Clients’ Service Expectations and Practitioners’ Treatment Recommendations in Veterinary Oncology

by

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A Thesis presented to The University of Guelph

In partial fulfillment of requirements for the degree of Doctor of Philosophy in Population Medicine

Guelph, Ontario, Canada

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ABSTRACT

CLIENTS’ SERVICE EXPECTATIONS AND PRACTITIONERS’ TREATMENT RECOMMENDATIONS IN VETERINARY ONCOLOGY

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Service provision in veterinary oncology in Ontario was examined using a mixed methods approach. First, an interview-based qualitative study explored the service expectations of oncology clients at a tertiary referral centre. Next, a survey-based quantitative study established an understanding of oncology service in primary care practice and investigated the treatment recommendations of practitioners for dogs diagnosed with cancer.

The first study, which involved 30 individual and dyadic interviews, identified “uncertainty” (attributable to the unpredictable nature of cancer and its treatment) as an overarching psychological feature of clients’ experience. Consequently, “the communication of information” (both content and process) was the foremost service expectation. For clients, it enabled confidence in the service, the ability to make informed patient care decisions, and preparedness for the potential outcomes of those decisions; it also contributed to creating a humanistic environment, which enhanced client resiliency. Findings suggest that services can support client efforts to manage uncertainty through strategic design and delivery of service, and incorporate intentional communication strategies to support clients’ psychological fortitude in managing the cancer journey.
The second study, a vignette-based survey of primary care practitioners across Ontario (N=1071) which investigated veterinarian decision-making in relation to oncology care, determined that 56% of practitioners recommended referral as their first choice of intervention, while 28% recommended palliative care, 13% in-clinic treatment, and 3% euthanasia. Recommendations were associated with patient, client and veterinarian factors. Specifically, referral and treatment were recommended for younger dogs, healthier dogs, and dogs with lymphoma versus osteosarcoma; for strongly bonded clients, and financially secure clients; and by veterinarians who graduated from a North American college, had experience with treating cancer, felt confident in the referral centre, and believed treatment was worthwhile, with variation in relation to practitioner gender and the type of medicine practiced. The human-animal bond appeared to be the primary factor associated with practitioners’ advocacy for quality of medical care for patients.

Through a blend of qualitative and quantitative methodologies, this thesis contributes to the evidence upon which best practices may be built so as to enhance the quality of patient and client care in veterinary oncology.
ACKNOWLEDGEMENTS

~ OF THE PARTNERSHIPS THAT PAVED THE WAY ~

I would like to formally acknowledge the commendable contributions of a number of partnerships that made this thesis possible, including the charitable financial support of the Ontario Veterinary College Pet Trust Fund for our research funding and the Dean’s office for my personal funding, with indebtedness too to the Department of Population Medicine for their support, which included an Ontario Graduate Scholarship. I would also like to acknowledge the graciousness of the Ontario Veterinary Medical Association and the University of Guelph’s Alumni Affairs & Development for their support, key to the success of this research.

~ OF THE PEOPLE WHO MADE A DIFFERENCE ~

In having reached this crossroads, I would like to acknowledge the many people without whom this journey would not have been possible or the same. Each person who shared in it contributed in his or her own special way, for which I am ever grateful.

First, my gratitude goes out to three exceptional people who each held enough confidence in me to support my application to the PhD program: Dr. Cindy Adams, Dr. Julia Christensen Hughes, and Mr. Dale Payne. Special mention goes to Dale, adjunct professor of social work at the University of Waterloo, for his dedicated mentorship and cherished friendship over the past decade as I pursued a tangential education in social work. This pursuit eventually led to a Master of Social Work internship with Cindy, who inspired me to follow her lead and continue academics in veterinary medicine.

In coming full circle back to OVC, I extend my sincere gratitude to my co-advisors, Dr. Jason Coe, Assistant Professor of Epidemiology and Communication, and Dr. Cate
Dewey, Chair of the Department of Population Medicine, each of whom brought their own expertise and strengths to the forefront in directing the course of my program and the research that forms this thesis. There were so many forks in the road, at which point alternate routes could have been taken. It was their insightfulness that guided the direction at each turn. Special thanks goes to Jason for his kindness, openness, and ability to maintain a human face to the PhD experience, anticipating and preparing me for each step along the way. Combined with his broad expertise in academics, he was a solid foundation of knowledge upon which I could rely. And special thanks goes to Cate for her incredible ability to envision “the big picture,” a gift I truly admire, as well as her impressive acumen within research. So many suggestions Cate offered were of considerable consequence in the development of this thesis. I thank them both for their support and too, their friendship. Their supervision has been an absolute privilege.

Further gratitude is extended to my committee members, Dr. Clare MacMartin, Associate Dean (Academic), College of Social and Applied Human Sciences, and Dr. Elizabeth Stone, Dean of OVC. I am especially thankful to Clare for her unique role in preserving a bridge to the social sciences. She has been my inspiration and guiding light throughout this journey, and a joy to work with. Her knowledge, dependability, and integrity set the benchmark to which I aspire. In no less measure I am indebted to Dean Stone, for it was her thoughtfulness, vision, and leadership that made my PhD and this thesis possible. I thank her from the core of my being, for there is no higher gift than the opportunity for self-actualization.

Beyond my committee, I have had the pleasure to work with many talented and generous-spirited people, through whom I have gained a deep appreciation of the imperative for, and value of, collaborative effort and mutual goodwill. I would like to
especially thank the team of OVC oncology technicians – Melanie Brooks, Vicky Heinbecker, and Geri Higginson – for their avid support of the interview-based study; Helen McKinnon for her meticulous transcription services; Judi Bell for her editorial expertise; William Sears for his less than “sadistical” statistical consultations; Shiona Glass-Kaastra for her amazing feats with Excel; and Karen Richardson for her myriad contributions, most notably her participation in a simulated client exercise and her coordination of the student volunteer groups. My appreciation is likewise extended to other faculty, staff, and students who also supported the endeavors of this research.

Most importantly, I would like to acknowledge the many clients and practitioners without whom this research would not have happened. My humble gratitude is extended to the oncology clients who were willing to put themselves on the line and share their stories – as difficult as they often were – with such candor and altruism, enabling an inside perspective of the client experience within the hope that it might, through informing service, “ease the journey” for others. I hope I have given credence to your efforts by enabling your voices to be heard. And for the primary care practitioners of Ontario who took the time out of their demanding schedules to complete yet another survey, thank you. My hope is that your efforts will have returns for you, your clients, and patients many times over.

On a personal note, I would like to thank two colleagues whom I shared the greater challenges of graduate life with, Jeonghwa Park and Hien Le. The simplicity of their unconditional friendship, including through the rigors of the comprehensive exams, has meant so much to me. I also thank the other students and faculty who contributed to making my PhD journey a memorable one. Much gratitude.
I would be remiss if I did not also acknowledge the very special friendship and privileged mentorship of two dear friends, Dr. Pari Basrur, OVC professor emeritus, whom I hold in highest regard, and Lorna Wyllsun of Communication Works, who has an innate ability to always provide a balanced perspective. Both unreservedly offered their wisdom, encouragement, and staunch support throughout my PhD.

In final measure, my deepest appreciation is extended to my family, most especially my parents, Millie and Fred, my sister, Janine, and her husband, Ken, and my daughter, Tessla, and her fiancé, Kyle. It is impossible to put into words the kind of love and support they provide, and equally impossible to thank them enough. They are, by far, the foundation upon which I stand. To each of you, heartfelt gratitude for all you are, all you do, and just for being you.

~
DEDICATION

In looking behind, I dedicate this to my parents.
In looking ahead, I dedicate this to my daughter.
In looking within, I dedicate this to the universe of possibilities within us all.
As we manifest the potential within, we venture the opportunity to
move the human consciousness forward to a place of greater
understanding, compassion, and ultimate good.

~

The phrase, *quality of care*, whether in relation to the patient or client, has not been meaningfully applied within veterinary medicine, unlike the human healthcare disciplines. This does not mean the concept has not been important, or indeed, a guiding principle within the veterinary context of healthcare. On the contrary, as the profession has evolved within its obligation to meet the needs of an ever-changing society, it has strategically both followed and led society in establishing standards of practice to improve the interests of animals and people alike. As the profession continues to do so, ever new ways of not only providing, but even envisioning veterinary medicine are likely to emerge, which will aim the questions as to “who,” “what,” “where,” “when,” “why,” and “how” in directions beyond the boundaries of what we know today.

May this thesis contribute to the library of knowledge in taking these questions to the edge of what we currently think and know, and in small measure contribute to advancing an all-embracing quality philosophy within veterinary healthcare.
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Chapter 1

Introduction, Literature Review, Summary, and Objectives
Introduction

As a society, our relationship with animals has evolved, with companion animals today often esteemed as valued members of the family.\textsuperscript{1-3} With the human-animal bond shown to correlate with the quality of veterinary health care sought,\textsuperscript{4} demands for improved veterinary health care over the past three decades have challenged the profession to provide ever-increasing levels of sophistication in veterinary medical services.\textsuperscript{5, 6} This has resulted in the development of specialty fields of practice,\textsuperscript{7} such as veterinary oncology, to provide comprehensive, state-of-the-art care. Oncological treatment modalities have evolved over the years to include what are now considered “traditional” in veterinary cancer intervention: surgery, radiation therapy, chemotherapy, and immunotherapy.\textsuperscript{8, 9}

Cancer is a major cause of death in dogs and cats.\textsuperscript{10-13} The prevalence of cancer has risen and is expected to continue to do so as veterinary medicine finds ways to further improve patient health and in turn extend the life expectancy of companion animals.\textsuperscript{8, 14} With reports of headway in the treatment of cancer in news media, popular press, and Internet websites, the demand for the treatment of animal members of the family with cancer has also risen.\textsuperscript{8, 14} Furthermore, with survivorship on the rise, the image of cancer is gradually changing,\textsuperscript{15} with cancer in people now often referred to as a chronic illness rather than a death sentence.\textsuperscript{16} Altogether, the deepening devotion of people to their companion animals, increasing prevalence of cancer, and changing perspectives on the treatment of cancer are expected to amplify the demands for veterinary cancer care, prompting Dr. Stephen Withrow, founder and associate director of the Animal Cancer Center at Colorado State University, to forewarn, “The veterinary profession needs to be prepared for these demands.”\textsuperscript{14}
Literature review

This literature review covers an eclectic group of topics interrelated under the overarching theme of service provision in veterinary oncology. In relation to specialty referral practice, it presents concise summaries of the importance of understanding client expectations, the status of research in veterinary-client-patient and doctor-patient communication in oncology, and the concept of uncertainty in medicine. In relation to primary care practice, it presents background on the significance of veterinary practitioners’ recommendations for patient care on the welfare of pets and their families, and the research-to-date in this area. It then broadens to briefly discuss what is known about physicians’ recommendations for patient care, specifically in relation to the factors that influence their preference of care. Interconnected between all of these topics is the common underlying theme of quality of care for the patient and client. Last but not least, in relation to the research methodology employed, this review presents an overview of thematic analysis and vignette-based inquiry, the qualitative and quantitative approaches underpinning this dissertation.

The importance of understanding veterinary client expectations—It has been stated that systems of human healthcare should begin with the “needs, wishes and values” of those they serve.\(^{17}\) In veterinary medicine, such an approach places client expectations at the centre of service provision. It necessitates the imperative to ascertain the expectations of clients and then institute best practices to meet and exceed those expectations to the best of the provider’s ability, thereby enhancing the quality of care clients receive. This is important because quality of care is directly associated with client satisfaction,\(^ {18}\) which, extrapolating from human medicine,\(^ {19}\) has significant implications
for increased compliance with medical recommendations, greater client retention, lower rates of malpractice suits, greater profitability, and increased client referrals. Attending to client expectations, therefore, is in everyone’s best interests: the client, the patient, and the veterinary service.

As with other health care professions, veterinary medicine today is challenged by rising client expectations. As Dr. Michael Blackwell stated during his 2001 keynote address to *The Iverson Bell Symposium*, “[the public] comes to us today armed with questions and expectations far beyond those of any period in the history of medicine.” Despite the palpable rise and obvious centrality of expectations within service delivery, veterinary studies in this area have, in fact, been limited. Two studies were identified in the literature.

The first study exploring client expectations was survey-based, involving 319 clients of three small animal clinics. This study centred on the expectations for communication and interaction between the veterinarian, client, and patient. Within this focus, the study demonstrated that clients expect their veterinary practitioner to inform them about healthcare issues, attentively listen to and respond to their concerns, and relate to them and their pets as individuals. It also suggested that identifying and meeting expectations contributes to client satisfaction. During the course of this study, it was noted that some clients were leaving the clinics with their expectations unmet.

The more recent study, from which two reports regarding client expectations were published, took a different methodological approach to explore this new area of veterinary research. As a focus group-based study, involving a total of 32 pet owners within 6 focus groups and 24 companion animal veterinarians within 4 focus groups, it reported on the expectations of clients with respect to veterinarian-client...
communication and the monetary aspects of veterinary care. Although the findings substantiated those of the survey study, as typical of qualitative research, the Coe et al. study was able to provide a rich and contrasting account of client expectations. Concisely summarized, it identified that clients expect their veterinarian to thoroughly educate them about their pet’s health care – to explain information well, use lay terms, supplement explanations with written materials (such as discharge statements and handouts/pamphlets), and provide information in an upfront manner. The study also found that clients expect to be presented with a range of options for care, to be respected for their choices, and to care for their pet within a valued veterinarian-client partnership. Furthermore, it ascertained that clients expect their veterinarian to listen attentively to their perspective, with the veterinarian asking the appropriate questions to elicit the information necessary to provide the proper care of the pet. With regards to the monetary aspects of veterinary care, the study identified that clients expect the care of their pet to take precedence over monetary matters, and that veterinarians be the ones to initiate discussions of cost.

Both of these studies importantly contribute to a foundational understanding of the expectations of veterinary clients in companion animal practice, most particular as they relate to veterinarian-client-patient interactions. Moreover, they add to an extensive foundation of research on expectations for care within human medicine, an area of research established in the mid-1960s. Expectations for care in medicine have been studied within different specialties, medical care contexts, and patient and caregiver populations. Although veterinary medicine can draw on the research methodology employed and benefit from the knowledge accrued, as a field of medicine unique unto itself, there is the imperative to establish its own foundation of evidence-based
knowledge. Furthermore, since expectations may vary according to specialty, context, and population, veterinary research will need to diversify to identify client expectations accordingly.

Of the many veterinary specialties, oncology in particular frequently provides care for patients with terminal disease, namely any of a variety of incurable cancers. In such circumstances, clients choosing to treat their pets are forced to negotiate contradictory psychological tasks: as they commit to do all they can to preserve the life of the pet they love, they likewise embark on the process of letting go, commonly called anticipatory grief. This places them in an emotionally vulnerable state, torn between hope and despair. Given the unique and often emotionally charged context of veterinary oncology, there is a clear need to explore the expectations of clients accessing services if the veterinary team is to best serve the interests of clients and patients.

In exploring the expectations of clients, the foremost expectation that emerged from the data collected herein was the communication of information. As a result the literature on communication in oncology care is described here.

**THE STATUS OF RESEARCH IN VETERINARY-CLIENT-PATIENT AND DOCTOR-PATIENT COMMUNICATION IN ONCOLOGY**—The interpersonal aspects of the provision of veterinary oncology service have been documented since the early 1980’s. Because of the highly emotional nature of cancer care, most publications have centred on client grief, how to recognize it, and how to respond in a supportive manner. These publications, which included a special commentary in a peer-reviewed journal, a chapter in Veterinary Clinics of North America (VCNA), a text chapter, and textbook, were descriptive, based on practical work experience in oncology. Although each of these
made reference to helpful aspects of communication, it wasn’t until 1995 that a chapter in VCNA, while drawing heavily on these previous publications, focused more specifically on communication. Since then, a textbook on geriatric veterinary oncology that incorporates elements of communication and a chapter in VCNA that centres on communication have been published. Most evident in noting the above publications, although valuable in their own right, is the absence of any research on communication in the unique area of veterinary oncology.

In human oncology, communication has long been considered a core clinical function, resulting in a research foothold that has grown in both importance and sophistication over the past twenty years. Such research incorporates primary, empirical studies on the need for and outcomes of effective communication; literature reviews; studies on communication research methodologies; and studies, articles, reports, and reviews on the need for and efficacy of communications skills training. In 1999, based on a European consensus of human medical experts, a position paper entitled, “Communication skills training in oncology” was written; this was updated in 2009, reflecting evidence-based refinements. While the first position paper was able to provide general recommendations regarding the development and implementation of communication skills training, the second was able to provide specific recommendations with regard to (i) the setting, objectives and participants of communication skills training, (ii) its content and pedagogic tools, (iii) organizational aspects, (iv) outcome and (v) future directions and research, based on a systematic review, a meta-analysis, and European expert opinion. Also in 2009, Cancer Care Ontario’s Program in Evidence-Based Care, a provincial initiative responsible for developing evidence-based clinical practice guidelines for human medicine, published the
first guidelines for the teaching and practice of communication in oncology. In this, communication is acknowledged as “a fundamental aspect of cancer care that significantly affects the therapeutic relationship, the well-being of patients and families, treatment decision-making and compliance, and the capacity of patients and families to plan for alternative trajectories in the disease and treatment course.”

In exploring the expectations of clients, an overarching theme that emerged from the data was the sense of uncertainty that clients experienced throughout the cancer journey. As a result, the literature on the topic of uncertainty in healthcare is described here.

**The Certainty of Uncertainty in Medicine**—“The practice of medicine has always been characterized by uncertainty, arising from limitations of professional knowledge, problems of diagnosis, ambiguities of treatment and outcome, and the unpredictability of patient response.” Differences in physician attitudes, values, preferences, and perceptions of risk further complicate the uncertainty that epitomizes practice. In the broadest sense, medical uncertainty can be understood as “a theoretical concept, an empirical phenomenon, and a human experience.”

The study of medical uncertainty, borne in the disciplines of sociology, anthropology, psychology, medicine, and nursing, has focused on a number of areas. While some research has explored the uncertainty inherent in the use of experimental and novel technologies, other research has examined the ways in which practitioners manage it and patients cope with it, including the ways in which it can be minimized, ignored, managed, or made acceptable. The uncertainty experienced by patients (and their families) has been variably termed “uncertainty in illness” and “illness uncertainty.”
Illness uncertainty has long been recognized as a central feature in illness experiences. As a theoretical concept, it is under continued refinement. As an empirical phenomenon and human experience, it is understood as “a pervasive stressful accompaniment of illness and its treatment” that negatively influences the process of coping with and adapting to the illness experience. Research has aimed not only to understand illness uncertainty, but also to assess interventions and offer evidence-based recommendations for the provision of service which may alleviate its impact. Since communication is integral to the construction, management, and resolution of uncertainty, research has specifically branched to explore the communication strategies that may support the ability to manage it. Although recent years have seen an expansion of the study of illness uncertainty to encompass a growing number of clinical populations, to date, illness uncertainty does not appear to have been researched in the veterinary context. However, it has been noted. As quoted by Butler (1991) over twenty years ago, “With all of the scientific knowledge veterinarians have at their disposal, the hard fact is that medicine at large, and oncology specifically, is riddled with a degree of uncertainty.”

**Clinical Decision-Making and Resultant Care Recommendations—**

Veterinarians engage at the interface between owners and their animals, providing both information and advice to support clients in the decision-making process. Clients ascribe Aesculapian authority, and value veterinarians for their compassion, humaneness, and understanding alongside their expertise and judgment. Consequently, the practitioner’s opinion is often held in high regard and may carry substantial weight in guiding client’s decision-making regarding their pet’s care. In a recent U.S. study, 52%
(619/1,190) of pet owners reported that they always do exactly what their veterinarian recommended, even if the treatment was inconvenient and time consuming, and for clients found to be highly attached, 74% (563/761) of cat owners and 79% (940/1190) of dog owners stated they were willing to do whatever their veterinarian recommended, regardless of cost. Recognizing the considerable influence of practitioners makes it important to understand the factors underlying their recommendations, especially since different approaches to care often lead to different outcomes – in this manner directly relating to patient quality of care. Research on the treatment recommendations of practitioners, however, has been quite limited.

In reviewing the literature, two relevant studies were found. The first study involved a telephone survey with 450 small and mixed-animal practitioners in the United States to describe veterinarians’ recommendations for the treatment and control of intestinal parasites in dogs. The survey made use of a standard questionnaire with 19 multiple-choice and open-ended questions to provide frequency data along with an assessment of regional differences in recommendations. The second study was a more technically sophisticated case-based questionnaire that formed part of a larger research project, the American Veterinary Medical Association-commissioned Brakke management and behavior study. Exclusively or predominantly small animal practitioners were presented with one of two versions of a case study (vignette), which varied with respect to the description of the client, and were asked to choose and price one of four treatment options to examine whether practitioners’ choice and pricing would vary in relation to the client. This study identified that treatment recommendations and pricing varied between owners and associates, with associates more likely to recommend a higher level of treatment, and especially with the successful young professional, indicating that both
practitioner status and client description influenced practitioners’ recommendations. This study, however, limited itself to the testing of only one variable (the client), and furthermore, a variable consisting of a hybrid mix of characteristics (“a successful young professional” versus “an elderly widow of modest means”), making it impossible to determine which feature or combination of features(s) (finances? age? working status? gender?) the practitioners actually responded to when making their recommendation. Although this study was therefore limited in the degree to which it could assess the factors that influence practitioners’ choice of treatment recommended, it provides a useful framework upon which a more elaborate study could be built. Such methodology surpasses the potential of standard questionnaires in the ability to determine the factors influencing treatment recommendations.90, 91

The management of cancer in veterinary medicine can be a particularly challenging aspect of clinical practice. The variation in types of cancer and biologic behaviours, and too, treatment complexity, modalities, and associated prognoses, can make it difficult for the primary care practitioner.35 In determining the best course of treatment, the factors usually evaluated include the type of cancer, extent of disease, and general health of the patient; the available finances and ability of the client to manage the logistics of care; and the veterinary medical resources available.34 While from a medical and practical perspective, these represent appropriate contextual factors to take into account when making oncology-related treatment decisions, to the author’s awareness, there have not been any studies to determine the factors that are, in fact, taken into account – or in other words, deemed as important in practitioner’s judgement – or how these factors influence practitioners’ preference of recommendation.
In human medicine, physicians’ decision-making and care recommendations have been studied across varying contexts and specialties. A number of patient-, physician-, treatment-, and practice-related factors have variously been identified as influencing physicians’ treatment recommendations. Patient-related factors include the patient’s age, disease severity, comorbidity status, lifestyle, socioeconomic status, institutionalization, physical complaints, and wish/expectation to be treated. Physician-related factors include the physician’s age, gender, specialty, remuneration, perception of treatment benefit, attitude towards patient participation in decision-making, and pattern of information gathering and interpretation. Treatment-related factors include the rate of response to therapy, degree of toxicity due to therapy, and expected survival gain. Practice-related factors include the practice volume and region – the latter both geographical and in relation to health care spending, with regions identified as high- or low-spending.

Physicians’ decision-making and care recommendations have been studied for the purpose of improving quality of care. Quality of care, described by Peabody (2000) as “the comprehensive provision of services in a manner that leads to better outcomes for individuals and populations,” is equally important in veterinary medicine. Veterinary practitioners are key participants in treatment decisions; because the fate of the pet diagnosed with cancer and the health, happiness and quality of life of the client are markedly influenced by the decisions made, the recommendations of veterinary practitioners are of profound consequence. If an aim of practice is to maximize quality of care, the decision-making practices and resultant care recommendations forwarded by veterinarians represents an area of practice that warrants investigation.
QUALITATIVE AND QUANTITATIVE RESEARCH APPROACHES—The selection of research design and method must be guided by the research question. Depending on the question at hand, a qualitative approach (which is primarily inductive, moving from observations to theories), quantitative approach (which is primarily deductive, moving from theories to observations), or mixed method approach (which combines both qualitative and quantitative approaches) may be employed. To address the research questions specific to this thesis, both qualitative and quantitative approaches seem appropriate: qualitative inquiry to explore clients’ oncology service expectations, and quantitative inquiry to investigate primary health care veterinarians’ treatment recommendations for patients diagnosed with cancer.

I: Thematic analysis, a form of qualitative inquiry—Qualitative inquiry is a form of research for exploring and understanding the life experience of people. Interview-based approaches seek to generate a deeper understanding of an area about which little is known by gathering reports of first-hand experiences, views, opinions and ideas. The data generated, therefore, consists of words. Although it could be argued that the subjectivity inherent in the interpretive process can lead to bias, it could be equally argued that the researcher’s familiarity with the subject matter and sensitivity to the participants’ reality can deepen understanding and enhance the creation of meaning. Following the rules and procedures of the analytic method employed serves to uphold scientific integrity and research credibility.

Thematic analysis is considered a foundational qualitative analytic method, and is applied to identify, analyze, and report patterns (themes) within the data. It is a recursive rather than linear process, involving back and forth movement between six phases of analysis. Data collection is considered sufficient when the themes have
become “saturated,” or in other words, “when no new or relevant data emerge, when all avenues or leads have been followed, and when the story or theory is complete.”

Rigorously applied, thematic analysis can produce an insightful assessment that answers the research questions posed.

A limitation of all qualitative research is the degree to which the results may be generalized. Since qualitative sampling is directed by the theoretical argument rather than the need for statistical rigour, sampling is *non-probability* rather than probability and *theoretical* rather than random. As a result, qualitative research is unable to claim the results as generalizable to the wider population. Care must be taken to consider how applicable the findings may be prior to extrapolating them to other contexts.

Nevertheless, one of the strongest potentials implicit in qualitative research is to break new ground, making it an ideal choice of methodology to explore the expectations of veterinary clients.

**II: Vignette-based analysis, a form of quantitative inquiry**—Vignette-based inquiry has proven useful in studies of clinical decision-making and quality within healthcare. Such inquiry, which examines human behaviour, attitudes, values, and perceptions, has provided insight into physicians’ evaluation of patients, formulation of diagnoses, and selection of treatments.

Vignettes are systematically elaborated simulations of real events, which can range from short written prompts to extended stories. They are formulated to contain the precise factors that are thought to be most important within the judgement- or decision-making process, thereby providing the necessary detail while standardizing the case-mix. Through defining and adjusting the case-mix, vignette-based inquiry takes on a level of uniformity and control that approximates an experimental design.
Three fundamental vignette designs are possible. The full factorial design makes use of the full array of possible vignettes based on all possible combinations of the levels of each variable of interest, which advantageously permits the ability to identify interactions. The other designs include the fractional replication factorial design, which incorporates a systematic selection process, and the factorial survey, which incorporates a random selection process. While these designs can account for a wider range of variables through the selection of a subset of the full array of possible vignettes, such selection limits the ability to test for interactions due to the introduction of partial or complete confounding of variables.

Vignette-based inquiry merges the benefits of the experimental design with those of the observational cross-sectional design, resulting in a methodologically sophisticated research approach. Cross-sectional studies have the advantage of being relatively inexpensive and easy to implement. They permit the collection of extensive amounts of data rapidly and simultaneously from a large group of research participants. Data can be collected specific to the participants as well as the vignette(s), making it possible to assess participant- as well as vignette-specific factors. With a large enough sample size, multivariable regression techniques can be applied to determine a range of putative factors that may be associated with the outcome of interest. It has been claimed that it is possible to infer causal relationships with the decisions made, meaning that “the factors actually cause the change in the decision, rather than merely being associated with it by “accident” owing to the virtual independence of the vignette-based factors. Adequate sample size is particularly of concern with the full factorial vignette-based design, with the ideal of attaining adequate response for each vignette.
version (since each vignette represents a unique factor combination). Ensuring access to surveys in both online and paper-and-pencil formats can help maximize response.

In the study of clinical decision-making and quality within healthcare, vignette-based inquiry is superior to standard survey and interview methods, since these methods risk biased and unreliable self-reports.\textsuperscript{90, 91} Questions of judgement tend to elicit answers thought to be socially desirable or “right” as respondents engage in “impression management,” which can bias responses in a favourable direction.\textsuperscript{90} Questions of judgement also tend to be too abstract, requiring respondents to provide answers based on their own interpretation or “mental picture” of what is being asked.\textsuperscript{90} In contrast, the presentation of a real-life decision-making or judgement-making vignette with an invitation to respond to the detailed and concrete aspects presented – in this manner standardizing the stimulus – reduces the degree of abstraction, thereby increasing the reliability of the data.\textsuperscript{90, 91}

Vignette-based inquiry also avoids several of the methodological problems ascribed to other methods of quality assessment, such as chart abstraction, peer assessment, and observation of patient-provider interactions using standardized patients (SPs).\textsuperscript{105, 119} Chart abstraction, although the most common method of measuring the process of care, has only been validated in a few studies,\textsuperscript{125, 126} and poses a number of problems, including the potential for recording bias,\textsuperscript{105} the need for a skilled (and costly) expert,\textsuperscript{127, 128} and the inability to adjust for case-mix variation sufficient enough to compare quality of care across different medical care centres or delivery systems.\textsuperscript{129-131} The challenges inherent in peer assessment and the use of SPs include threats to internal validity due to participant reactivity to the experience of being studied (the Hawthorne effect);\textsuperscript{119} the intrusive nature of observation, which can pose ethical dilemmas;\textsuperscript{105, 119} the expense of peer
observer and SP training and use;\textsuperscript{119} the cost of time for the doctor not spent with “real” patients;\textsuperscript{105} threats to internal validity due to the inability to control extraneous variables resulting in data which have high variability (as in the form of random error or “noise”);\textsuperscript{119} and difficulties understanding the reasoning behind the behaviours observed, which can limit data interpretation.\textsuperscript{119} Overall, observational methods are expensive, time-consuming, and fraught with practical, ethical, and logistical difficulties.\textsuperscript{105, 119}

In understanding vignette-based inquiry, it is important to recognize that this approach measures \textit{reported intentions} rather than actual behaviour.\textsuperscript{98, 132} Reported intentions may be influenced by the desire to provide the “right” answer, and, in this manner, not truly reflect actual behaviour;\textsuperscript{99, 120, 123} actual behaviour could be influenced by factors not practicable within vignettes, such as veterinarian-client-patient interactions.\textsuperscript{99} Therefore, it is impossible to guarantee that a decision made within a hypothetical situation such as a vignette will actually predict or determine real-life behaviour in similar circumstances.\textsuperscript{119, 132} However, although an early review of the literature found that only 15\% of vignette-based studies reported an assessment of validity,\textsuperscript{123} leaving the question of validity in doubt, a number of validation studies have since found vignette-based inquiry to be a valid measure of medical service delivery.\textsuperscript{105-107, 133, 134}

Validity depends on how vignettes are constructed and conducted.\textsuperscript{91} This includes whether they are of interest to participants, relevant to participants’ realities, and reflect realistic clinical complexity,\textsuperscript{91, 120, 124} and too, whether they incorporate open or closed questions,\textsuperscript{91, 105, 106, 120} ask for a close or distant perspective,\textsuperscript{91, 120, 135, 136} or impose realistic time-limits;\textsuperscript{106, 120} arguments for differing approaches depend on the research design, participant group, and purpose of the study.\textsuperscript{120, 135}
Although no research method is able to truly reflect the realities of human experience, and too, that each method is only one way of understanding these realities, vignette-based inquiry shows promise as a method for measuring the decision-making practices and resultant care recommendations of practitioners in veterinary medicine.

**Summary**

For the purpose of this thesis, quality of care may be described as *the comprehensive provision of veterinary oncology services in a manner that leads to better outcomes for patients and clients*. Better outcomes in veterinary oncology can be achieved through broadening our understanding of the systems of care – both at the primary and specialty referral levels – identifying best practices, and putting them into practice. To best serve the interests of patients and clients, it is important to learn what clients may expect as they access specialty referral oncology services. Likewise, it is important to develop an understanding of the recommendations for care endorsed by primary care practitioners, and why, since different approaches to care, especially with a disease such as cancer, often translate to different short- and long-term patient and client outcomes, and thus, quality of care.

There are a number of trends that suggest an impending change in the paradigm of cancer care in pets. The rising prevalence of cancer in pets, deepening devotion of people to their pets, increasing expectations of veterinary practitioners, changing perspectives on the treatment of cancer, and improved accessibility to viable, comprehensive services *together* are likely to amplify the demands for cancer care. Foresight necessitates a proactive approach if the profession is to best be prepared for these demands.
Objectives

In response to the need for preparedness, the focus of inquiry for this thesis lies in two specific areas. The primary objectives were:

1) To qualitatively investigate the service expectations of clients with dogs diagnosed with cancer accessing cancer treatment interventions with the oncology service of a tertiary referral centre (Chapters 2, 3, and 4):
   a. to develop an understanding of clients’ overall expectations of the service,
   b. to identify differences in expectations according to the stages of cancer treatment (early, middle, and late); and
   c. to develop an understanding of what contributes to, influences, or underlies clients’ expectations.

2) To quantitatively investigate the treatment recommendations of primary care practitioners for canine patients with a major cancer diagnosis (Chapters 5 and 6):
   a. to determine the preferences of practitioners to recommend referral, in-clinic treatment, palliative care, or euthanasia;
   b. to determine the patient-, client-, and practitioner-related factors contributing to, influencing, or underlying practitioners’ recommendations; and
   c. to develop an understanding of the decision-making processes of primary care practitioners in relation to cancer-care treatment, including potential barriers to the recommendation of tertiary referral services.
References


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Chapter 2

Information expectations of clients accessing oncology services

Prepared in the style of the *Journal of the American Veterinary Medical Association*
Abstract

Objective—To describe the content aspects of the information expectations of clients accessing oncology care services at a tertiary referral center for dogs diagnosed with life-threatening cancer.

Design—Qualitative study based on in-person single and dyadic interviews.

Participants—43 dog owners in 30 interviews.

Procedures—Independent in-person interviews were conducted with standardized open-ended questions and follow-up probes April – October 2009. Thematic analysis was performed on transcripts of the interview discussions.

Results—The central qualification was that the content had to be the truth. Beyond this, clients expected information about all aspects of the cancer and its treatment, varying in relation to their basic understanding of cancer, their previous experience with cancer, and their informational preferences. Information enabled the confidence necessary to engage in a treatment program, the ability to make informed decisions, and the ability to be prepared for the future.

Conclusions—Oncology services should abide by the principle of truth-telling. Beyond this, they should consider clients’ understanding of and experiences with cancer, as well as their information preferences, thereby adopting a “tailored” approach to information-giving. Furthermore, services should recognize the functional importance of information beyond the fundamental task of decision-making, and purposely provide information with the aim to enhance client psychological wellbeing in mind.
Introduction

Systems of healthcare should begin with the “needs, wishes and values” of those they serve.1 In veterinary medicine, such an approach places client expectations at the center of service provision. It necessitates the imperative to ascertain the expectations of clients and then institute best practices to meet and exceed those expectations. Evidence-based innovation in service delivery can have profound implications for the quality of care clients receive, and as such, their quality of life when caring for an ill pet. Moreover, quality of care is directly associated with client satisfaction,2 which, extrapolating from human medicine,3 has significant implications for increased compliance with medical recommendations, greater client retention, lower rates of malpractice suits, greater profitability, and increased client referrals, making it immediately apparent that attending to client expectations in veterinary medicine is in everyone’s best interests: the client, the patient, and the healthcare service.

Within an era of mass education, mass media, and mass consumerism, societal attitudes towards the medical professions have been changing, resulting in increased pressure on the professions to meet rising public expectations.1,4 With the imperative to remain attentive to societal change is the necessity to recognize the changing expectations of the profession and acquire the knowledge and skills necessary to remain responsive, productive, successful, and economically viable.5

Despite the centrality of client expectations within the provision of quality service, veterinary studies in the area of client expectations have been limited.5–8 Furthermore, such studies within specific specialties of practice, such as cancer care – a growing area of veterinary specialization – have not been done. Although veterinary medicine offers sophisticated technology for the treatment of cancer, comparable to the standards within
human medicine, knowledge of the complexities of client care within this specialized
context is lacking. Hand-in-hand with the mandate to practice bond-centred practice,9
service that attends to the needs of the client as well as the patient, is the mandate to
identify and respond to client expectations. Services that successfully attend to client
expectations may better enable clients to manage the challenges inherent to the cancer
journey.

Recognizing the importance of fulfilling expectations in the provision of service and
the lack of research in this area, the objectives of this study were threefold: (1) to identify
the expectations of clients accessing oncology care services at a tertiary referral center,
(2) to determine whether or not these expectations changed in relation to the stage of
treatment, and (3) to identify contributors to these changes. Six prominent client
expectations were identified, namely information, quick scheduling of the referral and
timely service, compassionate service, continuity of staff and service protocols,
maintaining quality of life, and achieving the goals of treatment. The findings in relation
to “information” as the foremost expectation were subcategorized into “the content” (i.e.,
the information wanted) and “the communication process” (i.e., how the information was
given). This chapter focuses on the former subcategory, specifically the quality, detail
and function of the information wanted by oncology clients.

**Materials and Methods**

**Study design**

The study consisted of 30 semi-structured interviews with pet owners seeking cancer
treatment for their dogs from the referral oncology service of the Ontario Veterinary
College Health Sciences Centre at the University of Guelph (OVCHSC) in Guelph, ON.
Pet owners were interviewed at either the early, middle or late stage of their dog’s cancer treatment program. A total of 10 interviews were conducted for each stage. At the time of each interview, owners completed a short demographic form and the Lexington Attachment to Pets Scale (LAPS), a widely used questionnaire with established psychometric properties for measuring the human-animal bond, with scores of 54.9 (SD 9.2) indicating very attached, 44.8 (SD 10.3) somewhat attached, 32.6 (SD 9.3) not very attached, and 26.2 (SD 13.6) not at all attached. When more than one family member participated, demographic and LAPS data were collected from the self-identified primary caregiver. The interviews were conducted over a 7-month period, April – October of 2009. Following Kravitz (1996), client expectations were defined as value expectations, specifically as “expressions of desire (what is wanted), necessity (what is perceived to be needed), entitlement (that which is owed or to which one has a right), normative standards (that which should be), or importance (a hybrid category, since wants, needs and rights may all be rank ordered in importance).” The study protocol was reviewed and cleared by the University of Guelph Research Ethics Board (REB #08DC007).

Study participants

Participants, as single owners or co-owners, were purposively recruited from the clientele of the oncology service at the OVCHSC as a convenience sample. When more than one family member participated, demographic data was collected from the self-identified primary caregiver. Clients were considered eligible if their dogs had any type of cancer and were receiving any form or combination of ongoing treatment (surgery, radiation and/or chemotherapy) during the early, middle or late stage of treatment as defined by the specified treatment protocol. Treatment programs ranged from 2 weeks to 6 months in duration. Those clients categorized as within the early stage were
interviewed during one of the first two appointments for the treatment program; those in
the middle stage were at the mid-point of the expected duration of the treatment program;
and those in the late stage were in the last two visits of their treatment program.

Recruitment followed a step-wise process. Potential participants were initially
identified by the oncology technicians and oncologists through screening the oncology
appointment schedule. An oncology team member then briefly explained the study to the
owner either during a phone call that preceded an upcoming appointment or in person
during an appointment. If the client was interested in participating, permission was
obtained for the author to contact the client to describe the study in detail. The author
then either contacted the client by phone prior to the next oncology appointment or, in the
case of early stage clients, in-person at the time of their first appointment. The purpose
and format of the study was explained. Those choosing to participate were presented with
the informed consent form during the appointment. Written consent was always obtained
in-person.

**Interview structure**

A semi-structured interview, following one of two interview guides, each containing a
series of standardized, open-ended questions and follow-up probes, was conducted to
explore each client’s perceptions, experiences, and expectations of the oncology care
service. One guide was for the early stage group and the other for the middle and late
stage groups (Appendix 1.5), which differ only in relation to an expansion of Question 4
to create two questions to identify potential changes in expectations through time. The
interviews were one hour long and conducted by the author in a private office. The
interviews were recorded using two devices synchronously. The resultant audio
recordings were transcribed verbatim in orthographic format by a professional
transcriptionist. The transcriptions were reviewed by the author in tandem with the audio recordings to ensure uniformity of quality and accuracy of the transcribed interview data. Words that were inaudible, implied, or adjusted in tense were presented in square brackets to most clearly represent the findings. In addition, to maintain anonymity, client, patient, and oncology service provider names were replaced with non-identifying descriptors in curly brackets.

**Data analysis**

Demographic data was summarized to provide general descriptors of the participant and patient population. The LAPS was summarized (mean, range) to provide a quantitative measure of participants’ emotional attachment to their dogs. Thematic analysis\(^\text{13}\) of the transcripts was performed group-wise by the stage of the treatment. To start, interesting features of the data were coded to generate a listing of codes supported by data extracts. The codes were then sorted into subthemes, resulting in a collation of the relevant data extracts within each subtheme. Related subthemes were drawn together via mapping to create main themes. The interrelationships between these themes were then defined and described. This process required multiple passes through each transcript, between transcripts, and between the 3 stages of transcripts, looking for similarities and differences. Thematic analysis is a recursive rather than linear process, involving back and forth movement between the phases of analysis.\(^\text{13}\) As a qualitative study, the data generated are words, not numbers. As such, the findings are presented as descriptive summaries. Although some general frequency trends are noted, the results do not represent a quantitative analysis and thus are not amenable to statistical generalizability.
Results

Client and patient demographics

Thirty-three individuals or co-owners were invited to participate in the study with 30 accepting, giving a response of 91%. The 3 non-respondents were in the early stage. A total of 43 dog owners participated in the interviews. Of the 30 interviews, 17 were with individual participants, 9 with husband-wife dyads, and 4 with mother-daughter dyads. Among the primary caregivers, 22 (73%) were female and 26 (87%) were between 30 to 64 years of age (ranging from 18 to over 65 years). With regard to educational status, 3 (10%) had a less than grade 12 education, 7 (23%) had a high school education, 11 (37%) had a college/university education, 6 (20%) had post-graduate degrees, and 3 (10%) had an alternate educational status (e.g. trade certification). In regards to annual household income, two did not respond to the question. Of the 28 respondents, two (7%) were in the $35,000 or lower annual income category, 3 (11%) between $36,000 to 60,000, 8 (29%) between $61,000 to 100,000, and 15 (54%) in the over $100,000 per year category.

The median number of routine visits to their family veterinarian was 2 per year (range 1-12). Twelve (40%) of the 30 primary caregivers had previously accessed the OVCHSC, either with the current patient or with other pets; two of these had undergone cancer treatment. Twenty-six (87%) of the primary caregivers grew up with one or more pets, 25 (83%) as an adult had owned another dog and 17 (57%) currently owned more than one pet. The LAPS mean score for the primary caregivers was 60.5 (SD 6.55, range 40-69).

Of the 30 cancer patients, 14 were diagnosed with multicentric lymphoma, 3 with appendicular osteosarcoma, 3 with mast cell tumour, 3 with hemangiosarcoma, and 7 with other types of cancer. The patients’ mean age was 8.7 (SD 2.5) years. Eighteen
(60%) were male. All the patients were neutered. Twenty-three (77%) were acquired at 3 months of age or less.

**Expectations for information: the truth about the entire journey**

**Participants’ expectation for information was qualified by one central clear-cut criterion: it had to be “the truth.”** Participants did not want the situation “sugar-coated,” “buttered-up,” or made “prettier” than it really was. Instead, they wanted “the straight goods,” “the truth,” “the facts – good or bad –” so they could “deal with it as best they [could],” avoid “surprises” and “disappointment,” and “be prepared.” They were adamant in wanting to face whatever it was head-on and deal with the reality of the situation, rather than be sustained with a moderated version which could result in “false hope.” As one client remarked, “I was never given any false hope here, which I think is really important. What I did get is the facts – no promises – but I got the facts. And what else can people offer? You need the truth.”

Experiencing the service as truthful enabled trust. Although trust was most commonly expressed as existing within and as a result of relationships, it was also related to the appraisal of the service as “honest,” as can be appreciated in one client’s comment, “I feel like I know them, and they’re honest, and I can rely on the advice they will give me.” Clients did not want to feel as if they were, as one client phrased it, “being led down the garden path.”

Experiencing the service as truthful also enabled confidence. As one client forwarded, they needed “the best possible information,” so they could satisfy themselves that they were “doing the right thing.” Doing what was “right” and “best” for their dog was repeatedly expressed as the universal underlying directive and guiding algorithm underpinning care. With confidence their decisions were based on the truth – the factual
realities of the situation – they could feel assured they were meeting this mandate. When confidence wavered, undermined by the many uncertainties characterizing cancer and its treatment, “the truth,” no matter how unpleasant, contributed to a greater sense of certitude and thus resolve, enabling them to push forward despite the many challenges.

**PARTICIPANTS WANTED TO BE INFORMED ABOUT ALL ASPECTS OF THE CANCER AND ITS TREATMENT: FROM THE BEGINNING, WITH THE DIAGNOSIS, TO THE END, THE INEVITABLE OUTCOME.** Most participants wanted to know about the cancer itself and what the natural course of events would be without treatment; the treatment options available and associated prognoses, including the pragmatics of financial, time, and emotional investments required; and the details of what the treatment journey would entail. These details included information about the diagnostic and monitoring procedures needed; potential treatment effects, side-effects, and complications; expected time-lines for response, remission and relapse; and potential for cure. This is clearly captured in the words of one client as she reminisced about her initial consultation:

“I really needed their guidance as to what was appropriate to do and what my options would be in terms of therapy for her… laying out what [was] possible, right from doing nothing to doing half body radiation, so everything from nothing to the most you could possibly conceive of doing to try and effect cure, if you want to look at it that way. And what the percentage response was, what the side-effects were, and more pragmatically what the cost was, both in terms of time and money – and emotional input, too. So, all those things I needed to hear. I needed to hear those things…”

Participants also wanted to know how to measure quality of life, since the prevention of undue suffering was deemed fundamental to engaging in treatment. As one client
stated, “At the end of the day, it just matters that the dog is happy, [that] he doesn’t suffer… Whatever needs doing, we just want to make sure that he doesn’t suffer.” Lastly, they wanted to know when “enough is enough,” when it would be “right” and “best” to discontinue treatment and/or euthanize.

**Variation in expectations: the effects of time, background, and preferences**

**Participants’ expectations for information varied over time.** As reflected in the discussion of participants in all 3 stages, the expectation for information was highest in the early stage when the cancer situation was completely novel and they were gathering “the facts” and seeking “guidance” to choose the course of action. Correspondingly, the expectation for information was lowest in the late stage, suggesting that previous information needs had been met. As one client recalled, “We had a lot of questions on what to expect and what would happen… We had no idea. We were blind coming in. A little bit more informed now, ’cause you learn from experience.”

**Participants presented with varying informational backgrounds.** Most participants arrived at the doorstep of the oncology service with only a rudimentary appreciation of their dog’s specific type of cancer and the potential treatment options, although exceptions were present, with a few well-informed either through their family practitioner or through Internet-based research. Those who were uninformed tended to automatically base their opinions on what they knew about cancer in humans. For example, one participant was worried that his dog might become “nasty” post-amputation, saying, “I mean, I have nothing else to compare it to other than your human experiences,” explaining that he’d “seen” that people who “lose limbs” can become “rather rude” and “mad at the world.” Many participants assumed the side-effects would be the same as in humans, considering this “scary” because they feared a similar “toll” on
the body. Instead of thinking of different cancers with different disease patterns, treatment responses, and associated prognoses, they tended to generalize from one cancer situation to another.

Although previous experience with cancer was not tabled as an area of discussion in the study, the majority of participants voluntarily raised the topic during the interviews. In half of the interviews, participant(s) referred to their experiences of cancer with immediate and extended family members, friends, and co-workers, with two self-identifying as survivors. Nearly the same proportion reported cancer (with and without treatment) in previously owned pets, sometimes gauging their current experience with the past. Just a few overtly pointed to their lack of experience with cancer. Although previous experience influenced their degree of awareness and specific informational needs, there was no evidence to suggest that it influenced their overall or broad informational needs. On the contrary, most participants expressed expectations for as much information as possible, independent of their experiential background.

Previous experience also influenced their attitudes and decisions, as evidenced in the following client’s comment, “{Niece} has been cancer-free for 4 years now, so there’s hope… Maybe that experience with {Niece} and the end result – and [then] we found {Patient} had cancer – maybe we’re a little more positive about the whole thing. Because otherwise, as soon as you hear the word ‘cancer,’ you’re like, ‘Oh, that’s it. You’re done.’ And maybe even more so when you’re thinking about a dog.”

**Participants’ Preferences for Information Varied.** While most participants wanted to know “as much as possible,” a few appeared to be satisfied with substantially less. At one extreme, the need for information was intense, as appreciated in a particularly passionate rendering: “I needed to know if we did nothing. And I needed to
know if we did everything. And I needed to know if we did in-between… I needed to
know. I needed to scientifically know… Give me – you have the information – give me
that.” This participant continued, “Most owners don’t need to know every detail, but I
feel I do.”

In contrast, a few participants were very comfortable with comparatively little
information despite openly having acknowledged its importance. Instead of needing to
know “every detail,” these individuals appeared to rely on trust in the expertise of the
oncology service. As one participant openly acknowledged, “So some of the technical
things, it doesn’t matter to us ’cause we don’t know. We wouldn’t have any input in any
case, right? So, I mean our job is to trust the experts, and they’re the experts.”

Of interest, two participants, when asked, were unable to name the kind of cancer their
dog had. In fact, in stark contrast to the participant above who needed to know “every
detail” about every potential prognosis, another reported having “blocked out” his dog’s
prognosis, saying, “I was doing some filing, and trying to get all his records alphabetical,
and I came across this one piece of paper and read it: 4 to 7 months. Now I know they
gave it to me – because I had it – but I don’t remember reading it, or I chose to ignore it.
I’m sure they told me – they almost have to tell you that – but I chose to block that out,
which is probably a good thing.” With this in mind, it is possible he may have also
“blocked out” the name of his dog’s cancer. Compared to the majority of participants who
insisted upon as much information as possible, some appeared to manage better with less.

The significance of information: trust, decisions, and preparedness

INFORMATION ENABLED TRUST AND CONFIDENCE IN THE ONCOLOGY SERVICE.

Through exposure to the expertise and technology the service could offer, learning about
the cancer and options for treatment, participants developed the trust and confidence
necessary to move forward in undertaking a cancer treatment program. As one client explained it,

“The sense of knowing that they’re knowledgeable… Like, I’m not the type of person to just put my dog in someone else’s hands… being blind to what’s going on. I spent hours and hours of research – days and days of research – so I was very well-researched before I came in with millions of questions. Every question I had, they were able to very thoroughly answer it. They answered questions I didn’t have – that I should have had… And I knew I wanted a certain protocol and they were automatically going to use that protocol…. They’ve never shown me a side where I’ve questioned their ability…. Virtually every visit they kind of reaffirm their ability as far as their knowledge and their wisdom.”

Later in the interview she indicated,

“Just having that comfort of someone to fall back on that you trust explicitly is huge when you’re in this situation, where you’re vulnerable and you don’t know what to do, and there’s nothing you can do. So to hand your pet over to someone you trust so much is… (she is unable to find the words). I’m optimistic – very optimistic – that ‘yes,’ they will help me make decisions in the future for {Patient}, and provide me with their knowledge of the situation and their wisdom… I have complete trust in them.”

**INFORMATION WAS NEEDED TO MAKE INFORMED DECISIONS.** Participants took the responsibility to do what was “right” and “best” for their dog seriously. One client alluded to the burden inherent in the decision-making by contrasting their situation to the human context, saying, “You know at least people get to make their own decision most of the time, where[as] we’re trying to decide what’s right for her.” Although the “right” decision was aimed to benefit the patient, it also benefited the client. The ability “to do,”
to take action, moved clients from a position of helplessness to empowerment. It engendered a sense of control and capability, and fostered hope for a future that could be better than originally forecasted. This can be appreciated in the following comment, “There was one point where I really felt that she was sick, and I was helpless. But then coming to {the service}, all of a sudden it was if I had like a team and we were all working for {Patient} together… helping me do what we can for her.”

Since the participants found cancer and its treatment to be both fear provoking and fraught with uncertainty, they would sometimes second-guess their decisions, most especially at the start of the treatment program. However, the information provided, often repeatedly and reassuringly, helped them, first, to make the decisions that were necessary, and second, to retain confidence in them. One early stage client’s struggle with confidence over the week following the start of treatment is evident in the following comment, “The rest has been sort of a whirlwind (large out-breath) of trying to analyze it, what we’ve done – not what we’ve done but what’s been done for him – and reassuring ourselves, and with the reassurances of everybody else, that we are doing the right thing for this animal.”

**Information was needed to prepare for an uncertain future.** Most participants had adopted a long-term approach to the cancer situation. In questioning a future wherein the taken-for-granted fabric of a “normal” life had unraveled, most felt they had to know as much as possible, and in so doing, be able to prepare themselves for what could happen and how they should respond. Life had been familiar and predictable, and thus controlled and comfortable, but the world of cancer was unfamiliar and presented the forever possibility of the unexpected, and as such was uncontrolled and uncomfortable. Through gathering and knowing as much as possible, they minimized the
unfamiliar and unexpected, finding some sense of control and comfort within the ability to be prepared for what might come. This can be appreciated in one client’s words, “If I know and I’m prepared, I can deal with it. If I don’t know… It’s very difficult for me to deal with things if I don’t know what’s in store.” She continued, “The only way I’m going to get comfortable is [through] the more I know and have control of.”

“Knowing” also reduced the fear that was associated with “not knowing.” The client just quoted referred to this as the “fear of the unknown,” claiming this to be “worse than knowing.” She was adamant that clients, “when in a position like this” need to be “really well-informed so they’re not so fearful.”

Although it was evident that “not knowing” tended to generate fear, by its very nature, it also left space for the possibility of hope. Facing uncertainties impregnated with hopes as well as fears, participants were better enabled to develop realistic expectations when informed, expectations that could moderate the pitfalls of both wishful thinking and doomsday predicting, enabling them to envision plausible, “on course” versions of the future. In reference to this, one client said she wanted the service to “fill in the gaps so that we stay on course” as “we might have unrealistic expectations because of our lack of knowledge.”

**Discussion**

The current study provides a broad introductory understanding of the information expectations of clients who access oncology service at a tertiary referral centre. Beyond the central qualification of truth-telling, the findings indicate that clients may expect information about all aspects of the cancer and its treatment, varying in relation to their basic understanding of cancer, their previous experience with cancer, and their
information preferences. Furthermore, they indicate that information functions in three ways: it enables the confidence necessary to engage in a treatment program, the ability to make informed decisions, and the ability to be prepared for the future.

As emphasized by the study participants, the central qualification was for the information to be “the truth.” Truth-telling in the oncological setting is actually a more recent phenomenon. Prior to the 1990s, within the era of paternalism, it was commonplace for physicians to “protect” patients from the psychological impact of the cancer diagnosis by withholding information.14, 15, 16 With the movement from paternalism – in which it was perfectly acceptable for physicians to decide what a patient should and should not know and what treatment should be given – to autonomy – wherein the patient is seen to have a right to information and active participation in their own care17, 18 – truth-telling has become the norm.15, 19 Despite this, the fact that truth-telling was repeatedly raised suggests the possibility of an ongoing current of distrust reminiscent from the experience of paternalism. Hence, oncology services may want to consider, as a matter of protocol, providing clients with verbal assurance by underscoring the principle of truth-telling underlying their service philosophy early in the service encounter. Abiding by this philosophy, the challenge of conveying bad or difficult news can be met, not by avoidance, but by imparting the information in an honest, clear, direct and yet compassionate manner.20-22

Veterinary clients’ awareness of cancer and its treatment when arriving for tertiary referral oncology care depends on the degree to which they were informed through their family practitioner, what they knew through independent research (e.g. Internet), their ‘walking knowledge,’ and their direct and indirect experience with cancer. Importantly, clients do not present as blank slates waiting to be inscribed, but with their own expertise,
preconceptions and values, which together shaped their perspectives toward the cancer situation. In the current study, what most powerfully differentiated their perspectives was their prior experience with cancer, which, although variable, was quite common. Prior experience can have significant implications, not all of which may support best outcomes. For example, unfavorable experiences could lead to a more pessimistic outlook, potentially limiting the treatment options clients would be willing to engage in, to the detriment of the patient. Conversely, more positive experiences could lead to an unrealistically optimistic outlook, potentially driving requests for treatment options not necessarily in the patient’s best interests. Identifying those at risk of either extreme would provide the opportunity to intervene, and thus maximize the potential for best outcomes.

It is important, therefore, to elicit and understand the client’s perspective.

There are two ways to accomplish this. The first is to directly inquire about thoughts, feelings, concerns, ideas, and expectations. The second is to identify and respond to clues, both verbal clues, in the form of comments, and nonverbal clues, such as changes in body language, speech or facial expression. In particular, the finding that clients tend to generalize their knowledge across different cancer contexts, at times coming to erroneous conclusions, suggests the need to specifically inquire about prior experience with cancer when eliciting the client’s perspective. Such inquiry would provide the opportunity to adjust preconceptions and misinformation, individualize the educational process, and converse with increased sensitivity and respect – validating client experience while being aware of its potential to overshadow the current situation.

Most participants of the current study had a strong absolute need to be fully informed – to know as much as possible, good or bad – while a few were satisfied with very little information, evidence of variance in preferences for information. This has been noted in
the veterinary literature,\textsuperscript{7, 24, 26} and is in keeping with the literature on patient expectations,\textsuperscript{17, 22, 27-31} wherein 80 to 94\% of patients report the desire to be fully informed.\textsuperscript{32-34}

The factors that influence preferences, as reported in the human medical literature, include an extensive number of patient, physician and situational factors.\textsuperscript{30, 32, 33, 35-40} Patient factors can include age, gender, educational status, socioeconomic status, cultural background, ethnicity, religion, past experience, the time from diagnosis, and the prognosis, as well as psychological factors such as anxiety, psychological adjustment, and coping style. Physician behavior, the physician-patient relationship, the purpose and type of consultation, the type of information presented in the consultation, and the comfort and trust in the clinical setting are also factors known to influence the amount of information wanted.

With age, gender and education as the most stable predictors, younger, female and educated patients are recognized as preferring the most information.\textsuperscript{19} Although these three predisposing factors are useful to keep in mind in understanding information expectations, it does not mean that providers can or should predict the information needs of individuals based on these or any of the other factors that have been shown to influence information preferences.\textsuperscript{17} For example, there is contradictory evidence that older individuals may not necessarily prefer less information, but assume a more passive role towards information-seeking.\textsuperscript{41, 42} Socialized within the norms of paternalism, they may still harbor a deferential attitude to medical personnel.\textsuperscript{32} This places the imperative upon service providers to be aware of differences in information-seeking tendencies, and rather than assume certain individuals to have lesser needs based on particular patient or
situational factors, be extra vigilant to elicit needs and actively encourage questions within a client-centered approach.\textsuperscript{32, 42}

A particularly well-documented factor known to influence information preferences is coping style: individuals cope with life-threatening illnesses by seeking or avoiding information to varying degrees.\textsuperscript{40} At one end of the spectrum, clients can be categorized into ‘monitors,’ who actively seek information, and at the other end, ‘blunters,’ who avoid, shun, minimize or distract themselves from information.\textsuperscript{40, 43, 44} Monitors cope best by gathering as much information as possible about a threatening situation, maximizing their informational resources, whereas blunters cope best by protecting themselves from the full impact of frightening information.\textsuperscript{44} Blunting appeared to be particularly evident with one participant, who said he must have “blocked out” the memory of his dog’s prognosis, having no recollection of it being given even though it had even been provided in writing. This individual had also been unable to name the type of cancer his dog had. Both these observations suggest this individual likely coped better with less information. The importance of recognizing differences in coping styles, as it relates to information preferences, is in realizing that information can function to enhance or hinder coping. As Butow (1997) said, “‘forcing’ information on a blunter may be as injurious as withholding it from a monitor,”\textsuperscript{37} emphasizing the need to be aware of the variation in coping style and provide information accordingly, thus supporting rather than undermining client ability to cope. For those preferring less, the information provided can be condensed to the major points necessary to assure client informedness, what has been called a “targeted” approach.\textsuperscript{35}

It is vital that service providers explore, identify and adhere to client preferences for information.\textsuperscript{36, 45} Success in client education depends on recognizing and attending to
information preferences so as not to under- or overwhelm, but provide the right amount and type of information tailored to the individual.\textsuperscript{46} This is not necessarily easy, as information needs can change, both within the consultation (in relation to the information given and/or physician behavior) and over the course of care.\textsuperscript{7, 32, 37} However, an individualized or tailored approach to information-giving is not just feasible, but recommended.\textsuperscript{19, 47, 48} Such an approach should start with the client by inviting the client to share what they already know and then asking them what they would like to know. Establishing their baseline understanding and preferences as the starting point, information can then be given in a staged approach called “chunking and checking,”\textsuperscript{25} alternating between providing small amounts of information and checking for understanding, incorporating the client’s interpretation and interests to direct the information-giving process. This will ensure the client’s views and preferences are kept central to the information-giving process, maximizing the potential to meet information preferences.

Via the information given, enabling awareness of the service’s expertise and technology, the participants of the current study were able to form opinions of the service. Such opinions are influenced by not only the information, but also the way the information is given.\textsuperscript{49} The proficient delivery of adequate information contributes to an opinion of competence and caring,\textsuperscript{49, 50} both of which are fundamental to the development of trust.\textsuperscript{51} Where poor delivery and undisclosed, inconsistent or contradictory information can diminish trust, proficient delivery and credible, complete, and scientific information builds trust.\textsuperscript{18} Since trust in the service is foundational to clients’ confidence to engage in a treatment program, and the acquisition of trust “[an] iterative process, requiring repeated evidence,” meeting clients’ informational needs
regarding the content (i.e., what is said) and process (i.e., how it is said) levels should remain a steadfast priority.\textsuperscript{52}

Prior to the establishment of trust, some clients may be especially diligent in seeking information and critically assessing it – scrutinizing what is said and how it is said – while forming their opinion of the service.\textsuperscript{53} Once trust is established, however, some of these clients may become less concerned with the details, comfortably complacent within the confidence they’ve placed in the service’s expertise.\textsuperscript{37, 53, 54} Informational needs, therefore, may be highest early in the engagement with services not only because of the novelty of the situation, but also because of clients’ need to assess the credibility of the service. It is important for oncology services to recognize the effect of trust (or the lack thereof) on the information needs of clients and respond accordingly in order to consistently meet those expectations. Services may have all the “bells and whistles,” yet if a trusting relationship cannot be established, it will likely be to no avail.

Via the information given, which helped form the foundation of trust whereupon action could be taken, participants of the current study were able to make informed decisions. According to the literature, in order to make informed decisions, adequate and appropriate information needs to be provided on all treatment options (including the ‘no cancer-directed’ treatment options), risks and benefits, associated prognoses, and why one treatment may be recommended over another.\textsuperscript{45} Communication needs to be clear, client understanding frequently checked,\textsuperscript{36} and written materials to reinforce important information provided as needed.\textsuperscript{45} Even with all these measures in place, decision-making is a complex process, and service providers should be prepared to address decisional insecurity. According to the findings of the present study, it appears that some clients may benefit from educational reinforcement in the immediate period after
decisions are made, in the form of repetition of key information and the provision of reassurances. Such reinforcement may allay the distress felt by those whose anxiety generates doubt about the validity of their decisions.

It was very apparent that the ability to take action meant a great deal to the participants. The ability “to do” moved them from a position of helplessness to empowerment. It engendered a sense of control and capability, and likewise, fostered hope for the future. What is most remarkable, however, is that this shift started with information – one building block at a time, each interconnecting with another, eventually materializing into what would represent the chosen course of action. It was not just “the doing,” but also “the knowing” that pre-empted ‘the doing’” that led to the sense of empowerment, control, capability, and hope. The attainment of information was of profound psychological significance for the participants.

There is a wealth of literature in human healthcare that demonstrates how information can support the psychological health and welfare of cancer patients.\textsuperscript{17,55} Traditionally, information was often withheld from cancer patients through the legal doctrine of therapeutic privilege\textsuperscript{14} in the belief it would increase patients’ psychological morbidity by causing anxiety, depression, and hopelessness.\textsuperscript{14,25,28} Studies over the past three decades, however, have repeatedly demonstrated quite the opposite, that information, rather than being harmful,\textsuperscript{14} can positively contribute to patients’ psychological wellbeing. Information has been documented to reduce anxiety,\textsuperscript{28,53,55} limit fears,\textsuperscript{28,56} help maintain a sense of mastery or control,\textsuperscript{17,55,57} positively affect the ability to adjust and cope with illness,\textsuperscript{17,58} reduce uncertainty,\textsuperscript{58} prevent unnecessary distress,\textsuperscript{17,29} lead to realistic expectations,\textsuperscript{17,29,55} increase confidence,\textsuperscript{14} and enhance hopefulness.\textsuperscript{28,55} These beneficial effects pertain to both favorable and unfavorable information, as, for most
individuals, “not knowing” is “worse than knowing,” as identified in human medicine and substantiated within the context of this study. Thus, it is important for oncology services to recognize the significant impact that information can have on clients’ psychological wellbeing. The provision of information does not just serve the profession’s ethical and legal imperatives to enable informed decisions, and thus the ability to take action to improve the welfare of patients. It also serves the profession’s ethical imperative to provide service in a manner which supports the welfare of clients. If a central tenet of practice is to provide humanistic service, as proposed by the philosophy of bond-centred practice, then it is vital for services to recognize the power of information, and in turn consciously, intentionally and purposefully provide information in ways that will promote the welfare of clients. Doing so will not only enable clients to make informed decisions, vital in itself, but also to become psychologically fortified in ways that will contribute to the resiliency necessary to carry through with those decisions and better manage the entire cancer journey.

To manage this journey, the participants in the current study needed information to prepare for the future – the future made uncertain by the diagnosis of a life-threatening cancer. Such a diagnosis brought numerous uncertainties as to what it would mean for both the dog and the family. The pursuit of treatment introduced even further uncertainties, those related to both the treatment and the basic practicalities of living with and caring for a dog with cancer.

There is, according to Beach (2004), an “omnipresence of uncertainty” associated with cancer. This can magnify the many fears and anxieties brought on by cancer, and detract from the sense of control, security, and predictability that might normally characterize life. Uncertainty along with fear, anxiety, and insecurity powerfully drive the
need for information. If unmet, the drive to know often leads to overly vivid imaginings, creating scenarios worse than the realities warrant.\textsuperscript{33, 44} This can lead to further – needless and preventable – fear, anxiety and insecurity. Since information can counter this by keeping clients “on course” as they manage the uncertainties associated with cancer, oncology services should provide as comprehensive an education as possible – delimited by information preferences – on what the future might bring. Doing so can prevent needless fear, anxiety and insecurity as well as engage clients with the numerous psychological benefits made possible by information.

Clients need to be prepared for the path they’re willing to take. From a humanistic perspective, services should arm clients with as much preparatory information as they want, need, and believe to be important, enabling them to be as prepared as possible. To be prepared means to be educated, trained, organized, systematized, primed, and made ready. To be ready means to be equipped, capable, and equal to the challenge. The provision of information enables clients to become equal to the challenge.

The present study was able to capture the firsthand real-life experiences of clients in their own words. Through rigorous analytic techniques, an in-depth understanding of client expectations based on clients’ first-hand experiences, views, opinions and ideas was generated. Analogous to the studies in human medicine, which have consistently identified high patient expectations for information,\textsuperscript{3} the current study identified information as the foremost expectation of clients accessing oncology services. Based on this evidence, if the goals of oncology services include fulfilling client expectations, then addressing client expectations for information would seem the appropriate first step for services wanting to provide high-quality care. The institution of best practices to meet
client expectations for both the content and process aspects of information, as discussed in this chapter and Chapter 3, can serve to advance cancer care in veterinary medicine.

It is important to note that the results of qualitative research, which focuses on specific individuals within specific contexts, cannot always be easily generalized to other individuals or other contexts. This study was not designed for statistical analysis. The relatively small number of participants does not necessarily represent the overall population of clients seeking cancer care services at a specialty oncology center. Further to this, it is possible that clients who choose a tertiary referral centre (as opposed to a secondary referral centre or treatment by their primary care veterinarian) may have different expectations – for example, expect more information – than those in alternate settings. Care must be taken to consider the applicability of our findings prior to extrapolating them to other oncology service contexts. 60

Likewise, the potential for bias needs to be considered. In order to minimize researcher bias, the interviews were approached ‘de novo,’ purposefully avoiding a prior literature review, and intentionally maintaining a curious, dispassionate, and non-partisan interview approach. As well, they were deliberately conducted in a client-driven manner, enabling significant client control of the direction of the interview and content discussed. Another potential source of bias is social desirability response bias, which can especially be an issue with one-shot interviewing. 61 Although this can influence responses to elicit more favorable social approval, it is nearly unavoidable in interview-based interpersonal research.

Future qualitative interview-based research could focus specifically on the information expectations of clients, possibly using an emergent design, such as grounded theory, wherein data collection and analysis are synchronous and the research questions adapted
to the emergent themes, with the potential therein to derive a more in-depth appreciation of this area.\textsuperscript{62} Given that communication is a complex phenomenon, the combination of qualitative with quantitative methodology – a mixed method approach – may be most favourable.\textsuperscript{63} Incorporating a survey assessment of information expectations based on what is known to date could strongly complement the knowledge gained through further qualitative work, thus gaining diverse levels or depths of knowledge.\textsuperscript{63}

Understanding and fulfilling client expectations should be an inherent goal in veterinary medicine. It is important to seek the firsthand experiences, views, opinions and ideas of clients – to examine the services delivered from the clients’ point of view. Research that seeks public influence on the healthcare system does more than support evolving and responsive care systems. It makes possible the potential to break new ground in advancing an all-embracing quality philosophy within healthcare delivery, and in so doing lead to improved outcomes for the client, the patient, and the healthcare system.

\textsuperscript{a} H2 digital audio recorder (Zoom, 2007) and GarageBand (Mac OS-X, 2009)
References


Chapter 3

“Making the journey easier”: The communication of information with owners of pets with cancer

Prepared in the style of the Journal of the American Veterinary Medical Association
Abstract

Objective—To describe the process aspects of the information expectations of clients accessing oncology care services at a tertiary referral center for dogs diagnosed with life-threatening cancer.

Design—Qualitative study based on in-person single and dyadic interviews.

Participants—43 dog owners in 30 interviews.

Procedures—Independent in-person interviews were conducted with standardized open-ended questions and follow-up probes April – October 2009. Thematic analysis was performed on transcripts of the interview discussions.

Results—The participants expected the provision of information in an “upfront” manner; in multiple formats; using comprehensible language; in an unrushed environment wherein staff took the time to listen, answer all questions, and repeat what was needed; on a continuous basis, with 24-hour access to address questions or concerns; in a timely manner; with positivity; with compassion and empathy; with a non-judgmental attitude; and through staff with whom they had established relationships.

Conclusions—How information is communicated is vitally important to oncology clients in that it not only functions to facilitate comprehension of the information given, but also to create a humanistic environment from which clients derive the psychosocioemotional support needed to successfully manage the cancer journey.
**Introduction**

The veterinary profession is challenged by not only changing, but also *increasing* expectations of the public, often highly bonded to their animals and well-informed about their care.\(^1,2\) As Dr. Michael Blackwell stated in his keynote address at *The 2001 Iverson Bell Symposium*, “An informed public, with no shortage of information resources, comes to us today armed with questions and expectations far beyond those of any period in the history of medicine.” With the imperative to remain attentive to growth and changing paradigms in veterinary medicine, veterinarians must acquire the knowledge and skills to respond to these changes in order to be productive, successful, and economically viable.

Furthermore, today’s standard of bond-centred practice\(^3\) requires that veterinary services care for the needs of the client as well as the patient. Although oncology services are challenging from the medical perspective, with the treatment of the patient, they are also challenging from a social perspective. These challenges will continue to intensify given the increasing attachment between owners and their pets and the increasing incidence of cancer in the pet population.\(^4,5\) Therefore, understanding the expectations of clients, especially given the unique and often emotionally charged context of cancer treatment, appears evermore imperative if oncology teams are to best serve the interests of clients and patients.

Veterinarians’ perceptions of clients’ expectations are not always consistent with clients’ actual expectations.\(^6-8\) Although a number of published studies have examined the expectations of veterinary clients within companion animal practice,\(^2,6,7,9\) none have explored the expectations specific to the unique challenges within cancer care practice. Veterinary medicine offers sophisticated technology for cancer; however, knowledge of the complexities of client care within this emotional context is lacking. Identifying and
then responding to client expectations in the design of service delivery may enable clients to better cope with their pet’s illness.

The objectives of this study were to identify the expectations of clients accessing oncology care services at a tertiary referral cancer center. Six prominent expectations were identified, namely information as an expectation of the consultation; quick scheduling of the referral and timely service, compassionate service, and continuity of staff and service protocols as expectations of the healthcare process; and maintaining quality of life and achieving the goals of treatment as expectations of the medical intervention. The findings in relation to “information” as the foremost expectation were subcategorized into “the content” (i.e., the information wanted) and “the communication process” (i.e. how the information was given). This chapter highlights the elements of the communication process identified by the participants as meeting and/or surpassing their expectations for information.

**Materials and Methods**

**Study design**

Details of the study design, participants, interview structure, and data analysis have been described in Chapter 2. In brief, the study consisted of 30 semi-structured interviews with pet owners seeking cancer treatment for their dogs with the referral oncology service of the Ontario Veterinary College Health Sciences Centre (OVCHSC), University of Guelph, Guelph, ON. Pet owners were interviewed at either the early, middle, or late stage of their dog’s respective cancer treatment program. Ten interviews were conducted for each stage. At the time of each interview, owners completed a short demographic form and the Lexington Attachment to Pets Scale (LAPS), a widely used questionnaire.
with established psychometric properties for measuring the human-animal bond, with scores of 54.9 (SD 9.2) indicating very attached, 44.8 (SD 10.3) somewhat attached, 32.6 (SD 9.3) not very attached, and 26.2 (SD 13.6) not at all attached. The interviews were conducted over a 7-month period, April to October of 2009. Client expectations were defined as value expectations, specifically as “expressions of desire (what is wanted), necessity (what is perceived to be needed), entitlement (that which is owed or to which one has a right), normative standards (that which should be), or importance (a hybrid category, since wants, needs, and rights may all be rank ordered in importance).” The study protocol was reviewed and cleared by the University of Guelph Research Ethics Board (REB #08DC007).

Study participants

Participants were purposively recruited as a convenience sample from the clientele of the OVCHSC referral oncology service. Clients were considered eligible if their dogs had any type of cancer and were receiving any form or combination of ongoing treatment (surgery, radiation and/or chemotherapy) during the early, middle or late stage of treatment as defined by the specified treatment protocol. Treatment programs ranged from 2 weeks to 6 months in duration. Those clients categorized as within the early stage were interviewed during one of the first two appointments for the treatment program; those in the middle stage were at the mid-point of the expected duration of the treatment program; and those in the late stage were in the last two visits of their treatment program. The oncology technicians, clinicians and author followed a step-wise recruitment process. Written informed consent was always obtained in person.
Interview structure

A semi-structured interview, following one of two interview guides, each containing a series of standardized, open-ended questions and follow-up probes, was conducted to explore each client’s perceptions, experiences, and expectations of the oncology care service. One guide was for the early stage group and the other for the middle and late stage groups (Appendix 1.5). The interviews were scheduled to be 1 hour long and conducted by the author in a private office. They were recorded using two devices synchronously. The resultant audio recordings were transcribed verbatim in orthographic format by a professional transcriptionist. The transcriptions were reviewed by the author in tandem with the audio recordings to ensure uniformity of quality and accuracy of the transcribed interview data. Words that were inaudible, implied, or adjusted in tense were presented in square brackets to most clearly represent the findings. As well, client, patient, and oncology service provider names were replaced with nonidentifying descriptors in curly brackets to maintain anonymity.

Data analysis

Demographic data was summarized to provide general descriptors of the participant and patient population. The LAPS was summarized (mean, range) to provide a quantitative measure of participants’ emotional attachment to their dogs. Thematic analysis of the transcripts was then performed group-wise by the stage of the treatment to identify, analyze, and report the primary patterns or “themes” across the data. This process required multiple passes through each transcript, between transcripts, and among the groups of transcripts corresponding to the 3 stages of treatment, looking for similarities and differences. Since the data generated are words rather than numbers, the findings are presented as descriptive summaries. Although some general frequency trends
are noted, the results do not represent a quantitative analysis and thus are not amenable to statistical generalizability.

**Results**

**Client and patient demographics**

The client and patient demographics were previously reported in Chapter 2. In brief, 43 dog owners participated: 17 individual participants, 9 husband-wife dyads, and 4 mother-daughter dyads. Of the 30 primary caregivers, 22 (73%) were female, 26 (87%) were between 30 to 64 years of age, and educational status varied from less than grade 12 to post-graduate education. Annual household income ranged from $35,000 or lower to over $100,000 per year. The LAPS mean score was 60.5 (SD 6.55, range 40-69). The 30 patients had been diagnosed with one of various forms of life-threatening cancer, including multicentric lymphoma, appendicular osteosarcoma, mast cell tumour, and hemangiosarcoma, among others. The patients’ mean age was 8.7 (SD 2.5) years.

**The process of communication**

The elements of the communication process most frequently cited included providing information (1) in an “upfront” manner, (2) in multiple formats, (3) using comprehensible language, (4) in an unrushed environment wherein staff took the time to listen, answer all questions, and repeat what was needed, (5) on a continuous basis, with 24-hour access to address questions or concerns, (6) in a timely manner, (7) with positivity, (8) with compassion and empathy, (9) with a non-judgmental attitude, and (10) through staff with whom they have established relationships. It should be noted that participants’ discussion about the varying aspects of providing information arose according to their own prerogative and how the conversation unfolded, rather than as a direct result of specific
questions about information giving. Without standardized questions on information
giving applied uniformly across participants, precise quantification of these findings is
not possible. Therefore, to provide the reader with a sense of the degree to which the
specific elements of the communication process were referred to among the participants,
the results are presented using qualitative descriptors such as “many,” “a number of,”
“some,” or “a few.”

**Participants were pleased that the information provided was presented freely and in a forthright manner, commonly described as “upfront.”** A number of participants expressed their appreciation of how the information was freely
given in an upfront manner. Presented this way, the information sharing was experienced
as comprehensive: participants felt they had been well-informed. It also provided a full
appreciation of the situation from which participants could then ask questions, and in
many cases actually reduced the number of questions. This can be appreciated in one
participant’s comment, “They told us everything upfront… They were proactive... I’d
rather you tell me everything about this disease, and what’s happening, and then I can ask
you the questions. So they told us everything beforehand, and then some of our questions
were already answered because they had already gone through it.” Substantiating the
need for information upfront, another participant said, “You don’t know what you don’t
know, so you don’t always know what to ask.”

**Participants appreciated information presented in formats other than verbal explanations, referring specifically to visual modes of information-giving.** Most commonly this was in reference to written materials such as
handouts and hospital discharge instructions, although a few clients referred to the use of
imaging technology (ultrasonic examination, radiographs, and magnetic resonance
imaging) and/or such basic tools as a white board and marker. There appeared to be as much praise as criticism for written materials – praise for it and criticism for not having more and better materials to enhance learning. Although written material was appreciated at all stages in the treatment program, it was especially valued early on when participants were challenged by a large quantity of unfamiliar information, often while still in a state of shock and overwhelmed with the diagnosis. As one client said, “I found myself referring to it quite a bit at first. And then I didn’t look at it very much. But at first I looked at it a lot because you’re… still in shock – a lot – and you don’t take anything in even though it’s been told to you. You don’t necessarily take everything in and remember it, so to actually be able to sit down and go over it with no distraction, to read through it all, was really helpful.”

Some participants read and re-read the material, in part to ensure they were taking proper care of their dog. It provided the self-assurance that they were not going to “hurt” their dog, as reflected in, “I’ve read that thing about ten times just to feel like, ‘Okay, I’m doing the right thing.’” It also increased awareness about the treatment program and what to expect. Not all clients, however, were satisfied. Those who had greater firsthand knowledge of cancer and its treatment found the handouts, “very generic,” containing “very little information about side-effects” and overall “not very helpful.” One client, whose expectations for information were admittedly high, was surprised she didn’t get “an information page on ‘My dog has cancer, and now what?’” on her first visit, saying, “That would be something they could do easily.” She followed this with, “I’m paying you to give me this care. Make a little sheet for me to make me feel better.”

Participants needed information given in comprehensible language. A few clients raised the issue of the language the service providers used. Faced with the
need to make life-implicating decisions within an emotionally charged context, attempting to make sense of a novel medical condition with its associated terminology, participants needed to be able to understand the information given to them. The frustration one client experienced can be appreciated in her attempt to recollect her experience, saying, “I’m sorry – it’s fuzzy because it was very traumatic. And when they’re giving you all those medical terms, you’re trying to process it and you don’t understand. And I had to keep saying, ‘Tell me in English, plain English… I’m sorry, I don’t understand.’” In contrast, another client acknowledged the staff’s recognition of the need to communicate at a level more easily understood, “They talked to me in language I understood, because they’re trained to talk as a doctor – [but] I’m not trained to listen as a doctor.”

**Participants appreciated consultations provided in an unrushed manner, “taking the time” to address all questions raised, repeat information, and actively listen and attend.** “Taking the time” for these activities promoted greater partnership within an open two-way communication exchange. This improved the quality and quantity of information exchanged, thus enhancing comprehension, and positively contributed to building the relationship through which participants found support. Firstly, “taking the time” to address questions supported participants’ efforts to understand the particulars of their dog’s care. As one client said, “[The oncology team] has all the time, it seems, to answer our questions. It wasn’t ever did we feel rushed or couldn’t ask enough questions. [Whether] the questions were silly or not, they answered every question. And we could ask the same question a couple of times, just to make sure that we were clear.” Secondly, “taking the time” to repeat appeared to be uniquely valued by
a few clients who spoke to the difficulties of comprehension. This can be realized in, “And I’m sure they’re busy, but they seem to really explain everything, and over and over again, too. Because I noticed there’s only so much a person can take in, especially when you’re emotional and you’re stressed.” And thirdly, “taking the time” to listen and attend signified that their dog’s lived realities and their point of view were valued and taken into account within a collaborative partnership. It also signified “care” and “connection.” As one client said, “It’s very evident that they care. They pay attention and listen to you when you let them know how your week was,” while another said, “You felt like you had their undivided attention… that kind of connection.”

**Participants appreciated the continuous access to informational support at all times, day and night, 7 days a week, in case of an unexpected event or complication with treatment.** Participants who engaged in the serious business of chemotherapy, radiotherapy, or major surgery needed to know they could access “advice,” “direction,” and “guidance” should an adverse event or crisis develop. The imperative for such access resonated with all the participants. Accessibility reduced the sense of isolation and vulnerability, or as one participant put it, the feeling of being “on the other side of the world.” It seemed analogous to a lifeline, enabling appropriate response to any issues that might arise, and the peace of mind needed to move forward, knowing support was at hand to manage any eventuality. This can be appreciated in the following client’s comment, “With the oncology team, I’m very confident because I know that at any time you can pick up the phone if you have any questions, concerns – whatever… So that’s comforting to know that… That’s good for me. We don’t want to feel as if… ‘What are we to do? We’re stuck here.’”
PARTICIPANTS WANTED INFORMATION IN A TIMELY AND PROMPT MANNER. Virtually all the participants commented on the concept of time, with many relating time to the experience of waiting. The undercurrent of anxiety that seemed to drive participants’ thoughts, emotions, and behaviours intensified when they were kept waiting. Participants most especially spoke to the “stress of waiting” in reference to incidents when the news to be received was potentially bad, such as when waiting for the results of diagnostic and screening tests. For many, the time spent waiting was time spent in worry about unfavorable outcomes.

The perception of the passing of time appeared to change for some participants, as revealed through one client’s observation, “To be fair, finding cancer in your dog is definitely very stressful… Waiting for a phone call back seems like hours… Every second seems like hours.” Substantiation for this was found in the difference in opinion of one couple on the time it took to get a referral. The husband thought the referral was “amazingly fast,” that “it couldn’t have been done any faster,” and that “things happened like ‘right now,’” while his wife, who was much more anxious, argued that the referral was “slow,” and the process, “long,” acknowledging that it was because she was “just so scared.”

PARTICIPANTS FOUND THAT THE POSITIVE, HOPEFUL ATTITUDE AND MANNER THAT CHARACTERIZED THE INTERACTIONAL EXCHANGES WITH THE SERVICE HELPED THEM MANAGE THEIR FRAME OF MIND AND SENSE OF HOPE. Participants often arrived at the doorstep of the oncology service extremely “worried and scared,” some so overwhelmed by the situation that they “broke into tears.” They felt “helpless,” “vulnerable” and very much wanting to help their dog, but at the same time very aware of the gravity of their dog’s diagnosis. They not only needed help, but also comfort and hope. Undoubtedly
comfort and hope were found through engaging in a treatment program, with the potential to extend quantity of quality life, but it was also found through the service itself, through the positive, realistically hopeful attitude and manner in which the service was delivered. For many, right from the very moment they walked into the hospital, this impressed them. As one client commented, “I mean, when you walk in, people are very positive and upbeat and happy and smiley. That’s very important. They have a really good bedside manner – dogsie manner – whatever you want to call it!”

One participant described the experience, by saying, “It’s just the way they are. They’re always positive. They’re never down. They’re always looking at the positive side.” This led some participants to feel that the oncology service was “a very nice, safe, happy place,” as one participant put it. This was highly valued because most felt, in fact, quite the opposite, sometimes describing the cancer diagnosis as having put them in a place they didn’t want to be. Another participant described it, saying, “It’s a very reassuring place to be… They just have a knack of making you feel that it’s going to be okay.” That “knack” certainly included direct messages of hope and reassurance, but it also included how the information was given, with words that conveyed hope, possibilities, and optimism, blended with a “friendly,” “approachable” manner. One participant described her clinician’s reassuring manner saying, “[The clinician] comes out and smiles at you and gives you that warmth, that feeling like ‘It’s okay.’” This was experienced as “positive reinforcement” that helped her to “keep on going.”

The positive attitude and manner radiated by the service, both verbally and nonverbally, helped participants develop and maintain a sense of optimism, which in turn helped them cope with the situation. Although they walked in helpless, they walked out
hopeful. One client said, “Somebody’s got to give you hope… I think when you have a challenge, it’s the other people that keep you going.”

**Participants valued the compassion and empathy shown, finding it “comforting” and “supportive” as they managed the emotionally challenging aspects of cancer care.** Since most of the cancers treated were life-threatening, the threat of a negative turn of events was nearly invariably imminent. The support of staff who listened to what they were going through and provided reassurance was very important to all the clients. When one client was asked what was needed from the service, she answered, “We need that human element.” She appreciated that the service wasn’t “cold” or “clinical,” typical of the human healthcare system where one couldn’t necessarily find that “connection.” Another client said he had expected a “huge, monolithic” organization, not the “folksy” kind of place that it was, with “kindness, courtesy, and gentleness.” Pleasantly surprised, one client recounted, “I sort of thought it would be more routine, kind of ‘Ah, we’ll do this. Go out. Nice to see you,’ kind of thing. But it was much more personal – much more personal.”

Other clients described the service as “supportive,” “very personable,” “warm,” “caring,” and “compassionate,” all “important characteristics for people who are doing this kind of work.” One client summarized her appreciation of the service saying, “I find that they’re very caring, compassionate people and yet they’re very professional and can keep things at a level where you can work with them without going into the emotional abyss that always awaits around the edges of this topic.”

**Participants appreciated the non-judgmental attitude held by the service, both regarding the time of diagnosis and/or treatment and the treatment option(s) chosen.** Some clients felt guilty, thinking they were somehow
negligent in not having noticed some sign of the cancer sooner, often questioning and re-questioning the circumstances leading up to the diagnosis. This was a great source of angst for some. No matter what the circumstance, however, the oncology staff supported and reassured clients, alleviating self-doubt and self-reacmanation. An example of this is found in the following: “They reassured me that ‘No,’ it wasn’t negligence on my part, that I hadn’t missed this for a month or 6 weeks or something just by not paying proper attention to my dog. So they took that big weight of guilt off my shoulders. Because instantly it’s huge, right? It’s like, ‘How could I have missed this?’” With another client who waited a full year from the initial consultation before having her dog’s leg amputated, the oncology service was “nice enough” to commend how the dog had managed so well “on his own” for so long, and then again “nice enough” to commend her on having the surgery done. No matter which direction she had chose in her dog’s care, the service had maintained a respectful, supportive, and non-judgmental stance.

Several participants expressed gratitude for the sense of respect and acceptance they felt when making treatment decisions. As one client commented, she definitely didn’t feel “swayed” or “pressured” one way or another, as in being “told” what to do. She was glad that they would have supported whatever decision she made, so she wasn’t made to feel that she might be deciding the opposite of what they were trying to offer her. Another client phrased it a little differently, stating that she felt “permission” to make any choice she wanted. She stated that “[the clinician] was able to lay this all out on the line and yet in a non-judgmental way so that I didn’t feel like if I took option A that I was copping out, or if I took option B that I was, really, you know, going off the deep end too. So [the clinician] did it in a very non-judgmental fashion, which I appreciated.”
Participants appreciated information from their regular oncology care provider(s). The importance of ongoing relationships was widely appreciated. As one client indicated, they “communicated differently” within an established relationship because they knew what to expect from one another. She thought it would be “very hard” on somebody going through the service to have to form “a new bond” partway through, estimating it would be “difficult to adjust.” Another said “somebody new coming in” would “confuse the issue” because he’d grown accustomed to and developed a trust in the individuals he had worked with. One participant summed it up saying, “Continuity of service is critical… And to have that comfort is really, really important, especially in a service like this.”

Discussion

The promise within a rigorous approach to interview-based qualitative research is the opportunity to generate a deep understanding of an area through learning about the firsthand experiences, views, opinions and ideas of individuals. In contrast to quantitative methods, which deal with numbers, are primarily deductive, and seek to draw generalizable conclusions, qualitative methods deal with words, are inductive, and seek to describe and generate understandings about phenomena about which little is known, making this the appropriate research methodology to address the objectives of this study. The current study offers an insightful perspective of the nature of clients’ lived experience, along with their views, opinions and ideas, by way of their own words, and through such, provides an in-depth understanding of client expectations.

Through the qualitative research methodology of thematic analysis, “information” was identified as the key expectation. More specifically, clients spoke to 10 elements of the
communication process which were greatly appreciated, and which did, indeed, “make the journey easier.” These process elements served to directly and/or indirectly facilitate comprehension: directly, through making the information clear and understandable, and indirectly, through creating a humanistic environment wherein the support of clients’ emotional needs enabled clients to better attend to, register, and retain the information at hand. Moreover, within the humanistic environment thus created, participants felt better able to handle the many challenges – emotional, cognitive or otherwise – that the cancer journey presented.

The elements of the communication process which contributed to making the information clear and understandable included the provision of information in an upfront manner; in visual as well as verbal modes; using comprehensible language; and taking the time to answer questions, repeat points, and listen and attend.

Participants generally referred to the upfront manner of presenting information in relation to their initial consultation wherein they were exposed to a large body of interrelated details within a short time frame. The upfront manner conferred a wide-screen panoramic snapshot, what was called “the whole story” of the cancer diagnosis and treatment options. This provided clients with a foundation from which they could build questions based on the integration of their new as well as prior knowledge. To merely provide an overview of the situation and then rely on questions to stimulate further information would presume clients to possess an unusually high degree of expertise and initiative. The “big picture” would appear to be preferred by most clients. For those preferring less information, however, a happy medium can be achieved by adopting a more targeted approach, wherein the key facts are covered. This reduces the overall information burden, while ensuring the client receives what is most relevant.
Participants appreciated visual as well as verbal modes of information. Since different modes of information giving, which include verbal, written and audiovisual, have different advantages and disadvantages, they can be integrated in a complementary fashion to enhance the client educational process. Verbal communication forms the cornerstone of information-giving, wherein the information imparted sets the stage for a two-way interactive exchange from which clients can ask questions, clarify uncertainties and derive inter-relational support. Visual aids such as the use of simple diagrams, pictures, charts and graphs, however, can be used to enhance understanding and recall.

A number of study participants experienced anxiety-related memory problems early in the consultation process. These participants expressly appreciated the handouts, as they reinforced what had been said, and the discharge statements, which served as a permanent record of what had been done. The benefits of take-home educational materials are numerous: they (1) permit the learning process to continue outside of the constraints and formality of the hospital setting; (2) enable the sharing of information with family and friends, through which enhanced understanding and emotional support become possible; (3) support efforts to educate and update family members, thus enabling the entire family to remain engaged; (4) serve to generate further questions, which, when addressed, rounds out understanding; and (5) contribute to informed consent when making treatment decisions. Despite these benefits, there are a number of pitfalls that need to be avoided. Providing clients with take home materials does not obviate the responsibility to verbally provide them with the information. Take home educational materials need to build on previously stated information rather than introduce new ideas. Educational materials such as handouts, pamphlets, and booklets need to be carefully constructed to ensure that the contents are of high standard. For those with
greater education and/or requiring greater detail, as was the case with a few participants, supplemental educational resources such as text references or journal articles may be useful to meet today’s wide range of client expectations for information. In today’s era of mass education, mass media and mass consumerism driving rising public expectations, it would seem untenable to send clients home without educational materials.

The use of appropriate language is fundamental to effective communication. The participants appreciated that the medical information was given in words they could understand. When it wasn’t, it added to, rather than detracted from, the anxiety they were experiencing. With the goals of client education in mind, it is important to use unambiguous language, avoid euphemisms, minimize the use of medical jargon, explain unavoidable jargon with layperson’s terms, and check to make sure clients have understood what was said. Comprehension can be especially challenged in emotionally charged circumstances, such as at the time of diagnosis, and the transitions from active treatment to palliative care or euthanasia. At these times, service providers need to be particularly attentive to their choice of words, simplifying the language used, and watching the pace of delivery.

The final aspect of the communication process that directly facilitated participants’ comprehension was the time the service devoted within consultations to answer questions, repeat information until it was understood, and listen and attend. Most of the participants had high informational needs that persisted throughout the cancer treatment program, changing as the context changed. With high and continuing needs, the participants appreciated the apparently “unlimited” time the service provided, enabling them to gather, assimilate, and integrate what they needed to know to care for their dog.
The perception of unlimited time does not suggest that time management was not of concern to the service providers or that they actually provided unlimited time. Attending to timing and efficiency in service delivery are not incongruent with meeting client needs for information. On the contrary, the time taken within a client-centered approach – which includes answering questions, repeating information, and listening and attending – does not usually result in longer consultation times. Rather, it enhances comprehension, increasing the efficiency of the consultation process.

Research suggests that clinicians need to take responsibility to encourage questions in order to avoid ignorance, correct misconceptions, and provide reassurance. Questions left unanswered can result in needless anxiety and be detrimental to patient care. Unfortunately, without encouragement, important questions may remain unasked. Clients may dismiss questions under the assumption that whatever was of relevance would have been told. They may worry about appearing foolish by asking questions that reveal their ignorance. They may think they’ll take up too much of the doctor’s valuable time. With so many potential barriers to that which is seemingly simple, it would do well for service providers to encourage clients to play an active role in seeking information. Creating a psychologically safe environment, giving permission to ask questions, inviting questions, and checking for understanding will together support clients’ inclination to ask questions.

Sometimes information has to be heard repeatedly and in different ways. This was true for a number of participants who commented on how their emotionality had impeded their ability to follow what was being said. Hearing it more than once, “’til it sinks in,” made the difference. Given the potential for repetition to enhance the learning experience,
repetition could be intentionally incorporated into conversations with clients, especially in circumstances of high emotionality and/or concerning key points.

Although the participants welcomed the service’s expertise, they also wanted to share what they knew. They wanted the service to take their concerns seriously, and validate their position and efforts within what they considered was a joint endeavour. Taking the time to listen is crucial in client education. It transforms the consultation from the traditional lecture approach to an interactive engagement, wherein the educational process becomes a partnership based on dialogue between collaborators, each with their own expertise to offer. In doing so, the opportunity to discover the client’s perspective becomes possible. Incorporating the client’s perspective can broaden and enrich the informational basis upon which patient care is based, important in itself, but it can also permit the educational process to be built on the ideas, concerns and expectations the client presents, which increases relevance, and thus understanding and recall. Moreover, a participative role has the potential to help clients reclaim a sense of control and may even add to their sense of confidence as they move forward. Importantly, the “taking the time” trio – making sure clients’ questions were answered, repeating information until understanding was reached, and listening and attending to clients’ concerns – not only promoted participants’ comprehension of the information, but also supported their emotional well-being. “Taking the time” was equivalent to “caring.” In the participants’ experience, the service “cared enough” to listen to their fears and concerns, and make sure they were well-informed. Rushing, on the other hand, could result in clients feeling unimportant, the staff uninterested, and the service impersonal, none of which are supportive of emotional needs.
The emotional needs of clients within the cancer context are very high. Cancer is the most alarming, dreaded, and fear invoking of all diseases,\textsuperscript{38-41} associated with pain, suffering, disfigurement and death.\textsuperscript{42, 43} No other disease generates more distress, fear and anxiety.\textsuperscript{44} Thus, highly bonded clients experiencing the emotional trauma of life-threatening cancer usually need substantial emotional support as they take on the cancer journey, doing the best they can to support the health and welfare of their dog. Certain elements of the communication process contributed to the creation of a humanistic environment wherein emotional support was found. These included the provision of information continuously; in a timely manner; in a manner that conveys hope and possibilities; with empathy, compassion, and a nonjudgmental attitude; and through care providers with whom clients have a trusting relationship.

The provision of 24-hour access to informational support provided the participants with a much-needed sense of security. Although cancer was “scary,” embarking upon a treatment program was often equally unnerving, opening up a virtual Pandora’s box of new issues that might have to be dealt with. It is essential for clients to know when and how to seek assistance, and for that assistance to be available when needed. This provides them with a “safety net” to back-up best laid plans.\textsuperscript{27} Safety-netting can afford both the peace of mind and confidence needed to move forward despite the many fears and uncertainty associated with cancer care.

The timeliness of information was of great concern to the participants. They found waiting, especially if the news was potentially bad, extremely stressful. Waiting was also associated with a perceived change in the passage of time for a couple of participants, with time “slowed” while waiting and worrying. Waiting is recognized as a problematic phenomenon in the medical healthcare fields.\textsuperscript{45} It has been variously characterized in
numerous studies, but tends to share three common features: uncertainty, threat, and powerlessness, which in combination result in psychological distress. The experience of waiting has also been described as being “in limbo,” with life “suspended” or “on hold,” which could explain why time appeared to slow down for two of the participants. Recognizing the distress that clients typically experience, and why, should motivate oncology services to provide service in as time-efficient a manner as possible, minimizing the wait times that are inherent in healthcare delivery.

Tremendously important to the participants was the comfort and hope they found through the positive, hopeful attitude and manner in which the service was delivered. The provision of hope via the communication process is supported by a wealth of literature in medical oncology. Chaplin and McIntyre (2001) state that hope provides “an energizing force which allows individuals to cope with their current life situation.” For those dealing with cancer, this “energizing force” is needed at every stage of the journey. Recognizing the proverbial need for hope and how it can impact quality of life, service providers need to be cognizant of the vital role they hold to support clients’ sense of hope. Every conversation has the potential to leave the other in a better or worse place.

There are a number of aspects of the communication process noted in the medical literature, both verbal and nonverbal, that can give rise to hope. Conversations characterized by friendliness, attentiveness, niceness and courtesy are known to increase hope. Conversing in a sensitive, compassionate manner, using positive talk, such as agreement and encouragement, and using positively framed language, such as discussing the ‘probabilities of survival’ rather than the ‘chances of mortality,’ all can significantly contribute to hope. Hope can also be found when words are used that leave the door open to possibilities.
Nonverbal behaviors such as “tone of voice, gaze, posture, laughter, facial expressions, touch and physical distance” can influence the “emotional tone” of conversations.\(^5^6\) When stressed by fear, anxiety, and uncertainty, it is natural to tune in to the nonverbal behaviors of others in order to gauge how one should think or feel.\(^5^7\) Evidence in the current study suggests clients within the context of cancer treatment may be inclined to screen service providers, looking for subtle clues that might indicate how serious the situation might be. Oncology service providers should themselves tune in to their nonverbal behavior and consider how it may affect their clients.

Recognizing the emotionally challenging context for clients who have pets with cancer, the multiple potential benefits of empathy and compassion identified in the medical literature,\(^2^7, 5^8^-6^0\) and the overwhelming appreciation of empathy and compassion identified in this study, it would seem appropriate to provide oncology services in a manner that is empathic and compassionate. This may include the use of communication skills such as eliciting feelings (through asking questions, identifying and responding to cues, making educated guesses, and encouraging the expression of feelings and thoughts); paraphrasing; reflective listening; attentive listening; using silence; and incorporating appropriate nonverbal behavior.\(^2^7, 5^6\) The use of these skills may help oncology clients feel understood and cared about, which may better enable them to manage the cancer journey.

Participants appreciated how the service was nonjudgmental. Some participants had the tendency to feel guilty, both in relation to the cancer diagnosis and/or the timing of or type of treatment pursued. The assurances of the service providers were a source of profound relief. Likewise, the unconditional support felt for their choice of approach with care was deeply appreciated. There is evidence in the veterinary literature that clients can
feel guilty about their pet’s cancer.\textsuperscript{42} There is also evidence that clients can experience guilt in relation to the treatment decisions they make.\textsuperscript{7,61} With the potential for multiple sources of guilt to needlessly complicate the emotional trauma already experienced, it would be appropriate for services to recognize these potential sources and do what they can to prevent or alleviate them. When addressing instances of guilt, the initial response should be one of acceptance, which acknowledges and accepts the client’s feelings or viewpoint.\textsuperscript{27} Following this, appropriate reassurance can be given, but only after sufficient information has been gathered to permit a full appreciation of the client’s perspective.\textsuperscript{27} If reassurance is given too fast, it may be interpreted as disingenuous or dismissive.\textsuperscript{27} Lastly, the reasoning behind the reassurance should be given so the client can understand the rationale.\textsuperscript{27} Understanding the rationale provides clients a stronghold to prevent them from slipping back into guilt-ridden thinking.

An aspect of the service repeatedly emphasized was the participants’ appreciation for the relationships formed with the service providers. Participants wanted information from those they knew, those with whom a bond of trust and camaraderie had been forged. The familiarity was comforting in that it enabled client and service provider to “know what to expect from one another,” reducing relational uncertainty\textsuperscript{62,63} and facilitating more meaningful conversations. Relationships within healthcare are critical, and especially so within the cancer context when those affected face a great deal of adversity. Although relationships are the medium through which information is accessed, they also function as a vital source of emotional support.\textsuperscript{18,64} Since clear distinctions between ‘the intrinsic character of a communication’ and its ‘affective significance’ cannot be made,\textsuperscript{65} information and support are inevitably intertwined. And since communication both contextualizes the information and personalizes the information-giving process,
consultations become relatively predictable interpersonal exchanges, wherein both client and service provider knows what to expect from one another. A change in service provider would represent both a change in the quality of consultation to which a client has become accustomed and an end to a valued relationship through which much needed support is derived.

What made the participant-service provider relationship especially strong was that it represented a partnership within the joint venture to achieve the best possible outcomes for the patient. This shared goal created a very special bond. It meant the participants were not traveling the road of cancer alone. As Bushkin (1993) described it, when faced with cancer, there are two types of people: tourists, who seem to travel the same road but avoid closeness and refuse to become truly involved, and guides, who have a special ability to understand needs and can commit themselves fully, even in the most critical of times. Accordingly, if oncology services were delivered within a rotational program that necessitated multiple and changing service providers, it would risk clients to feel as if they were being cared for by ‘tourists.’ The clients interviewed in this study, all of whom deeply appreciated their ongoing partnership with their oncology technician (who played a front-line role in the provision of service), were explicit in their desire for ‘guides,’ service providers who develop a unique understanding of their perspective, interests, and the role their dog plays in their life, and can commit to the journey for the long run. Moreover, because the journey is a changeable one, characterized by curves in the road, informational and support needs can, at times, intensify. It is times like these when established relationships, bound in trust, respect, and reciprocity, can serve as a significant buffer.
A qualitative interview-based research approach was used to capture the firsthand real-life experiences of clients in their own words. Through rigorous analytic techniques, an in-depth understanding of client expectations based on clients’ first-hand experiences, views, opinions and ideas was generated. Since qualitative inquiry “explore[s] the subjective subjectively,” this was the ideal research approach, generating a meaningful starting point in the understanding of a phenomenon on which little was previously known. One of the strongest potentials implicit in qualitative research is to break new ground.

The results of qualitative studies, however, cannot always be easily generalized to other individuals or contexts. This study was not designed for statistical analysis. The relatively small number of participants is not necessarily representative of the overall population of clients seeking cancer care services at a tertiary referral center. Further to this, it is possible that clients who choose a tertiary referral centre (as opposed to a secondary referral centre or treatment by their primary care veterinarian) may have different expectations – for example, expect more information – than those in alternate settings. Since generalizability of qualitative approaches depends on the degree of similarity between the research context and the specific context wherein the findings may be applied, care must be taken to consider the applicability of the findings prior to extrapolating them to other cancer care contexts. Likewise, since clients present as unique individuals with unique needs, our findings cannot be thought of as a general formula to address the needs and expectations of every oncology client, whether at a tertiary, secondary or primary care setting.

Although interview-based research is considered non-intrusive, researcher bias may have been introduced since it was the author who interviewed the participants. Effort was
made to minimize bias by approaching the interviews ‘de novo,’ purposefully avoiding a prior literature review, and intentionally maintaining a curious, dispassionate, and non-partisan interview approach. As well, in following a semi-structured interview format, the interviews were deliberately conducted in a client-driven manner, enabling significant client control of the direction of the interview and content discussed. Another potential source of bias, which could influence both participants and interviewer, is social desirability response bias, a bias particularly evident in one-shot interviewing. Although this can influence responses to elicit more favorable social approval, it is nearly unavoidable in interpersonal research.

Future research could undertake a grounded theory interview-based approach with an emergent design wherein the data collection and analysis are synchronous and the research questions adapted to the emerging themes rather than remaining standardized across participants, with the potential therein to derive a more in-depth appreciation of the themes that arise. Furthermore, since interview-based research is subject to recall bias and subjective interpretation, future research could focus on videotapes of service provider-client interactions and clients’ assessments of those interactions.

Despite the limitations of the current study, this research offers veterinarians the opportunity to better understand the expectations of oncology clients, not just to gain elucidation, but rather to gain the rationale upon which service can be enhanced, and through such, develop more humane hospitals. The past three decades have seen a shift in attention from the biomedical or “cure-oriented” to the humanistic or “care-oriented” side of human medicine. These two sides are now widely appreciated to be of equal importance. The expectation for information was the first and foremost expectation not just because of its instrumental value in enabling participants’ to care for their dog, but
also because of its affective value in that it did, in truth, “make the journey easier.” This study may serve to illuminate the role that the communication of information can play in creating a more humanistic experience within a humanitarian environment, vital in the field of veterinary oncology.

\(^a\) H2 digital audio recorder (Zoom, 2007) and GarageBand (Mac OS-X, 2009)
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Chapter 4

Coping with uncertainty:
Supporting client adaptation in veterinary oncology

Prepared in the style of the *Journal of the American Veterinary Medical Association*
Abstract

Objective—To describe the uncertainty experienced by clients accessing oncology care services at a tertiary referral centre and how this influences their expectations of the service.

Design—Qualitative study based on in-person single and dyadic interviews.

Participants—43 dog owners in 30 interviews.

Procedures—Independent in-person interviews were conducted with standardized open-ended questions and follow-up probes April – October 2009. Thematic analysis supplemented with content analysis was performed on transcripts of the interview discussions.

Results—Thematic analysis identified uncertainty as an overarching psychological feature that dominated clients’ experience within the oncology setting. Originating from the diagnosis of a serious, life-threatening cancer and its treatment, uncertainty had a profound impact on clients’ sense of a just and orderly world; their feelings, thoughts, behaviors, attitudes, and personal expectations in relation to their dog; and their expectations of the service. With uncertainty appraised mostly as a danger, clients employed multiple coping strategies to reduce uncertainty in the effort to adapt to the new reality of living with and caring for a dog with cancer. The need to manage uncertainty influenced their expectations of the service, specifically for information, ongoing relationships, 24-hour access, and timely service.

Conclusions—Oncology services need to be aware of the central psychological phenomenon of uncertainty, how it affects clients and influences expectations, and how services can and should do what they can to reduce, maintain or increase uncertainty, according to manageability, and in so doing, support client efforts to cope, enabling successful adaptation to the cancer journey.
Introduction

Uncertainty has been described as “the very nature of reality.” Our nature, as humans, however, instructs us to suspend our thoughts about uncertainty and live in an assumptive world, finding therein the predictability, continuity, and coherence needed to experience the world as both safe and stable. We go about our daily lives presuming the world to be certain, sheltered by the belief that what has been true will continue to be true. There is an inherent need to believe that the world is an orderly and predictable place, and a place where what ought to happen does happen. Events that rupture the assumptive world are transformative, opening wide the world of uncertainty.

Uncertainty has long been recognized as a central feature in illness experiences. As understood across a number of disciplines, including medicine,

“Uncertainty is a dynamic state in which there is a perception of being unable to assign probabilities for outcomes that prompts a discomforting, uneasy sensation that may be affected (reduced or escalated) through cognitive, emotive, or behavioral reactions, or by the passage of time and changes in the perception of circumstances. The experience of uncertainty is pervasive in human existence and is mediated by feelings of confidence and control that may be highly specific (event-focused) or more global (a world view).”

According to Michel’s Uncertainty in Illness Theory, uncertainty is forwarded as the central psychological feature of the illness experience, and its management the essential task in adaptation. According to Mishel there are four forms of uncertainty in illness experiences: (1) ambiguity concerning the state of the illness; (2) unpredictability concerning the illness course and prognosis; (3) lack of information about an illness, its treatment, and the system of care; and (4) complexity, or lack of
clarity, in what information exists. The uncertainties that characterize illness experiences begin at the diagnosis and often persist throughout the disease trajectory, varying in degree and form in proportion to circumstances.  

Uncertainty, in and of itself, is not inherently good or bad. The meaning of uncertainty, and thus its significance, is assigned through its appraisal. Uncertainty may be appraised in three ways: as a danger, when perceived as a source of harm or threat; an opportunity, when perceived as a source of hope or possibility; or inconsequential, when perceived as irrelevant to well-being. Because of the very nature of uncertainty, its appraisal is open to multiple interpretations. These are determined by the individual’s dispositions, beliefs and experiences.  

When appraised as a danger, strategies are applied to reduce it. When appraised as an opportunity, strategies are applied to sustain or even increase it. These strategies – coping strategies – may be problem-focused, with the aim to directly resolve the source of uncertainty, or emotion-focused, with the aim to manage the uncomfortable emotions associated with uncertainty. Uncertainty thus is managed through the use of coping strategies to reduce, maintain or increase it in order to successfully adapt to the illness experience.  

Problem-focused coping strategies include seeking information, vigilance, accessing social support, focusing on the positive, and living in the present. Information seeking is recognized as the primary strategy individuals use to reduce uncertainty. It can be “deliberate, intentional, and often effortful” when the need to reduce uncertainty is high. Vigilance, which refers to the ongoing monitoring of the patient-in-situ, is an activity aimed to reduce uncertainty through ongoing data acquisition. It enables the early detection of (and therefore ability to respond to) changes that could suggest the presence
of threat to well-being. Social support can assist with interpreting illness-related events and likewise, through social comparison, broaden awareness about illness-related issues. Both the consciously employed strategies of optimism and living life in edited time units reduce the perception of uncertainty and thus its impact. Optimism can also reduce feelings of vulnerability and increase the sense of personal control. Problem-focused strategies tend to be used in situations perceived to be manageable.

Emotion-focused strategies, on the other hand, are used to moderate the emotional distress associated with uncertainty in the effort to maintain emotional equilibrium. They include denial, avoidance, selective ignoring, minimizing, selective misinterpretation, and wishful thinking, and are especially implemented when the distress level is high and the source of the uncertainty unchangeable.

Uncertainty, if unmanaged, can become a significant source of psychological distress and reduce quality of life, negatively impacting adaptation to the illness experience. Substantive evidence exists related to uncertainty in specific cancer populations, most notably breast and prostate cancer. Although recent years have seen an expansion of the study of uncertainty to encompass broader clinical cancer populations, to date, according to the author’s awareness, illness uncertainty has not been explored in the veterinary context.

In the qualitative study that explored the expectations of clients accessing oncology services at a tertiary veterinary referral center, uncertainty was identified as an overarching theme. This chapter focuses on the theme of uncertainty as experienced by the clients accessing tertiary care of their pets with cancer who participated in this study, specifically their experience of uncertainty, how it influenced them, and how it shaped their expectations of the service. Based on participants’ experience, we offer ways in
which veterinary oncology service can be designed and delivered to support clients’ ability to manage uncertainty, and through such, maximize their potential to successfully adapt to loving, living with, and caring for a dog with incurable cancer.

**Materials and Methods**

**Study design**

Full details of the study design, participants, interview structure, and data analysis were described previously in Chapter 2. In brief, the study consisted of 30 interviews with pet owners seeking cancer treatment for their dogs at a tertiary referral center, April to October of 2009. Pet owners were interviewed at either the early, middle, or late stage of their dog’s cancer treatment program. Ten interviews were conducted for each stage. Owners completed a short demographic form and the Lexington Attachment to Pets Scale (LAPS), a widely used questionnaire with established psychometric properties for measuring the human-animal bond, with scores of 54.9 (SD 9.2) indicating very attached, 44.8 (SD 10.3) somewhat attached, 32.6 (SD 9.3) not very attached, and 26.2 (SD 13.6) not at all attached. Client expectations were defined as value expectations, specifically as “expressions of desire (what is wanted), necessity (what is perceived to be needed), entitlement (that which is owed or to which one has a right), normative standards (that which should be), or importance (a hybrid category, since wants, needs, and rights may all be rank ordered in importance).” The study protocol was reviewed and cleared by the University of Guelph Research Ethics Board (REB # 08DC007).

**Study participants**

Participants were recruited from the clientele of the referral oncology service at the Ontario Veterinary College Health Sciences Centre (OVCHSC), University of Guelph in
Guelph, ON. Clients were considered eligible if their dogs had any type of serious, life-threatening cancer and were receiving ongoing treatment during the early, middle or late stage of treatment as defined by the specified treatment protocol. A step-wise recruitment process was followed and written consent always obtained in person.

**Interview structure**

A semi-structured interview, following one of two interview guides, each containing a series of standardized, open-ended questions and follow-up probes, was conducted to explore each client’s perceptions, experiences, and expectations of the oncology care service. One guide was for the early stage group and the other for the middle and late stage groups. The interviews were scheduled to be 1 hour long and conducted by the author. They were recorded using two devices synchronously. The resultant audio recordings were transcribed verbatim in orthographic format by a professional transcriptionist. The transcriptions were reviewed by the author in tandem with the audio recordings to ensure uniformity of quality and accuracy of the transcribed interview data. Words that were inaudible, implied, or adjusted in tense were presented in square brackets to most clearly represent the findings. Furthermore, to safeguard anonymity, client, patient, and oncology service provider names were supplanted with nonidentifying descriptors in curly brackets.

**Data analysis**

Demographic data was summarized to provide general descriptors of the participant and patient population. The LAPS was summarized (mean, SD, range) to provide a quantitative measure of participants’ emotional attachment to their dogs. Thematic analysis of the transcripts was then performed group-wise, by the stage of the treatment, to identify, analyze, and report the primary patterns or “themes” across the data. With
“uncertainty” identified as a primary theme emerging from the qualitative data, content
analysis, a procedure that can quantify qualitative data (conversation) through the
examination of frequency counts of words or concepts\textsuperscript{37} was performed to determine the
relative extent of uncertainty within the three stages of treatment. Across the dataset,
expressions of uncertainty were coded to create a list of distinctly identifiable forms
(concepts) of uncertainty.

Results

Client and patient demographics

The client and patient demographics were previously reported in Chapter 2. In brief,
43 dog owners participated: 17 individual participants, 9 husband-wife dyads, and 4
mother-daughter dyads. Of the 30 primary caregivers, 22 (73\%) were female, 26 (87\%)
were between 30 to 64 years of age, and educational status varied from less than grade 12
to post-graduate education. Annual household income ranged from $35,000 or lower to
over $100,000 per year. The LAPS mean score was 60.5 (SD 6.55, range 40-69). The 30
patients had been diagnosed with one of various forms of life-threatening cancer,
including multicentric lymphoma, appendicular osteosarcoma, mast cell tumour, and
hemangiosarcoma, among others. The patient’s mean age was 8.7 (SD 2.5) years.

Uncertainty as a central theme

The findings on the theme of “uncertainty” fell under 3 subheadings: the shift into the
world of uncertainty; how uncertainty impacted clients’ feelings, thoughts, behaviors,
attitudes, and personal expectations; and how it influenced clients’ expectations of the
oncology service.
I. The world of uncertainty

The diagnosis of a serious, life-threatening cancer shifted participants into a world of uncertainty. Prior to the diagnosis, life in relation to their dog was lived following customary, taken-for-granted daily routines. For some, the clinical signs were imperceptible, with an incidental finding on examination or an acute hemorrhagic crisis as the first indication of threat. For others, the clinical signs were subtle, ill-defined, or vague, such as the gradual onset of lethargy or weight loss. For others yet, the clinical signs were assumed to be related to something “simple,” such as “an infection,” “arthritis,” or “constipation,” or the growth was assumed to be “innocent,” “just a tiny bump that had been there for months.” The diagnosis accordingly was nearly invariably experienced as “unexpected,” “traumatic,” and a “shock.” Participants described being “blown away” and “left reeling” by the news. One participant alleged the news of the diagnosis “hit” her “just as if it was a person.” In the midst of feeling “nervous,” “scared,” “tearful,” “overwhelmed,” and “devastated,” some posed the question, “Why me? Why us?” within a sense of existential “betrayal.” And with all participants equating cancer to a death sentence, the only certitude was the belief that their dog was “going to die,” and this was taken to be imminent. As one client recalled, “All I remember was crying because I thought [my dog] was going to die, really fast… My dog was dying and that’s all I knew.”

The omnipresence of uncertainty was strongly evident in the language of participants. Along 3 broad subthemes, all the participants repeatedly stated, to various degrees and in relation to a range of specifics, that they “didn’t know” what was happening, what to do, and what to expect. Not knowing, participants were left
“wondering,” “imagining,” “supposing,” and “guessing,” and lived in a world of
“might(s),” “could(s),” “should(s),” “seems(s),” “maybe(s),” and “probably(s).”

Fifty-three content-distinct forms of uncertainty were identified (Table 4.1). Of these uncertainties, some would have been knowable and thus imminently addressed by the service (such as ‘What kind of cancer their dog had’ and ‘What diagnostic tests might be needed’), others only knowable in a foreseeable future (such as ‘How well their dog would tolerate the chemotherapy’ and ‘Whether the treatment protocol might need to be changed’), and the rest fundamentally unknowable (such as ‘What the cause of the cancer was’ and ‘Whether diagnosing and/or treating it earlier would have made a difference’). Note that the first 19 (36%) uncertainties relate to the general cancer experience, while the remaining 34 (64%) relate to engagement in the treatment of cancer.

**THE EXTENT TO WHICH THE PARTICIPANTS LIVED IN UNCERTAINTY WAS STAGE DEPENDENT.** The greatest degree of uncertainty expressed, as determined by examining the distribution of the uncertainties listed in Table 1, lay with those in the early stage, with 40 of 53 (75%) identified, followed by 27 of 53 (52%) and 36 of 53 (68%) in the middle and late stages, respectively.

**II. The influence of uncertainty on feelings, thoughts, behaviors, attitudes, and personal expectations**

Living in a world of uncertainty strongly influenced participants’ feelings, thoughts, behaviors, attitudes, and personal expectations, all of which impacted their lived experience, and thus, their ability to cope with, and adapt to, the realities of the cancer situation.

**Uncertainty was related to feeling anxious, worried, and fearful.** In the participants’ words, the feelings arising from their uncertainty included being “worried,”
“scared,” “afraid,” “anxious,” and “concerned.” Two participants referred to “the fear of the unknown,” with one adding that “not knowing” was worse than knowing. The connection between “knowing” and “comfort” was present throughout the interviews, as evidenced in one client’s comment, “The only way I’m going to get comfortable is [through] the more I know.” The discomfort with not knowing ranged from feeling mildly unsettled to highly distressed.

**UNCERTAINTY LED TO THE TENDENCY TO CATASTROPHIZE.** Most participants were uninformed or misinformed about cancer and cancer treatment in dogs at the time of the diagnosis. Reflecting one extreme of naivety, one client, who described the diagnosis as “extremely unexpected” and “a shock,” explained, “We [the public] don’t really think of dogs getting cancer.” Others assumed that cancer treatment in dogs would be “as taxing on the body” as it is with humans, and survival “tenuous at best.” As one client commented, “In fact, I suspect, sadly, it’s interesting how it depends on what your information level is. Probably if we had known it was lymphoma, we would have let her die, because we wouldn’t have known what we know now – the potential to give her chemo and it’s not too toxic… and give her some reasonable lifespan. I would have thought, ‘Oh well, you know, I’m not going to torture her to keep her alive for three months.’” Being uninformed or misinformed, the diagnosis was often concluded to be, as one client referred to it, “a big end-of-the-world thing.”

**UNCERTAINTY MOTIVATED INFORMATION SEEKING IN MULTIPLE DIRECTIONS,** **INCLUDING RESOURCING THE PRIMARY CARE PRACTITIONER, SOCIAL COMMUNITY, INTERNET, AND PEERS.**

**The primary care practitioner.** Participants’ first source of information was usually the primary care clinician. They spoke openly about the “bad news” consultation, for the
most part satisfied with the information and guidance given. Many deeply appreciated the option of referral to “the best place” for their dog’s care. A few, however, expressed concerns about both the quality of the information given and their clinician’s hesitancy to refer. There was evidence to suggest that a few referring veterinarians may have had inadequate knowledge about the specific cancer, its treatment or both, were not aware of what speciality oncology services could offer, did not consider treatment or referral worthwhile, and were only referring out of pressure from their client. One client recalled her experience as follows:

“When {Patient} was first diagnosed, they weren’t rushing us off to get chemotherapy treatment. So I’m not sure if every vet really makes the owners aware of what options are out there for their animals. Do they evaluate whether the couple would be willing to spend the money? I don’t know what goes on in their decision-making, but I don’t think the services are as well known as perhaps they could be. They obviously knew that I wasn’t willing to give up without giving her every possible chance. I’m wondering, why didn’t they refer me to OVC? Why was it me having to keep fighting for her, pursuing it, that finally we came here?”

Another client shared how her practitioner’s attitude changed. Pleased with the therapeutic outcomes, her practitioner confessed to her, “After seeing how well {Patient} has done, I would recommend cancer treatment at Guelph to everyone, whereas I wouldn’t have done that before.”

Some participants were particularly distressed by what they thought were unduly pessimistic assessments offering little to no hope, motivating 3 (10%) to seek a second opinion. One such participant, after a full year of remission and committed to a second course of therapy (for lymphoma), recounted her experience, saying, “It was very
upsetting for her to basically say that there was nothing we could do for {Patient}, that this is it and he’s going to die essentially. Based on that experience…” she continued, “we ended up changing practices.” Another, after problem-free amputation and 6 months in remission (for osteosarcoma), shared her practitioner’s original doubts, saying, “My vet did not think he’d be a good candidate for an amputation and it was just a matter of time, to wait, to see, to put him down. I didn’t want to do that, so I came to Guelph… I came here a week later and they said, ‘Oh yes he would.’” She then added, with intonation, “And you might base your judgement on what certain people say;” insinuating how clients might make treatment decisions based on their general practitioner’s opinion, which, based on her experience, was not necessarily trustworthy, in that it lacked congruence with the opinion of the specialty service and the clinical outcomes achieved.

The degree to which primary care practitioners informed and thus prepared participants for their referral visit to the oncology service ranged from a minimalist assurance to an accurate and precise account of what they might expect from the referral service. For one client, as recalled in his own words, “The vet just said, ‘You know what? Just go there. They know you’re coming and they’ll take care of you.’ And that was all.” This is in stark contrast to another client’s experience, as found in the following:

“She told me a lot of the things that they possibly would do and what to expect. I was prepared even before I came for hearing about the fact that they would do diagnostic testing and they would want to do ultrasound and they would need bloodwork and possibly more x-rays. So my home vet had prepared me for all [that]… So I came here knowing. And cost, too. She actually asked about those kinds of things. So my home vet actually laid a lot of the groundwork for what I was to find out here. So nothing was a surprise… She finds it important to know
that you know what’s going on, so she gives you lots of information. I think that’s important, what you get at home to prepare you for coming here”

The majority of participants had been, at most, minimally informed about what to expect at the oncology center. As a result, they had “no expectations” and “didn’t know what to expect,” for as one client commented, “You can’t have expectations unless you understand a bit about it.”

**The social community.** The search for information extended beyond the examination room, often in the form of conflicting, changeable, and exhaustive conversations with family members as they tried to make sense of the bad news. These exchanges opened up to extended family, friends, neighbors, and from there to “anyone” and “everyone” within the greater community, including co-workers, pet retail employees, groomers, people out on walks, and as one client said, “almost everybody that we could find that could relate to what we were going through.”

**The Internet.** With the desire to know as much as possible as quickly as possible, 15 (50%) participants had sourced the Internet. This client-driven independent research was powerful enough to not just gain an understanding of the cancer and its treatment options, but also directly influence the decision as to whether or not to pursue treatment. As one client admitted, “We originally didn’t think that we were going to treat him, but then I did some research on-line…” Another client’s research was so extensive that she had even chosen the specific protocol she wanted for her dog. In her words, “I spent ‘hours and hours’ – ‘days and days’ – of research… so I was very well-researched before I came in… and I knew I wanted a certain protocol.”

Some participants’ research was quite in-depth, involving looking up specific treatment protocols, side-effects and associated life expectancies. Other research centered
on adjunctive support measures such as nutritional options (anti-oxidant diets, nutritional supplements), alternative approaches (naturopathy), and harm reduction methods (green disinfectants, natural candles, no perfumes). A few noted the risks with accessing web-based information, referencing the need to “read decent sites,” “validate the information,” and “take it with a grain of salt,” suggesting they were aware as opposed to naïve consumers.

**Peers.** It was clearly evident that all participants closely attended to others in the waiting room, zeroing in on the surrounding activities and one another’s conversations, as well as engaging in mutual dialogue, all the while making internal comparisons in the effort to learn as much as possible. It was the participants with pets in the early stage of treatment who referred most frequently to their appreciation of information from others who were “in the same situation,” “boat” or “shoes,” especially if their peers were “a little further ahead.” The sharing and comparing of stories was variously described as “encouraging,” “beneficial,” and “reassuring.” It was a source of firsthand, tangible, experiential knowledge, as conveyed in one client’s account, “You’re just more informed about it, not from a doctor, but [from] somebody that’s going through it.” As well, connecting with peers provided a sense of “camaraderie.” Through the similarities found within shared experience, the weight of isolation – of feeling singled out of the mainstream of the world of dog owners – lifted. As one client realized, “You’re not alone… You know you’re not the only one.”

**Uncertainty Motivated Vigilance.** As was repeatedly evident in the participants’ descriptions of their lifestyle and their perceptions of their dog’s welfare, it was clear that they were closely monitoring their dogs. A number of clients felt that they had “missed” the presence of the cancer prior to the diagnosis, so they were especially vigilant after the
diagnosis. What made the task challenging, compounding the uncertainty experienced, was that many patients exhibited minimal to no overt cancer-related illness or evidence of cancer, and tolerated treatment, such as chemotherapy, with little or only transitory treatment-related illness. They resumed “normal” lives and appeared disease-free, both physically and behaviorally. For many clients, the patients’ cancer was imperceptible and thus difficult to gauge in the effort to maintain an accurate perspective of the situation. As one client commented, “She looks so wonderful, you would never dream she has this cancer in her body… It’s almost like a fake world that we’re living in.”

Thus, even with close vigilance, many participants found themselves perplexed. The lack of clear-cut, concrete, observable evidence made it difficult for them to truly gauge their dog’s cancer status or monitor disease progression. It made it difficult for them to distinguish between the clinical signs of cancer, side-effects of treatment, and other conditions, such as the onset of an illness or a natural age-related developmental change such as arthritis, reduced energy or increased sleeping, especially when the signs were so subtle they could suggest any number of possibilities. Within subtlety, some clients even began to question normal behaviors, second-guessing the range of what was previously considered normal for their dog.

**Uncertainty led to various degrees of denial, avoidance, selective ignoring, selective misinterpretation, or minimization.** Just a few participants demonstrated overt evidence of these related emotion-focused coping strategies, based on analysis of single interviews and not purposely screening for this during the interviews. Note that clients’ distinct efforts to avoid specific aspects of their informational realities did not necessarily preclude specific information-seeking activities, such as the continuous monitoring of their dog’s quality of life (especially since this was the
foremost qualification in engaging in and continuing care). The two approaches to coping were not mutually exclusive.

For one client, the invisibility of the cancer permitted her and her husband to “pretend” that their dog was “not sick.” When asked how she managed to live with a dog with an incurable cancer, she answered, through tears, “The answer’s funny. You pretend he’s not sick, because hemangiosarcoma is the type of cancer where, when he’s not doing chemo, you can pretend he’s not sick, ’cause you don’t see it and it doesn’t make him sick… We pretend, and we do it every day… You live in denial, but prepare for the worst.” Pretending provided these clients temporary relief from the anticipatory grief they were experiencing.

For others, the invisibility risked the erroneous conclusion that the situation was stable, even when they had been advised otherwise. As one client commented, having been forewarned that another episode of abdominal hemorrhage could occur at any time, “I guess I sort of buried that somewhere… I might have been a little in denial… I just kept thinking it was going to be somehow farther away. And when that [bleed] happened, it was just like a slap, a big slap – wake-up call.”

In these cases, the first client expressed conscious awareness of the strategy used, while the second appeared unaware, leading him to be caught off guard when reality caught up. In this instance, despite his use of the term “denial,” it is impossible to say, based on an excerpt alone, whether he had truly “denied” the information given, or had engaged in avoidance, selective ignoring or misinterpretation, or minimization. Any of these strategies could equally have been in play.

**Uncertainty gave rise to hopeful, optimistic attitudes.** Without certitude upon which to rely, some participants appeared to intentionally choose an optimistic
“way of thinking.” This was seen as necessary, as found in, “We have just a total positive outlook on this. You need that.” Others felt the same, saying, “You have to think positive” and “You’ve got to be optimistic.” Some chose optimism to add force to the fight. As one said, “The mind is a very powerful weapon against diseases or anything you’re up against – you can be a negative or a positive person… I think I’m pretty positive.” Some clients who noticed the usual, happy-go-lucky way their dog continued on with life – unaffected by the diagnosis – intentionally adjusted their own perspective, taking on a mutual collaboration to go on with life “as per usual,” not letting the reality of cancer interfere with living life in a full, happy “Carpe diem – Seize the day!” kind of way.

**Uncertainty Led to Wishful Thinking.** Some participants toyed with thoughts of cure, thinking that their dog, out of all dogs, might be “the exception.” Eight (27%) of the participants (3 early, 2 middle, and 3 late stage) expressed purported beliefs that their dog could be “the exception to the rules,” “the one that will beat the odds,” and “the one-in-a-million to be cured.” Three (10%) clients went so far as to say they were “hoping for a miracle.”

**Uncertainty Telescoped Life into the Present.** With a future filled with uncertainty, described as, “a big question mark,” all the participants reined in their worlds to the present, adjusting their expectations of their dog and their life with their dog. Since the unpredictability of the future negated any perceived hold on it, they relinquished it to instead plant their expectations into the envisionable present. As one client said, “It is just unpredictable, so we just do it day-to-day and see how he does.” Others echoed this, referring to living “day-to-day,” “week-to-week,” and “from one treatment to another.”
There were no “expectations” or “plans” for the future. As one client said, “I try not to look too far in the future. You don’t know what’s around the corner.”

**Uncertainty appraisals: The meaning attributed to uncertainty.** For the greatest part, the participants of the current study had appraised the uncertainty as a danger. This was evident with the fear, distress, and tendency to catastrophize at the time of diagnosis, as well as the multiple coping strategies drawn on, consciously or unconsciously, in their efforts to manage the uncertainty and adjust to the situation. These included the problem-focused strategies of seeking information, accessing social support; closely monitoring their dogs; intentionally adopting an optimistic attitude; and living in the present. They also included the emotion-focused strategies of denial, avoidance, selective ignoring or misinterpretation, and minimization, as well as wishful thinking. It is important to recognize that optimism may equally have originated from the appraisal of uncertainty as an opportunity rather than danger. Without certainty to delimit outcomes, uncertainty may have been envisioned as a well of hope for all that might be possible, recognizing that the limits of individuals can surpass the confinements of statistics.

**III. The influence of uncertainty on client expectations of the service**

Since living in a world of uncertainty strongly informed participants’ feelings, thoughts, behaviors, attitudes, and personal expectations, it powerfully influenced their expectations of the oncology service.

**Participants wanted information about all aspects of the cancer journey.** Most participants wanted as much information as possible about the following: (1) the cancer and natural course of events without treatment, (2) treatment options and associated prognoses, including the pragmatics of financial, time, and emotional investment, (3) diagnostics and monitoring, potential side-effects and complications,
expected time-lines for treatment response, remission and relapse, and potential for cure, (4) parameters for monitoring and measuring quality of life, and, (5) when “enough is enough,” when it would be “right” and “best” to discontinue treatment and/or euthanize.

**Participants specifically wanted to know about their dog’s hospital experience.** Some participants expressed concern about not knowing what happened behind closed doors. The participants’ experience was that dogs go – are taken away from them for treatment – and come back – are returned to them to go home. Depending on mind-set, the space in between could be filled with many imaginings. Some clients wondered “where” their dog was and “how” the treatment was administered, as found in one client’s admission, “I do wonder what it’s like and how they do it… So I’m like, ‘Where’s he sitting?’ like, ‘Where is he?’ What I imagine is that they have little cubicles with IV bottles and whatever in each, and there’s a wall, but they can maybe see each other and hear each other. Like, just cubicles. And there’s all these cubicles – that’s what I imagine.”

Time in hospital was time beyond the seeable, hearable, and touchable, and thus knowable. One client worded this quite poignantly in the following commentary:

> “They come and take your dog away and you’re already heartbroken… They said we couldn’t go in… It would have been nice if we could watch some of the procedure through a glass window or something… even if we just saw the first procedure so we know what was happening so we feel a little more comfortable… I’m not happy with not having any contact at all… because, our time with her is limited now, for sure, and I would like to know what’s happening to her, making sure that I’m comfortable with what I’m doing to her… I’ve made the step to try and prolong her life, but I want to make sure that I’m not sacrificing the quality of life… I know you can’t have people in the way when
you’re trying to work. I understand that. There are times when it won’t work, but I’m sure that the professionals can figure out which times don’t work. It can’t be all the time. I think there should be some flexibility, especially when you know the pet is terminal.”

This client strongly felt services should “try to maintain the bond” as much as possible, rather than take your dog away “to places” “for procedures” of which they had little understanding.

**Participants specifically wanted information about the potential treatment outcomes.** For each participant, being informed about the potential treatment outcomes, most particularly the side-effects, meant being prepared. One client described it as having “ammunition” or “strategies,” saying, “{Technician} anticipates problems in a way that’s very helpful and gives you ammunition or strategies to help you deal with these problems before they happen and you have no idea what to do.” Another said, “And they were very good about laying that out: ‘You may experience this. You may experience that. If you experience this, you need to do A. If you experience that, you need to do B.’” Being fully prepared meant being prepared “for the worst.” Most participants did not want, as one client called it, “the ‘middle of the line’ stories.” They felt better knowing – and thus being prepared for – the worst that could happen. As one client shared, “I need to know the worst-case scenario… If I can prepare for it, but hope for the best, then I feel more comfortable.”

**Participants specifically wanted to know about the transition from active treatment aimed to extend life to palliative or end-of-life care.** Since the non-curative nature of the cancer remained a non-dismissable reality for many, they questioned what “the inevitable end” might bring and how they would handle it.
Hand-in-hand with the decision to start treatment was the need to know when to end it, and the imperative, thus, to be informed about quality of life and the transition to palliative or end-of-life care, as well as be assured of the continuing support of the oncology team. Although the forward thrust of exam room conversations was on the preservation of life, with the collaborative goal to extend quantity of quality life, there appeared to be an equal need, at least for some, to openly address the transition to end-of-life. As one client said, “Not that we wanted to hear it, but we needed to know.”

**Participants wanted, needed, and appreciated service with those they knew and trusted.** For each and every participant, relationship was a source of comfort and confidence, and the foundation for trust in the service. As one client shared, “They know who I am, and there’s just that awareness now… [We] know each other and know what to expect.” This client thought it would be “very hard” on somebody to have to “adjust” and form “a new bond” partway through with new service providers. For one client who did need to form “a new bond,” she repeatedly described how “apprehensive” she was. She questioned the new technician’s competency, how well she would get to know her dog, and how prompt she would be with home support, reflecting the instant introduction of layers of uncertainty and a breach of confidence while the rest of the service remained constant.

**Participants needed and depended upon the continuous access to informational support in case of an unexpected event or complication.** Participants who engaged in the serious business of chemotherapy, radiotherapy, or major surgery needed to know they could access “advice,” “direction,” and “guidance” should they find themselves perplexed about their dog’s condition or an adverse event or crisis develop. With cancer behavior and treatment response incompletely predictable at the
individual level, despite standardized, proven treatment protocols, every participant
needed ongoing access to informational support in order to manage the eventualities that
might arise. One client likened it to “a crutch,” saying, “Even if you don’t use it, it’s still
there.” The ability to lean on the service in time of need was imperative to the sense of
security needed to engage in the cancer treatment journey.

**Participants wanted and appreciated timely information and service.**
Waiting represented time in uncertainty, time spent “in the unknown.” The undercurrent
of anxiety that characterized the uncertainty of the cancer context intensified when the
participants were kept waiting. They most especially spoke to the “stress of waiting” in
reference to incidents when the news to be received was potentially bad, as with
diagnostic and screening tests. Waiting for return phone calls when “in a crisis” at home
was also cited as stressful. As one participant observed, “Waiting for a phone call back
seems like hours… Every second seems like hours.”

**Discussion**

For the participants of this study, the diagnosis of a life-threatening cancer in a much-
loved dog represented a crisis in their lives, abruptly shifting them from a world
characterized by continuity, orderliness, and coherence to a world set apart by ambiguity,
unpredictability, and ominous probabilities. With cancer metaphorically associated
with death, the only certainty was death.

The omnipresence of uncertainty was evident in the choice and frequency of the
terminology used and the content discussed. Uncertainties were expressed in relation to
the cancer and its treatment, especially the latter, suggesting the extent to which
engagement in a treatment program co-engages an entirely new dimension of unknowns,
magnifying the degree of, and complexity of, uncertainties experienced. While the most uncertainty was experienced in the early stage of treatment, the level rose again at the late stage to approximate the original degree experienced. Evidence for this same pattern of uncertainty is found in the human medical literature.\textsuperscript{10, 18} In a qualitative study by Cohen (1995) of the parental uncertainty experienced with children having life-threatening childhood illness, uncertainty was experienced “most acutely and unrelentingly” when the disease was newly diagnosed.\textsuperscript{18} It dissipated to lower, more constant levels over time with increasing familiarity with the disease. It could, however, be easily triggered by exacerbations of the disease, relapses, and the beginning of downhill trajectories, and most interestingly, the conclusion of the treatment program (that had effected a beneficial response), and too, the regularly scheduled diagnostic tests (that provided unambiguous evidence of health). Our findings appear to parallel those of Cohen (1995), with the initial uncertainty dissipating to relatively lower, stable levels with increasing familiarity with the diagnosis, treatment program, and cancer service, and then rising with the impending discontinuation of the treatment program and diagnostic monitoring, and anticipation of disease exacerbation or relapse, especially given the limited prognoses of these patients.

Mishel’s \textit{Uncertainty in Illness Theory}\textsuperscript{10, 11} proposes uncertainty as the central psychological feature of the illness experience.\textsuperscript{12} In order to successfully adapt to the illness experience, the uncertainty must be effectively managed. Indications of difficulty with adaptation are not in relation to uncertainty itself, but to how well it is managed.\textsuperscript{11, 12} Of paramount significance to the welfare of clients is the veterinary profession’s awareness of its role, responsibility, and potential to support client efforts to manage uncertainty. Services unaware of clients’ struggles with uncertainty or insensitive to the challenges therein may inadvertently contribute to the burden of uncertainty, and
undermine, as opposed to support client welfare. Fundamental to this end, oncology services can be designed and delivered to support client needs to reduce uncertainty when appraised as a danger, and sustain or increase uncertainty when appraised as an opportunity. In this way services can facilitate adaptive uncertainty management.\(^\text{19}\) Each of these approaches will be discussed in turn.

As noted in Chapter 2 and likewise reported by Neville (2003),\(^\text{30}\) with the goal of supporting client efforts to reduce uncertainty, it is important to start by determining clients’ needs for information, their information preferences, and their perceptions of uncertainty. This can be accomplished by first exploring the client’s perspective of the cancer situation with open-ended questions,\(^\text{40}\) listening for what they know, as well as don’t know, and would like to know. Next a statement acknowledging how some clients ‘like to know a lot’ about their pet’s cancer while others ‘prefer just the basic facts' can be made, and their individual preference sought. Lastly, offering a statement of normalization, acknowledging the reality that not all answers are possible in cancer care (as with other areas of life and living), and inviting their perspective on this, listening for the degree to which this may be difficult for them and how they typically manage such circumstances, would be appropriate. Since orientations to illness-related uncertainty may vary,\(^\text{20}\) some clients may want uncertainty reduced as much as possible while others may see some benefit in it. Such awareness can be used to guide information giving, keeping in mind the balance between clients’ need to know and their fear of knowing, as mentioned in Chapter 2 and reported by Kodish (1995).\(^\text{41}\) Just as information, for some, can be empowering, for others, it can be incapacitating.\(^\text{4, 19}\)

Unfortunately, a simple direct correlation between ‘information giving’ and ‘uncertainty reduction’ does not exist. Providers of information need to be aware of the
potential limitations in uncertainty reduction.\textsuperscript{20, 42} For instance, as described in Chapter 2 and elsewhere,\textsuperscript{20, 42} too much information can confuse and overwhelm, leading to information overload, diminishing the ability to critically assess, organize and prioritize information into an understandable format. Likewise, the complexity of the information given can give rise to new, unanticipated uncertainties, and the reduction of one uncertainty can potentially lead to a cascade of subsequent uncertainties.\textsuperscript{20} As can be appreciated, uncertainty reduction is not necessarily a straightforward process. Ironically, information can not only reduce, but also increase uncertainty. To minimize this potential, attention to the quality and structure of the information is necessary. Quality relates to the “sufficiency” (clarity, completeness and volume) and the “reliability and validity” (accuracy, source ethos, ambiguity, applicability, and consistency) of the information.\textsuperscript{42} Structure relates to the order in which the particulars are presented.\textsuperscript{42} The provision of clear, accurate, complete, consistent, and appropriately measured increments of applicable information, structured in a logical format, can go far to support uncertainty reduction. As mentioned in Chapter 2, this must occur within the boundaries of clients’ information preferences, “chunking” information into small portions and “checking” for understanding prior to proceeding,\textsuperscript{40} using this to guide the amount and type of information needed so as to avoid inadvertently compounding the uncertainty experienced.

The first priority of information giving, as reported in Chapter 2, is to ensure clients are able to make fully informed decisions. The decision of greatest consequence occurs at the time of diagnosis with the choice of the degree and type of intervention. With clients potentially uninformed or misinformed about cancer in dogs and equating the diagnosis to a death sentence and treatment as contributing to suffering, the tendency to
catastrophize can negate the potential to consider treatment. This risks both patient welfare and premature closure of the human-animal bond. Thus, the imperative, whether at the primary care or specialty setting, is to provide the best possible client education. Verbal information supported with visuals, such as diagrams and jointly reviewed articles, and supplemented with take-home written materials and recommendations to informative websites are recommended. Maintaining availability via offering or planning a follow-up phone conversation or appointment past the “breaking the bad news” event permits clients’ questions or concerns to be addressed. As forwarded in Chapter 2, clients want, need and have the right to accurate, objective, up-to-date information with supportive guidance to help them weigh the risks and benefits of the various options for care. The veterinary-client exchange at this critical juncture is of profound importance in determining the short- and long-term consequences for the health and welfare of the patient and the patient’s family.

The second priority, as reported in Chapter 2, is to ensure clients will be prepared for the outcomes of those decisions. Preparatory information reduces uncertainty by providing an orientation to the future, and in so doing, increases familiarity with what the future might bring. According to the findings of the current study, and supported by the literature, if the decision is made to refer to a specialty service, such orientation can and should begin at the primary care service. The provision of an accurate and precise account of what to expect at the specialty center will familiarize clients with this new experience. Orientation efforts should then continue at the referral service, enabling clients to navigate a healthcare system much broader than what they are familiar with. Helpful options could include a new client information package and/or admission orientation program.
The current study suggests that clients may want to be informed about the *entire* cancer treatment journey: the in-hospital treatment process, the potential outcomes and how they should be managed, and the transition from active treatment to palliation or euthanasia. Oncology services can do clients a great service by helping them understand their dog’s hospital experience. Without adequate knowledge, clients are in the dark as to what they’ve agreed to subject their dog to in the name of extending quantity of quality life, ‘quality’ being the key word. They wonder and even worry about where their dog is, what is happening, and how their dog is coping, all uncertainties that are reducible and even preventable with a measure of client education. Educational efforts necessarily must start with sufficient explanations, but could include supplementary resources such as pamphlets or booklets, videos of the hospital and treatment programs, a walk-through hospital tour, and an informative website with a video or virtual tour.\textsuperscript{46, 47} In addition to educational efforts, hospital service can be designed in a client-friendly manner to preserve the bond. This could include bond-responsive measures such as hospital design that features observation windows and hospital policies that minimize separation time and maximize client engagement in patient care.

Educating clients about the potential outcomes of the treatment program, both effects and side-effects, enables them to be prepared for all eventualities: good, bad, and inconsequential. As noted in Chapter 2, this can help ready them for the challenges that may lie ahead. Perhaps less acknowledged is the importance of preparing clients for the results of diagnostic screening tests and any potential resultant adjustments to treatment. Prior to tests being run, clients should be reminded about the range of results possible and what they would mean to avoid unnecessary additional uncertainty and distress when the news received is unfavorable.\textsuperscript{48} For clients wanting to be fully prepared, the full spectrum
of possibilities – including the worst possible case scenarios – should be discussed. According to the results of this study, the English proverb, “Hope for the best, but prepare for the worst,” seems material in the veterinary oncology context.

Since clients with dogs with incurable cancer maintain a long-range perspective on the cancer situation, it seems imperative for oncology services to follow this lead in order to complement and address client concerns. As contrary as it may seem to the immediate efforts in care, and as uncomfortable as it may be to broach, conversations about the transition to palliative and end-of-life care should be initiated early in the treatment process. Making space for conversation about the full journey of care right from the beginning will give clients the permission to raise their concerns as they arise, reducing the burden of uncertainties and supporting their efforts to prepare for the future.

As well as reducing uncertainty through the provision of information, oncology services can intentionally support clients’ own efforts to reduce uncertainty in two important ways. First, with the Internet as a readily available, expedient, and powerfully influential source of information, services can relegate their role as providers to instead be interpreters and integrators of information.\textsuperscript{49, 50} Services can empower clients through acknowledging their proactive efforts, facilitating the interpretation and integration of information, and directing them to recognized, high-quality official websites.\textsuperscript{49} And second, with clients wanting to connect with peers for information and social support, options such as offering peer group meetings, a buddy support system, a web-based chat site, or a cozy, relaxing café-style waiting area for clients whose dogs are day-hospitalized may support clients’ efforts to reduce uncertainty. Connection permits social comparison, which can reduce uncertainty,\textsuperscript{10, 44, 51} but it can also positively influence appraisals of, and responses to, uncertainty,\textsuperscript{52, 53} and in this way advantageously
contribute to adaptation on multiple levels. All information seeking and information sharing efforts should be validated, encouraged, and facilitated.

Integral to services with the aim to reduce uncertainty is the imperative to provide clients with an oncology care team that remains consistent throughout the provision of service. The relationship with the service provider is the foremost means to prevent uncertainty, making this vital to services committed to uncertainty reduction.

Continuing relationships not only reduce relational uncertainty, but also build trust and confidence in service providers, which reduces the overall burden of uncertainty.

Also integral in the aim to reduce uncertainty is the provision of 24-hour informational support. This is not only of importance in the case of true emergencies, but also in situations of more benign consequence that are plagued by uncertainty. The combination of fear, vigilance, and perplexity makes it easy for clients to interpret changes in their dog as more severe or serious than they really are. Because emotional arousal and selective attention can cause perceptual and cognitive biases, clients need the continuity of service to assist them as needed with interpreting their observations, and through such, alleviate uncertainty.

Lastly, attention to the timeliness of service is integral in the aim to reduce uncertainty. Waiting, which is recognized as a problematic phenomenon in the medical healthcare fields, tends to share three common features: uncertainty, threat, and powerlessness, which in combination result in psychological distress. Service designed with an emphasis on continuity along all aspects of service time lines – including, for example, the time between determining the need for a test, performing the test, and providing the results – can minimize wait times, and in so doing, prevent unnecessary uncertainty.
Uncertainty reduction is not always possible, both in relation to the nature of illness uncertainty and the limitations of information giving. Clients must live with and manage a significant burden of uncertainty along the cancer journey, which, when appraised as a danger, can significantly compromise quality of life.\textsuperscript{17, 58} Uncertainty is, however, by its very nature, open to multiple interpretations.\textsuperscript{11} Likewise, these interpretations are not fixed, but can change over time\textsuperscript{11} and as a consequence of social interaction.\textsuperscript{19} Recognizing the plasticity of appraisals makes real the potential to improve client quality of life through supporting positive and thus more adaptive appraisals of uncertainty when uncertainty is irreducible. Service providers should intentionally look for appropriate opportunities to partake in maintaining and even promoting uncertainty by adopting and encouraging a positive orientation towards it.\textsuperscript{11, 17, 58}

Moreover, uncertainty reduction is not always in the client’s best interests, particularly in situations of an unwelcomed, negative certainty, or when uncertainty is appraised as an opportunity.\textsuperscript{10} In such situations, in order to forestall the perception of the unwelcomed certainty and facilitate hope, clients may attempt to regulate information using emotion-focused coping strategies such as denial, avoidance, selective ignoring, minimizing, and selective misinterpretation.\textsuperscript{10} Repeated efforts on the part of well-intentioned service providers to reduce uncertainty could undermine clients’ best efforts to cope. In this case, rather than overwhelm clients with unwanted details and destroy hope, uncertainty could, to some degree, intentionally be preserved by providing no more than the essential facts, thus supporting, rather than undermining, efforts to cope.\textsuperscript{20} Furthermore, assisting clients to identify and engage in alternative, perhaps more adaptive, coping strategies may better enable effective adaptation over the long run.
Just over three decades have passed since Madewell (1981) stated in his commentary, “Though the ‘science’ of veterinary oncology is new to clinical practice, the ‘psychology’ of veterinary oncology is virtually unexplored.” With the identification of uncertainty as a central psychological feature of the veterinary client experience in the specialty oncology setting, we believe the current study marks a turning point. Through rigorous analytic techniques, we were able to generate an in-depth understanding of a previously unreported and under-recognized aspect of client experience that profoundly impacts their world, who they are, and what they bring to and expect from the service. Through identifying the psychological phenomenon of uncertainty, we have attained a new understanding of the subjective experience of clients, and through such, the evidence upon which to design and deliver services.

It is important to note that the results of qualitative research, which focuses on specific individuals within specific contexts, cannot always be easily generalized to other individuals or other contexts. The relatively small number of participants (N=43 in 30 interviews) in this study does not necessarily represent the overall population of clients seeking services at a specialty oncology center. Care must be taken to consider the applicability of our findings prior to extrapolating them to other oncology service contexts.

Likewise, the potential for bias needs to be considered. In order to minimize researcher bias, the interviews were approached ‘de novo,’ purposefully avoiding a prior literature review, and intentionally maintaining a curious, dispassionate, and non-partisan interview approach. As well, they were deliberately conducted in a client-driven manner, enabling significant client control of the direction of the interview and content discussed. Furthermore, because the purpose was to explore client expectations rather than
uncertainty, which arose emergently as a thematic finding during analysis, the interview process and data analysis were not biased in this direction.

Given the increasing attachment of people to their pets\textsuperscript{61, 62} and the increasing prevalence of cancer in the pet population,\textsuperscript{62, 63} the demand for cancer care will continue to rise, further challenging the profession to attend to both the science \textit{and} the psychology of veterinary oncology. Research in the area of veterinary psycho-oncology may yet be in its beginnings; however, the potential to advance the evidence upon which best practices can be built, in order to truly deliver on the promise of bond-centered care, lies at hand.

\textsuperscript{a} H2 digital audio recorder (Zoom, 2007) and GarageBand (Mac OS-X, 2009)

\textsuperscript{b} to the author’s knowledge
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37. Colorado State University Writing@CSU Web site. Available at http://writing.colostate.edu/guides/research/content/pop2a.cfm Accessed August 1, 2010.


Table 4.1: 53 content-distinct forms of uncertainties expressed by 43 clients within 30 interviews comprising a qualitative study exploring client expectations at the oncology service of a tertiary referral centre, the Ontario Veterinary College Health Sciences Centre, University of Guelph, Guelph, Ontario, April – October 2009*

1. Whether a certain symptom was the cancer developing
2. Whether more overt symptoms would have led to an earlier diagnosis
3. *Whether the cancer was diagnosed at the earliest possible point in time*
4. Whether they responded to the cancer in a timely manner
5. *How long the cancer was there prior to diagnosis*
6. What the diagnosis would mean for their dog
7. What the diagnosis would mean for their family
8. *What was best and/or right for their dog*
9. What was best and/or right for the family
10. *How long their dog might live*
11. Whether their dog really had cancer
12. What kind of cancer their dog had
13. *What the cause of the cancer was*
14. What the natural biological behavior of the cancer was
15. How important certain symptoms of the cancer were to their dog’s health and welfare
16. What stage the cancer was at
17. *Whether or when the cancer might metastasize or whether it has already metastasized*
18. *What the end would bring and how they would handle it*
19. *What the future would bring*
20. *What to expect as they access a specialty oncology service*
21. Who the staff were, what their positions were, and what responsibilities they held
22. When they see an oncologist versus a clinician versus a technician
23. When the behind-the-scenes contacts or activities were happening
24. How responsive and supportive the specialty service would be if or when called
25. What diagnostic tests might be needed
26. Which treatment option to choose
27. What treatment protocols were available
28. What the corresponding prognoses were
29. Whether they are making or made the best decisions
30. How concurrent conditions might influence the cancer, treatment plan or prognosis
31. Who they were really engaging in treatment for – themselves or their dog
32. What dogs on cancer treatment look like
33. *How well their dog would respond to treatment and achieve the desired efficacy and hoped for outcomes*
34. *How well their dog would tolerate the chemotherapeutic, radiation, surgical or palliative treatment*
35. *How to manage the day-to-day practicalities of living with a dog with cancer*
36. *What their dog’s hospital and treatment experiences were like*
37. How their dog was feeling and what their dog was thinking
38. What long-term effects their dog might experience
39. What side-effects effects their dog might experience
40. How important certain side-effects were to their dog’s health and welfare
41. If or when the side-effects would subside
42. Whether the medications to offset the side-effects would work
43. Why their dog was experiencing unexpected or unexplainable side-effects
44. How to differentiate whether subtle changes were cancer-related, treatment-related, or developmental
45. What the screening and monitoring tests might show
46. Whether the treatment protocol might need to be changed
47. What or when the next steps in care would be
48. If or when the remission might break / (in the case of hemangiosarcoma) another bleed-out happen
49. When the time would arrive to stop treatment and/or euthanize
50. Whether the service supported the end-of-life process (post-treatment)
51. Whether diagnosing and/or treating the cancer earlier would have made a difference
52. What the treatment ultimately would cost and what they would get from it
53. Whether, by a miracle or being ‘the exception,’ the cancer might actually be cured

*The italicized uncertainties were expressed by clients in all 3 stages (early, middle, and late) of the treatment program. These uncertainties may represent questions that are unanswerable (as in enduring uncertainties) or that need to be asked repeatedly throughout the cancer journey due to changing circumstances.
Chapter 5

Factors influencing primary care practitioners’ recommendations to refer to specialty oncology services: A vignette-based study

Prepared in the style of the *Journal of the American Veterinary Medical Association*
Abstract

Objective—To better understand primary care oncology service in Ontario and identify the factors which motivate veterinary practitioners to recommend referral as opposed to in-clinic treatment, palliative care, or euthanasia.

Design—Observational cross-sectional study.

Sample population—1071/2724 (39.3%) primary care practitioners across Ontario.

Procedures—A vignette-based survey was offered online and in paper format October 2010 – January 2011. Descriptive data were summarized and multivariable binary logistic regression performed.

Results—Most (84.3%) practitioners practiced within less than a 2-hour drive of a specialty referral centre, and 93.7% were completely confident in the oncology service. Canine multicentric lymphoma and appendicular osteosarcoma were usually diagnosed by practitioners once to twice a year. Experience with chemotherapeutics was limited, while experience with amputation more common. Although most (67.5%) considered cancer treatment more expensive than the treatment of other chronic diseases, fully half (54.5%) believed it to be comparatively worthwhile to treat. The propensity to recommend a referral for treatment was associated with the patient’s health status, client’s bond with their dog and financial status, practitioner’s experience with treating cancer, how worthwhile practitioner’s considered treatment, and how confident they were in the referral centre, with some variation in relation to practitioner gender and the type of medicine practiced.

Conclusions—Referral, the option of care most commonly recommended by practitioners for canine patients diagnosed with lymphoma and osteosarcoma, is not simply related to diagnostic uncertainty and treatment complexity, but takes into account
practitioner, client, and patient factors, signifying the importance of practitioner self-awareness in the decision-making process.
Introduction

As a society, our relationship with animals has evolved, with companion animals today often esteemed as valued members of the family.\textsuperscript{1, 2, 3} The resultant demands for improved veterinary health care over the past 3 decades have challenged the profession to provide ever-increasing levels of sophistication in veterinary medical services.\textsuperscript{4, 5} In response to higher public expectations\textsuperscript{6} and reduced constraint on pet-related expenditures,\textsuperscript{3} the veterinary profession has expanded into specialty fields of practice such as surgery, cardiology, neurology, and oncology, among others,\textsuperscript{7} all of which provide comprehensive, state-of-the-art care. With the advent and proliferation of readily accessible emergency clinics and specialty hospitals, in addition to the traditional services of tertiary referral centres such as university teaching hospitals, it is clear that the delivery of quality veterinary care has become a multi-tiered system not unlike the human medical health care system. The provision of the best possible medical care to veterinary patients may be envisioned as a collegial partnership between general practitioners and board-certified specialists,\textsuperscript{8} with specialty care as a “direct extension” of primary care service.\textsuperscript{4}

One area of specialty service now well-established is oncology, particularly the subspecialty of canine cancer care. Cancer is the leading cause of death in dogs over the age of two, half of all dogs develop some type of cancer in their lifetimes, and one in four dogs will die of it.\textsuperscript{9-12} Moreover, the prevalence of cancer has risen, and is expected to continue to do so as improvements in health care extend life expectancies.\textsuperscript{13} Despite these stark statistics, cancer has become a more treatable disease than ever before as a result of advancements in diagnostics, monitoring, and treatment, and the availability of generic
chemotherapeutics.\textsuperscript{14, 15} Previously untreatable cancers are now responding to contemporary treatment protocols, which have also become more affordable.\textsuperscript{15}

With the convergence of the above-noted trends, the treatment of cancer in companion animals may be on the verge of significant change. The combination of increased owner commitment to pets, higher expectations of veterinary care, increased prevalence of cancer in pets, and improved accessibility to and viability in treatment approaches, may amplify the public’s demand for cancer care. More pets than ever before may receive and benefit from treatment, which will shift the paradigm of cancer care in veterinary medicine, and drive the impetus for coordinated service between primary care and specialty practice.

As is conventional within multi-tiered systems of healthcare, the intermediary between the client and specialty service is the primary care practitioner. Practitioners not only make diagnoses, but also provide clients with guidance, advice, support, and counsel for care. The crux of client decision-making lies within the veterinary-client exchange, wherein the information presented is appraised to develop the plan of care. Since the fate of the pet diagnosed with cancer \textit{and} the health, happiness and quality of life of the client are markedly influenced by the treatment choices made,\textsuperscript{5} the recommendations of primary care practitioners are of profound consequence. The current study was undertaken to establish a foundational understanding of oncology service in primary care practice in Ontario, Canada, and further, via the use of vignettes, to understand the factors which motivate veterinary practitioners to recommend a referral as opposed to in-clinic treatment, palliative care, and euthanasia. Vignette-based inquiry (research using case simulations of realistic clinical encounters) is a well-recognized and validated method of assessing clinical decision-making and quality within healthcare.\textsuperscript{16-20}
Materials and Methods

The study protocol was reviewed and cleared by the University of Guelph Research Ethics Board (REB #10MY029).

Questionnaire Development—Following a literature review of actual case histories of cancer in dogs, a sample vignette-based survey was developed in accordance with vignette-based survey structure typical of research in the medical and social sciences.\textsuperscript{16, 21, 22} Two semi-structured group interviews were conducted with companion animal veterinarians actively practicing in the province of Ontario (one involving 5 participants practicing within 30 km of Guelph, Ontario and one involving 3 participants practicing within 30 km of Sudbury, Ontario). The purpose of this was to become familiar with veterinarians’ experiences with, and perspectives on, cancer and cancer treatment options, and to run an initial pretest of the sample vignette-based survey. A $50 honorarium was provided to each participant at the end of each discussion group. Based on the opinions and feedback provided by the discussion groups, further development of questions and refinement of the vignette-based survey was performed. The resulting survey was then pretested with 9 graduate students having expertise on the technical aspects of survey development from the Department of Population Medicine at the Ontario Veterinary College (OVC), which included 7 veterinarians with companion animal experience and 2 non-veterinarians. Both the question content (range and appropriate nature of the questions asked) and question construct (misspellings, clarity, ordering) were assessed. In addition, expert opinion on the survey was obtained from 2 self-selected members of the OVC oncology service who, upon reviewing the survey, provided constructive comments. Feedback from the graduate student pretest and oncology service was used to further refine the survey. An online version of the survey
was then developed and pretested with 5 randomly selected veterinarians practicing 100% companion animal medicine within a 50km radius of Guelph, Ontario as listed in the College of Veterinarians of Ontario (CVO)’s publicly accessible database. Final modifications to the survey were made based on feedback from the online pretest. The final version of the survey was made available online and in paper format.

**Questionnaire Design**—The survey was organized into 3 sections (Appendix 4.1). Section I consisted of a series of closed questions regarding respondent demographics. Section II centered on 1 of 32 variations of a vignette built around 5 main dichotomous variables: patient’s age (young, old), patient’s overall health status (good, comorbidity), the type of cancer the patient had (lymphoma, osteosarcoma), the strength of the human-animal bond (HAB) (strong, weak), and the client’s financial status (secure, restricted). The vignettes contained realistic clinical detail so as to genuinely portray a clinical encounter and were framed in the first person to capture participants’ personal perspectives. Respondents were invited to assume the role of the practitioner within the case scenario and asked to rank their preference of treatment recommendation (referral, in-clinic treatment, palliative care, and euthanasia) from 1 (first choice) to 4 (last choice) based on the specifics within the scenario. They were then asked to rank, on a scale of 1 (not important) to 5 (extremely important), 11 patient-, client-, and self-as-practitioner-related factors which may have influenced their first choice of treatment recommendation (the patient’s age, gender, and overall health status; the clients’ bond with the dog, financial status, and distance from the referral center; the practitioners’ confidence in the referral center and experience with chemotherapy and surgery; and the practitioners’ perceptions of the potentials to maintain quality of life (QOL) and extend quantity of life, and the costs that would be incurred to the client in terms of time, effort, and money).
Section III consisted of a series of closed-ended and ranking questions regarding the respondent’s professional and personal experiences with cancer. Professional-related questions centered on their experience with the diagnosis and treatment of canine multicentric lymphoma and appendicular osteosarcoma (OSA) – lymphoma, a common cancer usually treated chemotherapeutically, and OSA, a common cancer usually treated surgically – how worthwhile they thought the treatment of these cancers to be, and more broadly, how worthwhile they thought the treatment of cancer was as compared to a number of other chronic diseases in dogs, including diabetes mellitus, hyperadrenocorticism, chronic renal disease, congestive heart failure, and idiopathic epilepsy. Personal-related questions focused on the respondent’s experiences of cancer with their own dogs and other pets in their lifetime, and with themselves, their close family members, and close friends. Overall, the questionnaire consisted of 32 versions, each version varying only with regards to which vignette was presented in section II. Sections I and III were consistent to all versions of the questionnaire.

Study participants—Veterinary practitioners across the province of Ontario practicing any degree of small animal practice, according to the CVO’s publicly accessible database, were invited to participate in the study, excluding veterinarian participants involved in the initial group interviews and survey pretests, and veterinarians employed in an area outside of primary care practice (such as specialty or referral practice, industry, academia, pharmaceutica or government) or retired from practice. Computer-generated randomization assigned one of each of the 32 versions of the survey to each practitioner. An initial letter of introduction was mailed to each practitioner describing the study and providing a link to the online survey. This was followed by a postcard reminder in 3 weeks and a paper survey mail-out 3 weeks after that. A final
postcard reminder was sent a further 5 weeks later (i.e., 11 weeks following the initial mailed invitation). Concurrent with the primary recruitment process, the University of Guelph’s Alumni Affairs and Development office forwarded two e-mail announcements of the study to all Ontario-based alumni of the Ontario Veterinary College through their office, the first coinciding with the initial letter of introduction mail-out, and the second coinciding with the paper survey mail-out, using their alumni databank of veterinarians residing in Ontario. In addition, the Ontario Veterinary Medical Association forwarded five announcements of the study to their membership via their electronic newsletter *Newshound*, each coinciding with a mail-out plus a final call announcement. The survey was available from October 15, 2010 to January 31, 2011. Incentives for participation included $10.00 Tim Horton’s or William’s Fresh Café gift cards for the first 100 respondents and a draw for 1 of 3 complimentary passes to the joint 2011 American Animal Hospital Association and Ontario Veterinary Medical Association conference held in March 2011 in Toronto, Ontario, Canada.

**Data management**—A number of variables were re-categorized to ensure statistically adequate distributions (Appendix 5.1) or combined to create index variables (Appendix 5.2). The multinomial dependent variable was re-categorized into a binary variable to accommodate the use of binary logistic regression in order to determine the factors associated with ‘referral’ versus ‘in-clinic treatment, palliative care, and euthanasia’ grouped as the alternative option (Appendix 5.3). Practitioners’ postal codes were used to designate practitioners into geographically distinct regions of Ontario\(^4\) (Appendix 5.4).

**Statistical analysis**—Distribution of survey response by type of medicine practiced was analyzed by contingency table with chi-squared test. Demographic variables (gender, type of medicine practiced, and geographic region) were compared using contingency
tables with chi-squared tests between respondents and non-respondents. Descriptive statistics (absolute and percentage frequencies, means, medians, standard deviations, and ranges) were calculated. Rankings of the relative importance of factors influencing practitioners’ first choice of treatment recommendation were summed. The top-ranking factor was examined descriptively and analyzed using contingency table with chi-squared test. Demographic variables were assessed for association with attitudes towards the treatment of cancer via contingency table with chi-squared test.

Multivariable binary logistic regression was undertaken to determine the practitioner-, client-, and patient-related factors contributing to practitioners’ preference to recommend a referral to a specialty oncology center. Categorical variables included 23 practitioner and practice demographic variables, 10 practitioner attitudinal variables, and 5 vignette-based variables, specifically 3 patient- and 2 client-related variables (Appendix 5.5). There was also 1 practitioner-related continuous variable, the number of years in practice. Linearity of the continuous variable was assessed by including a quadratic term in the model and by categorization. Univariable analyses of the association of all potential variables with the dependent variable was performed to select those with a liberal p-value of less than 0.20 for model entry. Spearman’s rank correlations were performed on categorical variables. For those demonstrating correlation, either the most contributory variable was retained (based on statistical significance or determined degree of importance as a predictor) or index variables created, as appropriate.

In order to manage the large number of qualifying variables at p-value of less than 0.20, forward selection modeling involved first dividing the variables into 3 subsets (practitioner- and practice-related variables, cancer diagnosis- and treatment-related variables, and attitudinal variables) to build 3 subset models. Each subset model was
started as a core model consisting of the liberally significant vignette-based variables, and built by adding one variable at a time based on author preference, checking for confounding (by looking for a >30% change in coefficients and changes in direction of coefficients)\(^26\) as well as biologically and socially plausible interaction terms prior to removal. Retained variables in each subset model were significant at \(p < 0.05\). The final model was built in the same manner as the subset models, with entry of variables delimited to those that were significant in the subset models.

Backward elimination modeling involved starting with the full model of all liberally associated variables (i.e., \(p < 0.20\)) and removing them one at a time, starting with the most insignificant variable, while screening for confounding. Potential biologically and socially plausible interaction terms as judged by the author were tested in the final main effects model. Contingency table and chi-squared tests were performed to explain the association between 2 variables which formed an interaction term. Both modeling techniques retained variables with a significance of \(p < 0.05\). Forward selection and backward elimination models were compared via AIC and BIC values\(^26\) and classification tables. With the purpose of identifying the factors associated with the choice of making a referral, the model containing the most variables associated with this outcome was chosen as the final model. Analyses were performed with standard software.\(^a\),\(^b\)

**Results**

**Survey Distribution**—Of the 32 versions based on vignette, the mean number of completed surveys per version was 33.5 (median 35; SD 5.0; range 22 to 42). There was no significant difference in distribution of the 32 versions of the survey based on the type of medicine practiced by participants, 100% small animal (SA) or less than 100% SA.
**Study population**—Of the 2,811 veterinary practitioners registered in the province of Ontario, 2,724 were eligible to participate. Of those eligible, 1,071 participated, giving an overall response of 39.3%. Proportional response by type of medicine practiced included 41.5% (938/2,258) of those practicing 100% SA medicine, 29.0% (82/283) of those practicing greater than 50% SA medicine, 34.4% (32/93) of those practicing 50:50 SA:LA medicine, and 21.1% (19/90) of those practicing less than 50% SA medicine, with a summary overall response of 28.5% (133/466) for those practicing less than 100% SA medicine (Appendix 5.6). There was a consistent decline in participation in relation to the decade of graduation: 386/1071 (36.0%) of respondents were graduates between 2000 and 2010, while only 24/1071 (2.2%) were graduates before 1970. Fully 71.6% of respondents completed the survey online.

Veterinarians who were female or who practiced 100% SA medicine or who resided in Central, Southwestern, or Eastern Ontario were significantly more likely to respond than veterinarians who were male or practiced less than 100% SA medicine or who resided in other parts of Ontario (Table 5.1).

**Demographic characteristics**—The demographics of the veterinarians completing the survey and the practice in which they worked are described in Tables 5.2 – 5.3. Median number of years in practice was 14.0 (range, less than 1 to 50). Most participants, specifically 1033/1068 (96.7%), were actively practicing. Fully 796/1063 (74.9%) participants affirmed dog ownership, and of those who did not, 81/267 (31%) and 43/267 (16.5%) and 73/267 (28%) had owned a dog within the previous less than 5, 5 to 10, and 10 or more years, respectively, while 64/267 (24.5%) had never owned a dog.

**Primary care oncology practice in Ontario**—The prevalence of the diagnosis of lymphoma and OSA in dogs varied, with the former more frequent than the latter (Table
Familiarity and comfort with treating cancer in dogs with various oral chemotherapeutic drugs, specifically chlorambucil, cyclophosphamide, lomustine, melphanalan, and methotrexate, also varied (Table 5.5). While 349/1056 (33%) participants affirmed familiarity and comfort, the majority, 707/1056 (67%) were not familiar or comfortable with their use. This divergence increased with the parenteral chemotherapeutic drugs, specifically actinomycin D, carboplatin, cyclophosphamide, cytosine arabinoside, doxorubicin, gemcitabine, L-asparaginase, melphalan, methotrexate, mitoxantrone, vincristine, and vinblastine, with 230/1056 (21.8%) participants affirming familiarity and comfort while 826/1056 (78.2%) did not.

Confidence ratings in referral services that provide cancer care were very high, with 981/1047 (93.7%) of the participants more than moderately confident to completely confident, and only 66/1047 (6.3%) not at all confident to moderately confident in the service.

**Attitudes towards cancer treatment**—Half the respondents considered the treatment of lymphoma more than moderately to completely worthwhile whereas only a quarter of the respondents felt the same about treating OSA (Table 5.6). There was wider variation in the perception of treating OSA, with just over a quarter of participants ranking it as less than moderately worthwhile to treat. At least half the participants believed the treatment of cancer was as worthwhile as the treatment of other chronic diseases (specifically diabetes mellitus, hyperadrenocorticism, chronic renal disease, congestive heart failure, and idiopathic epilepsy); however, most believed it was more expensive to treat (Table 5.7). Eleven demographic factors were independently associated with how worthwhile the treatment of cancer was ranked (Appendix 5.7). Practitioners were more likely to think of the treatment of cancer as completely worthwhile if they were graduates
of the 1990’s and 2000’s as compared to the 1980’s and earlier (p < 0.001) and of the OVC and other North American colleges as compared to international veterinary schools (p = 0.023), if they practiced 100% SA medicine as compared to < 100% SA medicine (p < 0.001) and worked at a 100% SA practice as compared to < 100% SA practice (p = 0.005), if they were an associate or locum practitioner as compared to an owner/partner or emergency practitioner (p = 0.015), if they spent 20 or more as compared to less than 20 minutes per appointment (p < 0.001), if they served downtown and suburban as compared to town/village or rural communities (p = 0.002), if they worked in the Greater Toronto Area and Central Ontario as compared to Southwestern, Eastern, and Northern Ontario (p = 0.002), if they practiced less than a 1-hour as compared to greater than a 1-hour drive from a referral centre (p = 0.009), if they were completely as compared to moderately confident in the centre (p < 0.001), and if they engaged in 50 or more as compared to less than 50 hours/year of continuing professional development (CPD)(p = 0.001).

**Personal life experiences with cancer**—Most participants had personal experience with cancer with either themselves, others close to them, or their pets (Table 5.8). Half the respondents stated that their experience with cancer was mixed, with a balance of happy and sad experiences (Table 5.9). Few people found their experience to be primarily happy, whereas more than one third found it to be sad.

**Treatment recommendation preferences**—Practitioners’ preferences of treatment recommendation are found in Table 5.10. The majority preferences in patient care for the first to fourth choice respectively were referral (56.3%), treatment (40.7%), palliative care (42.9%), and euthanasia (59.4%). This pattern was the same for lymphoma and OSA.
Practitioners’ assessment of the factors influencing their first choice of treatment—Of the 11 factors practitioners ranked as influencing their first choice of treatment recommendation, practitioners’ perception of the potential to maintain QOL was the most highly ranked factor across all 4 treatment options, with a mean score of 4.8/5.0. Although the second, third, fourth etc. most highly ranked factors then varied according to specific treatment choice, the next most highly ranked factors among these were their perception of the potential to extend quantity of life (mean 4.00), the strength of the HAB (mean 3.98) and the patient’s overall health status (mean 3.93), having comparative rankings (Appendix 5.8).

The mean rankings for QOL according to treatment choice were referral 4.79, treatment 4.83, palliative care 4.76, and euthanasia 4.85, with no statistical difference between the ranking of QOL and treatment choice identified.

Factors associated with the recommendation of a referral to a specialty cancer center—A number of practitioner-, client-, and patient-related factors were associated with practitioners’ recommendation to refer (Table 5.11). Twenty-five variables were found to have a liberal p-value of < 0.20 thus qualifying for entry in modeling. Correlation analysis followed by variable exclusion or index variable creation resulted in 19 entry-level variables. Multiple forward selection subset modeling resulted in 12 variables plus an interaction term. Forward selection modeling with these variables resulted in a final model consisting of 9 variables and an interaction term, with an AIC and BIC of 708.330 and 775.470 respectively (894 valid observations) and a –2 log likelihood (LL) of 680.330, p < 0.001. Classification table predictions were 67.9% correct. Backward selection modeling resulted in a final model with 7 variables, with an AIC and BIC of 480.545 and 533.298 respectively (894 valid observations) and a –2LL
of 458.545, p < 0.0001. Classification table predictions were 68.6% correct. Forward selection and backward elimination modeling resulted in identical final models, with the exception of a gender and type of medicine practiced interaction. An interaction was also identified between the client variables (Appendix 6.1), but for the purpose of uniformity with reporting main effects with other models (Chapter 6), main effects will be reported for these variables. With the objective of determining potential associations, the most comprehensive model – the forward selection model – was chosen (Table 5.11).

Regarding the interaction identified between gender and the type of medicine practiced, for those who practiced 100% SA medicine, there was no significant difference in the odds of referral between female and male practitioners. However, for those who practiced less than 100% SA medicine, male practitioners were 2.8 times more likely to refer than female practitioners (CI 1.14 to 6.57). Female practitioners practicing 100% SA medicine were 2.2 times more likely to recommend a referral than their counterparts who practiced less than 100% SA medicine (CI 1.20 to 4.07), but there was no significant difference between male practitioners practicing less than 100% SA medicine and their counterparts who practiced 100% SA medicine. In sum, all of this suggests that males and females within 100% SA practice, as well as males in less than 100% SA practice, recommend referral at the same rate, whereas females who practice less than 100% SA practice are significantly less likely to recommend a referral. Limiting analysis to those practicing less than 100% SA medicine, contingency table analysis with chi-squared testing demonstrated no significant association between practitioner gender and how they ranked the following: (1) the worthwhileness of the treatment of cancer (N = 114), (2) the worthwhileness of the treatment of cancer as compared to other chronic
diseases (N = 122), (3) the expensiveness of the treatment of cancer as compared to other chronic diseases (N = 121), and whether or not they treated cancer (N = 133).

**Discussion**

When presented with a hypothetical yet true-to-life vignette of a patient newly diagnosed with cancer, and asked to choose the option of care they would most likely recommend first, just over half (56%) of the veterinary practitioners in the present study chose referral, while the balance, in order of descending frequency, chose palliative care (28%), in-clinic treatment (13%), and euthanasia (3%). Such a distribution – with the majority opting for either referral (which offers high-tech, cancer-targeted intervention) or palliative care (which offers conservative symptomatic support) – may be driven by evidence from the current study that many practitioners lack experience with chemotherapeutics and surgical intervention. Only 33% of participants were familiar and comfortable with the use of oral chemotherapeutics and 22% with the use of parenteral chemotherapeutics, with just over half (59%) reporting comfort and skill with surgical intervention, specifically limb amputation for OSA.

Interestingly, practitioners’ self-reported use of chemotherapeutic agents in the current study appears to be very different from that of UK practitioners. In a recent study, Cave et al surveyed veterinary practitioners across the UK regarding cytotoxic drug use, and with a response comparable to our study (36%), found that 71% of UK practices offer cancer chemotherapy. The use of chemotherapeutics to treat cancer in dogs is not new, with one of the earliest reports nearly half a century ago, but many cytotoxic drugs have mutagenic, carcinogenic and teratogenic risk with exposure, making their use a potential occupational hazard. Although the difference between Ontario and UK
practitioners may well be related to differences in cultural sensitivity to these risks, it may also be related to differences in veterinary school curricula, the number of cases encountered, attitude toward the treatment of cancer, and the availability of specialty services for practitioners to refer. For certain, with participants in the current study identifying that they diagnose canine multicentric lymphoma and appendicular OSA on average just once to twice per year, the opportunity to gain sufficient experience with and confidence in the use of chemotherapeutic agents may not be available.

It is clear from the present study that practitioners take into account their degree of experience with treating cancer when deciding whether or not to recommend a referral for a cancer patient. Participants who did not treat cancer were 2.7 times more likely to refer to a specialty centre than practitioners who did. This suggests that practitioners accommodate their lack of experience by drawing on the resources of board-certified specialists who are specifically trained to manage oncology care. Not only does this optimize the opportunity for good patient outcomes, but also judiciously limits professional liability for a practitioner in this type of situation.30

Practitioners’ attitude towards treatment was also found to influence whether or not they chose to recommend a referral to a specialty centre. Participants were 3.1 times more likely to refer when they thought the treatment of cancer was completely worthwhile to treat than when they thought it was only moderately worthwhile to treat. Substantiating this, participants were nearly twice as likely to refer when they thought the treatment of cancer was more worthwhile than the treatment of other chronic diseases as compared to when they thought it was less worthwhile to treat as compared to other chronic diseases. This suggests that a practitioner’s attitude towards cancer treatment could be a strong
determinant of whether or not a referral may be made, and that less favorable attitudes could pose a barrier to patients and their families accessing specialty oncology care.

Practitioners’ attitudes varied in relation to a number of factors. Perhaps most strikingly, they varied in relation to the practitioners’ era of graduation, with more recent graduation directly associated with higher rankings of worthwhileness. They also varied in relation to the practitioner’s school of graduation and the type of medicine practiced. As compared to the graduates of North American veterinary schools, graduates of international schools held less favourable views of the treatment of cancer. Likewise, those who practiced less than 100% SA medicine also held less favourable views. These predispositions may reflect variation in the extent to which practitioners are aware of the contemporary treatment protocols available and outcomes attainable. If differences in attitude do, in fact, relate to differences in proficiencies, this may suggest that some practitioners could benefit from a wider range of opportunities for CPD. Certainly the positive association found in the current study between number of hours of CPD and the opinions of the worthwhileness of cancer treatment supports this hypothesis.

Although there was no statistical difference in the propensity to recommend a referral based on the type of cancer the patient had, participant attitudes towards the treatment of lymphoma and OSA appeared to differ, with the treatment of OSA viewed less favorably. While attitudes towards the treatment of OSA have become more positive, some practitioners may yet consider amputation disfiguring or a cause of suffering and disability, thereby detracting from QOL, despite the fact that amputation is “the best pain control” for OSA and prevents the possibility of an acute pathological fracture, which both contribute to QOL. Differences in attitude could as well be related to differences between the long-term prognoses of these cancers, although, with treatment,
the median survival time for OSA now ranges from 235 to 540 days. This is compared to the median survival time of 171 to 396 days (with a 25% two-year survival rate) with lymphoma, along with the option of reinduction and rescue protocols which may further extend survival.

The propensity to make a referral was also associated with practitioners’ confidence in the specialty referral centre. Participants were 2.2 times more likely to refer when they were completely confident than when they were only moderately confident in the referral center. Confidence is likely important for practitioners who feel responsible for the care of their patients and clients. The act of relinquishing care and entrusting the welfare of their patients and clients into another’s hands would require a certain degree of confidence. With the finding of confidence as a significant determinant of whether or not a practitioner would recommend a referral, it becomes important for referral centres to consider what might contribute to practitioner confidence and how they could design and deliver services in a manner which builds and maintains confidence. Aspects of service which may contribute to practitioner confidence include attracting and retaining highly regarded specialists; offering team-based educational programs to build familiarity with, and trust in, the specialists and support staff; offering an online cancer treatment consultation service to support practitioners’ case management; developing and maintaining reliable communication practices and procedures with clients and referring practitioners; and ensuring positive client experiences with optimal patient outcomes. The overall reputation of the referral centre, as well as the judicious promotion of the technological, medical and surgical proficiencies characterizing the centre, may further contribute to practitioners’ confidence.
Interestingly, a relationship between the practitioner’s gender, the type of medicine practiced, and the propensity to recommend a referral was identified. Although no difference was found in the propensity to recommend a referral between male and female participants who practiced 100% SA medicine, for those who practiced less than 100% SA medicine, male participants were 2.8 times more likely to refer than female participants. Likewise, female participants practicing less than 100% SA medicine were only half as likely to refer than females who practiced 100% SA medicine. Not controlling for other factors, the gender difference in the propensity of those practicing less than 100% SA medicine was not related to whether or not they treated cancer, how worthwhile they thought the treatment of cancer was (including as compared to other chronic diseases), or how expensive they thought it was (as compared to other chronic diseases). Though the reason for this difference remains unclear, it could be related to the ways in which practitioners conceptualize animals and their owners, which strongly influences the way they treat them. One study\(^\text{31}\) suggests gender differences in large animal practitioners, with female practitioners more aligned with the interests of the client, and male practitioners more aligned with the interests of the animal. Given the findings of the current study, it may be worth further exploring this difference to better understand the basis of oncology recommendations made by female and male practitioners practicing less than 100% small animal medicine.

According to our findings, the client’s financial status was an important consideration when contemplating whether or not to recommend a referral to a specialty centre. Participants were twice as likely to recommend a referral if the client was financially secure as opposed to financially restricted. This substantiates the findings of a previous study wherein practitioners were found to sometimes recommend less aggressive and
expensive treatment options to clients who were financially restricted,\textsuperscript{32} suggesting that practitioners may be sensitive to the financial status of their clients and the costs incurred when accessing veterinary care. The costs of specialty care are often much higher than those associated with other options, a lot due to the expense of costly tests and sophisticated treatments,\textsuperscript{33-35} and are nearly always a consideration since most clients pay for their pet’s health care out-of-pocket. Practitioners may be reluctant to recommend a referral if they believe it unfeasible for the client, conscious of the potential to cause the client further distress (in the form of guilt) in addition to the distress of the diagnosis. Certainly practitioners need to consider their obligations to the client as well as the patient, providing that they do not conflict with the interests of the patient.\textsuperscript{36} In truth, it is impossible to predict how much a client may be willing to spend. Furthermore, if options were presented in a partisan manner, the client’s right to make fully autonomous decisions on how to spend their money could be undermined.\textsuperscript{36} As long as all treatment options are presented in a balanced and respectful manner, practitioners can be assured they are fulfilling their mandate to engage clients in fully informed decisions and avoid inadvertently limiting their patient’s access to care.

Also of importance to practitioners considering the recommendation of a referral was the practitioners’ perceptions of the quality of the HAB. Participants were 2.8 times more likely to recommend a referral when the bond between their client and patient was thought to be strong rather than weak. This may reflect how highly practitioners regard the depth of emotional connection that clients have with their companion animals. In the effort to preserve this connection, they may be moved to recommend the option with the highest possible chance of achieving this. Or perceiving that the highly bonded client would want to do everything possible, they may more freely endorse the option they
believe is in alignment with what the client would want. There is sound evidence that strongly bonded clients do, in fact, opt for higher quality of care options, and too, follow their practitioner’s recommendations for care more than those who are less bonded.\textsuperscript{37} Practitioners may recognize these proclivities and take them into account when formulating recommendations for care.

Since the bond is a consideration when judging whether or not to recommend a referral, it is important that it is assessed carefully. If the practitioner were to assume that a client was not as highly attached as s/he truly is, a referral may not be as highly endorsed, which could reduce patient advocacy for and potential access to quality care.

Practitioners in the current study also took into consideration the overall health status of the patient when making the decision of whether or not to recommend a referral. The likelihood of recommending a referral was one-and-a-half times greater when the patient was in good health as compared to when the patient had comorbid disease. This may relate to practitioners’ assessment of QOL and consideration for patient welfare, with the belief that the maximal extension of quantity of life achievable with a referral may be less worthwhile if the patient’s QOL was already compromised by other health concerns. As guardians of animal welfare, highly educated and informed, practitioners need to assess animal well-being from a multi-systems perspective and help clients weigh the relative risks and benefits of interventions. Care should be taken to be sure judgements of welfare are evidence-based, so as not delimit the opportunities for patients and clients based on “personal” professional opinion, which could introduce bias.\textsuperscript{38}

Vignette-based inquiry has been widely used in human medicine to evaluate the process of medical care, including the factors that influence physicians’ evaluations of patients,\textsuperscript{39, 40} their formulation of diagnoses,\textsuperscript{40, 41} and their selection of treatments.\textsuperscript{42, 43}
This is the first study that the author is aware of to make use of a multivariable vignette-based questionnaire to assess the process of healthcare delivery in veterinary medicine. The vignette-based approach is an advantageous form of research to study normative prescriptions\textsuperscript{21} – statements of what ought to be done.\textsuperscript{44, 45} It is superior to standard questionnaire or interview methods that risk unreliable and biased self-reports,\textsuperscript{21, 46} and avoids several of the methodological problems ascribed to other methods of inquiry such as observation of patient-provider interactions using standardized patients, peer assessment, and detailed chart review.\textsuperscript{17} Furthermore, vignette-based inquiry capitalizes on the central strength of the survey method, the ability to rapidly collect extensive data simultaneously from a large group of research participants.\textsuperscript{47, 48}

The survey method necessitates an adequate response. This is particularly of concern with vignette-based inquiry, with the ideal of attaining adequate response for each vignette (since each represents a unique combination of factors) – and specific to the present study, each version of the survey (since each version presented a unique vignette). This was achieved with the mean of 33.5 responses per survey. The overall response of 39.3\% is comparable to other recent survey studies in oncology practice in veterinary medicine.\textsuperscript{27} Although significant statistical differences existed in the distributional responses according to gender, type of medicine practiced and geographic region between respondents and non-respondents (p < 0.001), the proportional differences were small enough to suggest adequate representation and an unbiased response.

As with all research, the current study is not without limitations. In using vignette-based inquiry, it is important to recognize that this approach measures \textit{reported intentions} rather than actual behaviour.\textsuperscript{49, 50} Because reported intentions may be influenced by the
desire to provide the “right” answer, and in this manner, not truly reflect actual
behaviour, and actual behaviour could be influenced by factors not practicable
within vignettes, such as veterinarian-client-patient interactions, it is impossible to
determine how representative a decision made within a hypothetical situation such as a
vignette is for a real-life behaviour in similar circumstances. This said, a number of
validation studies have found vignette-based inquiry to be a valid measure of medical
service delivery.

Although vignette-based inquiry has repeatedly been found to be a valid measure of
medical service delivery, validity depends on how vignettes are constructed and
conducted. This includes whether they are of interest to participants, relevant to
participants’ realities, and reflect realistic clinical complexity, and too, whether
they incorporate open or closed questions, ask for a close or distant perspective,
and impose realistic time-limits, with arguments for differing approaches
depending on the research design, participant group, and purpose of the study. Within
the present study, abiding by quality standards for the purpose at hand, the vignettes
were constructed based on a literature review of actual case histories, as well as the
extensive practice experience of both primary care practitioners and the author, and
written to be interesting, relevant, and realistic, enabling practitioners to readily envision
the patient and client within their own practice; the vignettes were then reviewed by
experts in veterinary oncology and pretested with primary care practitioners, all of which
serves to ensure face and content validity. Substantiating these efforts, participant
feedback was positive, with participants finding the study “interesting,” “relevant,” and
“realistic,” response known to increase the quality of the data, and thereby the validity
of the results. However, some could decry the close perspective that was intentionally
chosen in order to maximize the practitioners’ ability to relate to the scenarios within the context of their own practice. According to a number of authors, framing the vignettes in “first person” (as opposed to presenting a fictional practitioner and asking what s/he thinks “Dr. Smith” should do) may pose greater risk for social desirability bias, which could skew the results towards what would be considered a ‘public’ account of practitioner recommendations.\textsuperscript{21, 22} Assuring respondents that there are no right or wrong answers, however, can help circumvent this bias;\textsuperscript{22} this assurance was provided with the vignette instructions.

Since normative prescriptions, such as treatment recommendations, are formed based on facts (what is known in the world) and values (the beliefs or judgements held about what is right or wrong, good or bad, or more or less important),\textsuperscript{44, 45} the ability to generalize the findings of the present study to populations having values different from those within the study cohort (the veterinary practitioners of Ontario) may be limited. Furthermore, since recommendations for treatment were explored with only two forms of cancer and one species of animal, the ability to generalize to broader cancer and species contexts may be limited. Further study is needed to determine how recommendations may vary.

Since the present study was a full factorial experimental design, advantageously permitting the ability to test for interactions, the number of variables that could be built into the vignettes was limited. As a result, other interesting factors, such as the patient’s prognosis in relation to expected lifespan and anticipated well-being, could not be included. Therefore, it was not possible to measure the influence of anticipated quantity of life and QOL on practitioners’ decision-making. This represents an interesting area for future research efforts, especially since QOL was identified to be of foremost importance.
to participants when considering the most appropriate approach to cancer care for patients.

Future research efforts could make use of alternate vignette-based study designs, such as the fractional replication factorial design\(^46\) and the factorial survey design,\(^55\) both of which can accommodate a wider range of variables. Furthermore, open-ended survey questions or the use of a mixed methods approach could deepen insight into practitioner’s decision-making, especially with regards to practitioner reasoning. Recognition that no one-time assessment could possibly identify all contributory factors in a subject as complex as the nature of referral decisions calls for further research in this increasingly relevant aspect of veterinary practice.

A referral to a specialty centre provides the opportunity for comprehensive state-of-the-art treatment for patients diagnosed with cancer. Referrals have been understood to occur in situations of diagnostic uncertainty or treatment complexity that lie beyond the practitioner’s capability, either due to the lack of specialized expertise or equipment required to ensure that the health needs of the patient are optimally met.\(^56, 57\) Knowledge with regard to the specifics of these situations, and how they may influence the propensity of practitioners to recommend a referral, has been less clear, and yet is important in better understanding the referral process, especially since it relates to patient welfare. The present study expands the profession’s understanding of the referral process, specifically in the case of the canine patient diagnosed with lymphoma and OSA. According to the findings, practitioners are more likely to recommend a referral when their patient is in good health, their client is strongly bonded and financially secure, they lack experience with cancer treatment but consider it worthwhile, and are completely confident in the referral centre, with some variability in relation to their gender and the
type of medicine they practice. In sum, practitioners’ propensity to recommend a referral is not simply related to diagnostic uncertainty and treatment complexity, but is contextually multifactorial, taking into account the self-as-practitioner-, client-, and patient-related factors.

a SPSS, version 19.0, SPSS Inc., Chicago, Ill.

References


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38. Holmes M, Cockcroft P. Evidence-based veterinary medicine 1. Why it is important and what skills are needed. *In Pract* 2004;26:28-33.


44. Takacs D, Shapiro DF, Head WD. From is to should: helping students translate conservation biology into conservation policy. *Conserv Biol* 2006;20:1342-1348.


Table 5.1: Demographics of population of veterinarians of Ontario compared to the 1071 veterinarians who responded to the survey, 2010.

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Eligible practitioners</th>
<th>Survey respondents</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Percent</td>
<td>Absolute</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1561</td>
<td>57.3</td>
<td>692</td>
</tr>
<tr>
<td>Male</td>
<td>1163</td>
<td>42.7</td>
<td>379</td>
</tr>
<tr>
<td>Type of medicine practiced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% SA</td>
<td>2258</td>
<td>82.9</td>
<td>938</td>
</tr>
<tr>
<td>&gt; 50% SA</td>
<td>283</td>
<td>10.4</td>
<td>82</td>
</tr>
<tr>
<td>50:50% SA:LA</td>
<td>93</td>
<td>3.3</td>
<td>32</td>
</tr>
<tr>
<td>&lt; 50% SA</td>
<td>90</td>
<td>3.0</td>
<td>19</td>
</tr>
<tr>
<td>Geographic region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Ontario</td>
<td>967</td>
<td>35.5</td>
<td>390</td>
</tr>
<tr>
<td>Southwestern Ontario</td>
<td>691</td>
<td>25.4</td>
<td>282</td>
</tr>
<tr>
<td>Eastern Ontario</td>
<td>528</td>
<td>19.4</td>
<td>228</td>
</tr>
<tr>
<td>Greater Toronto Area</td>
<td>375</td>
<td>13.8</td>
<td>109</td>
</tr>
<tr>
<td>Northern Ontario</td>
<td>163</td>
<td>6.0</td>
<td>62</td>
</tr>
<tr>
<td>Total</td>
<td>2724</td>
<td>100.0</td>
<td>1071</td>
</tr>
</tbody>
</table>
Table 5.2: Demographic information of Ontario veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School of graduation</strong></td>
<td><strong>Ontario Veterinary College</strong> 871 (81.4%)</td>
</tr>
<tr>
<td></td>
<td><strong>Atlantic Veterinary College</strong> 45 (4.2%)</td>
</tr>
<tr>
<td></td>
<td><strong>Western College of Veterinary Medicine</strong> 19 (1.8%)</td>
</tr>
<tr>
<td></td>
<td><strong>Universite de Montreal Faculty of Veterinary Medicine</strong> 13 (1.2%)</td>
</tr>
<tr>
<td></td>
<td><strong>U.S. veterinary college</strong> 19 (1.8%)</td>
</tr>
<tr>
<td></td>
<td><strong>Other international veterinary schools</strong> 103 (9.6%)</td>
</tr>
<tr>
<td><strong>Decade of graduation</strong></td>
<td><strong>2000 – 2010</strong> 386 (36.0%)</td>
</tr>
<tr>
<td></td>
<td><strong>1990 – 1999</strong> 288 (26.9%)</td>
</tr>
<tr>
<td></td>
<td><strong>1980 – 1989</strong> 261 (24.4%)</td>
</tr>
<tr>
<td></td>
<td><strong>1970 – 1979</strong> 112 (10.5%)</td>
</tr>
<tr>
<td></td>
<td><strong>1955 – 1969</strong> 24 (2.2%)</td>
</tr>
<tr>
<td><strong>Type of medicine practiced</strong></td>
<td><strong>100% SA</strong> 938 (87.6%)</td>
</tr>
<tr>
<td></td>
<td><strong>&gt; 50% SA</strong> 82 (7.7%)</td>
</tr>
<tr>
<td></td>
<td><strong>50:50% SA:LA</strong> 32 (3.0%)</td>
</tr>
<tr>
<td></td>
<td><strong>&lt; 50% SA</strong> 19 (1.8%)</td>
</tr>
<tr>
<td><strong>Position in practice</strong></td>
<td><strong>Associate</strong> 492/1060 (46.4%)</td>
</tr>
<tr>
<td></td>
<td><strong>Owner/partner</strong> 443/1060 (41.8%)</td>
</tr>
<tr>
<td></td>
<td><strong>Locum</strong> 101/1060 (9.5%)</td>
</tr>
<tr>
<td></td>
<td><strong>Emergency</strong> 24/1060 (2.3%)</td>
</tr>
<tr>
<td><strong>Hours worked per week</strong></td>
<td><strong>&lt; 20</strong> 81/1062 (7.6%)</td>
</tr>
<tr>
<td></td>
<td><strong>20 to &lt; 40</strong> 528/1062 (49.7%)</td>
</tr>
<tr>
<td></td>
<td><strong>40 to &lt; 60</strong> 413/1062 (38.9%)</td>
</tr>
<tr>
<td></td>
<td><strong>60 or more</strong> 40/1062 (3.8%)</td>
</tr>
<tr>
<td><strong>Average minutes spent/appointment</strong></td>
<td><strong>0 to &lt; 20</strong> 500/1067 (46.9%)</td>
</tr>
<tr>
<td></td>
<td><strong>20 to &lt; 30</strong> 499/1067 (46.8%)</td>
</tr>
<tr>
<td></td>
<td><strong>30 or more</strong> 68/1067 (6.4%)</td>
</tr>
<tr>
<td><strong>Continuing professional development (hours/year)</strong></td>
<td><strong>1 to &lt; 25</strong> 61/1061 (5.7%)</td>
</tr>
<tr>
<td></td>
<td><strong>25 to &lt; 50</strong> 267/1061 (25.2%)</td>
</tr>
<tr>
<td></td>
<td><strong>50 to &lt; 100</strong> 513/1061 (48.4%)</td>
</tr>
<tr>
<td></td>
<td><strong>100 to &lt; 200</strong> 172/1061 (16.2%)</td>
</tr>
<tr>
<td></td>
<td><strong>200 or more</strong> 48/1061 (4.5%)</td>
</tr>
</tbody>
</table>

169
Table 5.3: Veterinary practice demographic information of veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Demographic Details</th>
<th>Urban</th>
<th>Suburban</th>
<th>Town/village</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of community served</td>
<td>294/1066 (27.6%)</td>
<td>317/1066 (29.7%)</td>
<td>366/1066 (34.3%)</td>
<td>89/1066 (8.3%)</td>
</tr>
<tr>
<td>Distance drive away from nearest veterinary referral center</td>
<td>&lt; 1 hour 553/1059 (52.2%)</td>
<td>1 to &lt; 2 hour 340/1059 (32.1%)</td>
<td>2 to &lt; 4 hour 117/1059 (11.0%)</td>
<td>4 hours or more 49/1059 (4.6%)</td>
</tr>
<tr>
<td>Appointment lengths usually scheduled</td>
<td>15-minute 282/1059 (26.6%)</td>
<td>20-minute 339/1059 (32.0%)</td>
<td>30-minute 298/1059 (28.1%)</td>
<td>Flexible 140/1059 (13.2%)</td>
</tr>
</tbody>
</table>

Table 5.4: Diagnosis of cancer in dogs by primary care veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Cancer type</th>
<th>Frequency of diagnosis per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multicentric lymphoma</td>
<td>1 to 2 times 547/1030 (53.1%)</td>
</tr>
<tr>
<td>Osteosarcoma</td>
<td>1 to 2 times 735/1025 (71.7%)</td>
</tr>
</tbody>
</table>
Table 5.5: Experience with the treatment of cancer in dogs by primary care veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Familiarity and comfort with treating with oral drugs</td>
<td>Yes 349/1056 (33.0%) No 707/1056 (67.0%)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Familiarity and comfort with treating with parenteral drugs</td>
<td>Yes 230/1056 (21.8%) No 826/1056 (78.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Types of cancers treated with oral/parenteral drugs</td>
<td>Multicentric lymphoma 314/1071 (29.3%) Gastrointestinal, mediastinal or extranodal lymphoma 169/1071 (15.8%) Grade II or III mast cell tumor 189/1071 (17.6%) Bladder/urethral transitional cell carcinoma 186/1071 (17.4%) Appendicular OSA 86/1071 (8.0%) Splenic hemangiosarcoma 74/1071 (6.9%)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Familiarity and comfort with surgical amputation</td>
<td>Yes 627/1051 (59.7%) No 424/1051 (40.3%)</td>
</tr>
</tbody>
</table>
Table 5.6: Attitudes of primary care veterinarians who responded to survey 2010 towards the treatment of cancer in dogs.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Not at all to less than moderately worthwhile</th>
<th>Moderately worthwhile</th>
<th>More than moderately to completely worthwhile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worthwhileness of treating lymphoma with chemotherapy</td>
<td>86/995 (8.6%)</td>
<td>412/995 (41.4%)</td>
<td>497/995 (49.9%)</td>
</tr>
<tr>
<td>Worthwhileness of treating OSA with amputation and chemotherapy</td>
<td>280/1034 (27.1%)</td>
<td>474/1034 (45.8%)</td>
<td>280/1034 (27.1%)</td>
</tr>
</tbody>
</table>

Table 5.7: Attitudes of primary care veterinarians who responded to survey 2010 towards the worthwhileness and expensiveness of cancer treatment as compared to other chronic disease.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Less</th>
<th>Comparatively</th>
<th>More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worthwhileness of treating cancer as compared to chronic disease (finances aside)</td>
<td>269/1031 (26.1%)</td>
<td>639/1031 (62.0%)</td>
<td>123/1031 (11.9%)</td>
</tr>
<tr>
<td>Worthwhileness of treating cancer as compared to chronic disease (finances weighed in)</td>
<td>371/995 (37.3%)</td>
<td>542/995 (54.5%)</td>
<td>82/995 (8.2%)</td>
</tr>
<tr>
<td>Expensiveness of treating cancer as compared to chronic disease</td>
<td>42/990 (4.2%)</td>
<td>280/990 (28.3%)</td>
<td>668/990 (67.5%)</td>
</tr>
</tbody>
</table>
Table 5.8: Personal life experiences with cancer of primary care veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Personal life experiences with cancer</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (With people, dogs, &amp; other pets)</td>
<td>881/963 (91.5%)</td>
<td>82/963 (8.5%)</td>
</tr>
<tr>
<td>With people</td>
<td>740/1059 (69.9%)</td>
<td>319/1059 (30.1%)</td>
</tr>
<tr>
<td>With dogs</td>
<td>416/999 (41.6%)</td>
<td>583/999 (58.4%)</td>
</tr>
<tr>
<td>With other pets</td>
<td>396/1059 (37.4%)</td>
<td>663/1059 (62.6%)</td>
</tr>
</tbody>
</table>

Table 5.9: Ranking of personal life experiences with cancer of primary care veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Ranking of experiences with cancer</th>
<th>Sad</th>
<th>Mixed</th>
<th>Happy</th>
</tr>
</thead>
<tbody>
<tr>
<td>With people</td>
<td>351/828 (42.4%)</td>
<td>432/828 (52.2%)</td>
<td>45/828 (5.4%)</td>
</tr>
<tr>
<td>With dogs</td>
<td>160/445 (36.0%)</td>
<td>245/445 (55.0%)</td>
<td>40/445 (9.0%)</td>
</tr>
<tr>
<td>With other pets</td>
<td>171/411 (41.6%)</td>
<td>217/411 (52.8%)</td>
<td>23/411 (5.6%)</td>
</tr>
</tbody>
</table>
Table 5.10: Treatment recommendation preferences of primary care veterinarians in Ontario, 2010.

<table>
<thead>
<tr>
<th>Treatment Choice</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; choice</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; choice</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; choice</th>
<th>4&lt;sup&gt;th&lt;/sup&gt; choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Absolute</td>
<td>Percent</td>
<td>Absolute</td>
<td>Percent</td>
</tr>
<tr>
<td>Referral</td>
<td>603</td>
<td>56.3</td>
<td>204</td>
<td>19.0</td>
</tr>
<tr>
<td>Treatment</td>
<td>138</td>
<td>12.9</td>
<td>436</td>
<td>40.7</td>
</tr>
<tr>
<td>Palliative care</td>
<td>297</td>
<td>27.7</td>
<td>291</td>
<td>27.2</td>
</tr>
<tr>
<td>Euthanasia</td>
<td>33</td>
<td>3.1</td>
<td>140</td>
<td>13.1</td>
</tr>
<tr>
<td>Total</td>
<td>1071</td>
<td>100</td>
<td>1071</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 5.11: Factors of the final multivariable model associated with primary care veterinarians’ choice of recommendation to refer a patient to a specialty oncology service in Ontario, 2010.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio</th>
<th>95% confidence interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in the referral center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely confident</td>
<td>2.2</td>
<td>1.13 – 4.40</td>
<td>0.020</td>
</tr>
<tr>
<td>Moderately confident</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience with treating cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not treat lymphoma or OSA</td>
<td>2.7</td>
<td>1.61 – 4.68</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Treat either</td>
<td>1.4</td>
<td>0.81 – 2.58</td>
<td>0.217</td>
</tr>
<tr>
<td>Treat both</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure</td>
<td>2.0</td>
<td>1.52 – 2.74</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Restricted</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General health status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good health</td>
<td>1.5</td>
<td>1.14 – 2.06</td>
<td>0.004</td>
</tr>
<tr>
<td>Comorbidity</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human-animal bond</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong</td>
<td>2.8</td>
<td>2.05 – 3.70</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Weak</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worthwhileness of cancer treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completely worthwhile to treat</td>
<td>3.2</td>
<td>2.05 – 4.75</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Greater than moderately worthwhile to treat</td>
<td>1.8</td>
<td>1.21 – 2.66</td>
<td>0.004</td>
</tr>
<tr>
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Chapter 6

Factors influencing the treatment recommendations of primary care practitioners for dogs diagnosed with cancer: A vignette-based study

Prepared in the style of the *Journal of the American Veterinary Medical Association*
Abstract

Objective—To understand the factors which motivate the treatment recommendations of primary care veterinary practitioners when diagnosing canine lymphoma and osteosarcoma.

Design—Observational cross-sectional study.

Sample population—1071/2724 (39.3%) primary care practitioners across Ontario.

Procedures—A vignette-based survey was offered online and in paper format October 2010 – January 2011. Descriptive data were summarized and multivariable binary logistic regression performed.

Results—There was widespread variation, with all 4 treatment options recommended in 19/32 (59.4%) of the vignettes. The propensity to recommend euthanasia, palliative care, and in-clinic treatment was variously associated with the patient’s age, health status, and type of cancer; client’s bond with their dog and financial status; practitioner’s school of graduation, experience with treating cancer, how worthwhile they considered treatment, and how confident they were in the referral centre, with some variation in relation to practitioner gender and the type of medicine practiced. The bond was the most consistent factor associated with practitioners’ recommendations.

Conclusions—Practitioners’ treatment recommendations are contextually multifactorial, taking into account practitioner, client, and patient factors. Evidence suggests that practitioners engage in bond-centred practice and the bond may be the primary factor determining practitioners’ advocacy for patient quality of care. Practitioners may benefit from more continuing professional development opportunities to broaden awareness of cancer treatment options and outcomes, as well as increase familiarity with oncology referral centres and the services offered. Referral centres should consider what contributes
to practitioner confidence in the centre and design and deliver services in a manner which builds and maintains confidence.


Introduction

Veterinarians engage at the interface between owners and their animals, providing both information – the facts – and guidance – assistance with how to appraise those facts – to support clients in the decision-making process. Clients expect both knowledge and opinion, as is easily appreciable within what may be the most legendary question of all in veterinary medicine, “If this was your [animal], what would you do?” Since clients ascribe Aesculapian authority to, and value veterinarians for, their compassion, humaneness, and understanding alongside their expertise and judgment, the opinion of the veterinary practitioner is often held in high regard. It consequently carries substantial weight in “guiding and framing” clients’ decision-making regarding their pets’ care.

Since opinions strongly influence how facts are assessed and what actions may be endorsed, within the context of veterinary practice, they influence the recommendations that practitioners make. Normative prescriptions – statements of what ought to be done – are poised between facts (what is known in the world) and values (the beliefs or judgements held about what is right or wrong, good or bad, or more or less important). Practitioners are used to prescribing medications, and could readily explain the rationale behind each choice if asked. But the depth to which they understand how and why they might “prescribe” a course of action, or in other words, what may influence the guidance, advice, support, counsel and opinions they provide, and as such, the recommendations they make, may be less clear. Indeed, according to Alexander (1978), “most people are not particularly insightful about the factors that enter their own judgment-making process.”
Research on the factors that motivate the medical care recommendations of veterinary practitioners has been limited,\textsuperscript{10, 11} and yet is important in view of the considerable influence of practitioners on client decision-making. In a recent U.S. study,\textsuperscript{12} 52% (619/1,190) of pet owners reported that they always do exactly what their veterinarian recommended, even if the treatment was inconvenient and time consuming, and for those pet owners who were highly attached, 74% (563/761) of cat owners and 79% (940/1190) of dog owners stated they were willing to do whatever their veterinarian recommended regardless of cost. Thus, more often than not, clients tend to follow the approach to patient care recommended by their veterinary practitioner. This is of great consequence, and especially so with cancer care, because different routes of care, having different risks and benefits, are often associated with different outcomes, both with respect to quantity and quality of life. In short, practitioner recommendations, as they correspond to quality of care, can define the limits of patient welfare.

In human medicine, quality of care has been described as “the comprehensive provision of services in a manner that leads to better outcomes.”\textsuperscript{13, 14} Within veterinary medicine, and specifically cancer care, the highest quality of care – from a medical perspective – is the service rendered from a board-certified oncologist and his/her oncology team at a specialty referral centre, wherein comprehensive state-of-the-art diagnostics and treatment are available. Such expertise maximizes the potential to achieve best patient health and welfare outcomes. The next highest quality of care lies with a general practitioner and his/her technical staff within primary care practice who are experienced with oncological surgical approaches and the use of chemotherapeutics. From there, the offering of palliative care – the conservative symptomatic support of the patient – and euthanasia – the humane ending of the patient’s life – represent the next two
levels of quality of care, respectively. All 4 options, from referral to euthanasia, represent hierarchical levels of medical care intervention, varying with respect to the degree of sophistication of service provided and patient outcomes attainable.

Veterinary practitioners are key participants in patient care decisions. Since the fate of the pet diagnosed with cancer, as well as the health, happiness, and quality of life of the client, are markedly influenced by the decisions made, the recommendations of veterinary practitioners are of profound consequence. With this in mind, the current study was undertaken to identify the patient, client, and practitioner factors associated with practitioners’ treatment recommendations for dogs diagnosed with life-threatening cancer, specifically multicentric lymphoma and appendicular osteosarcoma (OSA).

**Materials and Methods**

The study protocol was reviewed and cleared by the University of Guelph Research Ethics Board (REB #10MY029).

**Questionnaire development and design**—Details of the questionnaire development and design, participants, and data management were described in Chapter 5. In brief, a vignette-based survey was developed in accordance with methods and structure typical of vignette-based research in the medical and social sciences. Following a literature review and the development of an initial survey, 2 semi-structured group interviews were conducted with a total of 8 actively practicing companion animal practitioners in the province of Ontario in order to become familiar with veterinarians’ experiences with and perspectives on cancer and cancer treatment, and to run a pretest to support the face and content validity of the survey. The revised survey was further pretested with 9 graduate students (7 who were also veterinarians) from the Department of Population Medicine at
the Ontario Veterinary College (OVC) and reviewed by 2 self-selected members of the OVC oncology service to further evaluate the validity of the survey. An online version was then piloted with 5 randomly selected veterinarians practicing 100% companion animal medicine in Ontario, as listed in the College of Veterinarians of Ontario (CVO)’s publicly accessible database.19

The survey was organized into 3 sections (Appendix 4.1). Section I consisted of a series of closed-ended questions regarding respondent demographics. Section II centered on 1 of 32 variations of a vignette built around 5 main dichotomous variables: patient’s age (young, old), patient’s overall health status (good, comorbidity), the strength of the human-animal bond (HAB) (strong, weak), the client’s financial status (secure, restricted), and the type of cancer the patient had (lymphoma, OSA). The vignettes contained realistic clinical detail so as to genuinely portray a clinical encounter and were framed in the first person. Respondents were invited to assume the role of the practitioner and asked to rank their preference of treatment recommendation (referral, in-clinic treatment, palliative care, and euthanasia) from 1 (first choice) to 4 (last choice) based on the specifics within the vignette. They were then asked to rank, on a scale of 1 (not important) to 5 (extremely important), 11 patient-, client-, and self-as-practitioner-related factors that may have influenced their first choice of treatment recommendation. Section III consisted of a series of closed-ended and ranking questions regarding the respondent’s professional and personal experiences with cancer, including questions centered on their experience with the diagnosis and treatment of multicentric lymphoma and appendicular OSA in dogs – lymphoma, a common cancer usually treated chemotherapeutically, and OSA, a common cancer usually treated surgically – how worthwhile they thought the treatment of these cancers to be, and more broadly, how worthwhile they thought the
treatment of cancer was as compared to a number of other chronic diseases in dogs, including diabetes mellitus, hyperadrenocorticism, chronic renal disease, congestive heart failure, and idiopathic epilepsy. Personal-related questions focused on the respondent’s personal experiences of cancer in his or her lifetime. Overall, the questionnaire consisted of 32 versions made available to participants in both an online and in paper format, each version varying only with regards to which vignette was presented in section II. Sections I and III were consistent to all versions of the questionnaire.

Study participants—Veterinary practitioners across the province of Ontario practicing any degree of small animal practice, according to the CVO’s publicly accessible database, were invited to participate in the study, excluding veterinarians involved in the initial pretesting and validation of the survey outlined above, and those self-identified as being employed in an area outside of primary care practice (such as specialty or referral practice, industry, academia, pharmaceutica or government) or retired from practice. The recruitment process included an initial letter of introduction (week 0) providing a link to the online survey, a postcard reminder (week 3), a paper survey mail-out (week 6), and a final postcard reminder (week 11). In addition, the University of Guelph’s Alumni Affairs and Development office forwarded two e-mail announcements (weeks 0 and 6) of the study to all Ontario-based alumni of the Ontario Veterinary College. Similarly, the Ontario Veterinary Medical Association forwarded five announcements (weeks 0, 3, 6, 9, and 11) of the study to their membership via their electronic newsletter Newshound. The survey was available from October 15, 2010 to January 31, 2011. Incentives for participation included $10.00 gift cards to coffee establishments for the first 100 respondents and a draw for 1 of 3 complimentary passes
to the joint 2011 American Animal Hospital Association/Ontario Veterinary Medical Association conference held in Toronto, Ontario, Canada.

**Data management**—The multinomial dependent variable was variously re-categorized into 3 binary variables to accommodate the use of binary logistic regression modeling (Figure 1). The first model represented the choice between the intervention to end life and the alternatives to preserve life; the second model represented the choice between conservative, symptom-directed care and targeted, cancer-directed treatment; and the third model represented the choice between targeted, cancer-directed treatment in-clinic and at a referral centre.

**Statistical analysis**—Distributions of frequency of diagnosis of lymphoma and OSA by whether practitioners treated lymphoma and OSA were analyzed by contingency table with chi-squared tests, and the association between these variables determined with univariable logistic regressions. Three multivariable binary logistic regressions determined the practitioner-, client-, and patient-related factors contributing to practitioners’ preference to recommend euthanasia, palliative care, and in-clinic treatment (Figure 1). Euthanasia was modeled relative to ‘palliative care, in-clinic treatment and referral’ together (Model 1); palliative care was modeled relative to ‘in-clinic treatment and referral’ together (Model 2); and in-clinic treatment was modeled relative to referral (Model 3).

Categorical variables included 23 practitioner and practice demographic variables, 10 practitioner attitudinal variables, and 5 vignette-based variables, specifically 3 patient- and 2 client-related variables (Appendix 5.5). There was also 1 practitioner-related continuous variable, the number of years in practice. Linearity of the continuous variable was assessed by including a quadratic term in the model and by categorization. For each
model, univariable analyses of the association of all potential variables with the dependent variable was performed to select those with a liberal p-value of less than 0.20 for model entry. Spearman’s rank correlations were performed on the liberally significant categorical variables. For those demonstrating correlation, either the most contributory variable was retained (based on statistical significance or determined degree of importance as a predictor) or index variables were created, as appropriate (Appendix 5.2).

Forward selection modeling involved adding one liberally significant variable at a time (based on ascending significance from the univariable analyses) to the core model of the liberally significant vignette-based variables. Variables were checked for confounding as well as biologically and socially plausible interaction terms (as judged by the author) prior to removal by looking for a >30% change in coefficients and changes in direction of coefficients. Backward elimination modeling was also performed which involved starting with the full model of all liberally significant variables and removing the most insignificant variables one at a time while screening for confounding. Potential biologically and socially plausible interaction terms were tested in the final main effects model following backward selection. Both modeling techniques retained variables with a significance of $p < 0.05$. To avoid over-fitting the euthanasia model, considering only 33 practitioners selected euthanasia, forward selection modeling was not performed. Instead, multiple backward elimination subset models starting with a maximum of 8 degrees of freedom (df) were built to arrive at the final model. Contingency table and chi-squared tests, as well as univariable logistic regressions, were performed to explain the association between 2 variables which formed an interaction term. Final models were chosen based on their ability to maximally explain the outcome, thus retaining models
with the greatest number of independent explanatory variables. Analyses were performed with standard software.a,b

Results

Survey response—The response was 39.3% (1071/2724), comparable to other recent survey studies in veterinary oncology practice.22 With 32 versions of the survey, each version presenting a unique vignette, the mean of 33.5 responses per version (median 35; SD 5.0; range 22 to 42) was adequate. The distribution of the 32 versions of the survey did not differ by the type of medicine practiced (100% SA or less than 100% SA).

Study population and demographic characteristics—The full demographics of the participants and the practice in which they worked were previously described in Chapter 5. Table 6.1 provides a brief overview. Veterinarians who were female or who practiced 100% SA medicine or who resided in Central, Southwestern, or Eastern Ontario were significantly more likely to respond than veterinarians who were male or practiced less than 100% SA medicine or who resided in other parts of Ontario (p <0.001); however, the proportional differences were small enough to suggest adequate representation.

Practitioners’ professional experience with lymphoma and OSA—Frequencies of the diagnosis of lymphoma and OSA, experience with cancer treatment, and attitudes towards treatment are found in Tables 6.2 – 6.5. The frequencies with which practitioners diagnosed lymphoma and OSA were associated with whether or not they treated these cancers (p < 0.001). Practitioners were 2.9 (CI 1.73 – 4.81) and 1.7 (CI 1.29 – 2.27) times more likely to treat lymphoma when they diagnosed it 7-or-more times and 3-6 times per year, respectively, as compared to practitioners who diagnosed it only 1-2 times per year. Likewise, practitioners were 10.7 (CI 4.99 – 23.04) and 2.3 (CI 1.39 – 3.69) times more
likely to treat OSA when they diagnosed it 7-or-more times and 3-6 times per year respectively as compared to practitioners who diagnosed it only 1-2 times per year.

**Treatment recommendations**—Variation in treatment recommendations was generally widespread within each vignette. All 4 treatment options were recommended in 59.4% (19/32) of the vignettes, 3 treatment options in 37.5% (12/32) vignettes, and 2 treatment options in 3.1% (1/32) vignettes. The vignette with the greatest consensus in care (the young, healthy patient with lymphoma owned by a highly bonded and financially secure client) (see Appendix 4.2, Version 1) was divided between 89.2% (33/37) of respondents recommending referral and 10.8% (4/37) recommending in-clinic treatment. Taken as a whole, regardless of vignette, 603/1071 (56.3%) practitioners chose referral, 297/1071 (27.7%) palliative care, 138/1071 (12.9%) in-clinic treatment, and 33/1071 (3.1%) euthanasia as the option of care they would recommend to their client.

**Factors associated with cancer treatment recommendations**—Multivariable binary logistic modeling demonstrated a number of practitioner-, client-, and patient-related factors contributing to practitioners’ treatment recommendations across the 3 models developed. Practitioner-related factors included practitioners’ gender, type of medicine practiced, school of graduation, experience with treating cancer, perception of the worthwhileness of the treatment of cancer (including as compared to other chronic diseases), and confidence in the referral service. Client-related factors included the two vignette-based variables: the strength of the HAB and client’s financial status. Patient-related factors included the three vignette-based variables: the patients’ age, general health status, and type of cancer. Although interactions were identified between 2 patient factors and between the 2 client factors (Appendix 6.5), for the purposes of model comparisons, only main effects will be reported in the current chapter for these variables.
No variables were lost with interaction term exclusion, accounting for all variables in the presented models.

**Factors associated with euthanasia versus the alternatives to preserve life,** including palliative care, in-clinic treatment, and referral—The final model (Table 6.6) consisted of 4 variables. Classification table predictions were 96.8% correct.

**Factors associated with palliative care versus targeted, cancer-directed treatment, including in-clinic treatment and referral**—Forward selection and backward elimination modeling resulted in the identical final model (Table 6.7) consisting of 7 variables. Classification table predictions were 75.0% correct.

**Factors associated with in-clinic treatment versus referral**—Forward selection modeling resulted in a final model consisting of 5 variables and an interaction term, with an AIC and BIC of 117.135 and 153.825 respectively (725 valid observations) and a $-2\log$ likelihood (LL) of 101.135, $p < 0.001$ (Table 6.8). Classification table predictions were 82.3% correct. Backward selection modeling resulted in a final model with 3 variables, with an AIC and BIC of 58.095 and 81.026 respectively (725 valid observations) and a $-2\text{LL}$ of 48.095, $p < 0.001$. Classification table predictions were 81.1% correct. With the objective of determining associations, the most comprehensive model (Table 6.8) was chosen.

The association between the gender of the practitioner and the decision to treat in-clinic was dependent on the type of medicine practiced. According to the type of medicine practiced, for those who practiced 100% SA medicine, male practitioners were 1.7 times more likely to recommend in-clinic treatment as compared to female practitioners (CI 1.07 to 2.59). In contrast, for those who practiced less than 100% SA medicine, female practitioners were 3.7 times more likely to recommend in-clinic treatment than male
practitioners (CI 1.06 to 13.16). Furthermore, for female practitioners, those who practiced less than 100% SA medicine were 3.1 times more likely to recommend in-clinic treatment than those who practiced 100% SA medicine (CI 1.40 – 6.86). However, for male practitioners, there was no significant difference in the propensity to recommend in-clinic treatment according to the type of medicine practiced. In total, this suggests that females who practice less than 100% SA practice were the most likely to recommend in-clinic treatment, whereas females who practice 100% SA medicine were the least likely to recommend in-clinic treatment, compared to a referral to an oncology service. Limiting analysis to those practicing less than 100% SA medicine, contingency table analysis with chi-squared testing demonstrated no significant association between practitioner gender and how they ranked (1) the worthwhileness of the treatment of cancer (N = 114), (2) the worthwhileness of the treatment of cancer as compared to other chronic diseases (N = 122), (3) the expensiveness of the treatment of cancer as compared to other chronic diseases (N = 121), and whether or not they treated cancer (N = 133). Limiting analysis to 100% SA medicine, logistic regression demonstrated that those who treated both types of cancer were 1.8 times more likely to be male (p = 0.017), and those who treated one type of cancer were 1.4 times more likely to be male (p = 0.038), indicating that within 100% SA medicine, there was a gender difference in the treatment of cancer between male and female practitioners. A parallel finding was not present with those who practiced less than 100% SA medicine.
Discussion

When making clinical decisions, such as contemplating the options when formulating recommendations for care, practitioners may engage in the decision-making process from a number of perspectives. As listed by Cockcroft (2007), these include the following:

“Dogmatism: This is the best way to do it.
Policy: This is the way we do it around here.
Experience: This way worked the past few times.
Whim: This way might work.
Nihilism: It does not really matter what we do.
Rule of least worst: Do what you are likely to regret the least.
Defer to experts: How would you do it?
Defer to [client]: How would you like to proceed?”

When considerable uncertainty exists about what approach may be best, a more logical and systematic decision-making process may be employed. Decision analysis is one such procedure, and a useful framework commonly employed is the decision tree, a graphical method of chronologically accounting for various alternative actions.

Such a framework could be used to conceptualize the decision making process when formulating cancer care recommendations. Following a decision tree which poses three hierarchical questions, the most basic question, which appraises the worth of treatment, would be, “Would it be best to euthanize or provide care?” Considering treatment worthwhile, the next question would be, “Should conservative, symptom-directed or targeted, cancer-directed care be provided?” Deciding on the latter, the last question would be, “Should cancer-directed care be provided in-clinic or at a specialty oncology centre?” Each question presents a choice between two levels of intervention, varying with respect to the degree of sophistication of medical care intervention, acknowledging
referral as the highest level of intervention, followed by in-clinic treatment, palliative care, and euthanasia, respectively. Corresponding to the 3 models developed in the present study, the factors that influenced practitioners’ recommendations for euthanasia, palliative care, and in-clinic treatment – each the lower level intervention within the decision tree questions – were explored.

Starting with the most fundamental question, “Would it be best to euthanize or provide care?” four factors were associated with practitioners’ preference to recommend euthanasia: the type of cancer the patient had, the strength of the HAB between the client and patient, the practitioner’s confidence in the referral centre, and their school of graduation. Contrary to what might be expected based on previously recognized factors associated with euthanasia decisions, the patient’s age and overall health status, as well as the client’s financial status, were not associated with practitioners’ recommendation to euthanize.

Specifically, practitioners were 3.4 times more likely to recommend euthanasia when the patient had OSA rather than lymphoma. Such a propensity may be related to the differential trends in the long-term prognoses of these cancers or the fact that the treatment of OSA is comparatively more invasive, being primarily surgical. Although attitudes towards the treatment of OSA have become more favorable, some practitioners may yet consider amputation disfiguring or a cause of suffering and disability.

Practitioners were also 2.5 times more likely to recommend euthanasia when the bond between the client and patient was thought to be weak rather than strong. Perhaps the inclination to recommend euthanasia was related to practitioners’ presumption that the client would be less willing to pursue treatment if less attached – and potentially, therefore, less committed. Indeed, according to a recent report, less bonded clients tend to
opt for lower levels of veterinary care. Furthermore, less bonded clients are less likely to follow their practitioner’s recommendations for care, which could discourage practitioners from endorsing options they themselves might prefer based on patient welfare, but anticipate would only be rejected.

Of the three options for care as the alternative to euthanasia (palliative care, in-clinic treatment and referral), referral was the option most commonly chosen, representing 58% (603/1038) of respondents who opted to provide care rather than euthanize. Correspondingly, confidence in the referral centre was associated with euthanasia, with practitioners 4.0 times more likely to recommend euthanasia when they were only moderately, as compared to completely, confident in the service offered by the referral centre. Practitioners’ degree of confidence in referral services could be related to the degree to which they are familiar with the service and what it has to offer. When considering, for example, the Ontario Veterinary College Health Sciences Centre as a well-established referral center for specialized oncology care in Ontario, graduates of the OVC would be advantaged by their familiarity with the college personnel, resources and services available. Lacking such familiarity, graduates from other schools may more readily recommend euthanasia.

With confidence a significant determinant of the propensity to recommend euthanasia rather than refer for care, it becomes important for referral centres to consider what might contribute to practitioner confidence and how they could design and deliver services in a manner which builds and maintains confidence. If familiarity with referral services is a factor influencing practitioner confidence, then services may want to consider the extent to which practitioners are aware of the medical, surgical, and technological expertise and equipment available and introduce measures to increase this awareness. As well, ongoing
familiarity with, and trust in, the specialists and support staff, positive experiences with optimal patient and client outcomes, and high-quality, reliable communication practices and procedures may also contribute to practitioner confidence.

Also related to the likelihood of recommending euthanasia was the practitioner’s educational and/or related experiential background. Practitioners who graduated from international veterinary schools and North American schools other than the OVC were 5.2 and 3.8 times more likely to recommend euthanasia than those who graduated from the OVC, respectively. This finding may be related to a number of possible interrelated dynamics, including differences in (1) education, continuing professional development (CPD), and professional experience, (2) attitudes towards the HAB, cancer, cancer treatment, and euthanasia, and, as suggested above, (3) familiarity with the specialty services available at the OVC.

Variation in curriculum among veterinary schools may result in differences in knowledge, skills, and attitudes, which may exert long-term effects on the career paths pursued and professional experience acquired. Variation in oncology curriculum in particular, and access to and participation in oncology-related CPD, and/or differences in CPD interests based on prior education and experience, could all contribute to differences in educational awareness, which has been linked to clinical approaches to care.\textsuperscript{26, 27} Recognition of the link between educational awareness of the treatment of cancer and the tendency to opt for euthanasia prematurely\textsuperscript{26, 27} suggests that practitioners might benefit from more cancer-related CPD opportunities to broaden awareness of cancer treatment options and outcomes.

Practitioners may also more readily opt for euthanasia if they believe that the treatment of cancer in animals is wrong or inappropriate, or if they feel that the life
expectancy associated with cancer may be too limited to justify treatment as worthwhile.\textsuperscript{2}

Indeed, within the present study, as previously described in Chapter 5, the graduates of international schools – those most likely to recommend euthanasia – were found to view the treatment of cancer as less worthwhile than those of other schools. This could be related to differences in attitudes towards the HAB, cancer, cancer treatment, or euthanasia itself.

The next question, which corresponds to the second model, “\textit{Should conservative, symptom-directed or targeted, cancer-directed care be provided?}” poses the choice between vastly divergent philosophical approaches to treatment. Within such divergence, an association of all 5 patient and client vignette factors was found with the propensity to recommend palliative care. Specifically, practitioners were 1.5 times more likely to recommend palliative care when the patient was old (versus young), 1.6 times more likely when the patient’s health was compromised by concurrent disease (versus being in good health), and 1.4 times more likely when the type of cancer was OSA (versus lymphoma). Given that of the two cancers, OSA was viewed less favourably, it is clearly evident that each of the “negative” patient attributes (old age, comorbidity, and OSA) were associated with the choice of palliative care, the lower level of intervention with respect to quality of care. With this in mind, practitioners may have considered active, cancer-targeted treatment of increased risk or reduced benefit when the patient was older, already compromised by concurrent health issues, or had a cancer with a less favourable prognosis. Likewise, in their assessment of QOL and consideration for patient welfare, they may have preferred to avoid a treatment intervention that could cause “the more fragile patient” undue physiological or psychological stress. As guardians of animal welfare, practitioners need to assess animal well-being from a multi-systems perspective.
and weigh the relative risks and benefits of interventions. In so doing, care must be taken to be mindful that judgements of welfare remain evidence-based, so as to avoid inadvertently delimiting the opportunities for patients and clients based on “personal” professional opinion.²⁸

Practitioners also took into consideration how strongly bonded and well-resourced their client was, with practitioners 3.1 and 2.3 times more likely to recommend palliative care when the bond was weak and the client was financially restricted, respectively. This substantiates the findings of a previous study wherein practitioners were found to sometimes recommend less aggressive and expensive treatment options to clients who were financially restricted.¹¹ This suggests that practitioners may be sensitive to the financial status of their clients and the costs incurred when accessing veterinary care, and may be reluctant to recommend more sophisticated treatment options if they believe it unfeasible for the client, conscious of the potential to cause the client further distress (in the form of guilt) in addition to the distress of the diagnosis. Undoubtedly, the costs of palliative care would be substantially lower than those associated with cancer-targeted treatment.

Costs are nearly always a consideration in the provision of veterinary service since most clients pay for their pet’s health care out-of-pocket. Certainly it is appropriate for practitioners to consider their obligations to the client as well as the patient, so long as they do not conflict with the interests of the patient.²⁹ Even if practitioners were to assess, based on the patient and client, that palliative care would likely be the best approach to care, they need to be mindful that they present all treatment options in a balanced and respectful manner to ensure they fulfill their mandate to engage clients in fully informed decisions, and, at the same time, avoid inadvertently limiting their patient’s access to
care. If options were presented in a partisan manner, the client’s right to make fully autonomous decisions on how to spend their money, and likewise, patient welfare, could be undermined.\textsuperscript{39}

Also associated with the recommendation of palliative care was the practitioners’ attitude towards the treatment of cancer, both on its own and in relation to treating other chronic diseases. Practitioners were 5.0 times more likely to recommend palliative care when they thought that the treatment of cancer was only moderately worthwhile as compared to completely worthwhile, and 2.4 times more likely when they thought it was greater than moderately worthwhile as compared to completely worthwhile. Likewise, they were 1.8 times more likely to recommend palliative care when they thought the treatment of cancer, as compared to other diseases, was comparatively worthwhile rather than more worthwhile to treat.

Palliative care (such as anti-inflammatories, analgesics, nutritional adjustments, and/or bandage applications) and cancer treatment (such as surgery, chemotherapy, immunotherapy and/or radiation therapy) represent radically different interventional approaches having significant health implications with respect to patient quantity and quality of life. From the present study, there is strong evidence that a practitioner’s less favorable attitude towards the treatment of cancer may potentially pose a barrier to patients and their families in accessing cancer treatment. If a practitioner’s attitude could, in essence, become a barrier to patient welfare, it may suggest the need for more and/or differing opportunities for CPD, again to broaden awareness of the treatment options available and outcomes possible. Recognizing the influence of practitioners on client decision-making makes it vital that the options for care be presented in a nonpartisan
manner. Doing so respects the rights of clients to engage in fully informed decisions and protects patient’s access to care.

Moving to the final question, “Should cancer-directed care be provided in-clinic or at a specialty oncology centre?” the choice lies between less divergent approaches to treatment – dissimilar with respect to options, expertise and technology, but similar in philosophical intent, with both aimed at disease control. With this question, the patient factors were not associated with practitioners’ preference of care, indicating that practitioners may have considered the patient’s age, health, and type of cancer in a similar manner in relation to both of these treatment approaches. The client’s financial status was also not associated, but again the HAB was, with practitioners 1.8 times more likely to recommend in-clinic treatment rather than referral when the HAB was thought to be weak. Since the bond again appears to be a significant determinant of practitioners’ choice of patient care options – each associated with different risks, benefits, and outcomes – it is important that the bond be assessed in a careful manner. With the question as to whether to treat in-clinic or refer to a specialty centre, if it were assumed that the client was not as highly attached as s/he truly is, the recommendation of a referral may not be as highly endorsed. This could reduce patient advocacy for and potential access to the highest quality of care.

Practitioners were also 3.2 times more likely to treat in-clinic rather than refer if they were only moderately confident in the referral centre, as compared to completely confident, demonstrating again the association between a practitioner’s confidence and their propensity to recommend a referral. Furthermore, practitioners were 7.7 times more likely to recommend in-clinic treatment when they treated both cancers (lymphoma and OSA), and 4.2 times more likely when they treated either cancer (lymphoma or OSA),
than those who did not treat cancer at all. Not controlling for other factors, experience
with the treatment of lymphoma and OSA was directly related to the frequency with
which they diagnosed these cancers, suggesting that practitioners with greater exposure to
these cancers may be more likely to develop the knowledge and skills to manage them,
and thus be able to recommend care within their own practice. Although unable to offer
the high-tech standard of care as expected within a specialty centre, in-clinic treatment
would offer cancer-targeted options for care with risks and benefits quite amenable to
some clients, especially in terms of practical realities such as the distance from a referral
centre and financial constraints.

Interestingly, the practitioner’s gender and type of medicine practiced was also of
influence in practitioners’ propensity to recommend in-clinic treatment as compared to a
referral. The finding that male practitioners who practiced 100% SA medicine were 1.7
times more likely to recommend in-clinic treatment as compared to their female
counterparts appears related at least in part to greater experience with treating cancer. However, a parallel association was not found with female practitioners who practiced
less than 100% SA medicine, who were 3.7 times more likely to recommend in-clinic
treatment as compared to their male counterparts. Though the reason for this difference
remains unclear, a hypothesis that warrants further investigation, as previously described
in Chapter 5, suggests that this may be related to gender differences in the way
practitioners conceptualize animals and their owners, with female practitioners more
aligned with the interests of the client, and male practitioners more aligned with the
interests of the animal.30

Through modeling such philosophically contrasting approaches to oncology care,
addressing the fundamental questions a practitioner may ask when formulating treatment
recommendations, three key assumptions were substantiated. First, both patient and client factors were, indeed, associated with recommendations for care. Second, the negative attributes of the patient and client factors (e.g. comorbidity, restricted finances) were associated with lower-level intervention recommendations, and correspondingly, the positive attributes (e.g. good health, secure finances) were associated with higher-level intervention recommendations, making positive attributes protective factors and negative attributes risk factors in determining patient quality of care. And third, not all the factors were always associated with the recommendation of one intervention over another. It is likely that factors not found to be significant were not necessarily of no importance, but rather not of differential importance when recommending one intervention over another. However, specifically for the recommendation of euthanasia, the lack of statistical association for some factors may have been due to the small sample size, since only 33 practitioners had selected this option.

A finding of consequential relevance, practitioners’ recommendations were found to be based not only on their assessment of the particulars of the patient and client, but also on the particulars of themselves as multifaceted professionals. Understanding the extent to which practitioner-related attributes may influence recommendations for oncology care enables greater understanding of the variation in recommendations evident in primary care practice, as noted in Chapter 4, and substantiated in the current study, wherein the full spectrum of treatment options were recommended in 59.4% of the vignettes.

What stands out as most unique was that no matter which question was asked along the decision tree, one factor was consistently associated with practitioners’ recommendations: the HAB. Recognition of the HAB is considered fundamental to the practice of veterinary medicine. Since clients are psychologically, socially, and
emotionally attached to their pets, which has implications for physical and mental health, and, as a result, overall client wellbeing,\textsuperscript{32} it is important for practitioners to acknowledge the HAB and practice in ways which give it due consideration.\textsuperscript{33} This appeared evident in the current study, wherein the presence of the negative attribute, a weak bond, was associated with the lower-level interventions (i.e., euthanasia, palliative care, and in-clinic treatment) and the presence of the positive attribute, a strong bond, was associated with the higher-level interventions (i.e., the alternatives, life-preserving care, cancer-targeted treatment, and referral). Accordingly, the presence of a strong bond influenced choices of intervention higher on the scale of preserving both patient quantity and quality of life and, as such, the bond. This suggests that the participants in the present study were strongly attuned to and responsive to the bond – firm evidence of bond-centred practice, today’s standard of care that leads to better outcomes for patients,\textsuperscript{34} clients,\textsuperscript{34} and veterinary practices.\textsuperscript{4} Furthermore, since the HAB was the only factor of consistent significance in the formulation of cancer care recommendations, of the 39 factors accounted for within the present study, the bond may be the primary factor determining practitioners’ advocacy for patient quality of care.

Measurements of clinical decision-making and quality within healthcare require accurate, affordable, and valid research methodologies.\textsuperscript{35} Vignette-based inquiry, which examines human behaviour, attitudes, values, and perceptions, may be one such approach. It avoids several of the methodological problems ascribed to other potential methods of inquiry, such as standard questionnaires and interview methods,\textsuperscript{9, 16} observation of patient-provider interactions using standardized patients,\textsuperscript{14} peer assessment,\textsuperscript{14} and detailed chart review.\textsuperscript{14} It also capitalizes on the central strength of the survey method, which is the ability to rapidly and inexpensively collect extensive data.
simultaneously from a large group of research participants.\textsuperscript{36, 37} Furthermore, it is possible to infer causal relationships with the decisions made, meaning that “the factors actually cause the change in the decision, rather than merely being associated with it by ‘accident’” owing to the virtual independence of the vignette-based factors.\textsuperscript{38} With the support of validation studies,\textsuperscript{14, 18, 39-41} vignette-based inquiry appears to be an ideal research methodology to study the treatment recommendations of veterinary practitioners. To the author’s awareness, the present study represents the first time a multivariable vignette-based methodology has been used to research the process of healthcare delivery in veterinary clinical practice.

As with all research, the present study is not without limitations. It is important to recognize that vignette-based inquiry measures reported intentions rather than actual behaviour.\textsuperscript{42, 43} Reported intentions may be influenced by social desirability, and thus not truly reflect actual behaviour,\textsuperscript{17, 36, 44} and actual behaviour could be influenced by veterinarian-client-patient interactions and other factors not practicable within vignettes,\textsuperscript{44} making it impossible to determine how representative a decision made within a hypothetical situation such as a vignette is for real-life behaviour in similar circumstances.\textsuperscript{37, 43} Despite this, a number of validation studies have found vignette-based inquiry to be a valid measure of medical service delivery.\textsuperscript{14, 18, 39-41}

The validity of vignette-based inquiry depends in great part on how the vignettes are constructed.\textsuperscript{16} Abiding by quality standards for vignette construction,\textsuperscript{17, 45} the vignettes in the present study were created based on a literature review of actual case histories in conjunction with extensive practitioner experience, and written to be interesting, relevant, and realistic, so practitioners would be able to readily envision the vignette patient and client within their own practice. Furthermore, the vignettes were reviewed by experts in
veterinary oncology and piloted with primary care practitioners, which further served to ensure face and content validity. Substantiating these efforts, participant feedback was positive, with participants finding the study “interesting,” “relevant,” and “realistic,” response known to increase the quality of the data, and thereby the validity of the results. The close perspective that was intentionally chosen in order to maximize the practitioners’ ability to relate to the scenarios within the context of their own practice, however, could be criticized. According to a number of authors, framing the vignettes in “first person” (as opposed to presenting a fictional practitioner and asking what s/he thinks “Dr. Smith” should do) may pose greater risk for social desirability bias, and thus a ‘public’ rather than true account of practitioner recommendations. The assurance that there are no right or wrong answers, however, can help circumvent this bias; this was provided with the vignette instructions.

The ability to generalize the findings of the present study to populations with values different from those within the study cohort (the veterinary practitioners of Ontario) may be limited, since recommendations for care are formed based on facts and values. Furthermore, since recommendations were explored with only two forms of cancer and one species of animal, the ability to generalize to broader cancer and species contexts may be limited. Further study is needed to broaden our understanding of how recommendations may vary according to practitioners, patients and clients in order to better understand practitioner decision-making.

Future research efforts could include alternate vignette-based study designs, such as the fractional replication factorial design and the factorial survey approach, which can accommodate a wider range of variables. Furthermore, mixed method designs or the integration of open-ended questions would offer a qualitative component to explore
meanings and perceptions,\(^3\) and consequently bring greater insight into the reasoning underlying practitioners’ formulation of treatment recommendations.

Research in human behaviour, attitudes, values, and perceptions, and how they may influence quality of care may be newer in veterinary medicine, but it follows the trend within other professions, including medicine, nursing, and social work,\(^{37,38,46,47}\) wherein it has become an increasingly fertile area of study. In many ways, the present study has given rise to new questions, with new ways of contemplating the practice of veterinary medicine.

Yesterday cancer care was usually contemplated by asking the first question, “Would it be best to euthanize or provide care?” Today, it appears to be most commonly contemplated by asking the second question, “Should conservative, symptom-directed or targeted, cancer-directed care be provided?” Following the trends of the past three decades, with new heights of owner commitment to pets, higher expectations of veterinary care, and improved accessibility to, and viability in, cancer treatment approaches, tomorrow cancer care will likely be contemplated at the level of the third question, “Should targeted, cancer-directed care be provided in-clinic or at a specialty oncology centre?” Better yet, the provision of the best possible quality of care to veterinary patients may be envisioned as a collegial and collaborative partnership between primary care practice and specialty referral centres, with specialty care a direct extension of primary care practice within a shared-care delivery system.

\(a\) SPSS, version 19.0, SPSS Inc., Chicago, Ill.

\(b\) SAS, version 9.2, SAS Institute Inc, Cary, NC.
References


Figure 6.1: Logistic model configuration and associated philosophical approach to care.

<table>
<thead>
<tr>
<th>Model</th>
<th>Recommended Choice of Intervention</th>
<th>Philosophical Approach</th>
<th>Decision analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Euthanasia ←→ Palliative care</td>
<td>In-clinic treatment</td>
<td>Referral</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Life-ending vs. life-preserving care</td>
</tr>
<tr>
<td>Model 2</td>
<td>Palliative care ←→ In-clinic</td>
<td>Referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td>treatment</td>
<td></td>
<td>Conservative, symptom-directed vs. targeted, cancer-directed care</td>
</tr>
<tr>
<td>Model 3</td>
<td>In-clinic treatment ←→ Referral</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In-clinic cancer-directed vs. referral cancer-directed care</td>
</tr>
</tbody>
</table>
Table 6.1: Demographic information of Ontario veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School of graduation</strong></td>
<td>Ontario Veterinary College 871 (81.4%)</td>
</tr>
<tr>
<td><strong>Type of medicine practiced</strong></td>
<td>100% SA 938 (87.6%)</td>
</tr>
<tr>
<td><strong>Continuing professional development (hours/year)</strong></td>
<td>1 to &lt; 25 61/1061 (5.7%)</td>
</tr>
</tbody>
</table>
Table 6.2: Diagnosis of cancer in dogs by primary care veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Cancer type</th>
<th>Frequency of diagnosis per year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 2 times</td>
</tr>
<tr>
<td>Multicentric lymphoma</td>
<td>547/1030 (53.1%)</td>
</tr>
<tr>
<td>Osteosarcoma</td>
<td>735/1025 (71.7%)</td>
</tr>
</tbody>
</table>

Table 6.3: Experience with the treatment of cancer in dogs of primary care veterinarians who responded to survey 2010.

<table>
<thead>
<tr>
<th>Familiarity and comfort with treatment</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Oral drugs</td>
<td>349/1056 (33.0%)</td>
</tr>
<tr>
<td>Parenteral drugs</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>230/1056 (21.8%)</td>
</tr>
<tr>
<td>Surgical amputation</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>627/1051 (59.7%)</td>
</tr>
</tbody>
</table>
Table 6.4: Attitudes of primary care veterinarians who responded to survey 2010 towards the treatment of cancer in dogs.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Not at all to less than moderately worthwhile</th>
<th>Moderately worthwhile</th>
<th>More than moderately to completely worthwhile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worthwhileness of treating lymphoma with chemotherapy</td>
<td>86/995 (8.6%)</td>
<td>412/995 (41.4%)</td>
<td>497/995 (49.9%)</td>
</tr>
<tr>
<td>Worthwhileness of treating OSA with amputation and chemotherapy</td>
<td>280/1034 (27.1%)</td>
<td>474/1034 (45.8%)</td>
<td>280/1034 (27.1%)</td>
</tr>
</tbody>
</table>

Table 6.5: Attitudes of primary care veterinarians who responded to survey 2010 towards the worthwhileness of cancer treatment as compared to other chronic disease.

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Less</th>
<th>Comparatively</th>
<th>More</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worthwhileness of treating cancer as compared to chronic disease (finances aside)</td>
<td>269/1031 (26.1%)</td>
<td>639/1031 (62.0%)</td>
<td>123/1031 (11.9%)</td>
</tr>
<tr>
<td>Worthwhileness of treating cancer as compared to chronic disease (finances weighed in)</td>
<td>371/995 (37.3%)</td>
<td>542/995 (54.5%)</td>
<td>82/995 (8.2%)</td>
</tr>
</tbody>
</table>
Table 6.6: Factors associated with primary care veterinarians’ choice to recommend euthanasia versus palliative care, in-clinic treatment, and referral, in Ontario, 2010.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio</th>
<th>95% confidence interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cancer type</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSA</td>
<td>3.4</td>
<td>1.51 – 7.84</td>
<td>0.003</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Human-animal bond</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td>2.5</td>
<td>1.16 – 5.27</td>
<td>0.019</td>
</tr>
<tr>
<td>Strong</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Confidence in the referral center</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately confident</td>
<td>4.0</td>
<td>1.57 – 10.26</td>
<td>0.004</td>
</tr>
<tr>
<td>Completely confident</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>School of graduation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International veterinary school</td>
<td>5.2</td>
<td>2.25 – 12.17</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Other North American college</td>
<td>3.8</td>
<td>1.42 – 10.21</td>
<td>0.008</td>
</tr>
<tr>
<td>Ontario Veterinary College</td>
<td>1.0</td>
<td></td>
<td></td>
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</table>
Table 6.7: Factors associated with primary care veterinarians’ choice to recommend palliative care versus in-clinic treatment and referral, in Ontario, 2010.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio</th>
<th>95% confidence interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old</td>
<td>1.5</td>
<td>1.12 – 2.12</td>
<td>0.008</td>
</tr>
<tr>
<td>Young</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSA</td>
<td>1.4</td>
<td>1.02 – 1.94</td>
<td>0.036</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General health status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comorbidity</td>
<td>1.6</td>
<td>1.14 – 2.17</td>
<td>0.006</td>
</tr>
<tr>
<td>Good health</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human-animal bond</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td>3.1</td>
<td>2.20 – 4.25</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Strong</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial status</td>
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<td></td>
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<tr>
<td>Restricted</td>
<td>2.3</td>
<td>1.69 – 3.24</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Secure</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worthwhileness of cancer treatment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately worthwhile to treat</td>
<td>5.0</td>
<td>3.20 – 7.71</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Greater than moderately worthwhile to treat</td>
<td>2.4</td>
<td>1.62 – 3.53</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Completely worthwhile to treat</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worthwhileness of treating cancer as compared to treating other chronic diseases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More worthwhile to treat</td>
<td>0.5</td>
<td>0.28 – 1.01</td>
<td>0.053</td>
</tr>
<tr>
<td>Comparatively worthwhile to treat</td>
<td>0.6</td>
<td>0.39 – 0.78</td>
<td>0.001</td>
</tr>
<tr>
<td>Less worthwhile to treat</td>
<td>1.0</td>
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Table 6.8: Factors associated with primary care veterinarians’ choice to recommend in-clinic treatment versus referral in Ontario, 2010.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio</th>
<th>95% confidence interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human-animal bond</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak</td>
<td>1.8</td>
<td>1.17 – 2.67</td>
<td>0.007</td>
</tr>
<tr>
<td>Strong</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience with treating lymphoma &amp; OSA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treat both</td>
<td>7.7</td>
<td>4.24 – 13.96</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Treat either</td>
<td>4.2</td>
<td>2.63 – 6.56</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Do not treat</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confidence in the referral center</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately confident</td>
<td>3.2</td>
<td>1.42 – 7.19</td>
<td>0.005</td>
</tr>
<tr>
<td>Completely confident</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>0.3</td>
<td>0.08 – 0.95</td>
<td>0.041</td>
</tr>
<tr>
<td>Female</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of medicine practiced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% SA</td>
<td>0.3</td>
<td>0.15 – 0.71</td>
<td>0.005</td>
</tr>
<tr>
<td>&lt; 100% SA</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender*Type of medicine practiced</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%SA, Male</td>
<td>1.7</td>
<td>1.07 – 2.59</td>
<td>0.025</td>
</tr>
<tr>
<td>&lt;100%SA, Female</td>
<td>3.7</td>
<td>1.06 – 13.16</td>
<td>0.040</td>
</tr>
<tr>
<td>Female, &lt;100%SA</td>
<td>3.1</td>
<td>1.40 – 6.86</td>
<td>0.005</td>
</tr>
<tr>
<td>Male, 100%SA</td>
<td>2.0</td>
<td>0.68 – 5.84</td>
<td>0.205</td>
</tr>
</tbody>
</table>
Chapter 7

Conclusions
Study background and purpose

Drawing from the human healthcare literature, quality of care in veterinary medicine may be described as the comprehensive provision of veterinary services in a manner that leads to better outcomes for patients and clients. Specifically with regard to oncology, better outcomes can be achieved through broadening our understanding of the systems of care, both at the primary and specialty referral levels, identifying best practices, and then putting them into practice. The overall purpose of the present thesis has been to identify ways in which the process of service may be advanced so better outcomes may be achieved. In short, this thesis aims to broaden the evidence base upon which best practices may be built so as to enhance the quality of care in veterinary oncology.

This endeavor is timely, considering a number of trends that upon convergence suggest an impending change in the paradigm of cancer care in veterinary medicine. The rising prevalence of cancer in pets along with the public’s deepening devotion to their pets, increasing expectations of their veterinary practitioners, changing perspectives on the treatment of cancer, and improved accessibility to viable, comprehensive services together are likely to amplify the demands for cancer care. More pets than ever before are expected to receive and benefit from comprehensive, state-of-the-art oncology service, shifting the paradigm of cancer care in veterinary medicine.

There is an imperative to remain attentive to growth and changing paradigms. Through such, the profession can acquire the knowledge and skills necessary in order to remain responsive, productive, successful, and economically viable. This thesis contributes to the knowledge and skills necessary by supporting the profession’s mandate to provide the very best quality of care for patients and clients. Advocacy for the highest possible quality of care is important. For patients, it acknowledges the raison d’être of companion
animal veterinary medicine: to help patients live better lives longer. For clients, it honours the central tenet of bond-centred practice: to attend to the needs of the client as well as the patient.

Summary of findings

This thesis encompasses two studies: an interview-based qualitative study to explore the service expectations of oncology clients at a tertiary referral centre, and a vignette-based quantitative study to investigate the treatment recommendations of practitioners for canine patients with a diagnosis of lymphoma or osteosarcoma (OSA).

The first study, involving 30 individual and dyadic interviews with clients accessing specialty referral oncology services for dogs diagnosed with various forms of life-threatening cancer, was undertaken to develop an understanding of clients’ overall expectations of the service, as well as what contributes to, influences, or underlies these expectations, and identify any treatment stage-related (early, middle, and late) differences in expectations. Following Kravitz (1996), client expectations were defined specifically as “expressions of desire (what is wanted), necessity (what is perceived to be needed), entitlement (that which is owed or to which one has a right), normative standards (that which should be), or importance (a hybrid category, since wants, needs, and rights may all be rank ordered in importance).”

Thematic analysis of the interviews identified 14 distinct although interconnected themes related to the expectations of clients accessing specialty oncology services, namely information, uncertainty, decision-making, quantity and quality of life, time, cancer, human-animal bond, commitment, resiliency, emotional support, public perspective, veterinary perspective, oncology service, and the Ontario Veterinary College
Health Sciences Centre as a referral centre. From the 14 themes, 6 prominent client expectations were identified, namely information as an expectation of the consultation; quick scheduling of the referral and timely service, compassionate service, and continuity of staff and service protocols as expectations of the healthcare process; and maintaining quality of life and achieving the goals of treatment as expectations of the medical intervention. The first four represent expectations of the service as they pertain to the client, and the last two represent expectations of the service as they pertain to the patient. The findings in relation to “information” were subcategorized into “the content” (i.e., what information clients expected) and “the communication process” (i.e. how clients expected the information to be given). With “information” as the central theme and foremost expectation, representing “the known,” and “uncertainty” as the counter-theme, representing “the unknown,” the topics of (1) the content of information, (2) the process of information-giving, and (3) uncertainty were chosen for inclusion in the present thesis.

Regarding the first topic, the information expected, the central qualification held by clients was that the information the service presented had to be “the truth.” Beyond this, clients expected information about all aspects of the cancer and its treatment, varying in relation to their basic understanding of, and previous experience with, cancer and their individual preference for information. Information permitted the necessary confidence to engage in the cancer treatment program, as well as the ability to make informed decisions and prepare for the future, all critical to successfully managing the cancer journey. At the same time, information clearly was of profound psychological significance for clients, in that it engendered a sense of empowerment, control, capability, and hope, which further contributed to their ability to successfully manage the cancer journey.
Regarding the second topic, the process of information-giving, clients referred to ten elements of the communication process which they greatly appreciated. These elements served to facilitate comprehension and support psychological adjustment, thereby helping to “make the journey easier.” The process elements identified included the provision of information (1) in an “upfront” manner; (2) in multiple formats; (3) using comprehensible language; (4) in an unrushed environment wherein the time was taken to listen, answer all questions, and repeat what was needed; (5) on a continuous basis, with 24-hour access to address questions or concerns; (6) in a timely manner; (7) with positivity; (8) with compassion and empathy; (9) with a non-judgmental attitude; and (10) through staff with whom they had established relationships.

Uncertainty, the third topic, was identified as the key factor underlying clients’ expectations of the service as they pertain to the client. Uncertainty was identified as the overarching psychological feature that dominated clients’ experience within the oncology setting. Originating from the diagnosis of a life-threatening cancer and its treatment, uncertainty had a profound impact on clients’ sense of a just and orderly world; their feelings, thoughts, behaviors, attitudes, and personal expectations in relation to their dog; and their expectations of the service – specifically for information, ongoing relationships, 24-hour access, and timely service. With uncertainty appraised mostly as a danger, clients employed multiple coping strategies to reduce it in the effort to adapt to the new reality of living with and caring for a dog with cancer.

The second study, which consisted of a cross-sectional, vignette-based survey of primary care veterinary practitioners across Ontario, was undertaken to investigate the treatment recommendations of practitioners for canine patients with a diagnosis of lymphoma and OSA, specifically to (a) determine the patient-, client-, and practitioner-
related factors associated with practitioners’ recommendations, and (b) develop an understanding of the decision-making processes of practitioners.

Of the 1071 practitioners who participated in this study (representing a 39.3% response), most diagnosed both lymphoma and OSA just once to twice a year, and up to one-third were familiar and comfortable using oral or injectable chemotherapeutics and two-thirds skilled with surgical amputation. Most (84.3%) practiced within less than a 2-hour drive of a specialty referral centre, and 93.7% were completely confident in the oncology services offered. There was wide variation in practitioners’ attitudes towards the treatment of cancer, related to demographic factors. Although most practitioners considered the treatment of cancer as more expensive than the treatment of other chronic diseases, such as diabetes mellitus, hyperadrenocorticism, chronic renal disease, congestive heart failure, and idiopathic epilepsy, just over half believed it to be comparatively worthwhile to treat.

With all four treatment options recommended in close to 60% (19/32) of the vignettes, and at least three treatment options recommended in 97% (31/32) of the vignettes, variation in practitioners’ treatment recommendations was widespread, suggesting that the patient and client factors may have been assessed differently and/or assessed in relation to aspects of the practitioners themselves rather than the particulars of the vignettes.

In response to the vignettes, just over half (56%) of the practitioners recommended, as their first choice of intervention, referral, while the remainder recommended palliative care (28%), in-clinic treatment (13%), and euthanasia (3%). Based on statistical modeling, these recommendations were variously associated with the patient’s age, health status, and type of cancer; the client’s bond with their dog and financial status; and the practitioner’s school of graduation, experience with treating cancer, how worthwhile they
considered treatment, and how confident they were in the referral centre, with some variation in relation to their gender and the type of medicine practiced.

All four options for care, from referral to euthanasia, represent hierarchical levels of intervention, varying with respect to the degree of sophistication of medical care provided and patient outcomes attainable. Within this classification, a referral, which provides comprehensive state-of-the-art diagnostics and treatment aimed to maximize quantity of quality life, represents the highest quality of care, while euthanasia, the humane ending of the patient’s life, represents the lowest quality of care. As a rule, the “negative” patient attributes (old age, comorbid disease, and OSA), and “negative” client attributes (weak bond and restricted finances) were associated with recommendations for lower quality of care interventions, such as palliative care or euthanasia. Likewise, practitioners’ less favorable attitude towards the treatment of cancer and only moderate confidence in the referral centre were also associated with lower quality of care interventions, suggesting that these attributes could represent potential barriers to patients accessing higher quality of care interventions, including the services of a referral to a specialty oncology service. The human-animal bond was the most consistent factor associated with practitioners’ recommendations, evidence that the veterinarians participating in this study were strongly attuned to and responsive to the bond, suggesting that they practice in a bond-centred manner. It also suggested that the bond may be the primary factor determining practitioners’ advocacy for patient quality of care.
Limitations

As typical of research, these studies are characterized by limitations in relation to the specific research questions asked and the methodologies employed to answer them, which have implications for the internal and external validity of the findings.

With respect to internal validity, interview-based research could be viewed as being prone to biases such as researcher bias and social desirability response bias. Although efforts were undertaken to minimize the potential for these biases, the very nature of interpersonal research makes it nearly unavoidable. Vignette-based research may also be limited by the potential for social desirability response bias, especially when a close perspective is asked for, as was the case in the study undertaken. Although participants were assured that there were no right or wrong answers, the potential remains that the findings could be skewed in the direction of ‘public accounts’ of practitioner recommendations.

The validity of vignette-based quantitative research depends on how the vignettes are constructed and conducted, with arguments for differing approaches depending on the research design, participant group, and purpose of the study. Although the vignettes within the study conducted were written abiding by quality standards for construction and pretested at three points in time during survey development, which contributed to face, content, and construct validity, the design of the study lacked the ability to measure criterion validity, or, in other words, the ability to verify whether the vignettes truly measured what we intended it to measure: actual practitioner behaviour. Without a validation component to the study, the most that can be claimed is that the study measured reported intentions, which cannot be guaranteed to reflect actual behaviour.
With respect to external validity, as is typical of qualitative research – which focuses on specific individuals within specific contexts – limitations may exist in the degree to which the findings may be generalized to other populations within other contexts. Since generalizability depends on the degree of similarity between the research context and the specific context wherein the findings may be applied, the findings cannot simply be extrapolated to other cancer care contexts without considering their applicability. In relation to the vignette-based study, since recommendations are formed based on facts and values, the findings may not necessarily be generalizable to practitioner populations having value systems that differ from those of the study participants. Furthermore, since practitioner recommendations were explored with only two forms of cancer and one species of animal, the ability to generalize to broader cancer and species contexts – as well as population contexts – may be limited.

**Key recommendations**

Based on the findings of this thesis, a number of key recommendations in the area of service provision in veterinary oncology may be put forward:

- Upon the diagnosis of cancer, whether at the primary care or specialty setting, it is important for service providers to provide the very best client education possible, especially since clients may be uninformed or misinformed about cancer and cancer treatment in dogs, and equate the diagnosis to a death sentence or treatment as contributing to suffering. The veterinary-client exchange at this critical juncture is of profound importance in determining the short- and long-term consequences for the health and welfare of the patient and the patient’s family. Adequate and appropriate information should be provided on all treatment options (including the ‘no cancer-
directed’ options), risks and benefits, associated prognoses, and why one treatment may be recommended over another.

- It would benefit primary care practitioners to realize the extent to which they influence client decision-making, and further, the degree to which their recommendations for cancer care are influenced by aspects of themselves as multifaceted professionals, including their attitudes towards cancer treatment and their conceptions of patient quality of life. This would permit engagement in self-reflective practices to question the extent to which their recommendations are soundly evidence-based. Treatment options should always be presented in a balanced and respectful manner in order to fulfill practitioners’ mandate to engage clients in fully informed decisions, as well as avoid inadvertently limiting patient care options.

- It is important for practitioners to be aware of the extent to which they may base their recommendations for care upon assumptions of the client and patient. Assuming that a client may not opt for higher-level interventions, based on perception of the client’s financial status or bond to their pet, could result in endorsements of lower-level interventions, such as palliative care or euthanasia. This could result in patients not receiving the quality of care they might otherwise receive, which could have long-term repercussions for both the patient and client, as well as clients who become discouraged and seek second opinions, which could lead to client loss and damage to the profession’s reputation and credibility. Likewise, assumptions that a particular patient, being older or having comorbid disease, may not be able to manage higher-level interventions could also result in endorsements of lower-level interventions, having similar negative end outcomes. Practitioners should make sure clients are made fully aware of each available course of action in an unbiased manner.
• Since practitioners’ recommendations for cancer care were associated in part with the degree to which they held confidence in the specialty referral centre, referral centres may want to consider what contributes to practitioners’ confidence and intentionally design and deliver services in a manner which builds and maintains confidence.

• Specialty oncology referral centres could offer client-friendly orientation packages for veterinary practices to provide prospective clients the information necessary for them to feel comfortable and confident in their decision to consult the specialty oncology service, engage in a cancer treatment program, and navigate an unfamiliar healthcare system. Likewise, oncology services could also offer supplemental information packages and orientation programs for clients new to their service. Within transparency, hospitals can be understood as humanistic sanctuaries rather than for-profit institutions.

• It is important for specialty oncology referral centres to design and deliver service in a client-centred manner, placing client expectations – what clients want, perceive to need, think should happen, believe they have a right to, and designate as important – at the heart of care. Service that takes into account the client’s perspective enables evolving and responsive systems of care with the potential to achieve better outcomes for the patient, the client, and the healthcare system.

• If service providers, which includes veterinarians and animal health technicians – anyone who provides clients with medical information – recognize the benefits and limitations of information and information-giving, and how clients’ informational and experiential backgrounds, information-seeking tendencies, information preferences, and coping styles influence the information wanted and how it should be given, they may be better enabled to meet clients’ information expectations. The adoption of a
client-centred, individualized, or “tailored” approach to information-giving, which can maximize the potential for clients to manage the information given, make the decisions that need to be made, be prepared for the outcomes of those decisions, and cope with and adapt to the cancer journey, seems most appropriate.

- Awareness on the part of service providers of the significant impact that information has on clients’ psychological well-being, and provision of information not only to ensure informed decision-making, but also to support client welfare, may improve clients’ quality of life. Understanding how information functions (enabling the psychological capacities of empowerment, control, capability, hope, and trust, as well as the interventional practicalities of medical care decisions and preparedness), and how it may help or hinder client well-being, should direct the communication process, and in this manner, better support client welfare and adaptation.

- It is important for veterinary service providers to be aware of the central psychological phenomenon of uncertainty experienced by clients and how this influences their feelings, thoughts, behaviors, and attitudes, as well as their expectations of the service, and provide services in a manner which supports clients’ efforts to manage the uncertainty experienced (either through reducing, maintaining, or promoting it) so as to support their ability to cope with and successfully adapt to the cancer journey.

- Recognizing the special role of preparatory information within the context of client uncertainty – specifically how future orientations can reduce uncertainty – veterinary service providers should anticipate and provide clients with as much preparatory information as they want, need, and believe to be important.
• It would be ideal for specialty oncology referral centres to offer service protocols that maximize the potential to preserve continuity, in this manner reducing the potential to compound the uncertainty clients experience. Examples of this include reliable patterns of service provision (appointments, admissions, in-hospital procedures, discharges), consistency in service providers, 24-hour informational support, and minimal wait times.

• With information as the foremost client expectation, specialty oncology services could provide communication skills training for staff to sensitize them to the clients’ perspective and advance the skills necessary to better meet client expectations. Although not addressed within this thesis, training in the delivery of bad news would also be appropriate in any oncology communication skills training program.

**Future directions for research**

The studies that comprise this thesis lay the groundwork for further research in the integrative areas of veterinary client expectations, communication, uncertainty, and practitioner decision-making as they relate to veterinary service provision.

First, since expectations may vary according to specialty, context, and population, research in veterinary medicine will need to diversify to identify client expectations in subspecialties other than oncology, and comparisons made to identify commonalities and differences. However, continuing within the specialty oncology setting, based on current findings, future research efforts could focus on specifically examining the information expectations of clients, starting with further interview-based qualitative work. This could be accomplished using an emergent design wherein data collection and analysis are synchronous and the research questions adapted to the emergent themes, with the
potential therein to derive a more in-depth appreciation of this area. Based on these findings, a survey assessment of clients’ information expectations could take this understanding to the next level, quantifying the relative importance of particular elements of the communication content and process expected by clients, further expanding the evidence base upon which best practices in communication can be built. Given that communication is a complex phenomenon, the combination of qualitative and quantitative methodologies may be most informative.

Future research efforts could also examine videotaped data of veterinary-client-patient interactions and clients’ assessments of those interactions. Qualitative methodologies such as conversation analysis, or quantitative methodologies such as the Roter Interaction Analysis System (RIAS)\textsuperscript{10} – which has proven a useful instrument in assessing the content and process of videotaped clinical interactions – could be employed.

To date, research in veterinary communication has concentrated on the process of communication. Yet, as found in the study of client expectations within this thesis, the content of information was vitally important to the participants of this study, integral to both the decision-making process and the ability to prepare for the future. Further research focusing on the content aspects of communication, particularly in relation to client decision-making, may be highly informative.

With the identification of uncertainty as an overarching psychological feature of clients’ experience within the oncology setting, continued work to expand on this newly identified aspect of client experience is recommended. This could include qualitative, quantitative or mixed-methods approaches, and should draw on the extensive research base in human medicine, most notably nursing, for methodological approaches. Furthermore, since the construction, management, and resolution of uncertainty lies
within the realm of communication, efforts to define the communication strategies that could be employed to better enable clients to manage the uncertainty they experience seems most appropriate. Beyond this, the broader concept of uncertainty in medicine, which would include practitioner uncertainty (for example, when making diagnoses, planning treatments, communicating with clients etc.) and the role that uncertainty plays within decision analysis may be very interesting.

With the introduction of vignette-based research to assess practitioner decision-making, research could expand to evaluate other patient- and client-related factors, including treatment-related factors such as anticipated quantity and quality of life in relation to various treatments. This may contribute to broadening practitioners’ self-awareness regarding their professional judgement-making, as well as point to potential areas where practitioners might benefit from support – and through such awareness and support, improve the quality of care that the public receives for their pets.

Future research efforts could also make use of alternate vignette-based study designs, such as the fractional replication factorial design and the factorial survey design, both of which can accommodate a wider range of variables. Furthermore, open-ended survey questions or the use of a mixed methods approach could deepen insight into practitioner’s decision-making, especially with regards to practitioner reasoning. Future efforts should also incorporate validation studies to demonstrate the validity of this research methodology within the context of veterinary medicine.
References


Appendix 1

Documents and commentary for the expectations study

1.1: Study protocol for the oncology team
1.2: Guide for oncology team to introduce the study to clients
1.3: Guide to obtain telephone consent with clients
1.4: Consent to participate in research
1.5: Interview guides
1.6: Client and patient demographic form
1.7: Lexington attachment to pets scale
1.8: Client commentary from interviews
1.9: Messages for the members of the oncology team
1.10: Quotation reflecting the experience of bond-centred practice
Study protocol for the oncology team

Participants will include clients with dogs seeking services presenting with any cancer type. It also includes clients discontinuing services when services can still be rendered.

In order to capture the broadest scope of client experience, clients will be interviewed at the early, middle and late stages of cancer treatment, with the goal to reach a total of 45 interviews. The interviews will be timed according to the cancer-specific treatment protocols.

For example:
For lymphoma (25 weeks long), the interviews will be treatment weeks 1, 11/13, and 25.
For osteosarcoma (20 week protocol), the interviews will be weeks 1, 12, and 20.
For mast cell cancer (12 week protocol), the interviews will be weeks 1, 6, and 12.

The interviews are expected to occur over a six-month period, based on statistics from oncology service and the recent broadening of the study intake (April 15 – October 15), with an average of 3 – 5 interviews per week.

Since treatments are typically scheduled at least one week in advance, the oncology service technicians will identify the client visits which qualify for study participation beforehand, speak with clients personally or over the phone to introduce the study, and then forward the clients’ contact information to Dr. Debbie Stoewen who will then phone and describe the study in full. Dr. Stoewen is happy to assist in any way with recruitment activities and blend in with routines as seamlessly as possible.
Guide for oncology team to introduce the study to clients

There is a new research project being conducted by Drs. Jason Coe and Debbie Stoewen of the Department of Population Medicine here at the Veterinary College. The purpose of this study is to explore what is important to clients who are accessing the oncology service at the Ontario Veterinary College. The results will be used to further enhance the quality of care and service to clients and their pets requiring cancer treatment.

If you’re interested in learning more about this study, and possibly participating, and we have your permission to pass your phone number to Dr. Stoewen, we could have her give you a call in the next day or so to explain the project in detail.

Your decision as to whether to participate or not will not in any way, positively or negatively, influence the services you and your dog receive here.

This research is strictly confidential and has been cleared by the University of Guelph Research Ethics Board and received funding from Pet Trust, a funder of companion animal and human-animal bond research.

It will make an important contribution to understanding what is important to clients, and will be used to help us maximize the quality of veterinary care provided to clients who pursue cancer treatment for their pets. It will ultimately improve the lives of patients and their families seeking cancer care here.

Do you think you might be interested in learning more about it?
So will it be okay to give Dr. Stoewen your phone number so she can give you a call and tell you about it? The call will probably take 10-15 minutes of your time.
What time would be most convenient for her to call?
I’ll let Dr. Stoewen know and she will give you a call within the next two to three days.
Is this fine?
Guide to obtain telephone consent with clients

My name is Dr. Stoewen and I’m calling from the Department of Population Medicine at the Ontario Veterinary College. I believe one of the oncology technicians was speaking with you regarding my research project and said you might be interested in participating. She gave me your phone number so I can tell you more about it. I am conducting a research project in the oncology service to explore what is important to clients who access the service for cancer care for their dogs. This research is a part of my PhD dissertation and the results will be used to further enhance the quality of care and service to clients and their pets requiring cancer treatment.

This research is strictly confidential and has been cleared by the University of Guelph Research Ethics Board and received funding from Pet Trust, a funder of companion animal and human-animal bond research. It will make an important contribution to understanding what is important to clients, and will be used to help us maximize the quality of veterinary care provided to clients who pursue cancer treatment for their pets. It will ultimately improve the lives of patients and their families seeking cancer care at the Veterinary College and potentially elsewhere too, as the information gathered will be used for publications and presentations.

There are three parts to this research. The main part is your participation in an audio-recorded interview which is about one hour long, asking you about what’s important to you for you and your dog as you seek cancer service. This will be in a private office in the Department of Population Medicine. The other parts involves the completion of two short forms, one being the general information form which is basic to most research. It’s just a checklist gathering general information about you and your dog and would take 5 minutes or less. The other is a human-animal bond questionnaire. It’s a list of short statements and you respond by checking whether you strongly agree, moderately agree, moderately disagree or strongly disagree. You basically choose one. This too will take about 5 minutes.

Other than this, the only other thing we would need from you is your permission to be able to access your dog’s medical records at the Veterinary College as it pertains to his/her cancer care (not other veterinary services) for a period of up to 10 years. This is to cover possible publication requirements, as different journals sometimes expect different degrees of background information, and could request information regarding treatment protocols etc. that isn’t a part of this study, and thus I would have to look it up.

Now as far as potential risks or benefits, because we’re talking about cancer in your dog, there is the risk for sensitive emotions to be triggered, and sometimes they can carry on after the interview is over. At the same time, sometimes when one is able to discuss their pet’s cancer condition and treatment with someone who has an in-depth understanding of the human-animal bond and the medical aspects of cancer care, it can be beneficial. Sometimes it’s helpful. And from a broad perspective, although the outcomes of this research are not going to benefit you and your pet now, you can take heart in knowing that you’d be contributing to better support and improve the lives of individuals and families seeking cancer care for their pets in the future.
The information you share will be kept confidential and will not influence or impact the cancer care services you receive – this research is conducted from a separate department of the Vet College. When the transcripts are written up, all identifying information such as the names of people, animals, places etc. will be removed, and the CD audio recordings will be kept stored in a locked filing cabinet for a period of up to seven years, upon which it will be destroyed. You have the right to have your audio recording withdrawn from the study at any time notifying myself in writing. Also, any findings released from this study will not be directly linked to any of the study participants – we may use direct quotes, but not assign your name to them.

Participation in this research is entirely voluntary. There is no remuneration. If you choose to participate and then change your mind, you may withdraw at any time without consequences of any kind. It will in no way affect the provision of care for you or your pet at the clinic. And if I felt that we should bring the interview to a close, then we’ll do that. Also, you don’t have to answer any questions you’re not sure of and still remain in the study.

Lastly, this study has been reviewed and received ethic clearance through the University of Guelph Research Ethics Board. If you choose to participate, I’ll give you the phone number for the Research Ethics Officer that you can jot down, in case you have any questions about your rights as a research participant.

Now, I’ve just shared a lot of information about this project. Do you have any questions? Do you think you’d be interested in participating?

OK, as you’ve agreed to participate – and thank you – how about if I give you the phone number for the Research Ethics Officer? It’s (519) 824-4120, ext. 56606. Also, I can give you the phone number of my advisor, the main investigator of this research project, again, in case you have any questions. His name is Dr. Jason Coe, and his number is also (519) 824-4120, but his extension is 54010.

Now, when would it be convenient for you to have this interview? Remember, it will take around one hour for the interview and about 10 minutes for the two forms.
CONSENT TO PARTICIPATE IN RESEARCH

Exploring the needs and expectations of pet owners accessing cancer treatment for their dogs at the Ontario Veterinary College

You are asked to participate in a study conducted by Dr. Jason Coe, DVM, PhD and Dr. Debbie Stoewen, DVM, MSW from the Department of Population Medicine at the University of Guelph. The results of this study will be used to enhance the veterinary oncological care and service given to clients and their pets. They will also contribute towards Dr. Stoewen’s PhD dissertation. If you have any questions or concerns about the research, please feel free to contact Dr. Jason Coe at 519-824-4120 Ext. 54010. This research is sponsored by the Ontario Veterinary College Pet Trust.

PURPOSE OF THE STUDY

To investigate the needs and expectations of clients seeking cancer treatment interventions through the oncology service at the Ontario Veterinary College. Information gathered during this study will be used for publication or presentation.

PROCEDURES

If you agree to participate in this study, we would ask you to do the following:

1. To fill out a short demographic form to gather some basic background information about you and your dog
2. To complete a short questionnaire asking you about your relationship with your dog
3. To participate in an interview with Dr. Stoewen in a private office in the Department of Population Medicine. The interview will follow a standard guide asking you about your thoughts, feelings and experiences of the cancer care program embarked upon so far. It will take about one hour and will be audio recorded in order to create a verbatim transcript of the interview.

   Background Information: A verbatim transcript is a written word-by-word record of what was said in the interview. To protect confidentiality, all identifying information will be omitted. Everyone’s transcripts will be assessed together to identify common and unique needs and expectations among clients seeking oncology services.

4. To have access to your dog’s OVC medical record as it pertains to the cancer treatment for a period of ten years.

   Background Information: In submitting research findings to various journals over the next several years, information about your dog’s cancer diagnosis and treatment plan may be included. Different journals have different interests and may request different details of the patients cancer-related medical background, so access to your dog’s records for this time period will enable publication of the results. Furthermore, the research findings of this study will hopefully form the foundation for future research, so future and past patient records as they pertain to the cancer
diagnosis and treatment may need to be compared. Publication also can be a complicated and slow process, so time is needed to accommodate any potential delays.

Upon request, research findings from this study will be available to participants at completion.

POTENTIAL RISKS

There is a potential risk for sensitive emotions to be triggered within the interview while discussing the circumstances surrounding loving, living and caring for a pet with cancer in a cancer treatment program. Sometimes these emotions can carry on after the interview is over. Every effort will be made to ensure the interview will be carried out in a caring and supportive manner.

POTENTIAL BENEFITS

There are no direct benefits to you for participating in the study. A potential personal benefit, however, is the opportunity to discuss your pet’s cancer condition with someone who has an in-depth understanding of the human-animal bond as well as the medical aspects of cancer care. Conversations in which people are understood and acknowledged tend to have therapeutic value. Beyond this, the findings of this study will help the veterinary profession better understand the needs and expectations unique to clients seeking cancer care services for their pets. Such understanding will enable the cancer care team as a whole to better meet the needs and expectations of clients. Ultimately, the study will improve the ability to better support and thus improve the lives of individuals and families seeking cancer care for their pets.

COMPENSATION FOR PARTICIPATION

There will be no form of remuneration for participation in this study.

CONFIDENTIALITY

Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study. Only a professional transcriber who is bound by a confidentiality agreement and the research team at the University of Guelph will have access to the audio recordings. The transcripts will exclude all identifying information. The interview CD will be labeled with a code which can only be linked to participant identity through a masterlist which will be separately stored in a locked filing cabinet only accessible to the researchers. Any and all information shared in the interviews, excepting suggestions of harm to self or others, will be held in strictest confidence and will not influence or impact the provision of cancer care in any way, positive or negative, since the research team, as part of the Department of Population Medicine, is not associated with clinical oncology services. Participants have the right to withdraw the audio recording of their interview from the study at any time by notifying the researchers in writing.

Any findings released from the outcome of this study will not be directly linked to any of the study participants. In signing this consent you are aware and agreeable to the use of non-identifying verbatim quotes in published materials and presentations. The audio recordings and masterlist will be stored in separate locked filing cabinets at the Ontario Veterinary College, University of Guelph for a period of up to seven years and then destroyed. Review of the medical record and inclusion of information for publication purposes will be confidential.
PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. It will in no way affect the provision of care for you or your pet at the clinic. You may also refuse to answer any questions you don’t want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so.

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the University of Guelph Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Officer
University of Guelph
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SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for “Exploring the needs and expectations of pet owners accessing cancer treatment for their dogs at the Ontario Veterinary College “ as described herein. My questions have been answered to my satisfaction and I agree to participate in this study with the assurance that my identity on written materials and audio recordings will remain completely confidential. However, I agree to the use of verbatim quotes in any published materials and presentations as long as my identity remains protected. I give permission to access my dog’s medical record for a period of ten years. I have been given a copy of this form.

____________________________
Name of Participant (Please print)
____________________________
Signature of Participant
____________________________
Date

SIGNATURE OF WITNESS

____________________________
Name of Witness (Please print)
____________________________
Signature of Witness
____________________________
Date
Early Stage Interview Guide

1. What brought you to the college’s cancer care service?

2. How would you describe your experience of the cancer care service so far?

3. Is this [experience] the same as what you expected or different? If so, how is it the same or different?

4. What do you need and/or expect in coming to the cancer care service?

5. Have your needs and/or expectations been met so far? Do you feel they will/will continue to be met?

6. What are your expectations for the future? What do you hope for?

7. When thinking about [dog’s name] circumstance of having cancer thus far, if you could roll back time, what might be done differently?

8. Before we close this interview, what else would like to share? Is there an area that we haven’t touched on that you’d like to discuss?

9. Out of curiosity, why did you agree to take part in this research project?

10. And lastly, what do you hope will come out of this research?
Middle and Late Stage Interview Guide

1. What brought you to the college’s cancer care service?

2. How would you describe your experience of the cancer care service so far?

3. Is this [experience] the same as what you expected or different? If so, how is it the same or different?

4. Thinking back, what did you need and/or expect when you started the cancer care service?

5. Have your needs and/or expectations changed? If so, how?

6. Have your needs and/or expectations been met thus far? Do you feel they will/will continue to be met?

7. What are your expectations for the future? What do you hope for?

8. When thinking about this cancer journey, if you could roll back time and do it all over again, what might be done differently?

9. Before we close this interview, what else would like to share? Is there an area that we haven’t touched on that you’d like to discuss?

10. Out of curiosity, why did you agree to take part in this research project?

11. And lastly, what do you hope will come out of this research?
CONFIDENTIAL PET AND OWNER INFORMATION

Pet's Information

1. My dog’s name is _____________________________________________________

2. My dog is _____ years old.

3. My dog is:  □ Female   □ Male

4. How old was your dog when you acquired him/her?
   □ < 6 months old    □ 6 months to 1 year of age    □ > 1 year of age

5. Is this the first dog you’ve ever owned?  Yes  □  No  □

6. Which member of your household is your dog’s primary caregiver (feeds, walks, gives treatments)?
   □ Myself  □ My spouse/partner
   □ Another household member (Please specify) ________________________________

7. On average, my dog makes ______ visits to a veterinarian each year.

8. Did your regular veterinarian refer you to this cancer service?  Yes  □  No  □

9. Was your dog diagnosed with cancer by your regular veterinarian?  Yes  □  No  □

   If yes, please continue with Question 10.

   If no, was your dog diagnosed here at the Veterinary College?  Yes  □  No  □

   If no, where was your dog diagnosed? (please specify) _________________

10. How long ago was your dog diagnosed with cancer?
    □ less than 1 week ago
    □ 1 week to less than 1 month ago
    □ 1 month to less than 3 months ago
    □ 3 or more months ago

11. Have you ever accessed veterinary services through the Veterinary College before?  Yes  □  No  □

    If No, please continue with Question 12.
If Yes, (a) When? □ Less than 1 year ago
□ 1 or more years ago
(b) Was it with this pet? Yes □ No □
(c) Was it for cancer care? Yes □ No □

12. Have you ever had another pet with cancer? Yes □ No □
13. Have you ever had a pet receive cancer treatment before? Yes □ No □

Owner’s Information

14. I am: □ Female □ Male
15. What is your age? □ 18 – 29 □ 30 – 49 □ 50 – 64 □ 65 and older
16. What have you completed? □ < Grade 12 □ High School
□ College/ University □ Postgraduate degree
□ Other, please specify ______________________
17. Please indicate the range that best describes your annual household income:
□ ≤$35,000 □ $36,000 - 60,000
□ $61,000-100,000 □ >$100,000
18. With regards to your current family… How many adults live in your home?
□ myself □ myself and 1 other adult □ more than 2 adults
19. With regards to your current family… How many children live in your home?
□ none □ 1 □ 2 □ 3 or more
20. With regards to your current family… How many pets live in your home?
□ 1 □ 2 □ 3 or more
21. With regards to your family of origin… Did you grow up with one or more pets in your home?
Yes □ No □

Thank you,

Debbie Stoewen
Please tell us whether you agree or disagree with some very brief statements about your dog. For each statement, check which column applies best. You may refuse to answer.

<table>
<thead>
<tr>
<th></th>
<th>Agree Strongly</th>
<th>Agree Somewhat</th>
<th>Disagree Somewhat</th>
<th>Disagree Strongly</th>
<th>Don’t Know or Refuse</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td><em>My pet means more to me than any of my friends.</em></td>
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<tr>
<td>B</td>
<td><em>Quite often I confide in my pet.</em></td>
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<td>C</td>
<td><em>I believe that pets should have the same rights and privileges as family members.</em></td>
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<tr>
<td>D</td>
<td><em>I believe my pet is my best friend.</em></td>
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<td>E</td>
<td><em>Quite often, my feelings toward people are affected by the way they react to my pet.</em></td>
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<tr>
<td>F</td>
<td><em>I love my pet because he/she is more loyal to me than most of the people in my life.</em></td>
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<tr>
<td>G</td>
<td><em>I enjoy showing other people pictures of my pet.</em></td>
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<tr>
<td>H</td>
<td><em>I think my pet is just a pet.</em></td>
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<tr>
<td>I</td>
<td><em>I love my pet because it never judges me.</em></td>
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<tr>
<td>J</td>
<td><em>My pet knows when I’m feeling bad.</em></td>
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<td></td>
<td></td>
<td>Agree Strongly</td>
<td>Agree Somewhat</td>
<td>Disagree Somewhat</td>
<td>Disagree Strongly</td>
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<tr>
<td>K</td>
<td>I often talk to other people about my pet.</td>
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<td>L</td>
<td>My pet understands me.</td>
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<tr>
<td>M</td>
<td>I believe that loving my pet helps me stay healthy.</td>
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<tr>
<td>N</td>
<td>Pets deserve as much respect as humans do.</td>
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<tr>
<td>O</td>
<td>My pet and I have a very close relationship.</td>
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<tr>
<td>P</td>
<td>I would do almost anything to take care of my pet.</td>
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<td>Q</td>
<td>I play with my pet quite often.</td>
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<td>R</td>
<td>I consider my pet to be a great companion.</td>
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<tr>
<td>S</td>
<td>My pet makes me feel happy.</td>
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<tr>
<td>T</td>
<td>I feel that my pet is a part of my family.</td>
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<tr>
<td>U</td>
<td>I am not very attached to my pet.</td>
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<tr>
<td>V</td>
<td>Owning a pet adds to my happiness.</td>
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<tr>
<td>W</td>
<td>I consider my pet to be a friend.</td>
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</table>
The last word today is yours…!
How did you find today’s experience?

__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

Thank you!

Debbie Stoewen

The last word is yours…!
How did you find today’s experience?

EXP 001
Very positive. Very supportive and understanding. Very good at putting us at ease. Very good listener.

EXP 002
Very positive and comfortable. Hopeful that the excellent care and support will continue as a result of the research. Dr. Stoewen is wonderful!

EXP 003
Therapeutic to say the least and perhaps a little concerning for the future without my girl.

EXP 004
I found this experience uplifting, inspiring and therapeutic. It let me put into words the feelings I have for my dog and how much he means to me. He has been an inspiration to me as he has gone through this treatment and has shown me such strength. I want to be strong for him as he has given me so much love and joy! This today has brought all the emotions forward, and I know my expectations have been met and fulfilled! Thank you Debbie!

EXP 005
Thanks for the time to talk about her with you. Good luck with the project!

EXP 006
We felt the interview was very open. Our hope is for other families to benefit from the information we provided. We were treated by Dr. Stoewen in a very compassionate manner.

EXP 007
Good experience to know to have the opportunity to share our experience with others. Made me feel good to participate.

EXP 008
Enjoyed the experience. It worked out well. I hope this will help with the goal of improving services. It was definitely worth the time to participate. Said it all on audio. Thank you.

EXP 009
Was very happy to see that there is someone ready and interested to see if clients have concerns and want to do something to help make things easier than it already is. Thank you.
EXP 010
Interview was very rewarding and hope that any contribution on the recording are helpful. If selected, we would be more than willing to do a follow-up interview at a later date.

EXP 011
As with our entire experience here, it was well done and a good, positive interview. It helps to discuss your feelings and thoughts to help deal with a difficult situation with someone who cares.

EXP 013
“Interesting.” I hope outcomes from this research would tend to encourage the small animal hospital to continue to operate exactly as they now are. The entire staff are absolutely great!!

EXP 014
Interesting, an opportunity to add voice to our experience as a family dealing and coping with a family member’s disease.

EXP 015
Was a good experience. It’s a good reality check and was therapeutic to discuss how {Patient} is doing. Thanks for listening.

EXP 016
Thought provoking and reflective. Thank you for this opportunity to participate in your research. I have thoroughly enjoyed sharing our experience with you. Good luck with your research.

EXP 017
Emotional, talking about {Patient} and all she does for {daughter} and how having cancer could take {Patient} from us, but at the same time {Patient} has received the best possible care in order to beat the cancer.

EXP 018
Very interesting and helpful and hope that I was of help. Good to talk about {Patient} and all the feelings and emotions surrounding his care and treatment and future. Thank you for this opportunity.

EXP 019
I cannot say enough good things about the University of Guelph. They are, without a doubt, the best at what they do, and they should all be so proud that they all work for this place. Cause, to be related, as you are, with all these people, that’s a blessing. And I’m sure that nothing but good’s going to come out of this. Because this is more research. This is positive research.
EXP 020
We found today’s experience had positive aspects and not as emotionally stressful as originally expected. We hope that our participation in the research project will be useful to OVC and helpful to other owners in the future.

EXP 021
Very worthwhile. Hopefully our input will help in some way, improve care of families who have sick pets. We were both very comfortable during the interview with Debbie. Thanks for being so interested in this research. The session was also very cathartic and allowed {Partner} and I to verbalize issues that were not talked about.

EXP 022
Relaxing experience. Easy to participate. Good probing questions. A pleasant conversation; felt interview was interested in my thoughts and experiences.

EXP 023
Very positive, as has been my experience in total with OVC. Perhaps a couple of questions I haven’t asked of oncology yet have come to light. Hopefully this will be of some benefit, although for me, I can’t imagine a better experience than this has been, if one’s pet must have cancer.

EXP 024
Very interesting and hopefully valuable in the work of the Vet College. It was good to talk about our dog and his experience with the College. We hope it will be helpful in your research.

EXP 025
Great! I really hope my information, input and comments were helpful. My only complaint – we needed about 10 more hours! Good Luck compiling Debbie – can’t wait to read the final product. Please don’t hesitate to call if you need anything further!

EXP 026
Best wishes in your research. It was our pleasure to try to help you. We hoped we helped in some way.

EXP 028
I find it interesting and enjoyable. It is good to have the opportunity to talk about one’s feelings about this difficult situation. A good experience. A good look at {Patient}’s care from a wide range of views. Important to understand how important pets are in people’s lives – this is a worthwhile endeavour. It was a pleasure to meet you. Thank you.

EXP 030
I enjoyed this experience very much. I felt very happy to share my story about {Patient} who is very important to me and hopefully any words I had to say will make a difference in either research or someone’s life. Hopefully this will be a help and I am very grateful for this opportunity to help {Patient}. Thank you.
Messages for the members of the oncology team

C: And you know, these people they all come in every day, and they just think they’re doing jobs, but they’re not. They don’t know how much joy they’re bringing.
D: How much…
C: Joy.
D: Joy, yes…
C: I go to work and what do I do. I push papers around a desk. {Oncology team member} comes in here, and she’s, she’s enriched our life. Like, nobody can take that away from us. And we can never thank her enough…

D: Well, I’m just wondering what you hope will come out of this research.
C: (15-second pause) You know… It would be really nice if the caregivers could realize how important they are. That would be really nice. Because everybody is so busy and everybody is so stressed, and some clients don’t take the time to say things. And it would be really, really nice if the {oncology team member}’s of this world knew, just the difference that they make in peoples lives. That’s not just a dog you’re looking after, or just a parrot or just a bunny rabbit. These are people’s lives that you’re holding in your hands. It is really, really important. I’d like them to know that.

Quotation reflecting the experience of bond-centred practice

C: So we felt that {Clinician} was taking our concerns into account as well as {Patient} getting the best treatment. ’Cause {Patient}’s getting his care, and we’re getting our care too.
Appendix 2

Supplementary findings and data synthesis for the expectations study

2.1: Lexington Attachment to Pets Scale

2.1: Summary of twelve top findings

2.2: Concept maps of the data

2.3: Coping model
Lexington Attachment to Pets Scale (LAPS)
description and study results

• Self-report quantitative measure of pet attachment having “excellent psychometric properties” (Johnson et al, 1992, p. 160)

• 23 items to elicit responses about opinions and feelings about their dog
  - “My pet understands me”
  - “My pet makes me feel happy”
  - “I enjoy showing other people pictures of my pet”

• Semantic differential attachment scale
  4-point scale from “no agreement” to “high agreement”

• Scores can range from 0 – 69

Average levels of attachment to companion animals in the household:1

<table>
<thead>
<tr>
<th>Interviewer ratings</th>
<th>Percent of caregivers</th>
<th>Average LAPS score [0 – 69]</th>
<th>N [322]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very attached</td>
<td>50.0</td>
<td>54.9 (9.2)</td>
<td>161</td>
</tr>
<tr>
<td>Somewhat attached</td>
<td>37.5</td>
<td>44.8 (10.3)</td>
<td>115</td>
</tr>
<tr>
<td>Not very attached</td>
<td>12.4</td>
<td>32.6 (9.3)</td>
<td>40</td>
</tr>
<tr>
<td>Not at all attached</td>
<td>1.9</td>
<td>26.2 (13.6)</td>
<td>6</td>
</tr>
</tbody>
</table>

1 Johnson et al., Psychometric Evaluation of the Lexington Attachment to Pets Scale

Expectations study results [N=30]:

➔ Mean: 60.5 (SD 6.55, range 40-69)

➔ On average, the participants of the expectations study were very attached
Summary of twelve top findings

Participants often have special bonds with their dogs.

Operationalization of ‘special bond’:

- The bond may be extra strong in association with
  - High historical investment (participants having met challenges within special health care or behavioural needs, or simply having met all needs)
  - Close identification (seeing oneself in the dog, not separating the self from the dog)
  - Integral family membership (shared activities, one-on-one cohabitation, relationship start from birth)
  - Dog’s function as an emotional moderator (helping people through difficulties)
  - The dog viewed as a spiritual guardian
  - The dog and/or human members of the family experiencing distress when separated

As a result…

- Some clients prefer shortened separation time from their dogs

Participants are emotionally traumatized by a major cancer diagnosis.

Operationalization of ‘emotionally traumatized’:

- The diagnosis is experienced as an unexpected occurrence evoking strong negative emotions (shock, anxiety, worry, upset) accompanied by consequent behavioural responses (tears, questions, a sense of urgency to respond/act) and the belief that the diagnosis is a death sentence (die, death, dying, life expectancy, the end, disease that kills, passed away). Further support to the degree of emotional trauma is the expression of need for and/or appreciation of reassurance (reassuring, ease).

The cancer journey is a world of unknowns.

Operationalization of ‘a world of unknowns’ includes direct and indirect expressions of

(A) Not knowing:

- Whether the dog really has cancer until a definitive diagnosis is made
- Whether the cancer was diagnosed at the earliest possible time or how long the cancer was there prior to being diagnosed
- What a diagnosis of cancer entails or means to the dog or themselves
- How long the dog will live (even with a projected life expectancy)
- What’s best and/or right for the dog
- What’s best and/or right overall, in the big picture, considering all implications
- What to do, how to manage a dog with cancer
What to expect as they access the cancer care service
What treatment protocols are available
How to access help when no primary contact or extension is given
How well the dog will respond to treatment (achieve desired efficacy and outcome)
How well the dog will tolerate the chemotherapeutic, radiation, surgical or palliative treatment / intervention (various risks inherent with these procedures)
What SEs their dog will experience
If or when the SEs will subside
Whether the medications to offset the SEs will work
Why their dog is experiencing an unexpected or unexplainable SE (pain)
How to differentiate whether subtle changes in their dog is cancer-related or not
Whether the treatment protocol will need to be changed
Whether, by a miracle or being ‘the exception,’ the cancer might actually be cured
If or when the remission will break and the cancer return
Whether or when the cancer will metastasize or whether it has already metastasized
What the screening and monitoring tests will show, what the news will be
What the next steps in care will be
When it’s time to stop treatment and/or euthanize
What dogs receiving cancer treatment look like
What the treatment ultimately will cost & what they & their dog will get from it
Whether they can really afford it
What the future will bring or hold (and thus living in the moment)
What the end will bring and how they will handle it
Whether they made or are making the best decisions
What the hospital is like behind the door where their dog disappears

(B) Hoping:
Their dog will continue to do well
Their dog will be the exception
Their dog will be miraculously cured

(C) Concern about staying in touch with the known:
Dogs with cancer can look so healthy or seem so well

The cancer journey is psychologically challenging.

Operationalization of ‘psychologically challenging’ includes direct and indirect expressions of the following:

Feelings such as grief, fear, worry, anxiety, upset, concern, anger, aggravation, guilt and the consequent or related behaviours
Anticipated grief with inevitable death (concern about self / others)
Helplessness, vulnerability, and the lack of or need for control and/or knowing
Cycling patterns (e.g. ‘ups & downs,’ ‘here we go again,’ & ‘emotional roller coaster’)
Phrases such as ‘dealing with,’ ‘growing forward,’ and ‘going through’
- Requiring or appreciating re/assurance, comfort, encouragement and/or support
- Memory failure, inability to think clearly
- The need to find ‘the bright side’ (emotional relief & forward movement)
- Wanting to minimize separation time

Note: An additional contributor to the psychological challenge for some participants is the experience of public judgement.

Participants expect information.

Operationalization of ‘expect information’ includes direct and indirect expressions of the following:
- Wanting information
- Needing information
- Feeling they have a right to information
- Believing information should be given
- Stating that information is important
- Appreciating that questions are answered
- Appreciating honesty / the truth / no false hope
- Resourcing multiple avenues for information (Internet, books, other people – family, friends, family vets, clients in waiting room)
- Appreciating choices

Statements about the service providing information also support the importance of information to the participants. The breadth of information that’s important to the participants is contextually found within the excerpts.

* Information is not just a source of hope and a way to reduce the fear of the unknown… It is a coping strategy in the adjustment to a diagnosis of cancer.

Continuity within service and relationships are important.

Continuing relationships are highly valued because of the trust, confidence and emotional support derived from them.

Operationalization of ‘continuity within service’ includes direct and indirect expressions of the following:
- Appreciating within- and out-of-hours availability when concerns arise
- Appreciating quick turn around times and reduced waiting times
- Appreciating continuity of care by keeping family vets informed
- Expressing concern about the fact that medical records were not available for emergency service
Quality of life is very important.

Evidence for this can be found in direct and indirect expressions of the following:

- Quality of life as important
- Wanting to preserve quality of life
- Actively monitoring quality of life (observing for the normal vs. non-normal)
- Consideration for how the dog would want to live life
- Consideration for the dog’s comfort, happiness, functionality, & overall welfare
- Appreciation that the dog did well with treatment
- Appreciation that there were minimal and/or manageable SEs
- Appreciation for the return to normal functioning
- Wanting to avoid pain, suffering, discomfort, stress
- Concern that suffering is hard to judge
- Desiring to avoid unnecessary procedures
- Weighing the potential benefits of intervention with the dog’s overall welfare
- Quantity of life not being worth it if quality isn’t present
- Desiring to keep the dog’s interests foremost, before their own
- Guilt with having waited too long to euthanize
- Decision-making based on quality of life factors

**Note:** Service should be geared to maintaining quality of life for the dog and the family.
- Quality of life for the family can be enhanced by
  - Treatment ease, success, and the management of SEs
  - Meeting and/or surpassing service expectations
  - Having emotional needs taken seriously and compassionately addressed
  - Building in continuity (permanence, stability, connection) on all levels (information, staff, procedures, scheduling, accessibility) to reduce the unknowns inherent in the cancer treatment journey
  - Affordability, payment options

**Time is of the essence with cancer.**

(Participants seem very sensitive to time issues)

Evidence for this can be found in direct and indirect expressions of the following:

- Wanting, demanding and appreciating a quick referral
- Concern about time lines and lags with the diagnosis and/or treatment
- Recalling of specific dates and times
- Having to wait or having difficulty waiting for results
- Appreciating quick responses to questions asked
- Appreciating 24 hour service availability
- Appreciating quick phone calls back when calling in with concerns from home
- Appreciating quick relief from worry when service is accessed
- Becoming worried, upset or agitated if there is a delay with appointments or scheduling
Successful treatment (process and outcome) is very important.

Evidence for this can be found in direct and indirect expressions of the following:

- Appreciation of a quick treatment response
- Appreciation of minimal SEs and/or that the dog handled the treatment well
- Appreciation of the alleviation of pain/discomfort
- Appreciation of the dog being healthy and happy again and enjoying life
- Appreciation of the length of remission achieved
- Wanting to extend life expectancy and shared time together
- Appreciation of having surpassed the expectation of longevity
- Appreciation of the treatment protocol being successful and/or without complications
- Appreciation that the treatment was not as bad as originally anticipated
- Appreciation that the treatment was experienced as ‘easy’
- Appreciation of having engaged in treatment
- Willingness to continue treatment and/or engage in a second course of treatment if/when necessary
- Willingness to recommend treatment to others
- Wanting to avoid unproven treatment protocols (protocols potentially associated with less surety of success)
- Hope that the dog continues to do well

Participants are satisfied with the service.

(Content, pleased, happy, fulfilled, contented, comfortable, and at ease)

Operationalization of satisfaction includes direct and indirect expressions of satisfaction related to:

- The service as a good/positive experience
- Willingness to recommend the Oncology service
- Expectations of service being met and/or surpassed
- Wanting the good experience with Oncology to continue
- Not wanting the Oncology service to change
- Willingness to return for service
- Suggesting the Oncology service to be better than human medical service
- Appreciation for aspects of service delivery (short referral time, information, time taken, care demonstrated, choices given, financial orientation, billing/accounting)
- Would complain or be elsewhere if s/he was not satisfied
- Gratefulness to be enrolled in a cancer study (subsidized treatment) Appreciation for good responses to treatment (quick response and overall good response)
- Wanting others to know about the service
- Getting what you want, need, believe you have the right to or what should be
Participants treat their dogs in the face of public judgement.

Some participants experience judgement by members of the public for treating their dog with cancer. Operationalization of ‘public judgement’ includes direct and indirect expressions of the following:

- Questioning and criticism for spending the money, implying the dog’s not worth it
- Comments suggesting that treatment is a waste of money
- Suggestions of being crazy (or worry about being called crazy) treating a dog
- Suggestions of being crazy for loving a dog so much that you would treat
- Questioning why someone would treat a Pit Bull with cancer (breed prejudice)
- Beliefs that treating a dog with cancer is unreasonable or illogical
- The need to justify within oneself or with others the rationale for treating

In contrast to this is the ‘public support’ of others, including family and friends. Potentially linked to the judgement experienced is the desire for increased public awareness, thus it was included in this theme.

The general practitioner’s perspective influences the referral process.

Evidence for this can be found in direct and indirect expressions of the following:

- Practitioner’s recommendations to go to OVC or another specialty centre
- Practitioner’s judgement on whether it’s worthwhile to refer
- Practitioner’s curiosity as to whether treatment is worthwhile
Cancer Diagnosis (Bad News) → Special HAB

Emotional Trauma → Public Judgement

Discomfort Instability → Attitude

Coping Model

Affordability

Information

Satisfaction

Dissatisfaction

Comfort Stability

Satisfaction

Continuity

Maintaining Quality of Life

Emotional Support

Quick Referral & Timely Service

Successful Treatment Outcomes

Staff

Service Protocols & Routines

Client Factors

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)

Family Veterinarian

OVC Oncology

Internet Books Other people

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)

Family Veterinarian

OVC Oncology

Internet Books Other people

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)

Family Veterinarian

OVC Oncology

Internet Books Other people

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)

Family Veterinarian

OVC Oncology

Internet Books Other people

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)

Family Veterinarian

OVC Oncology

Internet Books Other people

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)

Family Veterinarian

OVC Oncology

Internet Books Other people

Satisfaction

Dissatisfaction

Quick Referral & Timely Service

Family & Friends (Public)
Appendix 3

Documents for the recommendations study

3.1: Consent form for the informal group discussions
3.2: Outline for the informal group discussions and interview guide
3.3: Consent form for the survey pretest
3.4: Letter to request the OVMA’s support for the study
3.5: Initial letter to introduce the study to veterinarians across Ontario
3.6: First postcard reminder
3.7: Cover letter for the survey mail-out
3.8: Second postcard reminder
3.9: E-mail messages forwarded by the University of Guelph Alumni Affairs & Development for Ontario veterinary alumni
3.10: NewsHound e-mail messages forwarded by the Ontario Veterinary Medical Association for OVMA Members
3.11: Article in the November-December issue of the OVMA Focus Magazine
3.12: Notification letters for the first 100 respondents
3.13: Fundraiser for survey mail-out
CONSENT TO PARTICIPATE IN RESEARCH

Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario

Participants for the Informal Group Discussion

You are asked to participate in a discussion group that is part of a study conducted by Dr. Jason Coe, DVM, PhD and Dr. Debbie Stoewen, DVM, MSW from the Department of Population Medicine at the University of Guelph. The results of this discussion group will be used to design a vignette-based questionnaire that will be used in a province-wide survey of veterinarians in Ontario to determine how veterinarians respond to the diagnosis of life-threatening cancers in dogs. They will also contribute towards Dr. Stoewen’s PhD dissertation. If you have any questions or concerns about the research, please feel free to contact Dr. Jason Coe at 519-824-4120 Ext. 54010. This research is sponsored by the Ontario Veterinary College Pet Trust.

PURPOSE OF THE INFORMAL GROUP DISCUSSION IN THE STUDY

To learn about the experiences and perspectives of veterinary practitioners as they diagnose and treat life-threatening cancers in dogs in order to inform the development of a questionnaire which will be used in a province-wide survey of veterinarians in Ontario to determine how veterinarians respond to the diagnosis of life-threatening cancers in dogs.

PROCEDURES

If you agree to participate in this study, we would ask you to participate in a group discussion with 4-6 randomly selected veterinary practitioners practicing any degree of companion animal practice within a 30km radius of Guelph / Sudbury.

The discussion will include your experiences and perspectives of diagnosing and treating life-threatening cancers in dogs. A standard question guide will be followed asking for your thoughts about cancer and cancer diagnosis and treatment in dogs. The discussion will take about 1.5 hours and will be audio recorded to enable later review to identify subject matter for consideration in the development of the questionnaire.

In addition to this, we request permission in advance to be able to create a verbatim transcript of the audio recording in case we may find the group discussions important or relevant to a future expanded follow-up study in the area of oncology service delivery.

POTENTIAL RISKS

There is a potential risk of self-consciousness or embarrassment associated with participating in this form of discussion with your colleagues. Every effort will be made to ensure the confidentiality of participants in connection with this study. Access to the audio recording will be limited to the current research team at the Ontario Veterinary College and a possible future research team.
(with the guidance of one of the current researchers) should the audio recording be considered important or relevant in a future research project.

POTENTIAL BENEFITS

There are no direct personal benefits to you for participating in the discussion group. A potential benefit to the profession, science and society, however, is your contribution towards the development of a study which will result in an improved understanding of the service offered by practitioners in Ontario when faced with life-threatening cancer diagnoses in canines. Such understanding may help us estimate what the profession and public may benefit from as cancer treatment in dogs continues to evolve. This study, being the first of its kind, also sets the precedent for further studies in the area of service delivery in veterinary medicine.

COMPENSATION FOR PARTICIPATION

There is a $50 honorarium for participation in this informal group discussion.

CONFIDENTIALITY

Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study. Only the researchers associated with this project and any follow-up study will have access to the audio recordings in order to protect participant confidentiality.

In signing this consent form you agree to keep everything pertaining to this discussion group strictly confidential, including the identity and comments of other members participating in the group. Findings released from the outcome of this study or any follow-up study will not be directly linked to any of the project participants. In signing this consent you are aware and agreeable to the use of non-identifying verbatim quotes in research reports, presentations and publications. The audio recordings will be securely stored in a locked filing cabinet at the Ontario Veterinary College, University of Guelph, for a period of up to seven years and then destroyed.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this informal group discussion or not. If you volunteer to be in this discussion, you may withdraw at any time without consequences of any kind. If you do withdraw, please note that the recording will remain and be used for this research project and/or a follow-up study. You may also refuse to answer any questions you don’t want to answer and still remain in the discussion. The investigator may withdraw you from this research if circumstances arise that warrant doing so.

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the University of Guelph Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Officer
University of Guelph
Reynolds Building, Room 203
Guelph, ON  N1G 2W1

Telephone: (519) 824-4120, ext. 56606
E-mail: sauld@uoguelph.ca
Fax: (519) 821-5236
SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for the "Participants for the Informal Group Discussion" in the study, "Assessing the Canine Cancer Treatment Recommendations of Companion Animal Practitioners Across Ontario" as described herein. My questions have been answered to my satisfaction and I agree to participate in this study with the assurance that my identity on audio recordings will remain completely confidential in this study and any future study using the audio recording. I agree to the use of verbatim quotes in any published materials and presentations as long as my identity remains protected. I have been given a copy of this form.

Name of Participant (Please print) __________________________

Signature of Participant __________________________

Contact Phone Number __________________________

Date __________________________

SIGNATURE OF WITNESS

Name of Witness (Please print) __________________________

Signature of Witness __________________________

Date __________________________
Outline for Informal Group Discussion  
And Interview Guide

Setting

Conference room in the Holiday Inn Hotel, Guelph and Sudbury  
Folding cards for participants’ names (to set in front of them)  
Refreshments (fruit plate, muffins/danishes, crackers and cheese, coffee, tea, juice, water)

⇒ Participants to be welcomed and handed a consent form for review and signing upon arrival  
⇒ Start the audio-recorder (it’s important to capture the interview set-up)

Introduction

Welcome!  
Thank you everyone for coming to participate, contributing your time and effort to get this research project off the ground. We think it will prove to be a valuable project to the profession, so your participation is especially appreciated. Your role in this project is vital, as your thoughts will be taken into account in the development of the survey.

You can never go wrong starting off with food, so why don’t we start to pass it around, and feel free to help yourself – there are drinks here too – and help yourself with whatever you like along the way.

⇒ Start to pass the food around

As we get started, perhaps we can start with some introductions – I imagine some of us know one another already, but just to make sure. Just if you wouldn’t mind sharing who you are, when you graduated, where you’re working, if this is a rural or urban clinic and just one more thing… something about yourself that someone might find surprising – it could be a hobby or special interest you have, something interesting you’ve done or are planning on doing etc. After introductions and before we start, I’d like to welcome any questions you might have about this discussion group or the research project as a whole. Then I can tell you a little more about the discussion and we can get started. However, if you decide at any point that you change your mind about participating, that’s fine. You have the right to withdraw. Does that all sound OK?

So I’ll start with the introductions since I’m already talking. I’m Debbie Stoewen, the PhD student for this project working with Jason Coe and Cate Dewey in Population Medicine, was previously in practice for 25 years (OVC ’83 grad) mostly in a companion animal practice in Kitchener, the Pioneer Pet Clinic, started back to school in 2000, etc.

⇒ Round table group member introduction
Fielding of Questions About the Participants for the Informal Group Discussion form

More about the Discussion

So what is this going to look like? Basically I have a few quite broad questions in mind on my interview guide here, and I’ll just open the floor with a question and then you can just take it from there as far as forwarding your thoughts. The questions are quite open-ended and there are no right or wrong answers, although sometimes opinions and recollections of personal experience may differ, naturally so, and each person’s thoughts and opinions are valid. We’re interested in all opinions, so please feel welcome to express differences of opinion or experience and/or extend what others are sharing to a broader degree or emphasis if your experience is similar. You’re all coming from varying backgrounds, personally as well as professionally, and your clientele vary too, which influences your experience. And remember, we want to become exposed to as broad an understanding of cancer care with dogs in primary care practice as possible in order to develop a questionnaire that will represent what veterinarians actually experience. Some of you may have more to say than others, and that’s fine too, so if you have something to add, that’s fine, and if you don’t have a comment, that’s fine. Your participation every step of the way is completely voluntary.

One point to keep in mind is that this discussion is confidential. In order to preserve confidentiality, you need to avoid discussing with others who was in the group or what was said. In other words, what we say here, stays here.

As I mentioned, this is being audio-recorded so I can later re-listen to it and pull out important points that may be particularly useful in developing the questionnaire, rather than trying to listen to you now and write notes like crazy, which would interrupt the process. The audio-recording will be used for this project, but it may be used in future research as well, by the members of this research team.

There’s one trick to recording a group! And the trick is ‘one voice at a time.’ I don’t want to miss what you’re saying. It’s especially important to do the best you can to avoid interrupting or talking at the same time (in other words, try to take turns) because the overlapping of speech makes it difficult and sometimes even impossible to hear one or the other or both of you, thus missing what you shared and making it valueless. If I find an area of overlap, I might just interrupt you and ask each of you to speak in turn so your points will be captured.

Are there any questions so far?

At the end of the discussion I’ll pass out the honorariums, so please don’t leave before I give it to you! This talk will be about an hour-and-a-half, so I’ll try to keep it in around there. If any of you needs or wants to leave early, then just give me a moment so I can pass it to you.

I have a board here so I might jot a few notes as we go along. Having a visual of a few key words or ideas might make it easier as we go along.

⇒ Start the discussion group
Interview Guide

1. What’s the first thought that comes to mind when I say the word ‘cancer’?

2. What are the most common major / life-threatening cancers in dogs that you see in practice? I want to make a list of these and maybe we can come to a consensus as to which one is the most common, the second most common etc.

3. What are the challenges in breaking the news of a major, life-threatening cancer diagnosis?

4. What have you found facilitates the breaking of bad news?

5. How do your clients respond when you break the news?

6. We treat animals with cancer with surgery, chemotherapy, radiation therapy, and the provision of palliative care. What are your thoughts about treating animals with cancer?

7. What situational circumstances or factors influence your recommendations when a life-threatening/major cancer is diagnosed?

8. Are there certain cancers or cancer situations that you wouldn’t treat or pursue?

9. How is the treatment of cancer in humans and animals the same?

10. How is the treatment of cancer in humans and animals different?

Wrap-up

I think this brings us to a close. Thank you all of you for your participation today. Each of you has made a vital contribution to this research project. It’s very important to have your perspectives as we develop this questionnaire. Should you have any questions or concerns following tonight, remember you have the contact information for Dr. Coe on the ‘Consent to Participate in Research’ form, and he or I would be happy to help. I can give you my e-mail address as well. It has been a pleasure for me to be a part of this group. Thank you again, and as a token of our appreciation I’d like to present you with your honourariums.

⇒ Pass out the honourariums inside of ‘Thank you’ cards
⇒ Turn off the audio recorder
CONSENT TO PARTICIPATE IN RESEARCH

Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario
REB# 10MY029
Participants for the Survey Pretest

You are asked to assist in the pretesting of a survey that is part of a study conducted by Dr. Jason Coe, DVM, PhD and Dr. Debbie Stoewen, DVM, MSW from the Department of Population Medicine at the University of Guelph. Your feedback on this survey pretest will be used to finalize a vignette-based questionnaire that will be used in a province-wide survey of veterinarians in Ontario to determine how veterinarians respond to the diagnosis of life-threatening cancers in dogs. They will also contribute towards Dr. Stoewen’s PhD dissertation. If you have any questions or concerns about your participation with the survey pretest, please feel free to contact Dr. Jason Coe at 519-824-4120 Ext. 54010. This research is sponsored by the Ontario Veterinary College Pet Trust.

PURPOSE OF THE SURVEY PRETEST IN THE STUDY

To seek feedback on the development of the “Assessing Cancer Treatment – Ontario Recommendations” (ACT-OR) survey from a representative group of veterinary practitioners in Ontario who will assess the survey for clarity, comprehension, and ease of use, and provide their overall impression of it in order to ensure that the survey is understandable and user-friendly.

PROCEDURES

If you agree to participate in the survey pretest, we would ask you to complete the ACT-OR survey in the on-line version and provide a critical assessment of the survey’s comprehensibility, ease of use, strengths and weaknesses, and your sense of the logistics of the survey layout (the logical ordering of questions) and aesthetics (visual appeal). Comments and advice may be in relation to individual questions and/or the survey as a whole. Suggestions for improvement are welcome. A paper version will be mailed to you but we ask that you complete the on-line version first, without previewing the survey, and then use the paper version for your written comments.

The survey is estimated to take the average participant about 15-20 minutes to complete. The time required of you as an appraiser engaging in critical reflection may depend on how you experience the survey overall.

After completing the survey, the graduate student will schedule a one-on-one meeting with you at a location of your preference to discuss your experience and thoughts about the survey. The meeting will take approximately 30-60 minutes.
POTENTIAL RISKS

There are no known potential risks with participating in the survey pretest.

POTENTIAL BENEFITS

There are no direct personal benefits to you for participating in the survey pretest. A potential benefit to the profession, science and society, however, is your contribution towards the development of a study which will result in an improved understanding of the service offered by practitioners in Ontario when faced with life-threatening cancer diagnoses in canines. Such understanding may help us estimate what the profession and public may benefit from as cancer treatment in dogs continues to evolve. This study, being the first of its kind, also sets the precedent for further studies in the area of service delivery in veterinary medicine.

COMPENSATION FOR PARTICIPATION

There is a $50 honorarium for participation in the survey pretest.

CONFIDENTIALITY

Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study. The paper copies of the survey pretest s will be securely stored in a locked filing cabinet at the Ontario Veterinary College, University of Guelph, to which only Dr. Coe and Dr. Stoewen will have access for a period of up to seven years and then destroyed.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in the survey pretest or not. If you volunteer to participate in the pretest, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don’t want to answer and still participate.

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the University of Guelph Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

Research Ethics Officer  Telephone: (519) 824-4120, ext. 56606
University of Guelph  E-mail: sauld@uoguelph.ca
Reynolds Building, Room 203  Fax: (519) 821-5236
Guelph, ON  N1G 2W1
SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for the "Participants for the Survey Pretest " in the study, "Assessing the Canine Cancer Treatment Recommendations of Companion Animal Practitioners Across Ontario" as described herein. My questions have been answered to my satisfaction and I agree to participate in this study with the assurance that my identity will remain completely confidential. I have been given a copy of this form.

____________________________  _________________________
Name of Participant (Please print)  Contact Phone Number

____________________________
Signature of Participant

____________________________  _________________________
Date

SIGNATURE OF WITNESS

____________________________
Name of Witness (Please print)

____________________________  _________________________
Signature of Witness  Date
Dear Mr. Raven and Ms. Cerovic,

Thank you for your interest in the “Assessing the Canine Cancer Treatment Recommendations of Companion Animal Practitioners Across Ontario” study funded through the OVC Pet Trust Fund. The principal investigator for this study is Dr. Jason Coe, Assistant Professor of Communication. This study will form the basis of my PhD dissertation. It is the first of its kind in veterinary medicine, and I am pleased to have the opportunity to describe it to you. Your thoughts and ideas for how the OVMA may offer support are most welcome.

The purpose of this study is to broaden the profession’s understanding of service delivery in primary care practice, specifically in the area of oncology. Oncology is of special interest since it is an area of veterinary medicine wherein significant change is expected due to the merging of a number of realities. With the incidence of cancer in dogs rising, the human-animal bond continuing to deepen, continuing advancements in treatment success, and a remarkable growth in optimism towards cancer and its treatment, the demands for cancer treatment in veterinary medicine are expected to expand. More dogs than ever before are expected to receive and benefit from treatment, shifting the paradigm of cancer care in veterinary medicine.

In anticipation of this shift, this study will function to broaden our understanding of the current status of oncology service in the primary care setting. What do practitioners recommend when, for example, a six-year-old Golden Retriever is diagnosed with lymphoma? What if this dog was twelve years old? Would the recommendation differ if he had concurrent illness? And what if this same dog presented with bone cancer instead? What are the factors that influence veterinarians’ recommendations? Ultimately, through a clearer understanding of current practice – the treatments practitioners recommend and the factors contributing to their preferences – we can determine the resources that may enhance and advance the provision of oncological care in the primary veterinary health care system as the face of cancer and its treatment changes.

This study is a survey-based, province-wide research project wherein every veterinarian who practices any degree of companion animal practice is invited to participate. Such a broad invitation will best enable us to gather the most comprehensive picture of clinical practice possible. Each survey will incorporate one “vignette” (a case scenario) of a real-life clinical situation in practice, to which participants will be asked to order their choice of recommendation, first to last, of (a) euthanasia, (b) palliative care,
(c) treatment, and (d) referral to a specialty oncology centre. This will be followed by a request for what was important in making their first choice recommendation. Although each veterinarian will only have one vignette to complete (one per survey), there are actually 32 different vignettes with varying patient-, client- and cancer-related factors. This full factorial experimental design will provide the highest quality of data and potential for precise and accurate findings, but at the same time necessitates a high response rate in order to capture enough data for each of the 32 vignettes so the patient-, client-, cancer-, veterinarian- and practice-related factors that influence treatment recommendations can be determined.

To this end, the OVMA could play a vital role. The OVMA’s promotion of this project through NewsHound and/or separate announcements of the project along with reminders timed with our mail-out reminders would be much appreciated. To minimize the effort required by staff, I would be more than happy to provide the messages – of course, to meet with your approval. We have already enlisted the support of the University of Guelph’s Alumni Affairs and Development office, which has kindly agreed to e-mail the veterinary alumni an announcement and reminder. Again, with the need to elicit as comprehensive a response as possible and a study design requiring a high response rate, multiple modes of recruitment will prove invaluable.

Further to this, a short column in Focus magazine could go far to increase practitioner awareness and appreciation of the study. If practitioners recognize the extent to which this study will serve the profession and ultimately the health and welfare of people and their pets, I’m certain they will want to be a part of this.

And lastly, a final thought relates to the incentives being offered. To encourage participation and express appreciation, there will be a draw for three complimentary conference passes to the 2011 AAHA-OVMA Conference in Toronto for all participants, as well as $10.00 gift cards from Tim Horton’s or William’s for the first 100 participants. An announcement of the winners of the conference passes, either via NewsHound or a separate announcement, would be much appreciated.

This study will provide a unique window of understanding into the practice of companion animal veterinary medicine in Ontario. Further, the knowledge of current practice combined with foresight enough to envision the change necessary to meet societal expectations, and too, the resources of value that may enable that change, can only contribute to the betterment of the health and welfare of animals and their families. Beyond this, it will enable the profession to remain responsive, productive, successful and economically viable.

We welcome the support of the OVMA in this research venture. Should you have any questions, please don’t hesitate to call. The best way to reach me is via my home phone number at (519) 632-8365. I look forward to discussing this project and the potential role the OVMA could play in more detail. Thank you.

Sincerely,

Debbie Stoewen DVM MSW  
PhD Candidate  
Population Medicine, OVC

Jason B. Coe DVM PhD  
Assistant Professor  
Population Medicine, OVC
The face of cancer and cancer treatment is changing. Cancer is the leading cause of death in dogs over the age of two. One in four dogs die of it and half of all dogs will develop some type of cancer in their lifetimes. In recent years the prevalence has increased, and it is expected to continue to increase as improvements in health care extend life expectancies. People’s attachment to their dogs has also increased, often translating into increased owner commitment, especially when an often untimely illness such as cancer strikes. Coinciding with these changes, cancer has become a more treatable disease than ever before as a result of advancements in diagnostics and treatment. Overall, the increases in incidence of cancer, attachment of people to their dogs, and success with treatment are expected to amplify the demands for cancer treatment. More dogs than ever before are expected to receive and benefit from cancer treatment, shifting the paradigm of cancer care in veterinary medicine.

There is an imperative to remain attentive to growth and changing paradigms in medicine. Through such, the profession can acquire the knowledge and skills necessary in order to remain responsive, productive, successful, and economically viable. In order to determine what might benefit the profession through this transition, we are conducting a province-wide survey of veterinarians to assess the current practices of primary care veterinary practitioners as they respond to major / life-threatening cancer diagnoses in dogs. You are invited to participate in this survey. In fact, every veterinary practitioner in Ontario who ever diagnoses a life-threatening cancer in dogs, whether it is once a year or on a weekly basis, is invited to participate. Comprehensiveness of participation will contribute towards an across-the-board assessment, vital to estimating what might best benefit the profession as it endeavours to provide the best possible service to a society with changing needs and expectations. Your response to this survey is therefore extremely important.

The “Assessing Cancer Treatment – Ontario Recommendations” (ACT-OR) survey consists of two sections containing a short number of multiple choice type questions for which you may simply check the appropriate response, and one brief case scenario of a clinical encounter from which you order your preference of treatment options followed by the opportunity to scale the importance of a number of factors which may have influenced your preference. You may refuse to answer any questions you don’t want to answer. The survey takes approximately 15-20 minutes to complete and is available on-line at the website http://act-or.ovc.uoguelph.ca. Your unique identity code is “token”. We would appreciate your response on or before December 31st. As a token of gratitude, the first 100 respondents will receive a $10.00 gift card from your choice of Tim Horton’s or William’s Coffee Pub. There is approximately a 1 in 15 chance of receiving a gift card. There will also be a draw at the close of the study for 3 complimentary 4-day program passes to

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the AAHA/OVMA Conference in Toronto on March 24-27, 2011. There is approximately a 1 in 450 chance of winning a conference pass. However, as a bonus, if you complete the survey online (rather than the paper version), your identity code will be entered for the draw twice, effectively doubling your chances of winning. The draw will be held on January 15th and winners notified shortly thereafter.

After your survey is received, and your eligibility for the gift card and draw accounted for, your identity code will be deleted from the mailing list and disconnected from the data so as to never be connected to your answers in any way. Should you change your mind, and want to withdraw your survey, you may do so prior to your identity code being removed. Your survey answers are completely confidential and will be released only as summaries in which no individuals’ answers can be identified. The findings released in publications and presentations will not be directly linked to any survey participants. Every effort will be made to ensure the confidentiality of any identifying information obtained. The data will be stored in a locked filing cabinet at the Ontario Veterinary College, University of Guelph, for a period of up to seven years and then destroyed. If you have received this invitation but are currently working in industry, pharmaceuticals, government, or academics, or are a specialist in any capacity, practicing outside of primary care companion animal medicine, we ask you to please log on the website, enter your identity code and check the “Do not qualify” icon. We will then remove you from our masterlist to prevent you from receiving unnecessary reminders.

This study has been reviewed and received ethics clearance through the University of Guelph Research Ethics Board. If you have questions regarding your rights as a research participant, please contact the Research Ethics Officer, Sandra Auld, at the University of Guelph at (519) 824-4120, ext. 56606 or sauld@uoguelph.ca.

This research is sponsored by the Ontario Veterinary College Pet Trust. Drs. Jason Coe DVM, PhD, Cate Dewey DVM, PhD and Debbie Stoewen DVM, MSW of the Department of Population Medicine at the University of Guelph are conducting this study. This study will contribute towards Dr. Stoewen’s PhD dissertation. If you have any questions or concerns about the research, please feel free to contact Dr. Coe at 519-824-4120 Ext. 54010 or Dr. Stoewen at (519) 824-4120, ext. 53452. Should you wish to decline participation, please contact Dr. Stoewen actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452 to have your name removed from the research participant masterlist.

Your contribution in this research is sincerely appreciated. Please take the time to complete and submit the ACT-OR survey before December 31st. Thank you very much for your participation.

Sincerely,

Debbie Stoewen DVM, MSW
PhD Candidate
Department of Population Medicine
Ontario Veterinary College
University of Guelph
Guelph, Ontario

Jason Coe DVM, PhD
Assistant Professor
Department of Population Medicine
Ontario Veterinary College
University of Guelph
Guelph, Ontario
Dear Colleague,

About three weeks ago, you were invited to participate in the “Assessing Cancer Treatment – Ontario Recommendations” (ACT-OR) survey. In order to determine what may benefit the profession and public in Ontario as we move through an anticipated shift in paradigm in cancer care, we need to learn as much as possible about the current practices of veterinary practitioners responding to major / life-threatening cancer diagnoses in dogs. As a province-wide survey, every voice counts. Your participation is important.

If you have already completed the on-line survey, thank you very much for your assistance. If not, please do so as soon as possible. You may access it at by inserting the http://act-or.ovc.uoguelph.ca address into the top space bar (the address bar) of your Internet browser. If you have any questions, please contact me at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452.

Sincerely,

Debbie Stoewen DVM, MSW, PhD Candidate
November 22, 2010
Dr. <First Name> <Last Name>
<Street Address> 
<City>, <Province>, <Postal Code>  
Website: http://act-or.ovc.uoguelph.ca
Your identity code: <token>

Dear Dr. <Last Name>,

In mid-October we mailed you an invitation to participate in the ACT-OR, “Assessing Cancer Treatment – Ontario Recommendations” survey, a survey of all veterinarians in Ontario practicing any degree of companion animal practice involving dogs with major / life-threatening cancer diagnoses. We hope to determine how the profession might best be supported in the provision of cancer care services to pet owners. We can do this through broadening our understanding of how practitioners make treatment recommendations.

The ACT-OR survey will only take approximately 15-20 minutes of your time. It consists of two sections containing a short number of multiple choice type questions for which you may simply check the appropriate response, and one brief case scenario of a clinical encounter from which you order your preference of treatment options followed by the opportunity to scale the importance of a number of factors which may have influenced your preference. You may refuse to answer any questions you don’t want to answer. The ACT-OR survey is available on-line at http://act-or.ovc.uoguelph.ca. You can access this with your unique identity code: <token>. As an expression of gratitude, there will be a draw at the close of the study for 3 complimentary 4-day passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011. Depending on the response rate, there is approximately a 1 in 450 chance of winning a conference pass. But if you complete the on-line version of the survey rather than the paper version included with this mailing, your name will be entered twice for the draw, effectively doubling your chances to win. The draw will be held on January 15th and winners notified shortly thereafter.

This study is strictly confidential. Every effort will be made to ensure the confidentiality of any identifying information obtained. This research is sponsored by the Ontario Veterinary College Pet Trust and will contribute towards my PhD dissertation.

We welcome your participation. Should you have any questions, please don’t hesitate to contact me at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452.

Debbie Stoewen DVM, MSW, PhD Candidate
Department of Population Medicine
Ontario Veterinary College
University of Guelph
Guelph, Ontario
Postcard Reminder #2

With regard to the ACT-OR survey, disregard the OR – just ACT!

This is the final mail invitation to participate in the ACT-OR survey! The deadline has been extended to January 31st. Your participation will benefit you, the profession and the public you serve. The survey takes about 15-20 minutes, and its completion will make you eligible for the draw to be held on February 15th for one of 3 full 4-day passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011. Your contribution in this research project is highly valued.

If you have already completed the survey, thank you! If not, please do so now. You may access it at by inserting the http://act-or.ovc.uoguelph.ca address into the top space bar (the address bar) of your Internet browser. Alternatively you may fill out and submit the paper survey that was mailed a short while ago. Your unique identity code is on the front side of this postcard above your name. If you have any questions, please contact me at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452.

Happy New Year! All the best to you and yours,

Debbie Stoewen DVM, MSW, PhD Candidate
A groundbreaking study in veterinary medicine conducted through the Department of Population Medicine of the Ontario Veterinary College is now underway. This study, conducted by principal investigators Dr. Jason Coe and Dr. Cate Dewey along with PhD Candidate Dr. Debbie Stoewen, is exploring the treatment recommendations made by companion animal practitioners – specifically in the area of oncology practice with dogs. This is a province-wide study, inviting each and every veterinarian who ever diagnoses a major / life-threatening cancer in dogs, whether it’s once a year or on a weekly basis. Since comprehensive participation will be vital in establishing an accurate baseline understanding of cancer care service in Ontario, each and every practitioner is encouraged to participate. As the first ever study of treatment recommendations in veterinary medicine, this project will provide an understanding of the range of practitioner response and the factors contributing to this. This study is supported and sponsored by the OVC Pet Trust Fund.

Within the next week, every practitioner in Ontario involved in any degree of companion animal medicine will receive an invitation to the study with the link to the on-line survey. For those preferring a paper survey, this will be mailed out next month. As a token of appreciation, there will be a draw at the close of the study for 3 complimentary 4-day program passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011. Although there is approximately a 1 in 450 chance of winning a conference pass, if the survey is completed on-line (rather than in paper format) the unique identity code by which the practitioner is identified will be entered into the draw twice, effectively doubling the chances of winning. The draw will be held on January 15th and winners notified shortly thereafter.

Should you have any questions, you are welcome to direct them to Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452.
[2] E-mail announcement coinciding with the paper survey mail-out:

Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario
REB#10MY029

Some comments forwarded by participants so far…

“Excellent survey, thoughtful and well organized.”

“Excellent. I would like to know the outcome of this survey, which will help me to compare my outlook on cancer with opinions from other practitioners in Ontario. I enjoyed this survey and would like to participate always and everytime in the future.”

“An interesting exercise that forced me to think about why I make the recommendations that I do.”

“It made me ponder and perhaps will make me rethink how I present treatment options to clients with pets with cancer.”

“Survey was thought provoking. I am interested in the results even more now.”

“Fun and worthwhile... and thought provoking. Thanks.”

“This was an unusually interesting survey.”

“The survey was enlightening. Made me think again about my approach to cancer in dogs and the impact on their owners. Thank-you for conducting this survey.”

And an update…

The “Assessing Cancer Treatment – Ontario Recommendations” (ACT-OR) survey study opened in late October. Many of you have already completed the survey on-line – thank you! For those who haven’t, and perhaps prefer the paper version, you should have received one by now in the mail. We have included a postage paid return envelope for your convenience.

The survey takes only about 15-20 minutes of your time, and you'll have the opportunity to win one of 3 complimentary 4-day program passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011. The conference should prove to be an amazing and memorable event! Please note that if you complete the survey on-line, at the website http://act-or.ovc.uoguelph.ca, you will double your chances for winning because your unique identity code will be entered into the draw twice. If you have any questions or concerns, or need your identity code, please contact Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452. Thank you for your participation!
NewsHound e-mail messages forwarded by the Ontario Veterinary Medical Association for OVMA Members

[1] E-mail announcement coinciding with the initial survey mail-out:

Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario
REB#10MY029

A groundbreaking study in veterinary medicine conducted through the Department of Population Medicine of the Ontario Veterinary College is now underway. This study, conducted by principal investigators Dr. Jason Coe and Dr. Cate Dewey along with PhD Candidate Dr. Debbie Stoewen, is exploring the treatment recommendations made by companion animal practitioners – specifically in the area of oncology practice with dogs. This is a province-wide study, inviting each and every veterinarian who ever diagnoses a major / life-threatening cancer in dogs, whether it’s once a year or on a weekly basis. Since comprehensive participation will be vital in establishing an accurate baseline understanding of cancer care service in Ontario, each and every practitioner is encouraged to participate. As the first ever study of treatment recommendations in veterinary medicine, this project will provide an understanding of the range of practitioner response and the factors contributing to this. This study is supported and sponsored by the OVC Pet Trust Fund.

Within the next week, every practitioner in Ontario involved in any degree of companion animal medicine will receive an invitation to the study with the link to the on-line survey. For those preferring a paper survey, this will be mailed out next month. As a token of appreciation, there will be a draw at the close of the study for 3 complimentary 4-day program passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011. Although there is approximately a 1 in 450 chance of winning a conference pass, if the survey is completed on-line (rather than in paper format) the unique identity code by which each practitioner is identified will be entered into the draw twice, effectively doubling the chances of winning. The draw will be held on January 15th and winners notified shortly thereafter.

Should you have any questions, you are welcome to direct them to Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452.

[2] E-mail announcement coinciding with the first reminder:

Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario
REB#10MY029

Calling all practitioners! For those of you who have completed the “Assessing Cancer Treatment – Ontario Recommendations” (ACT-OR) survey, thank you! Your participation contributes to the profession’s understanding of the cancer care recommendations of veterinarians in Ontario. For those of you who haven’t yet completed the survey, your participation is most welcome. You may access the survey at the website http://act-or.ovc.uoguelph.ca. Just enter your unique identity code and survey password and you’ll be set to go. The survey takes about 15-20 minutes to complete. If you have any questions or concerns, or need your unique identity code, please contact Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452. Thank you for your participation!
[3] E-mail announcement coinciding with the second reminder:

Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario
REB#10MY029

The “Assessing Cancer Treatment – Ontario Recommendations” (ACT-OR) survey study opened last month. Many of you have already completed the survey – thank you! For those who haven’t, and perhaps prefer the paper version, you will soon find a copy mailed to you with a postage paid return envelope for your convenience. The survey takes only about 15-20 minutes of your time, and you’ll have the opportunity to win one of 3 complimentary 4-day program passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011. Please note that if you complete the survey on-line, at the website http://act-or.ovc.uoguelph.ca, you will double your chances for winning because your unique identity code will be entered into the draw twice. If you have any questions or concerns, or need your identity code, please contact Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452. Thank you for your participation!

[4] E-mail announcement coinciding with the third reminder:

Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario
REB#10MY029

Some comments forwarded by participants so far…

Participant feedback: “This is really an excellent, interesting and progressive survey.”

Participant feedback: “I found the survey to be simple and straightforward. Not onerous like many surveys.”

Participant feedback: “I found the questions thought provoking and insightful.”

Participant feedback: “It made me rethink some of my perspectives towards oncology in veterinary medicine.”

This study, the first of its kind in veterinary medicine, represents the first step for our profession to pull alongside other healthcare professions to develop a sound foundational knowledge base of how practitioners make treatment recommendations. “Recommendations” refers to the guidance, counsel, advice, assistance, help, facilitation and leadership offered to clients. Understanding how we support our clients today can help us understand what we are doing – and why – so we can set the direction for tomorrow.

Sincerest thanks to those who have already completed the ACT-OR survey! And for those who haven’t, there is still time. Recognizing the survey was run over the Holiday Season, a busy time of the year for many, the deadline has been extended to January 31. This extends your chance to participate, and in so doing, potentially win one of 3 complimentary 4-day passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011, which should prove to be an amazing and memorable event.

The ACT-OR survey can be accessed at the website http://act-or.ovc.uoguelph.ca. Alternatively, you may fill out and submit the paper version. If you have any questions or concerns, or need your unique identity code, please contact Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452. And again, for all of you who have already completed the ACT-OR survey, a most sincere “Thank you!” Your contribution counts!
E-mail announcement coinciding with the final reminder:

Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario
REB#10MY029

Sincerest thanks to all of you who have participated in the ACT-OR survey!
And for those who haven’t thus far, here are some comments about the survey from your colleagues who have...

“Good length. Good combination of questions. Easily completed with no open-ended questions. I like the case-based format – it brings it a little closer to what may really happen in a clinic setting.”

“Very well laid out and worded. Very easy to do – enjoyed it!”

“Quite enlightening. Great design! Have never seen one quite like this before.”

“Very user friendly. Informative and worthwhile.”

“The survey was extremely well designed and easy to follow. Easy to contribute.”

“Great survey. Very introspective... I hope it provides you with a spectrum of views.”

“I usually don’t take the time to do surveys, but know it is important to give back and help others and this is a worthy project.”

This is the last call for your participation in the ACT-OR survey. The survey is closing on January 31st. It only takes about 15-20 minutes to do and your participation will benefit you, the profession and the public you serve. Moreover, until the study closes, you still have the chance to win one of 3 complimentary 4-day passes to the AAHA/OVMA Conference in Toronto on March 24-27, 2011, which should prove to be an amazing and memorable event! For any winner already registered, we will be happy to reimburse your registration fee.

The survey can be accessed at the website http://act-or.ovc.uoguelph.ca. Alternatively, you may fill out and submit the paper version. If you have any questions or concerns, or need your unique identity code, please contact Dr. Debbie Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452. Your participation is much appreciated. Thank you all!
“What do you recommend, Doc?”

Maybe the question posed sounds a little out-dated, since for most of us today, being called “Doc” is not too common. Nevertheless, the question has survived through the ages, both in human and veterinary medicine. Just how many times have you heard the question, phrased one way or another? “What would you suggest?” or “Which way do you think we should go?” or “Well, what do you think?” and of course, that most perennial (and favourite!) question of all, “If s/he was your [animal], what would you do?”

The question, in its many reverberations, lives on, because the people we serve will always need our guidance. Clients rely on our expertise and trust our counsel in the management of their animal’s health care. In more way than one, the animal’s welfare lies in our hands, but it always starts with recommendations. Yet what is the guidance given? What do veterinarians recommend?

In response to this question, a study conducted by researchers from the Ontario Veterinary College is currently underway to broaden the veterinary profession’s understanding of what practitioners recommend, specifically in the area of oncology, and more specifically, with canines. The study is intended to provide the veterinary profession with a better understanding of the day-to-day recommendations being made by private practitioners in the management of cancer. This is especially important because the paradigm of cancer care is expected to shift with the merging of several coinciding factors. With this in mind, this study will not just provide a foundational understanding of veterinary recommendations in cancer care – significant in itself – but on a practical level, the opportunity to determine if there’s anything that may benefit the profession as it goes through this transition.

“So what do you recommend, Doc?” If you are a veterinarian practicing in the province of Ontario, you should have recently received a letter of invitation to participate in this research project entitled “A Study of the Cancer Treatment Recommendations of Veterinarians Across Ontario,” being lead by principal investigators Drs. Jason Coe and Cate Dewey, and PhD candidate, Dr. Debbie Stoewen, of the Department of Population Medicine at the Ontario Veterinary College. If you have not received an invitation or have questions about the study, please feel free to contact Dr. Stoewen at actor@ovc.uoguelph.ca or (519) 824-4120, ext. 53452.

Funding for this research has been provided by the OVC Pet Trust Fund.
Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario

REB# 10MY029

October 27, 2010

Website: http://act-or.ovc.uoguelph.ca
Your identity code: «token»

«name»
«address»

Dear «name»,

Thank you for participating in the ACT-OR survey.

We are writing to ask for further assistance. Unfortunately, with the on-line survey start-up process, we experienced a computer glitch that resulted in your survey data being lost.

Your contribution in this project, however, is invaluable. As such, we are wondering if you would consider re-doing the ACT-OR survey, ideally as soon as you are able, with the hope that your responses will be as similar as possible to your original answers. We recognize that you have a busy schedule and your time is valuable.

As one of the first 100 participants we have enclosed your coffee card as promised. As a further token of appreciation for your consideration of completing the survey a second time, we have enclosed a second coffee card. Since you did complete the survey on-line, regardless of whether you complete the survey for a second time your identity code will be entered into the draw twice for a chance at one of the three complimentary AAHA/OVMA 2011 Conference passes.

Again, your participation in the ACT-OR survey is very much appreciated. Thank you for your time and effort. We look forward to publishing the findings within the next year, contributing to the field of companion animal veterinary medicine specifically in the area of oncology care. We hope you will find the results informative and enlightening.

With sincere gratitude,

Debbie Stoewen DVM, MSW
PhD Candidate
Department of Population Medicine
Ontario Veterinary College
University of Guelph

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Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario

REB# 10MY029

November , 2010

Name
Address 1
Address 2
Address 3

Dear Dr. ,

Thank you for participating in the ACT-OR study. We are happy to notify you that you are one of the first 100 participants who responded to our survey, and as such qualify for a $10.00 gift card coffee card from either Tim Horton’s Donuts or William’s Coffee Pub.

In order to process your gift card, could you please let us know which card you prefer by contacting me by e-mail at actor@ovc.uoguelph.ca or by phone at (519) 824-4120, ext. 53452? Upon hearing from you, we will forward your gift card to you at the above address.

Thank you again for your participation, sharing your valuable time and expertise. Your participation contributes to an improved understanding of oncology care, which will enable the profession to remain responsive, productive, successful and economically viable, and continue to improve the health and welfare of animals and their families.

With sincere gratitude,

Debbie Stoewen DVM, MSW
PhD Candidate
Department of Population Medicine
Ontario Veterinary College
University of Guelph
Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario

REB# 10MY029

November , 2010

Name
Address 1
Address 2
Address 3

Dear Dr. Name,

Thank you for participating in the ACT-OR survey. The sharing of your valuable time and expertise will contribute to an improved understanding of oncology care in primary care practice. This will both benefit the profession and play a role in improving the health and welfare of animals and their families. Your participation is much appreciated.

As thanks for being one of the first 100 participants completing the Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario study, please find enclosed your coffee shop gift card. We are pleased to pass this your way.

Again, your participation in the ACT-OR survey is very much appreciated. Thank you for your time and effort. We look forward to publishing the findings, contributing to the field of companion animal veterinary medicine, specifically in the area of oncology care. We hope you will find the results informative and enlightening.

With sincere gratitude,

Debbie Stoewen DVM, MSW
PhD Candidate
Department of Population Medicine
Ontario Veterinary College
University of Guelph
Announcement of Fundraiser for Children of Bukati

Looking for volunteers! Dr. Debbie Stoewen is running a dual-purpose fundraiser tomorrow (Wednesday, December 8) for the Children of Bukati project. She has a mass mailing to go to the veterinarians of Ontario and needs help preparing it for mail-out – basically stuffing surveys into envelopes. If you can donate some time, she will have a couple of tables set up outside of the OVC cafeteria from 10am onwards tomorrow where you can join her. For those able to donate even 5 minutes, she will donate a twoonie to the Children of Bukati project. For those who can stay longer, pizza and drinks will be made available from 11:30 onwards. For those who can commit around an hour’s time, please let Debbie know at stoewend@uoguelph.ca so she can determine how many pizzas to order (and your preferences – any vegetarians out there?). Let her know by 10am tomorrow morning!

____________________________

Thank you to OVC Community Members for Support

Sincerest heartfelt thanks to the OVC community for supporting the Children of Bukati fundraiser in support of the survey mail-out for the “Assessing the Canine Cancer Treatment Recommendations of Veterinarians Across Ontario” study last week. With your support we managed to forward the survey to over 2,300 veterinarians in Ontario – in 24 hours – and at the same time raise $202.00 for the Children of Bukati!

Special thanks goes out to Karen Richardson for her enduring presence and help in making the day work, and too, to one very special group of second year students inspired by the leadership of Kaitlyn Madge who went above and beyond in pushing the project forward. My belief in the power and potential of OVC students remains unwavering! To ALL those veterinary, grad and post-doc students and those staff who contributed their time and effort – and you know who you are – thank you! This experience has shown me what community is all about.

Deb Stoewen
Appendix 4

Questionnaire and commentary for the recommendations study

4.1: Assessing the Canine Cancer Treatment Recommendations of Veterinary Practitioners Across Ontario (ACT-OR) survey

4.2: Lymphoma vignette versions

4.3: Osteosarcoma vignette versions

4.4: “We Welcome Your Comments” results of the survey

4.5: Positive comments from survey participants

4.6: Constructive comments from survey participants

4.7: Interesting comments reflecting views on cancer treatment
Section I: A Few Questions About You

The first set of questions will be in reference to you. Please check the response that is most appropriate for each question.

1. What is your gender?
   - Male
   - Female
   - Other

2. What are the first three symbols of your postal code? ____________

3. From which veterinary school did you graduate?
   - Ontario Veterinary College
   - Western College of Veterinary Medicine
   - Atlantic Veterinary College
   - St. Hyacinthe
   - U.S. Veterinary School
   - International Veterinary School (other than a U.S. School)

4. What year did you graduate? ________________

5. How many full years have you been practicing veterinary medicine? ____________
   (Please exclude time spent on maternity leave, continuing education, extended vacations, extended illnesses or other such leaves of absence.)

6. What type of veterinary medicine do you practice? (check one)
   - 100% small animal [CVO code 29]
   - > 50% small animal [CVO code 30]
   - 50% : 50% small & large animal [CVO code 15]
   - > 50% large animal [CVO code 14]
7. How would you classify yourself? (check one)
   - Practice owner/partner
   - Associate veterinarian
   - Locum veterinarian
   - Emergency veterinarian
   - Other. Please specify __________________________________________

8. Are you currently working?
   - Yes
   - No

9. How many hours/week do you usually work?
   - 0 to <20 hours
   - 20 to <40 hours
   - 40 to <60 hours
   - 60+ hours

10. How would you categorize the practice where you usually work? (check one)
    If you work in more than one type of practice, please check the predominant type.
    - 100% small animal
    - > 50% small animal
    - 50% : 50% small & large animal
    - > 50% large animal

11. What kind of community does the practice where you usually work serve? (check one)
    - A large urban centre (serving primarily city dwellers)
    - A large suburban centre (serving primarily city dwellers)
    - A small urban centre (serving primarily town/village dwellers)
    - A rural setting (serving primarily an agricultural community)
    - Other. Please specify __________________________________________

12. How much time on average do you spend in your appointments?
    - 0 to <10 minutes
    - 10 to <20 minutes
    - 20 to <30 minutes
    - 30 to <40 minutes
    - 40+ minutes

13. How long are appointments usually scheduled for?
    - 10 minutes
    - 15 minutes
    - 20 minutes
    - 30 minutes
    - Flexible

14. How many hours drive is the practice where you usually work from the nearest veterinary referral centre that offers specialized oncology treatment?
    - < 1 hour drive
    - 1 to < 2 hour drive
    - 2 to < 4 hour drive
    - 4 to < 6 hour drive
    - 6+ hour drive
15. Thinking about the referral centre to which you would most likely refer a dog diagnosed with a life-threatening cancer, how confident are you in the service they provide?

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>no</th>
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<td></td>
<td>not at all confident</td>
<td>moderately confident</td>
<td>completely confident</td>
<td>opinion</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

16. Please find below a list of self-directed learning activities. Please order your preference of continuing professional development by numbering them with 1 being your first choice (that which you feel is most worthwhile), 2 your second choice (the next most worthwhile) etc. If there are one or more which you do not take part in, please put N/A (not applicable).

- Reviewing videos/DVDs
- Reading journals/texts, CVO & OVMA publications
- Independent research on VIN or other on-line resources
- Consulting with peers/specialists
- Other (please specify): ________________________________________________

17. Please find below a list of organized learning events. Please order your preference of continuing professional development by numbering them with 1 being your first choice (that which you feel is most worthwhile), 2 your second choice (the next most worthwhile) etc. If there are one or more which you do not take part in, please put N/A (not applicable).

- Conference sessions
- Veterinary-academy sessions (i.e. TAVM, Golden Triangle etc.)
- Seminars, workshops, wet-labs with/without certificate credential
- Distance-education courses/modules with degree/diploma/certificate credential
- In-class courses with degree/diploma/certificate credential
- Industry-delivered product sessions
- Other (please specify): ________________________________________________

18. How many hours of continuing professional development in companion animal medicine do you participate in in an average year?

- None
- 1 to < 25 hours
- 25 to < 50 hours
- 50 to < 100 hours
- 100 to < 200 hours
- 200+ hours
- Do not keep track

Section II: Case Scenario

The next set of questions will be in reference to the case scenario.

In the provision of veterinary service, a primary goal as practitioners is to enable clients to make informed decisions. In doing so, one role is to present clients with the full set of treatment options, knowing that each option has its own advantages and disadvantages and/or risks and benefits. Another role is to partner with clients to help guide them through the decision making process as they weigh the risks and benefits and/or advantages and disadvantages of the options available. Clients rely on our expertise and trust our counsel in the management of their dog’s health care.

Please imagine this case scenario as happening at the primary clinic where you work, the clients being your clients and the patient your patient. Once you have read the scenario,
which includes the available treatment options, you will be asked to order your personal preferences of the treatment options. You will not be asked for the order of the way you would present the treatment options to your clients (as in ‘gold standard’ first, the ‘next best’ next, etc.), but for the order of your personal preferences, given the situation, that you would most likely recommend. Please note that there are no right or wrong answers to the case scenario question.

**Case Scenario**

Trigger is a six-year-old neutered male Golden Retriever who was adopted by the Robertsons at three years of age from a Golden Retriever Rescue Agency, relinquished because of becoming gun-shy and thus no longer useable as a working dog. Trigger came without house-training or a lot of social skills, but Mr. Robertson worked consistently and extensively with him, also engaging in obedience classes, and Trigger has turned out to be a wonderful and well-loved family dog that Mr. Robertson is proud of. Since Mrs. Robertson died 1½ years ago, Mr. Robertson, now in his late fifties, is on his own with Trigger.

The Robertsons have never complained about veterinary expenses and have always paid for services at the time rendered. Trigger has received regular yearly preventative health care at your clinic since his very first visit after his adoption. Other than an occasional ear infection, Trigger has been a happy, healthy dog.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while petting him. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

The options for Trigger’s care could be any of the following:

- To humanely euthanize
- To watch and wait, supported by palliative treatment with oral prednisone to extend the quantity and maintain the quality of life
- To treat with one or more chemotherapeutic drugs following one of several recognized chemotherapy protocols
- To refer to a specialty oncology service which will offer full diagnostic staging and a number of potential chemotherapy protocols, including the Madison-Wisconsin protocol, and/or other treatment options such as half-body radiation, depending on service availability

**Note:** The Madison-Wisconsin protocol is a 25-week program of five chemotherapeutic drugs: vincristine, prednisone, asparaginase, cyclophosphamide and doxorubicin.

**Question 1**

Imagine you have just given Mr. Robertson the diagnosis, presented the treatment options, and are about to develop a plan of care. Notwithstanding that the ultimate decision would arise through a dialogue between you and Mr. Robertson, given this case scenario, which treatment options would you recommend? Please order your personal preferences of treatment options by numbering them 1 to 4, starting with the option you would medically recommend first, then second, then third, and then last. It can be any combination. There are no right or wrong answers.

Euthanasia _____  Palliative care _____  Treatment _____  Referral _____
**Question 2**

We are interested in understanding what may have influenced your preferences. Please answer the following question in relation to your most preferred treatment recommendation, the treatment option you ranked as number “1” in the previous question.

How important was each of the following factors in arriving at your most preferred treatment recommendation? Please rank the factors on a scale of 1 to 5, with 1 being ‘not at all important’ and 5 being ‘extremely important.’

<table>
<thead>
<tr>
<th>Factor</th>
<th>not at all important</th>
<th>moderately important</th>
<th>extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trigger’s age</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Trigger’s overall health status</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Trigger’s gender</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The bond between Mr. Robertson &amp; Trigger</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Mr. Robertson’s financial status</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The distance to the referral centre</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Your confidence in the referral centre</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Your degree of expertise in chemotherapy/surgery</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The potential for extending Trigger’s quantity of life (lifespan)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The potential for maintaining Trigger’s quality of life (well-being)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The costs that could be incurred to Mr. Robertson in terms of time, effort and money</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

There may be other factors not listed above that were important in arriving at your preferred treatment recommendation. If this is true for you, please specify in the space below what other factor(s) influenced your preference of recommendation. Please also assign a scale value of 1 to 5, with 1 as ‘not at all important’ and 5 as ‘extremely important’ for each factor specified.

Other factor:                                          | 1    | 2    | 3    | 4    | 5    |
Other factor:                                          | 1    | 2    | 3    | 4    | 5    |
Question 3

Based on your answers to Question 2, please number from 1 to 4 the top 4 factors that influenced your preference of recommendation, with the 1st as the most influential, the 2nd the next most influential, the 3rd the third most influential, and the 4th the fourth most influential factor.

______ Trigger’s age
______ Trigger’s overall health status
______ Trigger’s gender
______ The bond between Mr. Robertson and Trigger
______ Mr. Robertson’s financial status
______ The distance to the referral centre
______ My degree of confidence in the referral centre
______ My degree of expertise with chemotherapy/surgery
______ The potential for extending Trigger’s quantity of life (lifespan)
______ The potential for maintaining Trigger’s quality of life (well-being)
______ Mr. Robertson’s costs in terms of money, time and effort
______ Other factor as noted in Question 2. Please specify __________________________
______ Other factor as noted in Question 2. Please specify __________________________

Section III: Your Experience With Cancer

This last set of questions will be in reference to your professional and personal experiences with cancer. Please check the response that is most appropriate for each question.

To start, the following questions refer to your professional experience and opinions of the diagnosis and treatment of cancer in practice.

1. On average, how often would you diagnose or assist in the diagnosis of multicentric lymphoma in dogs? (If you are a new graduate, you may check N/A.)
   - □ Never
   - □ Once to twice a year
   - □ Three to six times a year
   - □ Seven to twelve times a year
   - □ More than twelve times a year
   - □ N/A

2. On average, how often would you diagnose or assist in the diagnosis of appendicular osteosarcoma in dogs?  (If you are a new graduate, you may check N/A.)
   - □ Never
   - □ Once to twice a year
   - □ Three to six times a year
   - □ Seven to twelve times a year
   - □ More than twelve times a year
   - □ N/A

3. There are various oral chemotherapeutic drugs that can be used to treat cancer in dogs. These include drugs such as chlorambucil, cyclophosphamide, lomustine, melphalan, and methotrexate. Please answer this question with these drugs in mind. Are you familiar with and comfortable treating cancer in dogs using one or more of the various oral chemotherapeutic drugs?
   - □ Yes
   - □ No
4. There are various **injectable** chemotherapeutic drugs that can be used to treat cancer in dogs. These include drugs such as actinomycin D, carboplatin, cyclophosphamide, cytosine arabinoside, doxorubicin, gemcitabine, L-asparaginase, melphalan, methotrexate, mitoxantrone, vincristine and vinblastine. Please answer this question with these drugs in mind.

Are you familiar with and comfortable treating cancer in dogs using one or more of the various **injectable** chemotherapeutic drugs?

- Yes
- No

If you answered ‘No’ to the previous two questions, please continue with Question 6.

5. If you answered ‘Yes’ to either of the previous two questions, **which cancers in dogs** do you treat with the various oral and/or injectable chemotherapeutic drugs?

Please check all that apply.

- Multicentric lymphoma
- Gastrointestinal, mediastinal or extranodal lymphoma
- Splenic hemangiosarcoma
- Appendicular osteosarcoma
- Grade II or III mast cell tumour
- Bladder/urethral transitional cell carcinoma
- Other. Please specify ______________________________________________

6. Are you comfortable as a surgeon, skill-wise, with performing limb amputations?

- Yes
- No

7. Overall, on a scale of 1 to 7, do you consider the treatment of **multicentric lymphoma with chemotherapy** such as the Madison-Wisconsin protocol worthwhile or not worthwhile?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</thead>
<tbody>
<tr>
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<td>moderately worthwhile</td>
<td>completely worthwhile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>opinion</td>
</tr>
</tbody>
</table>

8. Overall, on a scale of 1 to 7, do you consider the treatment of **appendicular osteosarcoma with amputation and chemotherapy** as worthwhile or not worthwhile?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
<th>no opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not at all worthwhile</td>
<td>moderately worthwhile</td>
<td>completely worthwhile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>opinion</td>
</tr>
</tbody>
</table>

9. Financial costs **aside**, if you were to compare the treatment of cancer in dogs with the treatment of the following chronic diseases in dogs, on a scale of 1 to 7, would you consider the treatment of cancer as less worthwhile, comparatively worthwhile or more worthwhile?

<table>
<thead>
<tr>
<th></th>
<th>less worthwhile</th>
<th>comparatively worthwhile</th>
<th>more worthwhile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes mellitus</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hyperadrenocorticism</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Chronic renal disease</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Idiopathic epilepsy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

295
10. Financial costs **weighed in**, if you were to compare the treatment of cancer in dogs with the treatment of the following chronic diseases in dogs, on a scale of 1 to 7, would you consider the treatment of cancer as less worthwhile, comparatively worthwhile or more worthwhile?

<table>
<thead>
<tr>
<th>Disease</th>
<th>less worthwhile</th>
<th>comparatively worthwhile</th>
<th>more worthwhile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes mellitus</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Hyperadrenocorticism</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Chronic renal disease</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
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<tr>
<td>Congestive heart failure</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Idiopathic epilepsy</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
</tbody>
</table>

11. When comparing the financial costs of ongoing care for the treatment of cancer in dogs with the financial costs for the ongoing care of the following chronic diseases in dogs, would you consider the treatment of cancer as less expensive, comparatively expensive or more expensive?

<table>
<thead>
<tr>
<th>Disease</th>
<th>less expensive</th>
<th>comparatively expensive</th>
<th>more expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes mellitus</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Hyperadrenocorticism</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Chronic renal disease</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
<tr>
<td>Idiopathic epilepsy</td>
<td>1 2</td>
<td>3 4 5</td>
<td>6 7</td>
</tr>
</tbody>
</table>

The following questions refer to your personal experience of cancer.

12. Are you currently a dog owner/caregiver/guardian?

- Yes
- No

If ‘Yes,’ please skip to question 14.

13. If ‘No,’ when was the last time you owned a dog?

- Within the last < 5 years
- Within the last 5 to < 10 years
- 10 years or more ago
- Never

14. Have you experienced or are currently experiencing a life-threatening cancer in a dog of your own?

- Yes
- No
- Does not apply (never owned a dog)

15. Have you experienced the loss of a dog of your own due to cancer?

- Yes
- No
- Does not apply (never owned a dog)
If you answered ‘No’ or ‘Does not apply’ to the previous two questions, please skip to question 17.

16. If you answered ‘Yes’ to either of the previous two questions, on a scale of 0 to 10, has your experience of cancer with your dog(s) been sad, with many upsetting events and outcomes, mixed, with good and bad events and outcomes, or happy, with many good events and outcomes?

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<tbody>
<tr>
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<td></td>
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</tbody>
</table>

17. Have you experienced or are currently experiencing a life-threatening cancer in one or more other kinds of pets other than dogs (such as cats, horses, birds, rabbits, rodents, exotics etc.) of your own?

- Yes
- No
- Does not apply (never owned other pets)

18. Have you experienced the loss of one or more other kinds of pets other than dogs (such as cats, horses, birds, rabbits, rodents, exotics etc.) due to cancer?

- Yes
- No
- Does not apply (never owned other pets)

If you answered ‘No’ or ‘Does not apply’ to the previous two questions, please skip to question 20.

19. If you answered ‘Yes’ to either of the previous two questions, on a scale of 0 to 10, has your experience of cancer with your other pet(s) been sad, with many upsetting events and outcomes, mixed, with good and bad events and outcomes, or happy, with many good events and outcomes?

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<th>9</th>
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</tbody>
</table>

20. Have you experienced or are currently experiencing your own, a close family member or close friend’s cancer journey?

- Yes
- No

21. Have you experienced the loss of a close family member or friend due to cancer?

- Yes
- No

If you answered ‘No’ to the previous two questions, you have finished the survey.

22. If you answered ‘Yes’ to either of the previous two questions, on a scale of 0 to 10, has your experience of cancer in relation to yourself, your family, extended family and/or friends been sad, with many upsetting events and outcomes, mixed, with good and bad events and outcomes, or happy, with many good events and outcomes?

<table>
<thead>
<tr>
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<th>1</th>
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<th>3</th>
<th>4</th>
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<td></td>
</tr>
<tr>
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<tr>
<td>happy</td>
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</tbody>
</table>
We Welcome Your Comments

Why did you participate in the ACT-OR survey? Please check all that apply.

☐ I am interested in knowing more about what’s happening in cancer care in primary care practice

☐ I am interested in having more resources to support cancer care to my canine patients and their families

☐ I want to contribute to the advancement of science in veterinary medicine

☐ I like supporting research from my alma mater

☐ I like supporting research sponsored by Pet Trust

☐ I would like to win a complimentary AAHA/OVMA 2011 Conference pass

☐ I thought it looked like a worthwhile research project

☐ Other. Please specify ______________________________________________________

Would you like to do a case scenario-based survey like this again?

☐ Yes

☐ No

How did you find this survey? Do you have any comments or suggestions?

Conclusion

Thank you for completing the ACT-OR survey. Your participation contributes to an improved understanding of oncology care, which will enable the profession to remain responsive, productive, successful and economically viable, and continue to improve the health and welfare of animals and their families.

Your unique identity code will be entered into the draw for one of the 3 complimentary 4-day program passes to the AAHA/OVMA Conference. Remember that if you complete and submit this survey on-line, your identity code for the draw will be entered twice, doubling your chances to win.

Please identify below how you would prefer to be contacted. Any contact information you provide will be separated from the database and stored elsewhere for notification purposes only, upon which it will be destroyed. Please check one:

☐ By phone Please specify your preferred contact number __________________________

☐ By e-mail Please specify your e-mail address _________________________________

☐ By mail Please specify your preferred address only if it is different from the one we already have

________________________________________________________

________________________________________________________
Lymphoma Vignette Versions

Legend for vignette coding:

<table>
<thead>
<tr>
<th>Age of patient:</th>
<th>(y) young</th>
<th>vs.</th>
<th>(o) old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human-animal bond:</td>
<td>(s) strong</td>
<td>vs.</td>
<td>(w) weak</td>
</tr>
<tr>
<td>Client financial status:</td>
<td>(r) rich</td>
<td>vs.</td>
<td>(p) poor</td>
</tr>
<tr>
<td>General health:</td>
<td>(g) good health</td>
<td>vs.</td>
<td>(c) comorbid disease</td>
</tr>
<tr>
<td>Cancer type:</td>
<td>(l) lymphoma</td>
<td>vs.</td>
<td>(o) OSA</td>
</tr>
</tbody>
</table>

Example: yrsrl = young age, strong bond, rich client, good health, and lymphoma cancer

________________________________________________________________________

Version 1: yrsrl

Trigger is a six-year-old neutered male Golden Retriever who was adopted by the Robertsons at three years of age from a Golden Retriever Rescue Agency. He had been relinquished because of becoming gun-shy and thus was no longer useable as a working dog. Trigger came without house-training or a lot of social skills, but Mr. Robertson worked consistently and extensively with him, including engaging in obedience classes, and Trigger has turned out to be a wonderful and well-loved family dog that Mr. Robertson is proud of. Since Mrs. Robertson died 1½ years ago, Mr. Robertson, now in his late fifties, is on his own with Trigger.

The Robertsons, quite well off, have never complained about veterinary expenses and have always paid for services at the time rendered. Trigger has received regular yearly preventative health care at your clinic since his very first visit after his adoption. Other than an occasional ear infection, Trigger has been a happy, healthy dog.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while petting him. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

Version 2: yspgl

Trigger is a six-year-old neutered male Golden Retriever who was adopted by the Robertsons at three years of age from a Golden Retriever Rescue Agency. He had been relinquished because of becoming gun-shy and thus was no longer useable as a working dog. Trigger came without house-training or a lot of social skills, but Mr. Robertson worked consistently and extensively with him, even engaging in obedience classes despite limited finances, and Trigger has turned out to be a wonderful and well-loved
family dog that Mr. Robertson is proud of. Since Mrs. Robertson died 1½ years ago, Mr. Robertson, now in his late fifties, is on his own with Trigger.

Experiencing periodic layoffs at work in the last while and feeling the pinch, Mr. Robertson decided to skip heartworm testing and prevention this year. For the most part Trigger has received regular yearly preventative health care at your clinic over the past three years. Other than an occasional ear infection, Trigger has been a happy, healthy dog.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while petting him. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

Version 3: ywrgl

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The Robertsons, quite well off, have never complained about veterinary expenses and have always paid for services at the time rendered. Trigger has received regular yearly preventative health care at your clinic since his very first visit after his adoption. Other than an occasional ear infection, Trigger has been a happy, healthy dog.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while putting his collar on. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

Version 4: ywpgl

Trigger is a six-year-old neutered male Golden Retriever who was adopted by the Robertsons at three years of age from a Golden Retriever Rescue Agency. He had been
relinquished because of becoming gun-shy and thus was no longer useable as a working dog. Trigger came without house-training or a lot of social skills, but Mrs. Robertson, who became endeared to him, worked consistently and extensively with him, even engaging in obedience classes despite limited finances, and Trigger turned out to be a wonderful companion for her. Since Mrs. Robertson died 1½ years ago, Mr. Robertson, now in his late fifties, is on his own with Trigger, but has been finding it difficult. Being a trucker he is away a lot. A retired neighbour has been kind enough to home and care for Trigger while Mr. Robertson is on the road, but Mr. Robertson knows this can’t go on forever. He was never as close to Trigger as his wife and only guilt – thinking about what his wife would want – has held him back from finding a new home for Trigger.

Experiencing periodic layoffs at work in the last while and feeling the pinch, Mr. Robertson decided to skip heartworm testing and prevention this year. For the most part Trigger has received regular yearly preventative health care at your clinic over the past three years. Other than an occasional ear infection, Trigger has been a happy, healthy dog.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while putting his collar on. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

**Version 5: ysrel**

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The Robertsons, quite well off, have never complained about veterinary expenses. They have always paid for services at the time rendered despite a number of very costly visits to attend to Trigger’s chronic allergic dermatitis and repeated bouts of poorly responsive otitis externa on top of his regular yearly preventative health care. Trigger too was diagnosed with bilateral Grade II hip dysplasia a couple of years ago. Mr. Robertson has noted that Trigger has been stiffer over the past year and occasionally experienced difficulty rising, even after his usual walks which are not very long.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while petting him. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is
more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

**Version 6: ywrc**

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The Robertsons, quite well off, have never complained about veterinary expenses. They have always paid for services at the time rendered despite a number of very costly visits to attend to Trigger’s chronic allergic dermatitis and repeated bouts of poorly responsive otitis externa on top of his regular yearly preventative health care. Trigger too was diagnosed with bilateral Grade II hip dysplasia a couple of years ago. Mr. Robertson has noted that Trigger has been stiffer over the past year and occasionally experienced difficulty rising, even after his usual walks which are not very long.

Although Trigger has been his usual self, he recently developed a lump by his throat, which Mr. Robertson found while putting his collar on. Thinking it an abscess, Mr. Robertson took him in to your clinic for a check-up. What you’ve indeed discovered is that there is more than one lump, and after fine needle aspiration and cytology of several prominent lymph nodes, have diagnosed Trigger with multicentric lymphoma.

**Version 7: yspcl**

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Experiencing periodic layoffs at work in the last while and feeling the pinch, Mr. Robertson decided to skip heartworm testing and prevention this year. For the most part
Trigger has received regular yearly preventative health care at your clinic over the past three years. He has also received periodic care for chronic allergic dermatitis and bouts of poorly responsive otitis externa. Trigger too was diagnosed with bilateral Grade II hip dysplasia a couple of years ago. Mr. Robertson has noted that Trigger has been stiffer over the past year and occasionally experienced difficulty rising, even after his usual walks which are not very long.

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**Version 8: ywpcl**

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Versio

9: osrgl

Trigger is a twelve-year-old neutered male Golden Retriever who was adopted by the Robertsons at three years of age from a Golden Retriever Rescue Agency. He had been relinquished because of becoming gun-shy and thus was no longer useable as a working dog. Trigger came without house-training or a lot of social skills, but Mr. Robertson worked consistently and extensively with him, including engaging in obedience classes, and Trigger has turned out to be a wonderful and well-loved family dog that Mr. Robertson is proud of. Since Mrs. Robertson died 1½ years ago, Mr. Robertson, now in his late fifties, is on his own with Trigger.

The Robertsons, quite well off, have never complained about veterinary expenses and have always paid for services at the time rendered. Trigger has received regular yearly preventative health care at your clinic since his very first visit after his adoption. Other than hypothyroidism which was diagnosed two years ago and is being managed well with thyroxin supplementation, and too, an occasional ear infection, Trigger has been a happy, healthy dog.

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Version 10: ospgl

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**Version 11: owrgl**

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**Version 12: owpgl**

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**Version 13: osrcl**

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**Version 14: owrcl**

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**Version 15: ospcl**

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**Version 16: owpel**

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Experiencing periodic layoffs at work in the last while and feeling the pinch, Mr. Robertson decided to skip heartworm testing and prevention this year. For the most part Trigger has received regular yearly preventative health care at your clinic over the past nine years. He has also received periodic care for chronic allergic dermatitis and bouts of poorly responsive otitis externa. Trigger too was diagnosed with bilateral Grade II hip dysplasia a couple of years ago. Mr. Robertson has noted that Trigger has been stiffer over the past year and occasionally experienced difficulty rising, even after his usual walks which are not very long.

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OSA Vignette Versions

Legend for vignette coding:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Example 1</th>
<th>Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of patient:</td>
<td>(y) young vs. (o) old</td>
<td>(y) young vs. (o) old</td>
</tr>
<tr>
<td>Human-animal bond:</td>
<td>(s) strong vs. (w) weak</td>
<td>(s) strong vs. (w) weak</td>
</tr>
<tr>
<td>Client financial status:</td>
<td>(r) rich vs. (p) poor</td>
<td>(r) rich vs. (p) poor</td>
</tr>
<tr>
<td>General health:</td>
<td>(g) good health vs. (c) comorbid disease</td>
<td>(g) good health vs. (c) comorbid disease</td>
</tr>
<tr>
<td>Cancer type:</td>
<td>(l) lymphoma vs. (o) OSA</td>
<td>(l) lymphoma vs. (o) OSA</td>
</tr>
</tbody>
</table>

Example: ysrgo = young age, strong bond, rich client, good health, and OSA cancer

Version 1: ysrgo

Ozzie is a six-year-old spayed female Old English Sheepdog who was adopted by John and Mary Kaplan as an eight-week-old puppy. Once they settled on the breed, the young couple waited with anticipation for six months for Ozzie, and openly joke about how they continue to love and spoil her despite the addition of two young children to the family.

The Kaplans appear to be comfortably well off. They have never complained about veterinary expenses and have always paid for services at the time rendered. Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. Other than an occasional ear infection, she has been a happy, healthy dog.

Recently Ozzie developed a mild lameness of her right front leg. Thinking it likely a soft tissue injury, you placed Ozzie on an anti-inflammatory, advising the Kaplans to return if the lameness failed to resolve, at which time you would take radiographs despite the lack of heat, pain or swelling of the limb on examination. Ozzie definitely improved, but within a week of finishing the medication, the lameness returned. Now three weeks after the initial visit, you can palpate a mild swelling of the right carpus, and radiographs taken have identified the characteristic lesions of osteosarcoma of the distal radius. Finding this, you x-ray Ozzie’s chest and find the three views clear of overt pulmonary metastasis.

Version 2: yspgo

Ozzie is a six-year-old spayed female Old English Sheepdog who was adopted by John and Mary Kaplan as an eight-week-old puppy. Once they settled on the breed, the young couple waited with anticipation for six months for Ozzie, and openly joke about how they continue to love and spoil her despite the addition of two young children to the family.
With the addition of the children and Mary now a stay-at-home mum, however, the Kaplan’s financial situation is not at all what it used to be. Although they have never complained about veterinary expenses, you can tell their spoiling of Ozzie has been less discretionary. For the most part Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. Other than an occasional ear infection, she has been a happy, healthy dog.

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**Version 3: ywrgo**

Ozzie is a six-year-old spayed female Old English Sheepdog who was adopted by John and Mary Kaplan as an eight-week-old puppy. Although originally quite attached to Ozzie, now, with the addition of two young children, and life revolving around their needs, Ozzie has been relegated into the background. Mary has even admitted to a bit of neglect within the hustle and bustle of family life.

The Kaplans appear to be comfortably well off. They have never complained about veterinary expenses and have always paid for services at the time rendered. Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. Other than an occasional ear infection, she has been a happy, healthy dog.

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**Version 4: ywpgo**

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With the addition of the children and Mary now a stay-at-home mum, the Kaplan’s financial situation is not at all what it used to be. Although they have never complained about veterinary expenses, you can tell the expenditure on Ozzie has been less discretionary. For the most part Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. Other than an occasional ear infection, she has been a happy, healthy dog.

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**Version 5: yrsco**

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The Kaplans appear to be comfortably well off. They have never complained about veterinary expenses. They have always paid for services at the time rendered despite a number of very costly visits to attend to Ozzie’s chronic allergic dermatitis and repeated bouts of poorly responsive otitis externa on top of her regular yearly preventative health care. Ozzie was also diagnosed with bilateral Grade II hip dysplasia a couple of years ago. The Kaplans have noted more stiffness over the past year and occasional difficulty rising, even after her usual walks which are not very long.

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**Version 9: osrgo**

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Version 11: owrgo

Ozzie is a twelve-year-old spayed female Old English Sheepdog who was adopted by John and Mary Kaplan as an eight-week-old puppy. Although originally quite attached to Ozzie, now, with the addition of two children, and life revolving around their needs, Ozzie has been relegated into the background. Mary has even admitted to a bit of neglect within the hustle and bustle of family life.
The Kaplans appear to be comfortably well off. They have never complained about veterinary expenses and have always paid for services at the time rendered. Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. Other than an occasional ear infection, she has been a happy, healthy dog.

Recently Ozzie developed a mild lameness of her right front leg. Thinking it likely a soft tissue injury, you placed Ozzie on an anti-inflammatory, advising the Kaplans to return if the lameness failed to resolve, at which time you would take radiographs despite the lack of heat, pain or swelling of the limb on examination. Ozzie definitely improved, but within a week of finishing the medication, the lameness returned. Now three weeks after the initial visit, you can palpate a mild swelling of the right carpus, and radiographs have identified the characteristic lesions of osteosarcoma of the distal radius. Finding this, you x-ray Ozzie’s chest and find the three views clear of overt pulmonary metastasis.

**Version 12: owpg**

Ozzie is a twelve-year-old spayed female Old English Sheepdog who was adopted by John and Mary Kaplan as an eight-week-old puppy. Although originally quite attached to Ozzie, now, with the addition of two children, and life revolving around their needs, Ozzie has been relegated into the background. Mary has even admitted to a bit of neglect within the hustle and bustle of family life.

With the addition of the children and Mary now a stay-at-home mum, the Kaplan’s financial situation is not at all what it used to be. Although they have never complained about veterinary expenses, you can tell the expenditure on Ozzie has been less discretionary. For the most part Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. Other than an occasional ear infection, she has been a happy, healthy dog.

Recently Ozzie developed a mild lameness of her right front leg. Thinking it likely a soft tissue injury, you placed Ozzie on an anti-inflammatory, advising the Kaplans to return if the lameness failed to resolve, at which time you would take radiographs despite the lack of heat, pain or swelling of the limb on examination. Ozzie definitely improved, but within a week of finishing the medication, the lameness returned. Now three weeks after the initial visit, you can palpate a mild swelling of the right carpus, and radiographs have identified the characteristic lesions of osteosarcoma of the distal radius. Finding this, you x-ray Ozzie’s chest and find the three views clear of overt pulmonary metastasis.

**Version 13: osrco**

Ozzie is a twelve-year-old spayed female Old English Sheepdog who was adopted by John and Mary Kaplan as an eight-week-old puppy. Once they settled on the breed, the young couple waited with anticipation for six months for Ozzie, and openly joke about how they continue to love and spoil her despite the addition of two children to the family.
The Kaplans appear to be comfortably well off. They have never complained about veterinary expenses. They have always paid for services at the time rendered despite a number of very costly visits to attend to Ozzie’s chronic allergic dermatitis and repeated bouts of poorly responsive otitis externa on top of her regular yearly preventative health care. Ozzie was also diagnosed with bilateral Grade II hip dysplasia a couple of years ago. The Kaplans have noted more stiffness over the past year and occasional difficulty rising, even after her usual walks which are not very long.

Recently Ozzie developed a mild lameness of her right front leg. Thinking it likely a soft tissue injury, you placed Ozzie on an anti-inflammatory, advising the Kaplans to return if the lameness failed to resolve, at which time you would take radiographs despite the lack of heat, pain or swelling of the limb on examination. Ozzie definitely improved, but within a week of finishing the medication, the lameness returned. Now three weeks after the initial visit, you can palpate a mild swelling of the right carpus, and radiographs have identified the characteristic lesions of osteosarcoma of the distal radius. Finding this, you x-ray Ozzie’s chest and find the three views clear of overt pulmonary metastasis.

**Version 14: owrco**

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The Kaplans appear to be comfortably well off. They have never complained about veterinary expenses. They have always paid for services at the time rendered despite a number of very costly visits to attend to Ozzie’s chronic allergic dermatitis and repeated bouts of poorly responsive otitis externa on top of her regular yearly preventative health care. Ozzie was also diagnosed with bilateral Grade II hip dysplasia a couple of years ago. The Kaplans have noted more stiffness over the past year and occasional difficulty rising, even after her usual walks which are not very long.

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With the addition of the children and Mary now a stay-at-home mum, however, the Kaplan’s financial situation is not at all what it used to be. Although they have never complained about veterinary expenses, you can tell their spoiling of Ozzie has been less discretionary. For the most part Ozzie has received regular preventative health care at your clinic since her very first visit after her adoption. She also has received periodic care for chronic allergic dermatitis and bouts of poorly responsive otitis externa. Ozzie was also diagnosed with bilateral Grade II hip dysplasia a couple of years ago. The Kaplans have noted more stiffness over the past year and occasional difficulty rising, even after her usual walks which are not very long.

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Survey Results: We Welcome Your Comments

Reasons primary care practitioners participated in the ACT-OR survey 2010.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>I want to contribute to the advancement of science in veterinary medicine</td>
<td>771/1071 (72.0%)</td>
</tr>
<tr>
<td>I am interested in knowing more about what’s happening in cancer care in primary care practice</td>
<td>746/1071 (69.7%)</td>
</tr>
<tr>
<td>I thought it looked like a worthwhile research project</td>
<td>696/1071 (69.5%)</td>
</tr>
<tr>
<td>I am interested in having more resources to support cancer care to my canine patients and their families</td>
<td>726/1071 (67.8%)</td>
</tr>
<tr>
<td>I like supporting research from my alma mater</td>
<td>535/1071 (50.0%)</td>
</tr>
<tr>
<td>I like supporting research sponsored by Pet Trust</td>
<td>476/1071 (44.4%)</td>
</tr>
<tr>
<td>I would like to win a complimentary AAHA/OVMA 2011 Conference pass</td>
<td>472/1071 (44.1%)</td>
</tr>
</tbody>
</table>

Interest in participation in future case-based studies

| Would you like to do a case scenario-based survey like this again?       | 853/926 (92.1%)    |
**Positive comments from survey participants**

<table>
<thead>
<tr>
<th>Comment</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoyed the survey – easy to answer, quick, not overly time consuming. Did not find it to be an inconvenience, like some surveys!</td>
<td></td>
</tr>
<tr>
<td>Good balance of multiple choice and case scenario. Good length of survey for average practitioner. Good time of year for survey.</td>
<td></td>
</tr>
<tr>
<td>An interesting exercise that forced me to think about why I make the recommendations that I do.</td>
<td></td>
</tr>
<tr>
<td>I found the case scenario very relevant.</td>
<td></td>
</tr>
<tr>
<td>Good length - interesting questions. Growing area of practice.</td>
<td></td>
</tr>
<tr>
<td>Different, well laid-out survey.</td>
<td></td>
</tr>
<tr>
<td>I found the survey interesting. It allowed me to think about cancer compared to other potentially, life-threatening disease (which I have never thought of before).</td>
<td></td>
</tr>
<tr>
<td>I thought it was very well laid out, easy to use and the case scenario was very real. Living in Northern Ontario we are VERY limited in terms of chemotherapy options but I would love to learn more and possibly make these options possible in the North.</td>
<td></td>
</tr>
<tr>
<td>Excellent. I would like to know the outcome of this survey which will help me to compare my outlook on cancer with opinions from other practitioners in Ontario. I enjoyed this survey and would like to participate always and every time in future.</td>
<td></td>
</tr>
<tr>
<td>I thought it was a pretty good survey. Not boring at all.</td>
<td></td>
</tr>
<tr>
<td>Easy, fun, quick.</td>
<td></td>
</tr>
<tr>
<td>Survey was not too long. Looking forward to seeing the results and hope to get more help in advancing my understanding of cancer treatments for my patients. I feel this is a huge area I could improve upon in my clinic.</td>
<td></td>
</tr>
<tr>
<td>Not bad, quite enlightening, appreciated opportunity for 'other' option.</td>
<td></td>
</tr>
<tr>
<td>Great survey. Very introspective. It was well laid out and I hope it provides you with a spectrum of views.</td>
<td></td>
</tr>
<tr>
<td>I thought it was very easy to complete the survey, very user friendly. I liked the case based questions.</td>
<td></td>
</tr>
<tr>
<td>The survey was well written and had an excellent format. The length was also very good.</td>
<td></td>
</tr>
<tr>
<td>Survey was thought provoking. I am interested in the results even more now.</td>
<td></td>
</tr>
<tr>
<td>Excellent survey. Well designed, thought-provoking, but not too long.</td>
<td></td>
</tr>
<tr>
<td>I felt this was a well-designed survey. The scenario provided was realistic.</td>
<td></td>
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<tr>
<td>Well-designed. Have never seen one quite like this before.</td>
<td></td>
</tr>
<tr>
<td>It made me ponder and perhaps will made me re-think how I present treatment options to clients with pets with cancer.</td>
<td></td>
</tr>
<tr>
<td>Very user-friendly, questions seemed well formed and easy to answer, well organized, seems relevant</td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Very straightforward, easy to work through, interesting.</td>
<td></td>
</tr>
<tr>
<td>Like the online format. Very good to have a &quot;real life&quot; scenario since this is not really taught at school.</td>
<td></td>
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<tr>
<td>Good survey for identifying reasons for treating cancers.</td>
<td></td>
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<tr>
<td>I certainly thought it was a well-designed survey. I can see how you are considering our experiences and how they affect our response to cancer patients.</td>
<td></td>
</tr>
<tr>
<td>Easy to understand and respond to. I will be interested in seeing published results.</td>
<td></td>
</tr>
<tr>
<td>Very user friendly. Great design!</td>
<td></td>
</tr>
<tr>
<td>Reasonable. Sensitive.</td>
<td></td>
</tr>
<tr>
<td>Very clear expectations. Great case scenario.</td>
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<tr>
<td>Just excellent.</td>
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<tr>
<td>Excellent questions. Reasonable length.</td>
<td></td>
</tr>
<tr>
<td>Fun and worthwhile...and thought provoking. Thanks!</td>
<td></td>
</tr>
<tr>
<td>This is a well-designed survey and very user friendly.</td>
<td></td>
</tr>
<tr>
<td>Good length, good combination of questions. Easily completed with no open-ended questions. I like the case-based format. Brings it a little closer to what may really happen in a clinic setting.</td>
<td></td>
</tr>
<tr>
<td>Excellent survey, thoughtful and well organized.</td>
<td></td>
</tr>
<tr>
<td>This was an unusually interesting survey.</td>
<td></td>
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<tr>
<td>Very insightful.</td>
<td></td>
</tr>
<tr>
<td>I found the survey interesting and practical. I am looking forward to seeing the results of the analysis.</td>
<td></td>
</tr>
<tr>
<td>This survey was very interesting and made me think. I also found it quite user-friendly.</td>
<td></td>
</tr>
<tr>
<td>The survey was enlightening. Made me think again about my approach to cancer in dogs and the impact on their owners. Thank-you for conducting this survey.</td>
<td></td>
</tr>
<tr>
<td>Great study - interesting! I liked the case base format.</td>
<td></td>
</tr>
<tr>
<td>Good questions and concerns that a veterinarian must deal with when talking to clients about cancer. Case study typical of the cancer cases we see and how we approach the client.</td>
<td></td>
</tr>
<tr>
<td>User friendly, excellent format and questioning.</td>
<td></td>
</tr>
<tr>
<td>THIS IS REALLY AN EXCELLENT, INTERESTING AND PROGRESSIVE SURVEY!</td>
<td></td>
</tr>
<tr>
<td>I usually don't take the time to do surveys, but I know it is important to give back and help others and this is a worthy project.</td>
<td></td>
</tr>
<tr>
<td>This was an exciting survey. These types of surveys are going to contribute in ongoing research in cancer.</td>
<td></td>
</tr>
<tr>
<td>Very interesting and thought provoking. I liked the human comparison at the end.</td>
<td></td>
</tr>
</tbody>
</table>
Thank you for doing this study. I found the questions thought provoking and insightful. I do change my recommendations to my clients after experiencing a close life experience with an illness like cancer.

Thank you for doing this and I hope the results are going to benefit all of us in the animal health profession.

The survey was well thought out and interesting. It helps to point out our bias when offering treatment regimens to our clients who have pets with neoplasia. I feel we, as practitioners need to always give the owners all the options and let them make an informed decision.

User-friendly, adequate detail. Well-designed survey! Kudos!

When I first received my letter informing me of this survey, I could not find the website on-line. That was a little frustrating. The survey itself was fun though. The questions made me think about how my own views of cancer care have been formed. Good stuff!

In my opinion survey will be very useful in treatment & management of cancer in pets.

The survey was extremely well designed and easy to follow. My apologies for being tardy in my responding.

At first I was reluctant, but when I started to read the questions I became interested. Incidentally I have a reading disability and this survey took closer to 1hr. I am not complaining, but rather saying that it must have been pretty good for me to persevere. Good questions. Good luck!

Excellent survey, very relevant topic, easy to use. Thought provoking. Makes me review my approach to the cancer patient. Sorry, I am past the deadlines, hopefully my answers are still of some use.

I found the survey very easy to answer but also thought provoking. It has changed the way I think about treating cancer in my hospital.


It was relatively painless, and made me rethink some of my perspectives towards oncology in veterinary medicine. It was a different sort of survey and I would like to get the results or conclusions from it.

Survey was interesting – puts the reluctance of owners to treat pets & practitioners reluctance to push more heavily for treatment into perspective.

Interesting – made me consider many things. I am happy to see research being done into the factors influencing care decisions wrt cancer.

It was easy. I think the case based discussion was unique. I am just not sure how you are extracting statistical information from it.

A good general overview on how the GP sees cancer and treatment options. Would continue to like to have resources available to treat at our practice.

It was short, well-organized, and brought up a lot of emotions involving my recently lost pets.
Constructive comments from survey participants
(useful for directing future research efforts)

The scenario should have more detail as to blood work etc. Some of the questions were ambiguous in they didn’t allow for a more personal expression of rationale for therapy.

Frequency of diagnosing cancer in dogs is closer to once every 2 years. Otherwise, survey was good; except there were weren't many questions pertaining to cats. I see more cancer, especially lymphoma, in cats.

I found the questions around the scenario somewhat difficult to answer, especially the preferred Tx order (as it seemed to flip-flop between what I thought was best, and what I thought relative to the situation). I also found the "Worthwhile compared to..." questions very confusing – I was not sure if "Less Worthwhile" meant e.g. Diabetes is less worthwhile to tx vs. cancer OR Cancer is less worthwhile to tx vs. diabetes. I think there will be a lot of reversed answers as a result. Thanks and good luck.

Some questions are hard to answer with a scale answer – there are other variables not mentioned which may have changed my answer.

I found it concise and to the point. The predetermined answers alleviated the need for comments for me, but I’m glad the option was there, as I am sure some answers would not fit the survey's mold.

Was expecting more case based questions. Over all, this survey gave some comparative thoughts between cancer and other chronic diseases.

A well thought out survey. Areas for explanation might be helpful but would be hard to evaluate statistically.

It seemed totally based around dogs. Is there a reason for this?

Very interesting and well organized. (The power went off during the survey & I had to repeat it, however NOT YOUR fault!) It would have been a good idea to allow respondents to comment on another option for the 6-yr-old Golden, which would have been to allow the owner to give him up once again for adoption and perhaps a new owner with more money/time could have been found!

Took longer than I thought it would. Some questions were ambiguous (maybe they were supposed to be).

Maybe offer some more optimistic cancer cases, like low-grade mast cell tumours, for example. Even multiple myeloma.... I've had bad luck/experiences with osteosarcomas. Sorry.

Some questions a bit wordy. Would be difficult to do at work while busy!

Difficult to read white font on black background, otherwise concise questions.

Difficult questions to answer in a check box type scenario. Difficult to answer section II 2B in reference to "importance of confidence in referral centre" as this can be interpreted in multiple ways (if you are confident in referral centre) but answer on either ends of the spectrum.
It was an interesting case scenario, however still many factors which can only be answered in that situation, making it difficult to answer some of the survey's questions. There are many things to consider with any significant health issue in our pets and I hope that we continue to help guide our clients in making the best decision they can for their pets. Research, such as this, will hopefully help us to do so.

I find it interesting that none of the treatment protocols or options included alternative therapies such as diet, vitamin supplement or herbals.

Some questions too general. For example, leg amputation in my experience is not good for cancer, but if done, a dog of any size always does better if it is hind leg vs. front leg, so I would be more inclined to recommend it for hind leg. Also, the questions don't seem to get at how my personal experience with my pets and with my clients' pets, many of whom are like family, and my own family members with cancer has affected my recommendations to clients. Nor does it reflect how my recommendations are received by my clients because of their personal experiences with cancer. It seems to me in cancer treatment the costs are not the determining factor in the client’s decision to treat. Rather, it is their personal experiences along with mine and my recommendations, which rightly or wrongly are also colored by my personal experiences. Cancer treatment seems to be a much more personal experience for clients than any other service we provide either personally or by referral. Clients want quality of life more than anything. I find the statistics on survival times, percentages of cures not very useful in dealing with clients. It would be helpful to have some type of measurement to discuss with them on the quality of life to be expected from a given treatment regimen. Longevity, costs etc. are secondary to quality of life.

The case-based question is the best approach because comparing renal disease to cancer, for example, is much too broad, and deciding how worthwhile treatment is really depends on the individual situation. I had a hard time answering the ranking question on how worthwhile treatment would be with various different diseases.

The hardest part about the case study was not being able to assess the owner's frame of mind because it contributes mightily to my choices. It's always easy to want to refer to the best, but this is not the best option in every scenario, and in some cases you end up making the owner feel guilty if you push too hard for this.

I am missing one question in the case examples: Clients often ask "What would you do Doctor?" This is when I am completely truthful. I recommend always the gold standard first, but I would not necessarily do it for my own pet.

Some of the scenarios were very broad. In other words "chronic renal failure" has a wide range of presentations from well-maintained and not life altering to in-hospital and intensive care. Again this is the same for idiopathic epilepsy (rare seizure and not on any medication to status and in the ICU).

I think the questions required a black and white answer, which is not always possible. It didn't allow for discussions with the client.

A little confused about the questions asking if treating cancer was more, less or equally worthwhile as treating several other chronic diseases. Would love to know outcome of this survey. Good luck!
Survey was okay but volunteer interviews of life's experiences may reveal that much more info and the direction in which you are headed. I know it may be impossible to achieve with today’s balancing act. Thus, the survey.

I found the black background and small bullets hard on my eyes, and difficult to see whether I had already answered something.

The question about the cost of treatment should have an indication of costs associated with different treatments.

The format here was not what I expected and found some of the questions difficult to translate my accurate responses. Hope it doesn't skew your results. There is never a simple situation in medical care and always compelling individual circumstances other than finance or willingness to refer. For certain, I will refer ALL cancer patients that are willing to go. For certain, I will try to explain the journey through surgery and chemotherapy and radiation. For certain, I will try anything but euthanasia first.

Would have liked one of the options for treatment to have been referral for discussion of cancer treatment options with an oncologist without commitment to any particular cancer treatment.

I would have liked a chance to comment on why I made the treatment choice that I did in the case scenario. The responses to the questions given to investigate this choice suggested some of my reasoning, but not all. Otherwise I thought it was a well-designed survey.

End questions too personal.

Well thought questionnaire. Admirable effort. However I did feel that my answers (specially the one referring to the comparison of diseases) were a bit biased due to the fact that the answers can change significantly from patient to patient. Patient age at the onset of the disease, time duration of the diagnostic process and the treatment process, how quickly a chronic disease gets under control, and probably the most important in our profession: how the owner feels (which is very hard to quantify). Owners do have the only and last decision. In my experience, many owners including myself say that they will do every thing they can for their beloved pets, however how can I or you define "what an owner can do for a pet"? I hope that I have contributed somehow to your study and again I do admire, respect and support your effort to achieve some answer to the many questions that we all have.

The scenarios were a good idea to give a more personal touch to it. However, the questions afterwards only dealt with treatment, etc of "cancer" as a whole, and we all know there are a huge variety of cancers, and some I would treat/refer/etc. a lot more than others (i.e. recommend referring more a young dog with lymphoma over a dog with metastatic osteosarcoma in a limb or in a cat with caudal tongue adenocarcinoma with a very poor Px). Therefore I have different opinions over just general "cancer" questions.

1-7 options may be too many for each answer.
I found the survey to be simple and straightforward. Not onerous like many surveys. Nowhere during the survey was Mr. Robertson asked for input with respect to the treatment of Trigger and the consequences. I feel that including the owner throughout the process is crucial.

This type of survey should be open-ended. Likewise, what type of cancer do you see most in your clinic? What type of treatment do we follow? etc.

Sorry to tell you your questions did not reflect the real life of being involved in real, live supervision of the cancer patient. I would like to have you involved by yourself in the clinical experience dealing with patients and clients more so you will develop more deep/close survey questions. Good luck with your research.

I would choose two cancers which had a more positive prognosis than comparing lymphoma and osteosarcoma (with mets). Without checking the epidemiology, I believe the outcomes of the latter are very negative. With two cancers highly treatable, the responses might be more positive respecting treatment.

Please do not tell anyone 15-20 min. I am tired of surveys or surveying companies minimizing the time it takes to complete one of these.

It is hard to compare how "worthwhile" a treatment is between diseases, since the worth of a treatment can change depending on the individual situation. Comparing across the board is difficult, if not impossible.

It is difficult to compare costs of treatments without knowing which specific treatments for either cancer or the chronic diseases listed.

Should have a different survey for specialists/specialist trainees.

Case-based questions were a little bit confusing. Needed to read several times to be sure you were asking for my personal opinion vs. what I would discuss with the client.

Can you consider other species vs. just dogs, cats? (indicated earlier in the survey that 1/2 of my workload is exotic animals)

I think you should ask more questions about referral centers. i.e. Why or why not practitioners feel comfortable referring.

Hard to answer in a multiple choice format, but well designed considering, more likely to get response in this format so likely the best choice.

Good survey from patient care point of view. I would like to answer questions about the experience of referring to OVC. I feel that communication at times between the specialist and referring veterinarian could be better.

I tried online several times without success.

I like working with pen and paper rather than sit at a computer. Thanks for mailing it.

One huge factor in caring for cancer patients not covered: TIME availability of the client. Cancer treatment can be very time-consuming and labour intensive and a big factor for many clients.

I liked the survey but would have liked to have a comment box to explain all of my choices (for each of the 4 options), not just the first one.
### Interesting comments reflecting views on cancer treatment

It is so hard to give answers based on cases like this, but the detail given was good. We get to know our owners and patients so well, and our rapport with them allows us to have a predetermined sense of which treatment protocol is likely right for each family. However, I have been pleasantly surprised so many times by owners who I assumed would choose the least expensive route or that with the lesser commitment. My approach now is to make no assumptions at all – referral to an oncologist is always offered as the preferred option, even just for an initial consult. There is no question in my mind that this allows for a collaborative effort between our hospital and the referral oncology service to ensure the best quality of care is given to our patients.

I have referred clients for cancer care in their animals. Many clients are fearful and without a little knowledge refuse care quickly. I point out dogs don't have as many of the side-effects that humans have and that I am a cancer survivor. Also, any decision (except ignoring) is a good one. Clients have surprised me. Some I thought wouldn't do anything went home and really studied their relationship to their dog and made the appropriate decision for their case. I give all the tools to the owner without judgment. It is a personal journey. Even if a client says the dog is not a close companion, don't make any assumptions. The dog may be a close attachment to the dead wife and psychologically the owner is afraid to let go after all. So I always give them every option possible and give the owner the power to make the decision all the time being supportive. I can make the dog comfortable for the day or two the owner needs to decide. This is an emotionally charged issue.

I think cancer is a much more multifactorial disease than just plain ‘yes’ and ‘no.’ Owners always need to be offered all treatment options and not offered what we think they can afford. It also depends on the type of cancer the animal is dealing with as to what my opinion would be to the owner on treatment. An osteosarcoma prognosis is much poorer, so financially it may not be as worthwhile to send to referral versus a lymphoma, which has a much better outcome.

My attitude towards the treatment of cancers in pets has been influenced by my experiences working in the UK, where pet insurance is much more common – I found a marked difference in the owners’ willingness to pursue cancer treatment and thus a big increase in the amount of chemotherapy I did in practice (several patients per year compared to almost none in Canada). I found the experiences of the owners and pets (in the UK) to be overall more positive as far as the perception of pain and suffering in a) deciding to treat, and b) perception of how the pet was tolerating the medication.

Compared to 32 years ago when I graduated, I see a number of cancer cases per day or week. Many are relatively young patients. I find the owners’ perception of cancer treatment is very influenced by their own experience for themselves or friends/family members. Sometimes their negative experiences are a major obstacle to treatment for their pet. Education about cancer treatment in veterinary patients will be very important.

I do not believe in cancer chemotherapy.
I think it was a very good survey and definitely got me thinking about how I view cancer compared to other chronic conditions in dogs.

I NEVER compare cancer to other chronic conditions, however, that question prompted some thinking for me and gave me another presentation method for helping owners navigate the decision making process. If they would try to treat their pet for X, maybe they should try to treat their pet for cancer. Hmmm…

Your question about ‘Are you familiar with and comfortable using oral or injectable chemo drugs’ could have been in 2 parts. Yes I am familiar with these drugs / no I am not comfortable using them yet. But with education on proper use I would have no concerns using them.

Interesting topic. Unfortunately my clients do not participate in chemotherapy treatments. However, if I had more information, maybe they would.

In my opinion veterinarians in Ontario (including myself) are poorly prepared at OVC for diagnosing and treating the common cancers we would encounter in practice. We have few resources available to us to improve our knowledge, especially in decision-making and surgical oncology. As a result many patients receive inadequate and frequently incompetent cancer care. This situation needs to be rectified. OVC needs to get with it!!!!!! Our clients expect us to be competent in this area but OVC is not providing the necessary training and it's difficult to get good CE in oncology. The focus needs to be on diagnosis and treatment of the common, unexciting cancers (that don't interest the faculty), rather than lymphoma and osteosarcoma.

Good questions and well worthwhile. VETERINARIANS AS GENERAL PRACTITIONERS NEED MORE CANCER TRAINING AND SUPPORT!

Owners are now wanting more chemotherapy for their pets. I found this survey worthwhile.
Appendix 5

Supplementary findings and data management for the recommendations study

5.1: Variables re-categorized into a reduced number of categories to result in statistically adequate distributions

5.2: Variables combined to create index variables

5.3: Dependent variables re-categorized into a reduced number of categories to facilitate binary logistic regression

5.4: Transforming postal codes to create geographic regions

5.5: Variables for potential consideration in multivariable logistic regression

5.6: Proportional response rates of veterinarians of Ontario by type of medicine practiced

5.7: Factors associated with how worthwhile the treatment of cancer was ranked

5.8: Ranking of influential factors (mean, median, mode)

5.9: Probabilities of recommendations for care according to number of years in practice

5.10: Causal diagrams for euthanasia, palliative care, in-clinic treatment, and referral
Data management—To solve the lack of adequate distribution resulting in cell sizes too small to achieve valid statistical results, to alleviate the problem of collinearity (retaining rather than losing comparable data that was equally informative), and to create variables that when used in statistical modeling could provide meaningful results, a number of variables were transformed. Twenty independent variables were re-categorized into a reduced number of categories to ensure at least 20 observations were included in each category of each variable (Table 1), while others that measured similar items were grouped to create index variables (Table 2).

Table 5.1: Variables re-categorized into a reduced number of categories to result in statistically adequate distributions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Original distribution</th>
<th>Adjusted distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of veterinary medicine practiced</td>
<td>100% SA  &gt; 50% SA  50:50% SA:LA  &lt; 50% SA</td>
<td>100% SA  &lt; 100% SA</td>
</tr>
<tr>
<td>Type of practice worked in</td>
<td>100% SA  &gt; 50% SA  50:50% SA:LA  &lt; 50% SA</td>
<td>100% SA  &lt; 100% SA</td>
</tr>
<tr>
<td>School of graduation</td>
<td>Ontario Veterinary College  Atlantic Veterinary College  Western College of Veterinary Medicine  Universite de Montreal  Faculty of Veterinary Medicine  U.S veterinary schools  International veterinary schools</td>
<td>Ontario Veterinary College  Other North American colleges  International veterinary schools</td>
</tr>
<tr>
<td>Year of graduation</td>
<td>55 years (1955-2010)</td>
<td>5 decades (1960s – 2000s) (1950s included in the 1960s since so few 1950s &amp; 1960s)</td>
</tr>
<tr>
<td>Kind of community served</td>
<td>Urban  Suburban  Town/village  Rural  Varies</td>
<td>Urban  Suburban  Town/village  Rural</td>
</tr>
<tr>
<td># Hours drive from the referral center</td>
<td>&lt; 1 hour  1 to &lt; 2 hours  2 to &lt; 4 hours  4 to &lt; 6 hours  6+ hours</td>
<td>&lt; 1 hour  1 to &lt; 2 hours  2 to &lt; 4 hours  4+ hours</td>
</tr>
<tr>
<td># Hours worked/week</td>
<td>0 to &lt; 20 hours</td>
<td>20 to &lt; 40 hours</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Time on average spent in appointments</td>
<td>0 to &lt; 10 minutes</td>
<td>10 to &lt; 20 minutes</td>
</tr>
<tr>
<td>Appointment length usually scheduled</td>
<td>10 minutes</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Confidence in the referral center</td>
<td>not at all confident</td>
<td>&gt; not at all confident</td>
</tr>
<tr>
<td># Hours continuing professional development in companion animal medicine per year</td>
<td>none</td>
<td>1 to &lt; 25</td>
</tr>
<tr>
<td># Times multicentric lymphoma in dogs is diagnosed per year</td>
<td>never</td>
<td>1 to 2</td>
</tr>
<tr>
<td># Times osteosarcoma in dogs is diagnosed per year</td>
<td>never</td>
<td>1 to 2</td>
</tr>
<tr>
<td>How worthwhile the treatment of lymphoma with chemotherapy is thought to be</td>
<td>not at all worthwhile</td>
<td>&gt; not at all worthwhile</td>
</tr>
<tr>
<td>How worthwhile the treatment of osteosarcoma with amputation and chemotherapy is thought to be</td>
<td>not at all worthwhile</td>
<td>moderately worthwhile</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Experience of loss of a dog of your own due to cancer</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Experience of loss of a pet of your own due to cancer</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Ranking the experience of a dog with cancer</td>
<td>0 (sad) to 5 (mixed) to (10) happy</td>
<td>sad, mixed, happy</td>
</tr>
<tr>
<td>Ranking the experience of a pet with cancer</td>
<td>0 (sad) to 5 (mixed) to (10) happy</td>
<td>sad, mixed, happy</td>
</tr>
<tr>
<td>Ranking the experience of a person with cancer</td>
<td>0 (sad) to 5 (mixed) to (10) happy</td>
<td>sad, mixed, happy</td>
</tr>
</tbody>
</table>
Table 5.2: Variables combined to create index variables

<table>
<thead>
<tr>
<th>New variable</th>
<th>Original variables</th>
<th>Original distribution</th>
<th>New distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whether or not you treat cancer (lymphoma and OSA)</td>
<td>Whether or not you treat multicentric lymphoma Whether or not you treat OSA</td>
<td>don’t treat</td>
<td>don’t treat treat either treat both</td>
</tr>
<tr>
<td>Comfort and familiarity with chemotherapeutic treatment</td>
<td>Comfort and familiarity with oral chemotherapeutic drugs Comfort and familiarity with injectable chemotherapeutic drugs</td>
<td>no yes</td>
<td>no somewhat yes</td>
</tr>
<tr>
<td>Comparing worthwhileness of treating cancer as compared to chronic disease (finances aside)</td>
<td>Comparing worthwhileness of treating cancer as compared to diabetes mellitus Comparing worthwhileness of treating cancer as compared to hyperadrenocorticism Comparing worthwhileness of treating cancer as compared to chronic renal disease Comparing worthwhileness of treating cancer as compared to chronic heart failure Comparing worthwhileness of treating cancer as compared to ideopathic epilepsy</td>
<td>less worthwhile &gt; less worthwhile &lt; comparatively worthwhile comparatively worthwhile &gt; comparatively worthwhile &lt; more worthwhile more worthwhile</td>
<td>less worthwhile comparatively worthwhile more worthwhile</td>
</tr>
<tr>
<td>Comparing worthwhileness of treating cancer as compared to chronic disease (finances weighed in)</td>
<td>Comparing worthwhileness of treating cancer as compared to diabetes mellitus Comparing worthwhileness of treating cancer as compared to hyperadrenocorticism Comparing worthwhileness of treating cancer as compared to chronic renal disease</td>
<td>less worthwhile &gt; less worthwhile &lt; comparatively worthwhile comparatively worthwhile &gt; comparatively worthwhile</td>
<td>less worthwhile comparatively worthwhile more worthwhile</td>
</tr>
<tr>
<td>Comparing</td>
<td>Comparing worthwhileness of treating cancer as compared to chronic heart failure</td>
<td>worthwhileness</td>
<td>worthwhile</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>------------</td>
</tr>
<tr>
<td>expensiveness of treating cancer as compared to chronic disease</td>
<td>Comparing expensiveness of treating cancer as compared to ideopathic epilepsy</td>
<td>less expensive</td>
<td>less expensive</td>
</tr>
<tr>
<td></td>
<td>Comparing expensiveness of treating cancer as compared to diabetes mellitus</td>
<td>&lt; comparatively expensive</td>
<td>expensive</td>
</tr>
<tr>
<td></td>
<td>Comparing expensiveness of treating cancer as compared to hyperadrenocorticism</td>
<td>expensive</td>
<td>&gt; comparatively expensive</td>
</tr>
<tr>
<td></td>
<td>Comparing expensiveness of treating cancer as compared to chronic renal disease</td>
<td>&gt; comparatively expensive</td>
<td>comparatively expensive</td>
</tr>
<tr>
<td></td>
<td>Comparing expensiveness of treating cancer as compared to chronic heart failure</td>
<td>&lt; more expensive</td>
<td>more expensive</td>
</tr>
<tr>
<td>How worthwhile the treatment of cancer is thought to be</td>
<td>How worthwhile the treatment of lymphoma with chemotherapy is thought to be</td>
<td>moderately worthwhile</td>
<td>completely worthwhile</td>
</tr>
</tbody>
</table>
Table 5.3: Dependent variables re-categorized into a reduced number of categories to facilitate binary logistic regression

<table>
<thead>
<tr>
<th>New variable</th>
<th>Original variables</th>
<th>Original distribution</th>
<th>New distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>First treatment choice – referral</td>
<td>First treatment choice</td>
<td>euthanasia referral</td>
<td>referral alternative (euth/palli/txmt)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>palliative care treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>alternative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(euth/palli/txmt)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First treatment choice – euthanasia</td>
<td>First treatment choice</td>
<td>euthanasia referral</td>
<td>euthanasia alternative (palli/txmt/referral)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>palliative care treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>alternative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(palli/txmt/referral)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First treatment choice – palliative care</td>
<td>First treatment choice</td>
<td>euthanasia referral</td>
<td>palliative care alternative (txmt/referral)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>palliative care treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>alternative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(txmt/referral)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First treatment choice – in-clinic treatment</td>
<td>First treatment choice</td>
<td>euthanasia referral</td>
<td>in-clinic treatment alternative (referral)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>palliative care treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>treatment referral</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>alternative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(referral)</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.4: Transforming postal codes to create geographic regions

<table>
<thead>
<tr>
<th>New variable</th>
<th>Original variable</th>
<th>Original distribution</th>
<th>New distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic region</td>
<td>Postal code</td>
<td>K (1st postal code letter)</td>
<td>Eastern Ontario</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L</td>
<td>Central Ontario</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>Greater Toronto Area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>Southwestern Ontario</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P</td>
<td>Northern Ontario</td>
</tr>
</tbody>
</table>
Table 5.5: Variables for potential consideration in multivariable logistic regression

<table>
<thead>
<tr>
<th>Practitioner and Practice Demographic Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>School of graduation</td>
</tr>
<tr>
<td>Year of graduation</td>
</tr>
<tr>
<td>Number of full years in practice*</td>
</tr>
<tr>
<td>Type of medicine practiced</td>
</tr>
<tr>
<td>Employment position</td>
</tr>
<tr>
<td>Hours worked/week</td>
</tr>
<tr>
<td>Length of scheduled appointments</td>
</tr>
<tr>
<td>Average time spent per appointment</td>
</tr>
<tr>
<td>Type of practice worked in</td>
</tr>
<tr>
<td>Type of community served</td>
</tr>
<tr>
<td>Geographic region</td>
</tr>
<tr>
<td>Distance from the referral center</td>
</tr>
<tr>
<td>Hours/year continuing professional development in companion animal medicine</td>
</tr>
<tr>
<td>Frequency of diagnosis of lymphoma/year</td>
</tr>
<tr>
<td>Frequency of diagnosis of OSA/year</td>
</tr>
<tr>
<td>Experience with chemotherapy</td>
</tr>
<tr>
<td>Experience with surgical amputation</td>
</tr>
<tr>
<td>Experience with treating lymphoma and OSA</td>
</tr>
<tr>
<td>Dog ownership</td>
</tr>
<tr>
<td>Loss of a dog due to cancer</td>
</tr>
<tr>
<td>Loss of other pets due to cancer</td>
</tr>
<tr>
<td>Loss of close people known due to cancer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Practitioner Attitudinal Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence in the referral center</td>
</tr>
<tr>
<td>Judgement of worthwhileness of treating lymphoma</td>
</tr>
<tr>
<td>Judgement of worthwhileness of treating OSA</td>
</tr>
<tr>
<td>Judgement of worthwhileness of treating cancer</td>
</tr>
<tr>
<td>Judgement of worthwhileness of treating cancer as compared to other chronic diseases (finances aside)</td>
</tr>
<tr>
<td>Judgement of worthwhileness of treating cancer as compared to other chronic diseases (finances weighed in)</td>
</tr>
<tr>
<td>Judgement of the expensiveness of treating cancer as compared to treating other chronic diseases</td>
</tr>
<tr>
<td>Judgement of cancer experience(s) with dog(s)</td>
</tr>
<tr>
<td>Judgement of cancer experience(s) with other pet(s)</td>
</tr>
<tr>
<td>Judgement of cancer experience(s) with people</td>
</tr>
</tbody>
</table>

*continuous variable
Table 5.6: Proportional response rates of veterinarians of Ontario by type of medicine practiced.

<table>
<thead>
<tr>
<th>Type of medicine practiced</th>
<th># Veterinarians in Ontario</th>
<th># Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>All types</td>
<td>2,724</td>
<td>1071 (39.3%)</td>
</tr>
<tr>
<td>100% SA</td>
<td>2,258</td>
<td>938 (41.5%)</td>
</tr>
<tr>
<td>&lt; 100% SA</td>
<td>466</td>
<td>133 (28.5%)</td>
</tr>
<tr>
<td>&gt; 50% SA</td>
<td>283</td>
<td>82 (29.0%)</td>
</tr>
<tr>
<td>50:50% SA:LA</td>
<td>93</td>
<td>32 (34.4%)</td>
</tr>
<tr>
<td>&lt; 50% SA</td>
<td>90</td>
<td>19 (21.1%)</td>
</tr>
</tbody>
</table>

Table 5.7: Factors associated with how worthwhile the treatment of cancer was ranked.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Chi-squared statistic</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decade of graduation</td>
<td>30.962</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>School of graduation</td>
<td>11.386</td>
<td>0.023</td>
</tr>
<tr>
<td>Type of medicine practiced</td>
<td>18.038</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Type of practice worked in</td>
<td>10.723</td>
<td>0.005</td>
</tr>
<tr>
<td>Employment status</td>
<td>15.761</td>
<td>0.015</td>
</tr>
<tr>
<td>Average time spent per appointment</td>
<td>27.316</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Type of community served</td>
<td>20.672</td>
<td>0.002</td>
</tr>
<tr>
<td>Geographic region practiced in</td>
<td>24.901</td>
<td>0.002</td>
</tr>
<tr>
<td>Distance from the referral centre</td>
<td>17.207</td>
<td>0.009</td>
</tr>
<tr>
<td>Confidence in the referral centre</td>
<td>41.279</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Hours of CPD engaged in per year</td>
<td>25.734</td>
<td>0.001</td>
</tr>
</tbody>
</table>
Table 5.8: Ranking of influential factors (mean, median, mode)

<table>
<thead>
<tr>
<th>Ranking of influential factors</th>
<th>Referral</th>
<th>Treatment</th>
<th>Palliative Care</th>
<th>Euthanasia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>Potential to maintain quality of life (4.79, 5.00, 5)</td>
<td>Potential to maintain quality of life (4.83, 5.00, 5)</td>
<td>Potential to maintain quality of life (4.76, 5.00, 5)</td>
<td>Potential to maintain quality of life (4.85, 5.00, 5)</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>Confidence in referral center (4.32, 5.00, 5)</td>
<td>Potential to extend quantity of life (4.22, 5.00, 5)</td>
<td>Human-animal bond (4.03, 4.00, 5)</td>
<td>Human-animal bond (4.06, 4.00, 5)</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>Potential to extend quantity of life (4.26, 5.00, 5)</td>
<td>Dog’s overall health status (3.99, 4.00, 4)</td>
<td>Dog’s overall health status (3.92, 4.00, 5)</td>
<td>Potential to extend quantity of life (3.81, 4.00, 5)</td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Dog’s overall health status (4.04, 4.00, 5)</td>
<td>Human-animal bond (3.88, 4.00, 5)</td>
<td>Potential to extend quantity of life (3.71, 4.00, 5)</td>
<td>Dog’s overall health status (3.76, 4.00, 4)</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Human-animal bond (3.94, 5.00, 5)</td>
<td>Experience w chemotherapy and surgery (3.83, 4.00, 4)</td>
<td>Client costs in terms of time, effort, &amp; $ (3.69, 4.00, 5)</td>
<td>Client costs in terms of time, effort, &amp; $ (3.70, 4.00, 4)</td>
</tr>
<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Experience w chemotherapy and surgery (3.78, 4.00, 5)</td>
<td>Client costs in terms of time, effort, &amp; $ (3.49, 3.00, 3)</td>
<td>Dog’s age (3.46, 4.00, 3)</td>
<td>Client’s financial status (3.67, 4.00, 5)</td>
</tr>
<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Client costs in terms of time, effort, &amp; $ (3.08, 3.00, 3)</td>
<td>Client’s financial status (3.17, 3.00, 3)</td>
<td>Experience w chemotherapy and surgery (3.34, 3.00, 5)</td>
<td>Confidence in referral center (3.50, 4.00, 5)</td>
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<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Dog’s age (2.98, 3.00, 3)</td>
<td>Dog’s age (3.09, 3.00, 3)</td>
<td>Client’s financial status (3.31, 3.00, 3)</td>
<td>Dog’s age (3.31, 3.00, 3)</td>
</tr>
<tr>
<td>9&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Client’s financial status (2.87, 3.00, 3)</td>
<td>Confidence in referral center (3.01, 3.00, 1)</td>
<td>Confidence in referral center (2.88, 3.00, 1)</td>
<td>Experience w chemotherapy and surgery (3.16, 3.00, 3)</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
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<td>Distance to the referral center (2.13, 2.00, 1)</td>
<td>Distance to the referral center (2.10, 2.00, 1)</td>
<td>Distance to the referral center (2.09, 1.00, 1)</td>
</tr>
<tr>
<td>11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Dog’s gender (1.21, 1.00, 1)</td>
<td>Dog’s gender (1.22, 1.00, 1)</td>
<td>Dog’s gender (1.11, 1.00, 1)</td>
<td>Dog’s gender (1.12, 1.00, 1)</td>
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**Probabilities of recommendations for care according to number of years in practice**

The probabilities of euthanasia, palliative care, in-clinic treatment, and referral were calculated for practitioners less than 1 full year and 50 years in practice to determine the difference in probability in relation to time in practice.

**Findings:**

There was very little variance in the probability of recommending euthanasia in relation to the length of time practitioners were in practice, with a difference of only 1.3% between practitioners in practice less than 1 full year (2.6%) and those in practice for 50 years (3.9%). This suggests that the propensity to recommend euthanasia was not related to the number of years in practice.

The probability of recommending palliative care differed by 10.5% between practitioners in practice less than 1 full year (25.4%) and those in practice for 50 years (35.9%). This suggests that practitioners who have been in practice longer are somewhat more inclined to recommend palliative care.

There was very little variance in the probability of recommending in-clinic treatment in relation to the length of time practitioners were in practice, with a difference of only 1.4% between those in practice less than 1 full year (18.2%) and those in practice for 50 years (19.6%). This suggests that practitioners do not appear to acquire experience with treating cancer as they accumulate years of clinical practice experience.

The probability of recommending a referral differed by 9.9% between practitioners in practice less than 1 full year (59.4%) and those in practice for 50 years (49.5%). This suggests that more recently graduated practitioners may be somewhat more inclined to recommend a referral than practitioners who have been in practice for longer.

**Variables in the Equation**

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<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
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</table>

\[
\text{COMPUTE Logit_referral} = 0.381 + (-0.008 \times \text{Years\_practice}).
\]

\[
p = \frac{1}{1 + \exp(-\text{logit})}
\]
A causal diagram of factors possibly associated with the decision to recommend euthanasia.
A causal diagram of factors possibly associated with the decision to recommend palliative care.
A causal diagram of factors possibly associated with the decision to recommend in-clinic treatment.
A causal diagram of factors possibly associated with the decision to recommend a referral.
Appendix 6

Full interaction models and graphs for the recommendations study

6.1: Referral model with full interactions (relates to Chapter 5) (Gender*Type of medicine practiced and HAB*Finance)

6.2: Gender*Type of medicine practiced interaction statements and graph for referral model

6.3: HAB*Finance interaction statements and graph for referral model

6.4: Treatment model (as found in Chapter 6)

6.5: Gender*Type of medicine practiced interaction statements and graph for treatment model

6.5: Palliative model with interactions (relates to Chapter 6) (Type of cancer*General health and HAB*Finance)

6.7: Type of cancer*General health interaction statements and graph for palliative model

6.8: HAB*Finance interaction statements and graph for palliative model
Table 6.1: Factors of the full interaction model associated with primary care veterinarians’ choice of recommendation to refer a patient to a specialty oncology service in Ontario, 2010.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Odds ratio</th>
<th>95% confidence interval</th>
<th>P-value</th>
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<tr>
<td>Experience with treating cancer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not treat lymphoma or OSA</td>
<td>2.8</td>
<td>1.63 – 4.77</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Treat either</td>
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</tr>
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<td>Financial status</td>
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<td></td>
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<tr>
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<tr>
<td>General health status</td>
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<td>Comorbidty</td>
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<tr>
<td>Human-animal bond</td>
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</tr>
<tr>
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<td>2.0</td>
<td>1.33 – 2.98</td>
<td>0.001</td>
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<tr>
<td>Weak</td>
<td>1.0</td>
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<td></td>
</tr>
<tr>
<td>Worthwhileness of cancer treatment</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Completely worthwhile to treat</td>
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<td>2.03 – 4.72</td>
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</tr>
<tr>
<td>Greater than moderately worthwhile to treat</td>
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<td>1.20 – 2.66</td>
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<tr>
<td>Moderately worthwhile to treat</td>
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<tr>
<td>Worthwhileness of treating cancer as compared to treating other chronic diseases</td>
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<tr>
<td>More worthwhile to treat</td>
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<td>1.07 – 6.26</td>
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</tr>
<tr>
<td>Type of medicine practiced</td>
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<td></td>
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</tr>
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<td>100% SA</td>
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<td>1.19 – 4.04</td>
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</tr>
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<td>&lt; 100% SA</td>
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<td>Gender*Type of medicine practiced</td>
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<td>Female, 100%SA</td>
<td>2.2</td>
<td>1.19 – 4.04</td>
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<td>Human-animal bond* Financial status</td>
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<td>1.90 – 4.53</td>
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<tr>
<td>Restricted, Strong</td>
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<td>1.33 – 2.98</td>
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</table>
Gender*Type of medicine practiced for the referral model (Chapter 5):

- For those practitioners who practiced 100% SA medicine, there was no difference in the propensity to recommend a referral between females and males.
- For those practitioners who practiced less than 100% SA medicine, male practitioners were 2.6 times more likely to recommend a referral as compared to female practitioners (CI 1.07 – 6.26).
- For female practitioners, those who practiced 100% SA medicine were 2.2 times more likely to recommend a referral than those who practiced less than 100% SA medicine (CI 1.19 – 4.04).
- For male practitioners, there was no difference in the propensity to recommend a referral between those who practiced less than 100% SA medicine and those who practiced 100% SA medicine.

---

**Figure 6.1:** A graph demonstrating the relationship between the type of medicine practiced and practitioner’s gender as these factors were associated with the propensity of practitioners to recommend a referral to a specialty oncology centre.
Human-animal bond*Financial status for the referral model (Chapter 5):

- When the bond was strong, practitioners were 2.9 times more likely to recommend a referral when the client was financially secure than when financially restricted (CI 1.90 – 4.53).
- When the bond was weak, there was a tendency for practitioners to be 1.5 times more likely to refer when the client was financially secure than when financially restricted (CI 0.99 – 2.21).
- When the client was financially secure, practitioners were 4.0 times more likely to recommend a referral when the bond was strong rather than weak (CI 2.56 – 6.12).
- When the client was financially restricted, practitioners were 2.0 times more likely to recommend a referral when the bond was strong rather than weak (CI 1.33 – 2.98).

Figure 6.2: A graph demonstrating the relationship between the strength of the human-animal bond and the client’s financial status as these factors were associated with the propensity of practitioners to recommend a referral to a specialty oncology centre.
Table 6.2: Factors associated with primary care veterinarians’ choice to recommend in-clinic treatment versus referral in Ontario, 2010.

<table>
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<tr>
<th>Variable</th>
<th>Odds ratio</th>
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<th>P-value</th>
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<td>Gender*Type of medicine practiced</td>
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<td>0.68 – 5.84</td>
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Gender*Type of medicine practiced for the in-clinic treatment model (Chapter 6):

- For those practitioners who practiced 100% SA medicine, male practitioners were 1.7 times more likely to recommend in-clinic treatment as compared to female practitioners (CI 1.07 – 2.59).
- For those practitioners who practiced less than 100% SA medicine, female practitioners were 3.7 times more likely to recommend in-clinic treatment as compared to male practitioners (CI 1.06 to 13.16).
- For female practitioners, those who practiced less than 100% SA medicine were 3.1 times more likely to recommend in-clinic treatment than those who practiced 100% SA medicine (CI 1.40 – 6.86).
- For male practitioners, there was no difference in the propensity to recommend in-clinic treatment between those who practiced less than 100% SA medicine and those who practiced 100% SA medicine.

**Figure 6.3:** A graph demonstrating the relationship between the type of medicine practiced and practitioner’s gender as these factors were associated with the propensity of practitioners to recommend in-clinic treatment rather than a referral to a specialty oncology centre.
Table 6.3: Factors of the full interaction model associated with primary care veterinarians’ choice to recommend palliative care versus in-clinic treatment and referral, in Ontario, 2010.

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<tr>
<td><strong>Worthwhileness of cancer treatment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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</tr>
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<td>1.62 – 3.53</td>
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<td>Completely worthwhile to treat</td>
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<td></td>
<td></td>
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<tr>
<td><strong>Worthwhileness of treating cancer as compared to treating other chronic diseases</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>More worthwhile to treat</td>
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<td>0.28 – 1.01</td>
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<td><strong>Cancer type</strong></td>
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<td>OSA, Comorbidity</td>
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<td>2.35 – 6.94</td>
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</tr>
<tr>
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<tr>
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<td>1.43 – 3.35</td>
<td>&lt; 0.001</td>
</tr>
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</table>
Cancer type*General health status for the palliative model (Chapter 6):

- For dogs that had OSA, practitioners were 2.3 times more likely to recommend palliative care when the dogs also had comorbid disease as compared to when they were in good health (CI 1.46 – 3.72).
- For dogs that had lymphoma, the propensity to recommend palliative care was the same whether the dogs had comorbid disease or were in good health – it was not related to their overall health status.
- For dogs that had comorbid disease, practitioners were 2.1 times more likely to recommend palliative care when the type of cancer was OSA than when it was lymphoma (CI 1.30 – 3.26).
- For dogs that were in good health, the propensity to recommend palliative care was the same whether the dog had lymphoma or OSA – it was not related to the type of cancer they had.

Figure 6.4: A graph demonstrating the relationship between the patient’s type of cancer and general health status as these factors were associated with the propensity of practitioners to recommend palliative care rather than in-clinic treatment or a referral to a specialty oncology centre.
Human-animal bond\textsuperscript{*}Financial status for the palliative model (Chapter 6):

- For clients who were strongly bonded, practitioners were 4.0 times more likely to recommend palliative care when the client was financially restricted rather than financially secure (CI 2.35 – 6.94).
- For clients who were weakly bonded, practitioners were 1.7 times more likely to recommend palliative care when the client was financially restricted rather than financially secure (CI 1.10 – 2.55).
- For clients who were financially secure, practitioners were 5.3 times more likely to recommend palliative care when the client was weakly bonded rather than strongly bonded (3.07 – 9.07).
- For clients who were financially restricted, practitioners were 2.2 times more likely to recommend palliative care when the client was weakly bonded rather than strongly bonded (CI 1.43 – 3.35).

![Diagram showing the relationship between bond strength and financial status.](image)

**Figure 6.5:** A graph demonstrating the relationship between the strength of the bond and the client’s financial status as these factors were associated with the propensity of practitioners to recommend palliative care rather than in-clinic treatment or a referral to a specialty oncology centre.