injuries)

Each location of injury included a long list of specific injuries recorded for each NAI case. As with the Munro and Thrusfield study, lacerations, incised wounds, gunshot wounds and stab wounds followed standard forensic terminology. Conventionally, these types of injuries are classified separately from NAI. For purposes of identifying all the specific superficial injuries to the animals, these injuries (lacerations, incised wounds, gunshot wounds and stab wounds) are listed with the NAI categories. There was no differentiation between cranial and facial (including mandibular) regions.

¹ Blumenthal, I. (1994). The history. Child Abuse: A Handbook for Health Care Practitioners. Edwards Arnold, London, pp. 18-23.

² Hobbs, C.J., Hanks, H.C.I & Wynne, J.M. (1999). Physical abuse. Child Abuse and Neglect: A Clinician's Handbook, 2nd edition. Churchill Livingstone, London. pp 63-104.

³ Hobbs, C.J., Hanks, H.G.I, and Wynne, J.M. (1999). Child Abuse and Neglect: A Clinician's Handbook, 2nd edition. Churchill Livingstone, London. pp 63-104

⁴ Munro, H.M.C and Thrusfield, M.V. (2001). 'Battered Pets': features that raise suspicion of non-accidental injury. *Journal of Small Animal Practice*. 42: 218-226.