Survey of Equine Referring Veterinarians' Satisfaction with Their Most Recent Equine Referral Experience

C. Best ⬤, J.B. Coe, J. Hewson, M. Meehan, and D. Kelton

Background: Little is known about the veterinary referral process and factors that contribute to positive outcomes.

Objective: To investigate equine referring veterinarians' (rDVMs') satisfaction with their most recent referral experience and compare rDVM and specialist perspectives.

Sample: 187 rDVMs and 92 specialists (referral care providers).

Methods: Cross-sectional observational study. An online survey was administered to both rDVMs and specialists. Referring veterinarian satisfaction with their most recent referral experience was evaluated. Both rDVMs and specialists were asked to identify factors influencing a rDVM's decision where to refer, and the top 3 factors they perceive are barriers to referral care.

Results: Median rDVM satisfaction with their most recent referral care experience was 80 of 100 (mean, 75; range, 8–100). Referring veterinarians provided the lowest satisfaction score for the item asking about "The competition the referral hospital poses to your practice" (mean, 56.96; median, 62; range, 0–100). The top factor rDVMs identified as influencing their decision where to refer was "quality of care," whereas specialists identified "quality of communication and updates from the clinician." Referring veterinarians' top barrier to referral care was "high cost of referral care," and for specialists was "poor service provided to the client by the referral hospital."

Conclusions and Clinical Importance: Referring veterinarians generally were satisfied with referral care, but areas exist where rDVMs and specialists differ in what they view as important to the referral process. Exploring opportunities to overcome these differences is likely to support high quality care.

Key words: Equine referral care; Inter-professional relationships; Referral hospital; Referring veterinarian satisfaction; Specialty care.

L ittle is known about the equine referral process in veterinary medicine and factors that contribute to positive outcomes of a referral, such as referring veterinarian (rDVM) satisfaction, specialist satisfaction, and impact on patient health. A focus group study investigating equine rDVMs' expectations of specialists and referral care found participating rDVMs expected referral care to function as an "extension of their own care."[1] This entailed a collegial

Abbreviations:

rDVM	referring veterinarian
RSS	referral satisfaction score
VTH	veterinary teaching hospital

relationship between rDVM and specialist, good communication between rDVM and specialist, recognition of the rDVMs' relationships with their clients, rDVM involvement with referral care, and respect for boundaries of care provided by the referral center.[1] A study investigating rDVM satisfaction with the University of Prince Edward Island's Veterinary Teaching Hospital (VTH) found that inefficiency sending discharge statements and poor communication during the referral process influenced rDVMs' satisfaction with their referral experience.[2] In a staff paper detailing an investigation of equine rDVMs' referral experiences with the Michigan State University's Large Animal VTH, the need for good rDVM-specialist communication, as well as the specialist's respect for the rDVM, were highlighted as important components of the referral process.[3]

In human medicine, a primary care physician's personal knowledge of a specialist is associated with his or her choice of specialist to whom to refer.[4] This relationship may influence patient care, because quality of care can differ among specialists.[5,6] Furthermore, primary care physicians' satisfaction with the referral is a predictor of future referrals.[7] Factors contributing to primary care physicians' satisfaction with referral care include the amount of feedback received from the specialist, and involvement of both the primary care physician and specialist in the provision of patient care.[8] Feedback from the specialist increased the primary care physician's perception that the referral was of benefit to the patient's care.[8] Challenges and barriers

experienced by primary care physicians during the referral process include poor communication with the specialist,[9] disagreement between primary care practitioner and specialist regarding the role of the specialist,[10] and poor availability of the specialist to provide care.[11] As referral becomes more common veterinary practice, understanding factors influencing rDVMs' satisfaction and the challenges experienced in relation to the referral process are important areas to explore.

Determining factors that contribute to equine rDVM satisfaction provides specialists and referral centers with the information necessary to better meet rDVMs' needs. This decreases the potential for unmet expectations and dissatisfaction, which may impact a rDVM's willingness to refer cases, and thus, the care patients receive. Furthermore, striving to increase rDVM satisfaction is likely to support the referral caseload of a referral hospital and therefore support the success of the practice. The objective of our study was to investigate equine rDVMs' satisfaction with their most recent referral experience, and to identify the factors considered by rDVMs when determining where to refer a case. Our study contributes to the body of rDVM research by soliciting both rDVM and specialist perspectives. Furthermore, conducting the study with an international pool of veterinarians allows the findings to be generalized to a wider population than studies limited to a specific referral hospital.

Materials and Methods

The study protocol was reviewed by the University of Guelph Research Ethics Board (13NV045). In this study, the term "specialist" described board-certified specialists or veterinarians that self-identified as secondary or tertiary referral care providers.

Study Participants

Referring veterinarian participants were recruited by an initial email invitation and 1 reminder email distributed via the American Association of Equine Practitioners and Equine Clinician's Network listservs. Specialist participants were recruited by an email distributed to the American College of Veterinary Internal Medicine Diplomates' listserv and the American College of Veterinary Theriogenologists' listserv, as well as a notice posted to the private Facebook group for Diplomates of the American College of Veterinary Surgeons. Demographic information was collected as part of the survey for both rDVM and specialist participants. Participants were asked to self-identify their role in equine medicine at the start of the survey. The choice provided was "referring (primary care) veterinarian" or "specialist or referral care provider." Participants who identified as a "referring (primary care) veterinarian" were asked to describe any post-graduate training they completed.

Development of the rDVM Satisfaction and Referral Decision-Making Questionnaire

A survey exploring equine rDVM satisfaction with their most recent referral experience, referral decision-making and barriers to referral care was developed in 4 phases. Phase I involved a focus group study investigating equine rDVMs' expectations of equine specialists and referral care.[1] In brief, 6 focus group interviews, each comprising 7–9 equine rDVMs, were conducted (n = 48). Participants received a $100 honorarium for their participation. Thematic analysis was used to identify common themes and ideas expressed by participants pertaining to their needs and expectations of referral care.

In Phase II, the themes and ideas from the focus group study were used to create an initial pool of 177 items regarding rDVMs' expectations of referral care considered for the questionnaire. Two equine rDVMs (including the primary author) and an equine internal medicine specialist (JH) reviewed the initial item pool and evaluated each item for relevance, comprehensibility, and clarity on a scale of 1–10. The scores from each reviewer then were summed to form an aggregate score for each item. This score then was used to inform item reduction. Items were retained if the item had an overall aggregate score > 20 because this score was determined to be representative of endorsement of at least 2 of the 3 reviewers. Items also were retained if the item's removal would have resulted in the loss of an important topic area identified during the focus groups. The 3 reviewers also assessed item redundancy at this time. Items perceived to be asking about very similar ideas or experiences were flagged as possibly redundant. Identified items were then examined to determine whether they were truly redundant, and if so, the item with the lower aggregate score was considered for deletion. This approach resulted in a pilot questionnaire of 78 items.

The primary author then subdivided the items into 39 items regarding rDVM satisfaction with their most recent referral care experience, 28 items regarding a rDVM's decision-making process for where to send a case, and 11 items considered to be barriers to referral care for rDVMs. Items were categorized on the basis of applicability and the way participants in the focus group study[1] described the situation from which the item arose. If an item were most applicable to referral satisfaction, it was placed in the satisfaction scale. Other items suitable for the way a rDVM makes decisions regarding where to send cases were placed in the decision-making factor scale. Items relevant to barriers to referral care were placed in the barrier scale. A visual analogue scale was used for each satisfaction item, ranging from 0 (completely dissatisfied) to 100 (completely satisfied). A visual analogue scale also was used for decision-making items, ranging from 0 (does not factor into decision at all) to 100 (factors heavily into decision). Initially, participants were asked to select and rank 5 items from the list of 11 potential barriers that they perceived to be most challenging with regard to referral care.

Phase III consisted of a pilot study inviting members of the Ontario Association of Equine Practitioners to complete the questionnaire. Participants were recruited by an email invitation and 1 reminder email distributed to the Ontario Association of Equine Practitioners' listserv. The pilot questionnaire was delivered using an online survey tool.[a] Items within each section (satisfaction, decision-making, and barrier question groups) were presented to participants in a randomized order by the online program. Descriptive statistics, item-item correlations, and item-total correlations were performed for the satisfaction and decision-making sections of the questionnaire. This analysis informed the second round of item reduction and questionnaire revision. Items were removed from the questionnaire on the basis of the following criteria: item-item correlation > 0.8,[12] low variation in responses (ie, median score > 90),[12] high number of missing responses (ie, > 10% of respondents did not answer the item), and content validity.

Phase IV involved psychometric evaluation of the rDVM satisfaction section of the questionnaire using data collected in the full survey administration, delivered by an online tool.[a] A referral satisfaction score (RSS) was calculated, taking the mean score across all satisfaction items for each rDVM. Five global questions were asked of participants to assess support for construct validity of the questionnaire's referral satisfaction section.[12] The first 4, "Based on your most recent interaction, please answer the following": "I would be completely happy to send another case to this clinician"; "The clinician's approach was a good fit for me"; "I would recommend this clinician to a colleague"; and, "I would use this clinician if my own horse needed care" were scored using a visual analogue scale ranging from 0 (completely disagree) to 100 (completely agree). The fifth global question, "Overall, how satisfied were you with this referral experience?" was scored using a visual analog scale ranging from 0 (completely dissatisfied) to 100
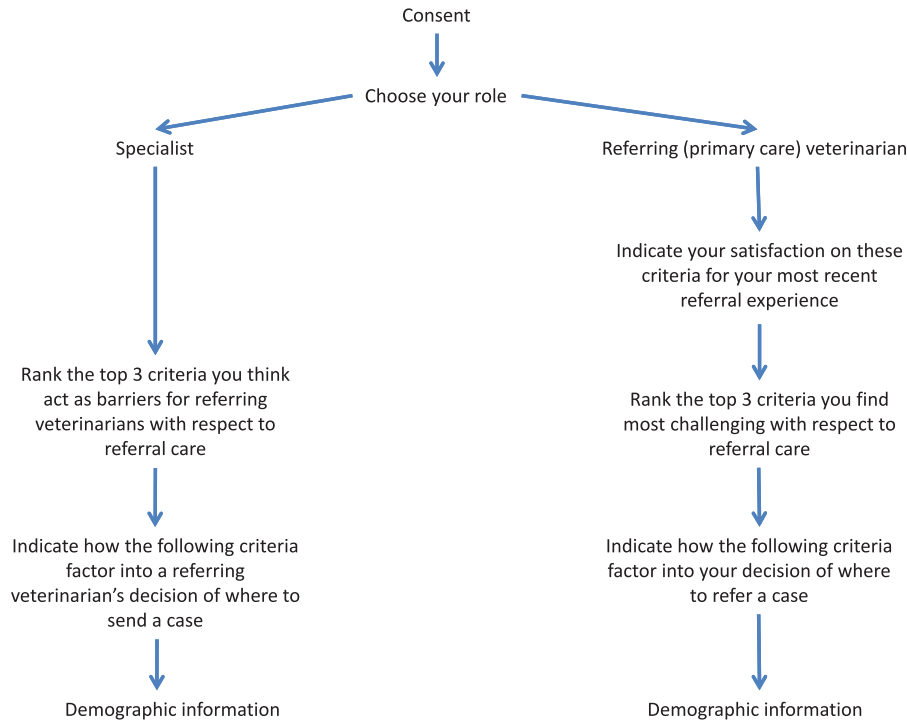
Consent

Choose your role

Specialist   Referring (primary care) veterinarian

Indicate your satisfaction on these
criteria for your most recent
referral experience

Rank the top 3 criteria you think
act as barriers for referring
veterinarians with respect to
referral care

Rank the top 3 criteria you find
most challenging with respect to
referral care

Indicate how the following criteria
factor into a referring
veterinarian's decision of where to
send a case

Indicate how the following criteria
factor into your decision of where
to refer a case

Demographic information   Demographic information

Fig 1. Referring veterinarian and specialist questionnaire content.

(completely satisfied). The a priori hypothesis was that each of the global items would have a strong positive correlation with the RSS. In Phase IV, the question concerning barriers to referral care asked participants to select and rank the top 3 barriers found most challenging with respect to referral care for rDVMs of the 11 barriers presented.

Exploratory factor analysis was performed to investigate the dimensionality of the referral satisfaction section of the questionnaire, and a Monte Carlo simulation was used to determine the final number of factors to retain.[b] On the basis of previous studies that have identified client satisfaction[13] and patient satisfaction[14,15] as single-factor traits, it was hypothesized that rDVMs' satisfaction with referral care also would be 1-dimensional. Cronbach's alpha was used to assess the internal consistency of the referral satisfaction section of the questionnaire.

A different survey completed by specialists comprised the decision-making items and barrier items used in the rDVM questionnaire, and was delivered via an online tool.[a] Only pronouns were changed to make the questions applicable to specialists. Figure 1 outlines the flow of the questionnaires completed by rDVMs and specialists.

Statistical Analysis

Descriptive statistics were generated for all independent variables and the RSS. Frequency counts were generated for categorical variables, and mean, median, minimum, maximum, and standard deviation for continuous variables. The rDVM and specialist responses to the decision-making items and barrier rankings are presented descriptively, with median scores and frequency counts. The normality of the RSS was investigated graphically and by using the Shapiro–Wilk statistic. Spearman correlations between the RSS and global items were generated.

A new variable representing the number of missing satisfaction items was generated. A graph of RSS and the number of missing satisfaction items was created to visually explore if the RSS changed with the number of missing satisfaction items. To investigate whether the RSS varied significantly with the number of missing satisfaction

items, a series of linear regressions was generated on data sets including respondents with sequentially increasing numbers of missing satisfaction items. The RSS was the dependent variable and the number of missing satisfaction items was the independent variable. When the number of missing satisfaction items variable became significant, the data set including respondents missing 1 less satisfaction item than that in the data set where the number of missing satisfaction items was significant was used for all statistical analyses pertaining to satisfaction items.

A multivariable linear regression model was constructed to investigate the factors that contributed to an rDVM's satisfaction with a given referral experience. Variables included in the full model were sex (male, female), strength of relationship with client (1–100), years in practice, number of routine case referrals per year, number of emergency cases referred per year, number of consultations with a specialist per year, referral hospital work experience (never, previous employment at a referral hospital, current employment at a referral hospital), and days to receive discharge statement. Independence among all variables considered for inclusion in the linear model of RSS was evaluated by generating Spearman correlations to assess collinearity. A manual backward approach was used, with a significance level of $P < 0.05$. Variables also were assessed for potential confounding. If a change of $>20\%$ was observed in the coefficients of any variable in the model, which plausibly may have a confounding relationship with the variable being removed, then the variable was retained in the model as a confounder. Once all variables remaining had P values < 0.05 or were retained due to confounding, interaction terms were investigated including all plausible combinations of remaining main effect variables using the same backward manual approach. In the next step, all removed variables were re-introduced to the Model 1 at a time in the reverse order from which they were removed to determine if they were now significant. Model fit, outliers, and leverage for the final model were investigated by graphical observation of residuals plotted against predicted values and explanatory variables.

The software SAS[c] was used for modeling purposes; all other statistical tests were conducted using SPSS v. 22.[d]

Results

Two-hundred and seventy-nine equine veterinarians participated in the final administration of the survey. Throughout the results presented, the number of respondents for a particular questionnaire item is presented in brackets.

rDVM Participants

One-hundred and eighty-seven participants identified themselves as referring (primary care) veterinarians. This group was comprised 109 females and 63 males (n = 172), with a median age of 47.5 years (mean, 47.02; SD, 12.83; min, 25; max, 72; n = 176). Practice and referral demographic information for the participating rDVMs is presented in Table 1. A description of the types of postgraduate training respondents completed is presented in Table 2.

Specialist Participants

Ninety-two respondents indicated they were specialists or referral care providers; 53 were female, and 33 were male (n = 86). The median age was 43 years (mean, 45.3; min, 29; max, 70; n = 87). Of the 92 specialist respondents, 76 indicated that they were board certified, and 8 indicated that they were not (n = 84). Some respondents held multiple specialty designations. The distribution of board certification was 55 internal medicine, 13 surgery, 1 radiology, 5 theriogenology, 9 emergency and critical care, and 3 sports medicine and rehabilitation. Additional practice demographic information is presented in Table 3.

rDVM Satisfaction with Their Most Recent Referral Experience

The final referral care satisfaction instrument consisted of 29 items. Differences in numbers of respondents represent

Table 1. Referring veterinarian demographic statistics (total respondents n = 187).

Demographic Variable	n	Descriptive Statistics
Years since Graduation	175	
Median (min, max)		19 (0, 49)
Strength of relationship with clients[a]	175	
Median (min, max)		88 (30, 100)
Number routine cases referred per year	167	
Median (min, max)		10 (0, 200)
Number emergencies referred per year	172	
Median (min, max)		10 (0, 80)
Consultations per year	172	
Median (min, max)		15 (1, 250)
Hours to closest referral hospital	173	
Median (min, max)		1 (0, 6)
Hours to hospital referred to most	168	
Median (min, max)		1.5 (0, 9)
% of Work that is equine	175	
Median (min, max)		100 (10,100)

[a]The scale for this item was 1–100, with 1 = Not strong at all, 100 = Very strong.

Table 2. Post-graduate training completed by referring veterinarians (n = 68).

Post-Graduate Training Completed	n[a]
Internship	46
Residency	15
Master's of Science degree	6
Diplomate of the American College of Theriogenology	4
Diplomate of the American College of Veterinary Internal Medicine	4 (3 regular, 1 honorary)
Diplomate of the American College of Veterinary Practitioners	3
Diplomate of the American College of Veterinary Preventive Medicine	2
Doctor of Philosophy degree	2
Member of the Australian and New Zealand College of Veterinary Scientists (Dentistry) and International College of Equine Veterinary Odontologists	1
Post-graduate dental training	1
Equine specialist certificate	1
Specialist	1
Diplomate of the American Veterinary Dental College	1

[a]Multiple types of training were indicated by some participants.

missing values. Missing satisfaction items had no impact on the RSS when participants answered ≥ 21 of the 29 satisfaction items. Therefore, all analyses pertaining to the satisfaction questionnaire were based on data from respondents (n = 184) who answered ≥ 21 items (184 of 187; 98.4%).

The mean RSS was 74.91 (median, 79.77; range, 8.48–100; SD, 19.08; n = 184) of 100. The 3 lowest scored satisfaction items were: "The competition the referral hospital poses to your practice" (mean, 56.96; median, 62; range,

Table 3. Specialist demographic statistics (total respondents n = 92).

Demographic Variable	n	Descriptive Statistics
Number of referral cases seen per year	73	
Median (min, max)		300 (0, 2000)
Number of consultations conducted per year	80	
Median (min, max)		100 (4, 2000)
Worked in primary care before specialty practice (%)		
Yes	52	62
No	32	38
Years working in referral care	85	
Median (min, max)		11 (1, 36)
Currently provide primary care (%)		
Yes	40	48
No	43	52
Role in referral practice (%)		
Owner	15	18.5
Associate	30	37
Academia/faculty	19	23.5
Other	17	21
Type of referral hospital employed by (%)		
Private referral center	34	42
Veterinary teaching hospital	44	54
Other	3	4

Table 4. Descriptive statistics for satisfaction items and referral satisfaction score (RSS).

Please Indicate Your Level of Satisfaction of the following Regarding Your Most Recent Referral Experience (Scale 0–100[a])	N	Mean	Median	SD	Min	Max
The quality of care provided	183	88.40	94	15.67	23	100
The ease of arranging for the horse to receive care	178	88.01	93.5	16.47	27	100
The expertise of the clinician(s)	181	87.34	93	17.23	15	100
The collegiality between the clinician and yourself	183	82.60	93	23.56	0	100
The way the clinician supported your efforts to provide the patient with the best possible care	181	82.46	90	20.85	0	100
The relationship between the clinician and yourself	180	81.60	90	23	0	100
The respect shown to you by the clinician	180	80.23	90	24.38	0	100
The use of technology for communication (text, email, fax)	170	79.29	90.5	27.34	0	100
How the referral experience impacted your relationship with your client	174	79.22	85	21.29	4	100
Your ability to get a hold of the clinician in charge of the case	179	78.61	89	25.07	0	100
How the clinician followed through with the plan for care you requested	174	78.07	85.5	23.32	0	100
The primary/routine care was left to you	174	77.91	89	26.43	0	100
The communication you had with the clinician before they saw the horse	183	77.33	87	26.39	0	100
The treatment options provided to the client by the clinician	176	77.32	86	23.68	0	100
The clinician's respect for your knowledge and expertise	181	77.23	85	24.97	0	100
The adaptability of the clinician, given the client and horse's situation	178	75.55	82	23.87	0	100
The accuracy of the cost estimate provided	146	73.70	80	25	0	100
The communication between the clinician and yourself about the horse's aftercare	181	71.91	80	29.07	0	100
The thoroughness of the discharge statement you received	176	69.99	81.5	31.57	0	100
The way the clinician involved you in the horse's care	176	69.39	76	28.89	0	100
The way the clinician kept you up to date with what was going on	178	68.72	83	32.17	0	100
The amount of new information you learned from the clinician	174	68.57	75	26.87	0	100
The cost of care provided	168	68.56	75	24.56	0	100
The length of time it took to receive the discharge	175	68.33	83	33.53	0	100
The amount of medication sold to the client for the aftercare of the horse	158	68.24	75	29.98	0	100
The components of your work up that were repeated by the hospital	171	68.18	75	26.89	0	100
The clinician's ability to provide cost effective care	173	65.08	70	25	0	100
The way the clinician communicated the costs of care to you	162	63.36	75	31.87	0	100
The competition the referral hospital poses to your practice	174	56.96	62	37.29	0	100
RSS	184	74.91	79.77	19.55	8.48	100

[a]The scale used for these questions was 0 = Completely dissatisfied to 100 = Completely satisfied.

0–100; SD 37.29); "The way the clinician communicated the costs of care to you" (mean, 63.36; median, 75; range, 0–100; SD, 31.87); and, "The clinician's ability to provide cost effective care" (mean, 65.08; median, 70; range, 0–100; SD, 25.00). Descriptive statistics for the satisfaction items are presented in Table 4. Factor analysis of the satisfaction items identified 1 underlying dimension using the criterion values produced from parallel analysis to determine the number of factors to retain. This finding was supported by Scree plot and comprehensibility of factors. Spearman correlations between the RSS and the 5 global items (n = 179) ranged from 0.795 to 0.870 ($P < 0.01$).

rDVM Decision-Making

The final decision-making instrument comprised 21 items. Differences were identified between rDVMs' and specialists' ratings of decision-making factors (Tables 5 and 6, respectively). "Quality of care" was the highest ranked decision-making factor by rDVMs (median, 99; n = 175), "Expertise of clinician" was ranked second (median, 97; n = 175), and "Ability of the hospital to provide comprehensive care" was ranked third (median, 95; n = 172). The top 3 criteria specialists indicated that factored into a

rDVM's decision regarding where to refer a case were "Quality of communication and updates from the clinician" (median, 95; n = 91), "Quality of care" (median, 91; n = 89), and "Ease of communication with the clinician" (median, 90.5; n = 90).

Barriers to Referral Care

As a result of the pilot study, where many respondents ranked only 3 top barriers, the final administration of the survey asked respondents to select and rank the top 3 barriers they experienced with respect to referral care. Referring veterinarians ranked the following items as the top 3 barriers to patient referral: "High cost of referral care," "Lack of referring veterinarian involvement with case management," and "Poor communication between clinician and referring veterinarian." Specialists ranked "Poor service provided to the client by the referral hospital," "High cost of referral care," and "Lack of collegiality between the clinician and the referring veterinarian" as the top barriers they perceived rDVMs faced when referring patients. The barrier rankings of rDVMs and specialists are presented in Tables 7 and 8, respectively.

Table 5. Referring veterinarians' (rDVMs) ratings of factors that influence a rDVM's decision of where to refer a case.

Criterion (Scale 0–100[a])	n rDVM	Median Score for rDVMs
Quality of care	175	99
Expertise of clinician	175	97
Ability of the referral hospital to provide comprehensive care	172	95
The referring veterinarian's belief that the client will have a positive experience	174	94
Previous experience referring cases to the clinician	174	93
Ease of communication with the clinician	174	90
Likelihood the clinician will do what the horse was sent to have done	172	90
Quality of communication and updates from the clinician	174	90
Collegiality between the clinician and the referring veterinarian	172	90
The referring veterinarian's confidence that the client will be returned to their practice	160	88.5
Ease of arranging referral	168	87
The referring veterinarian's confidence that the primary/routine care will be left to them	162	83
The availability of the clinician for consultation regarding non-referred patients	173	81.5
The clinician includes the referring veterinarian as a team member in the patient's care	169	81
Accurate estimate for cost of care	167	76
Likelihood the clinician will include the referring veterinarian in decision-making regarding patient care	161	75
The referral hospital does not compete with the referring veterinarian's practice	160	75
Openness of the referral hospital to have the referring veterinarian present to observe/learn	161	73
The amount of knowledge the referring veterinarian gains from working with the clinician	167	73
Likelihood that the clinician will repeat the referring veterinarian's work up	153	50.5
The referral hospital is unlikely to provide medication for aftercare that the referring veterinarian could provide	149	50

[a]The scale used for these questions was 0 = Does not factor into decision at all to 100 = Factors heavily into decision.

Factors Associated with rDVMs Satisfaction with the Referral Process

The RSS was not normally distributed, but the data were deemed robust enough to proceed with linear regression modeling because the kurtosis was high but not extremely high, and linear regression can tolerate skewed data. Also, the data were distributed similar to an exponential distribution, for which inferences drawn from linear regression are valid. The variables having a negative association with rDVM satisfaction were "average time to receive a discharge statement" and "number of cases referred for emergency care per year." The identified average length of time to receive a discharge statement after the end of the patient's treatment as estimated by rDVM respondents was 9 days (median, 2; range, 0–365; SD, 39.60). Number of

Table 6. Specialists' ratings of factors that influence a referring veterinarian's decision of where to refer a case.

Criterion (Scale 0–100[a])	n Specialists	Median Score for Specialists
Quality of communication and updates from the clinician	91	95
Quality of care	89	91
Ease of communication with the clinician	90	90.5
Previous experience referring cases to the clinician	90	90
Collegiality between the clinician and the referring veterinarian	90	90
The referring veterinarian's confidence that the client will be returned to their practice	87	90
Expertise of clinician	90	88.5
The referring veterinarian's belief that the client will have a positive experience	89	87
Ability of the referral hospital to provide comprehensive care	88	85
The referral hospital does not compete with the referring veterinarian's practice	84	82.5
Ease of arranging referral	90	80.5
The referring veterinarian's confidence that the primary/routine care will be left to them	83	80
The clinician includes the referring veterinarian as a team member in the patient's care	87	80
The availability of the clinician for consultation regarding non-referred patients	82	79.5
Likelihood the clinician will do what the horse was sent to have done	85	79
Accurate estimate for cost of care	83	74
Likelihood the clinician will include the referring veterinarian in decision-making regarding patient care	82	71
The referral hospital is unlikely to provide medication for aftercare that the referring veterinarian could	78	60.5
Openness of the referral hospital to have the referring veterinarian present to observe/learn	83	60
The amount of knowledge the referring veterinarian gains from working with the clinician	85	60
Likelihood that the clinician will repeat the referring veterinarian's work up	78	45

[a]The scale used for these questions was 0 = Does not factor into decision at all to 100 = Factors heavily into decision.

consultations with a specialist per year had a positive association with rDVM satisfaction (Table 9). Two respondents were identified as outliers. When the model was run with outliers removed, "number of cases referred for emergency care per year" became nonsignificant (P value > 0.05). Because there was no clear reason to remove the 2 outliers from the model, they were retained.

Discussion

Our findings suggest that, in general, equine rDVMs are satisfied with referral care. This observation is consistent with findings of a separate study of rDVM satisfaction with a VTH (large and small animal), which found that 70% of the rDVMs were satisfied with the overall referral experience provided.[2] Our study identifies opportunities for specialists and referral centers to enhance their delivery of referral services. Furthermore, a recent study investigating equine rDVMs' expectations of referral care identified situations and areas in which rDVMs face challenges with the referral process, including competition posed by the referral hospital and communication with the specialist.[1]

On the basis of participants' responses to individual satisfaction items in our study, the area in which rDVMs appeared least satisfied with respect to their most recent referral experience was the competition the referral hospital posed to their practice. Our study did not ask rDVM participants to identify whether they referred the horse to a VTH or to a private referral hospital. Therefore, it is not possible to speculate about whether there is a difference between these 2 clinic types and concerns about the competition posed to the rDVM. Two commentaries[16,17] have discussed the topic of referral centers competing with rDVMs' practices. These commentaries, 1 written by private practice specialist veterinarians[17] and the other by an academic hospital specialist veterinarian,[16] suggest that referral hospitals should limit their care to the problem for which the animal was referred. The authors also recommend communication between specialist and rDVM in the event of extenuating circumstances, such as a client's request to the specialist for a certain treatment or the need for treatment deemed to be in the best interest of the patient.[16,17] Findings of a recent focus group study with equine rDVMs suggest that initial communication aimed at resolving differences of opinion or potential misunderstandings may be valuable to the referral relationship.[1]

Results of our study indicate that rDVMs are less satisfied with communication regarding costs and the way costs are managed. Cost of referral care was identified as the top barrier to referral care by participating rDVMs. The low rating of the cost-related satisfaction item "The way the clinician communicated the costs of care to you" clearly suggests that the way rDVMs and specialists discuss costs is an area that may benefit from greater evaluation. Interestingly, rDVMs also were less satisfied with "The clinician's ability to provide cost effective care," which may also be related to the communication between rDVM and specialist regarding the care the horse receives and the respective costs. Discussing costs of veterinary care has been identified to be a challenge for both veterinarians and clients.[13,18] Our findings highlight a potential need for rDVM and specialist to consider their approach to communication with each other concerning the costs of referral veterinary care.

Our results suggest rDVMs are more satisfied with referral care when they receive the discharge statement a short time after the horse leaves the referral hospital. This finding is consistent with another report where lack of timeliness of discharge statement was identified as a reason for poor rDVM satisfaction with referral care at a VTH.[2] Delay in providing the rDVM with the discharge statement has the potential to influence patient care. A recent investigation of rDVMs' expectations of specialists found that rDVMs considered the timely receipt of a discharge statement to be essential because it often contains information important to the rDVM in providing the client and his or her horse with appropriate follow-up care.[1] Addressing the timeliness with which the rDVM receives the discharge statement is an area for potential focus by the management of a referral hospital in order to promote rDVM satisfaction and enhance delivery of coordinated patient care.

When considering why rDVM satisfaction increased with the frequency of consultation with a specialist, a plausible explanation is that consultations provide an opportunity for relationship building between the rDVM and specialist. Referring veterinarian participants in a separate study perceived better case outcomes and improved communication between themselves and the specialist when they had an established relationship.[1] In companion animal practice, a consistent or long-term relationship between veterinarian and client results in significantly higher ratings of satisfaction by clients at the end of an appointment when compared with satisfaction after first-time veterinarian-client encounters.[19] If we assume the proposed hypothesis is correct, then specialists and referral centers would benefit from pursuing opportunities to enhance the rDVM and specialist relationship. This might include opportunities for interactions outside of case referral, such as newsletters for rDVMs, hospital open houses, or continuing education seminars. These events would provide an opportunity for relationship building between rDVM and specialist, which may in turn increase case-specific rDVM satisfaction.

Considering the inverse relationship found in our study between rDVM satisfaction and number of emergency referrals per year, it is reasonable to consider the impact the circumstances that surround the referral may have. In emergency referral situations, the rDVM may have less choice of the specialist to whom they refer, and tensions are likely to arise for all parties involved (ie, client, rDVM, specialist) because of the patient's compromised health status. This could negatively impact the relationship and communication between rDVM and specialist. The halo effect, which theorizes that respondents base their responses on their overall experiences instead of on the criteria for which they are being asked to rate the person or experience,[12] also may explain the low satisfaction of rDVMs who refer more cases for emergency care per year. Regardless of the reasoning, focusing on the process of emergency referrals may provide an opportunity for referral practices to develop new relationships with rDVMs and broaden their own client base. Given the increased levels of tension and complexity in emergency referrals, if a positive outcome is to result, the importance

Table 7. Referring veterinarian (rDVM) barrier ranking frequencies (n = 186).

	% (n) rDVMs Ranking as a Top 3 Barrier
High cost of referral care	26.4 (131)
Lack of referring veterinarian involvement with case management	16.9 (84)
Poor communication between clinician and referring veterinarian	15.5 (77)
Distance to referral hospital	13.5 (67)
Clinician does not provide the care for which the horse was referred	6.9 (34)
Referring veterinarian loses client following referral	6.5 (32)
Poor service provided to the client by the referral hospital	5.8 (29)
Lack of collegiality between the clinician and the referring veterinarian	4.8 (24)
Poor availability of referral hospital to provide referral care	2 (10)
Poor quality of care	1 (5)
Low cost of referral care	0.6 (3)

of meeting the rDVM's expectations is likely increased. Recent research exploring equine rDVMs expectations of specialists[1] suggests that meeting rDVMs' expectations includes providing the rDVM with timely updates on the patient's progress, involving the rDVM in the decision-making progress regarding the care the horse receives while at the referral hospital, and providing a discharge statement promptly at the end of the horse's stay.

Our findings indicate that a number of criteria influence a rDVM's decision of where to refer a case. In many referral situations, the rDVM is trusting the specialist and the referral hospital to act as an extension of his or her own care while providing to the patient and client the care that the rDVM cannot provide.[1] Therefore, it is not surprising that factors related to quality of care were identified by

Table 8. Specialist barrier ranking frequencies (n = 88).

	% (n) Specialists Ranking as a Perceived Top 3 Barrier
Poor communication between clinician and referring veterinarian	24.2 (63)
Poor service provided to the client by the referral hospital	15.8 (41)
High cost of referral care	13.8 (36)
Lack of collegiality between the clinician and the referring veterinarian	12.7 (33)
Referring veterinarian loses client following referral	9.2 (24)
Poor quality of care	6.9 (18)
Distance to referral hospital	6.5 (17)
Lack of referring veterinarian involvement with case management	5.8 (15)
Clinician does not provide the care for which the horse was referred	2.7 (7)
Poor availability of referral hospital to provide referral care	2.3 (6)
Low cost of referral care	0 (0)

participating rDVMs as the top criterion considered when making a referral. It is also important to consider the decision-making factors that rDVMs and specialists rated differently, because they represent potential gaps in understanding and could become barriers to positive rDVM and specialist outcomes. Closing these gaps is likely dependent upon frequent and timely use of effective communication between specialists and rDVMs. Open-ended questions are a valuable communication tool that can close potential gaps between specialists and rDVMs by providing information about each other's needs before and during the referral. Open-ended questions invite a thoughtful response, because they do not constrain the respondent to a "yes" or "no" answer.[20] This is beneficial to the referral process because it promotes development of a shared understanding of the position of both the rDVM and the specialist, thus decreasing the potential for misunderstandings and unknown expectations.

Our results indicate the top barriers to referral care perceived by rDVMs are similar to those the specialists perceive them to experience, although the order in which they were identified differs. It is important to note the subtle differences in the barrier rankings of rDVMs and specialists. Lack of involvement was a top barrier for rDVMs, but not specialists, and specialists identified poor service provided to the client and lack of collegiality, whereas rDVMs did not. A study exploring rDVMs' expectations of specialists and referral centers identified rDVM involvement during referral care and communication that keeps the rDVM up-to-date with the case as important to rDVMs.[1] When there is no common understanding of the problems in a situation, the likelihood of resolution decreases. For instance, a study of rDVMs and VTH veterinarians found that 80% of VTH veterinarians report contacting the rDVM before sending a discharge summary, whereas only 50% of rDVMs indicate this occurs.[21] The difference in perception regarding the amount of communication occurring is likely to lead each party to different conclusions regarding the way communication between rDVM and specialist may need to change after patient discharge. Differences in perception between rDVM and specialist, such as those found in our study and in another report,[21] can represent blind spots that serve as substantial obstacles to change because what is perceived by 1 individual is not the reality of the other. Awareness of the barriers rDVMs face with respect to referral care will allow specialists and referral hospitals to better identify areas to direct their efforts and energy to work with rDVMs to decrease the impact of these barriers for all involved.

Communication is the primary way that relationships are built and maintained. The use of communication skills, particularly empathy and increasing efforts to develop partnerships with clients, have been promoted as ways to improve communication about costs within the context of veterinary medicine.[13] These skills also may address the challenges associated with communicating costs between rDVMs and specialists. Empathy is a communication skill that has the opportunity to foster curiosity and respect between rDVMs and specialists because it involves the consideration of another's perspective or experience. Empathy has 2 stages, the first being an intellectual understanding or awareness of another

Table 9. Linear regression model for referral satisfaction score (n = 167).

	Estimate	Standard Error	*P* value	95% CI for Estimate
Constant	77.4630	2.1036	<0.001	73.31, 81.62
Average length of time to receive discharge	−0.1673	0.04920	<0.001	−0.26, −0.07
Number of cases referred for emergency care per year	−0.2437	0.1079	0.0252	−0.46, −0.03
Number of consults with specialists per year	0.1092	0.04415	0.0145	0.02, 0.20

person's experience and the second a verbal or nonverbal communication of that awareness back to the other person.[20] The use of empathy in referral situations before the care of the horse is transferred and while the horse is under the care of the specialist may contribute to strong relationships between rDVM and specialist, because it increases the likelihood of consideration of the other party's perspective throughout the referral process. In turn, this may facilitate a positive referral experience for both rDVMs and specialists.

Our study used non-random sampling, because online recruitment and data collection methods were employed. This design feature may have introduced selection bias, because only those who saw the notice online could have chosen to participate. Furthermore, individuals with a vested interest or strong feelings on the subject of referral care may have been more motivated to participate. Both of these types of selection bias may have biased the sample of respondents away from those of the average equine veterinarian. Respondents also were asked to base their responses on their most recent referral experience. This may have led to recall bias because participants may not have remembered what transpired accurately. Last, it is difficult to predict what, if any, impact the post-graduate training some rDVM respondents had completed has on their satisfaction with referral care, and the factors that influence their referral habits. Future directions for research include the use of a more inclusive sampling strategy and investigating the case-related factors that may influence rDVMs' satisfaction with referral care.

Our findings provide insight into what contributes to rDVM satisfaction, the factors that rDVMs consider when deciding where and to whom to refer a case, and what is most challenging to rDVMs with respect to referral care. In addition, it compares rDVM and specialist perspectives on issues that influence rDVMs' decisions of where to refer a case and the barriers rDVMs face with referral care. This information can be used to consider opportunities for increasing collaboration and partnership between rDVMs and specialists to optimize specialists' and referral centers' relationships with their rDVM clientele, and ultimately to support high quality patient care.

Footnotes

Acknowledgments

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