

Strategies to Improve Case Outcome When Referral is Not Affordable

The Research Question and Why It Is Important

Development of referral-level diagnostic and therapeutic plans for clients with financial constraints is often necessary at our teaching hospital at the Mississippi State University College of Veterinary Medicine (MSU-CVM), which has a referral base serving primarily Mississippi and Alabama, where low-income households predominate. The MSU-CVM Small Animal Medicine Service receives, on average, 8-10 consultation calls each day from local veterinarians seeking advice on managing difficult cases. Often, a referring veterinarian may not feel confident in the management of a challenging case, but the owners are unable to afford the cost of referral care at MSU-CVM, which can exceed \$2,500 per case. In many of these situations, the internists at MSU-CVM recognize that the local veterinarian can make medical decisions and institute clinical techniques or empirical therapies in a cost-effective manner and, without referral, improve the outcome of a challenging case.

Our overall research question, based on our anecdotal clinical observations, is “are there specific low-cost alternatives to referral care that can be effectively implemented in general practice?” Since referral-level care is beyond the budget of many pet owners, development of affordable alternatives that can be applied widely by practitioners will positively impact canine health.

Hypothesis

Our hypothesis is that low-cost, alternative strategies and protocols that can be implemented in general practice will benefit veterinarians and improve the outcome of dogs with severe or chronic diseases when the owner cannot afford referral to a veterinary internist. We also hypothesize that incorporation of these alternative approaches into the veterinary curriculum will

enhance the ability of future veterinarians to offer affordable veterinary care to a broader client base and enable more families to benefit from having healthy dogs.

Research Objectives

- 1. Change the paradigm on specialty-level care.** Establishing alternative methods of providing practical aspects of specialty-level care to dogs with complicated medical conditions will potentially lead to, at least regionally and hopefully nationally, adoption of a new approach to veterinary medicine. The alternative approach seeks better outcomes and improved health for dogs belonging to families that are unable to afford the cost of what has become standard tertiary referral care. Methods and “products” developed during the Fellowship year ideally will evolve into a sustainable program offered routinely by the MSU-CVM Medicine service.
- 2. Build skills and incomes of local practitioners.** We seek to determine if utilization of strategies and protocols for medical conditions that traditionally require a specialist can, in fact, be managed effectively at a lower cost by informed local practitioners. We will also evaluate the perceived benefit to the practitioner with regard to income and client relationships. Ultimately, success will result in sustaining the availability of veterinary care in many local communities.
- 3. Impact veterinary medical education.** Equally important will be an assessment of the impact of the proposed project on veterinary students educated at MSU-CVM. Fourth-year (“senior”) veterinary students will be trained as they visit practices, as well as when they are working on referred cases on the MSU-CVM clinic floor, to consider a range of diagnostic and therapeutic regimens when difficult cases are encountered, rather than first thinking of referral to a specialist. As most of our graduates enter general practice, this

type of real-world “Fourth Way” experience will complement their didactic education and clinical training by immersing them in the search to provide excellent veterinary care at lower cost.

Current State of Research

To the authors’ knowledge, there are no current publications in veterinary medicine regarding the use of specific alternatives to referral care. However, with the rise in veterinary costs, estimated in 2005 at 7% per year, investigation of such strategies and incorporation of these alternative approaches into the veterinary curriculum is necessary.¹ A survey by Veterinary Pet Insurance (Brea, CA) revealed one-third of pet owners would euthanize a pet if the cost of medical care was expected to be \$500-\$1000, a cost that is often exceeded at our MSU-CVM teaching hospital, as well as at other specialty practices.¹ In the United States, the number of dog owners with insurance is low, and most owners pay for veterinary care out-of-pocket.² Certainly, referral care is not affordable for many pet owners, and other options should be available.

Referral to a specialist is frequently chosen when the practitioner is uncomfortable with the complexity of the case or is unfamiliar with certain techniques.³ Veterinarians value the opinions of trusted colleagues, and find this resource useful to guide clinical decision making.⁴ Also, practitioners see evidence-based practice guidelines as a way to improve care, reduce stress, and improve client communication.⁴

Broadening of the veterinary curriculum to include critical thinking skills, communication, flexibility training, and financial management has been encouraged by both practitioners and educators.⁵ Over the last 15 years, veterinary colleges have increased the amount of training in non-technical skills, but the effectiveness of these initiatives in improving career success has not

been examined.⁵ To the authors' knowledge, incorporation of "Fourth Way" principles has not been investigated formally in an academic veterinary medical environment.

Applicant Qualification

The applicant, Dr. Alyssa Sullivant, is currently in her final year of a small animal internal medicine residency and Masters of Veterinary Science degree program in veterinary medical research at the MSU-CVM, and her long term goal is to obtain a faculty position at MSU. Dr. Sullivant expects to be board certified with the American College of Veterinary Internal Medicine (Small Animal Internal Medicine) in July 2016. Before beginning her residency, she practiced small animal medicine for 5 years in a private practice near Memphis, TN. Before veterinary school, she worked for 9 years at a rural mixed animal practice in Sardis, MS. Both experiences provided numerous opportunities to work with low-income clients, and learn different approaches to patient care. Finding ways to help dogs, regardless of how sick they are and how much money their owners are able to spend, is very rewarding, and Dr. Sullivant believes it is an obligation of the veterinary profession that can be developed further.

Dr. Sullivant has a passion for teaching and sharing real-life general practice experiences with veterinary students, and believes future veterinarians should be taught not only the knowledge and skills of specialty medicine in a tertiary care hospital setting, but also how to apply those resources when the client cannot afford referral. The Fellowship provides an opportunity for Dr. Sullivant to expand upon this personal practice philosophy, which is shared among the small animal medicine clinicians at MSU-CVM, and takes into consideration not only the medical needs of the patient but also the financial limitations of the client.

Research Methodology

The proposed project will include weekly visits to one or two of 15 voluntary veterinary practices located in low median family income areas within our referral region. Dr. Sullivant will travel to participating practices along with 2 to 3 fourth-year veterinary students enrolled in the required Medicine rotation, one day per week for 5 weeks of each 6 week rotation (40 weeks/year), to offer clinical expertise on 1 to 2 challenging canine case(s) seen on that day or that week in the practice. Each practice will be visited three times during the one year Fellowship, for a total of 45 practice visits. To be eligible for discussion and evaluation, cases must belong to clients unable to afford referral to an internist. Based on the most likely diagnosis for each case, Dr. Sullivant will identify which specific tests and therapies are most likely to yield significant improvement for the dog, while minimizing cost to the owner. On-site consultation on over 50 cases is expected. Between visits, participating practitioners will be encouraged to contact Dr. Sullivant for continued case consultation. Development of a Skype®-based program from MSU-CVM will also be implemented to assist 2-3 selected participating practices as part of a pilot study. This portion of the project will evaluate feasibility of establishing this modality of communication as a permanent method of practitioner outreach offered by the MSU-CVM Medicine service, particularly to benefit clients that need low-cost options for their dogs. Participating students will develop, as a group, evidence-based, affordable protocol(s) for the case(s) encountered during each visit. Dr. Sullivant will critique, grade, edit, and update these protocols, and provide them to the practitioners involved in the study.

The project will be a “proof-of-concept” study designed to describe and assess alternative strategies in canine medicine when referral is not affordable. The strategies evaluated will include the following: on-site specialist consultations with local practitioners; utilization of

alternative, low-cost diagnostic and treatment protocols; and improved follow-up with local practitioners treating referral-level cases in a private practice setting. In collaboration with Dr. David Morse, Professor of Educational Psychology in the MSU College of Education, baseline and end-of-study questionnaires as well as end-of-study satisfaction score surveys will be generated for participating practitioners to complete. These data will be used to assess the practitioner's comfort level with treating referral-level cases and knowledge of alternative strategies before and after the project. These data will be used also to determine practitioner sentiment towards the strategies, and the likelihood of the practitioner to use the alternative protocols. Collectively, these data will enable us to determine (1) if low-cost strategies were beneficial or desirable for local practitioners, and (2) if perception of case outcomes, practice income, or client relationships were improved by using these alternative methods. Similarly, fourth-year veterinary students will be surveyed at the beginning and end of each Medicine rotation to evaluate their perceptions of the value of learning alternative methods and strategies.

Outcome of cases from the on-site visits will be compared to outcome of comparable cases seen by the MSU-CVM referral Medicine service. Specifically, rates of cure, remission, survival, and euthanasia will be evaluated to identify differences in outcome. Average costs of our alternative protocols for certain canine conditions will be compared to the cost of diagnostics and treatment for the same condition through the MSU-CVM referral Medicine service.

Before commencement of the project in July 2016, 15 participating practices will be selected for the study, with consideration of proximity of multiple practices so that more than one practice can be visited on the same workday. Participants will receive a full description of the project before agreement to participate. Additionally, several pilot visits will occur before the study begins as a "trial run" to improve the efficiency of the future on-site visits.

Potential pitfalls of the project include diminished interest from enrolled practitioners, and a lack of qualifying cases to be discussed during the practice visits. To minimize these challenges, practices will be contacted the day before the visit to assure at least one case qualifies for evaluation and that the visit is desired by the veterinarian. Another limitation may be insufficient number of cases to provide enough statistical “power” to assess differences in case outcome and costs. If funded, an additional year of data collection would provide more statistical power.

Level of Support Requested

Full-time support is requested to complete the proposed project within one year. Additional sources of support outside of the Fellowship will not be provided or available for the project. Practice visits, follow-up communication, data collection, and derivation of appropriate protocols with veterinary students will occur weekly for 40 weeks. The remainder of the Fellowship will be devoted to communication and ongoing consultation with referring veterinarians, statistical analyses of data and preparation of the manuscript for publication.

Project Timeline and Benchmarks

The project will commence on July 1, 2016. Quarterly benchmarks will be achieved and communicated to the Foundation. We anticipate that, pending a successful first year, application for a second year of funding will be requested to obtain additional data to determine more completely the impact of the project effects. Specific benchmarks are outlined below.

- October 1, 2016: 12-15 total practice visits
- January 1, 2017: 24-30 total practice visits
- April 1, 2017: 45 total practice visits
- May 1, 2017: Completion of all questionnaires and surveys

- June 1, 2017: Completion of statistical analysis
- July 1, 2017: Submission of manuscript for publication

Institutional Approvals

Dr. Sullivant and her mentor, Dr. Andrew Mackin, will meet with the MSU Office of Research Compliance in November 2015 to discuss all requirements necessary to comply with federal regulations and ethical standards in human research. Deadlines and expected turn-around times for approval will be confirmed to assure all requirements are met well before commencement of the Fellowship. In December 2015, Dr. Sullivant will complete required human subjects training offered by the MSU Institutional Review Board for Protection of Human Subjects in Research. Project questionnaires and surveys as well as a consent and assent form will be submitted along with an application for approval by the MSU Institutional Review Board in January 2016.

Benefit and Output of Project

Benefits to Dogs

- Improved health, longevity, and quality of life for chronically or severely ill canine patients that are typically candidates for referral to a veterinary internist, but whose owners cannot afford such referral costs.
- Reduction in the number of dogs euthanized due to clients' inability to pay costs.

Benefits to Practitioners

- Equipment of local general practitioners with practical, low-cost, clinical strategies and treatment protocols for managing what would usually be referral-level cases in a private practice setting, which will ultimately improve client relationships and practice income.

- Expansion of practitioner expertise and confidence in handling similar cases in the future.
- Development of a Skype®-based consultation program from MSU-CVM as part of a pilot study to evaluate feasibility of establishing this modality of communication as a permanent method of practitioner outreach offered by the MSU-CVM Medicine service.

Benefits to Veterinary Students

- Exposure of veterinary students to real-life financial limitations of clients.
- Training of veterinary students in strategies for providing “the next best option” when referral is not affordable for their clients.
- Teaching of veterinary students in methods for tailoring protocols and clinical-decision making to the financial ability of the client.

Output (1 year)

- Submission of a publication of project results in a peer-reviewed journal (*Journal of Veterinary Medical Education* or *Journal of the American Veterinary Medical Association*).
- Generation and dissemination of evidence-based, alternative, low-cost diagnostic and treatment protocols for at least 20 canine diseases for which practitioners commonly recommend referral to an internist.
- Publication of these alternative protocols online for access to practitioners nationwide.
- Presentation of alternative protocols and strategies and project outcome at local and regional veterinary conferences.

Long Term Goals

- Development of a long-term solution for the MSU-CVM Medicine team to serve clients who cannot afford referral when their dogs have a severe or chronic illness.
- Production, both on-line for veterinarians and as a handbook/textbook, of a series of at least 50 evidence-based cost effective protocols for the management of common challenging diseases in dogs.
- Dissemination of the concepts developed in this study via national veterinary conferences.
- Creation of a cost-effective model program (designed to complement but not fully replace referral) whereby practitioners can obtain referral-level advice, via Skype, email and telephone, for those patients whose owners cannot afford full referral.

Summary

We believe that, by embracing the “Fourth Way” concept and incorporating alternative, low-cost methods when necessary, current and future veterinarians will be able to offer better health care for many thousands of dogs over the duration of their practicing careers. Your consideration of me for the Stanton Fellowship is humbling and thrilling at the same time. Thank you for providing this once-in-a-lifetime opportunity to advance my career at our great college, as well as to contribute to the welfare of man’s best friend. Please contact me if there are any questions.

References

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5. Harris, DL, Lloyd JW. Changes in teaching of nontechnical skills, knowledge, aptitudes, and attitudes at US colleges and schools of veterinary medicine between 1999 and 2009. *Journal of the American Veterinary Medical Association* 2011; 239 (6): 762-766.