Article

The demand for veterinary services in western Canada

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Abstract — The objective of this study was to determine the number of hours veterinarians in western Canada work per week, how they apportion their time by species, and clinics' hiring intentions for new veterinary associates. Of 1099 clinics contacted, 706 (64%) responded to the survey, representing 80% (1774/2227) of private practitioners in western Canada. Practitioners devoted 73% of their time to small animals (SA), 11% to beef practice, and 9% to horses. Sixty-four percent of clinics and 66% of practitioners were devoted exclusively to companion animal (SA and horses) practice; only 4% of clinics and 4% of practitioners were devoted exclusively to food animal practice. A total of 230 clinics were seeking to hire another veterinarian, representing 223 full-time equivalents (FTEs). When adjusted for clinics that did not respond, the total number of vacancies in western Canada could be as high as 347 FTEs with 57% of vacancies in companion animal practice. The survey, however, did not assess how determined the clinics were in their attempts to hire another associate.

Résumé — La demande de services vétérinaires dans l'Ouest canadien. L'objectif de cette étude consistait à déterminer le nombre d'heures travaillées par semaine par les vétérinaires dans l'Ouest canadien, comment ils répartissent leur temps selon l'espèce et les intentions d'embauche des cliniques pour les nouveaux vétérinaires salariés. Parmi les 1099 cliniques contactées, 706 (64 %) ont répondu au sondage, ce qui représente 80 % (1774/2227) des praticiens privés dans l'Ouest canadien. Les praticiens ont consacré 73 % de leur temps aux petits animaux, 11 % à la pratique bovine et 9 % aux chevaux. Soixante-quatre pour cent des cliniques et 66 % des praticiens se consacraient exclusivement aux animaux de compagnie (petits animaux et chevaux); seulement 4 % des cliniques et 4 % des praticiens se vouaient exclusivement à la pratique pour animaux de consommation. Un total de 230 cliniques cherchaient à embaucher un autre vétérinaire, ce qui représente 223 postes équivalents temps plein (ETP). Avec un rajustement pour les cliniques qui n'ont pas répondu, le nombre total de postes vacants dans l'Ouest canadien pourrait être aussi élevé que 347 ETP avec 57 % des postes vacants en pratique des animaux de compagnie. Cependant, le sondage n'a pas évalué à quel point les cliniques étaient déterminées dans leurs tentatives d'embauche d'un autre vétérinaire salarié.

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Introduction

In 2007, the Canadian Veterinary Medical Association (CVMA) reported that there were approximately 10 000 veterinarians in Canada, 8000 of whom were private practitioners (1). The majority (59%) were practising on companion animals (CA), while 29% were involved in mixed animal (MA) practice and 12% in food animal (FA) practice. In the United States, 66.9% of all practitioners are exclusively CA oriented, whereas only 1.8% are in exclusively FA practice (2). A similar demographic exists in the United Kingdom, where 54.0% of the clinics are classified as SA, 41.6% MA, and 1.5% FA (3). Regardless of the country, more than 50% of veterinary practitioners or practices are dedicated exclusively to companion animals.

Anecdotal reports from practitioners in western Canada suggest that food animal caseloads decreased significantly after bovine spongiform encephalopathy (BSE) was reported in Canada in May 2003, and for many, their caseloads never recovered to pre-BSE levels. There are also reports that the declining demand for food animal services has been offset by an

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Table 1. Cross-tabulation (%) of the responding veterinary clinics by clinic size (number of veterinarians per clinic) and by province. The percentages in brackets refer to all the veterinary clinics in western Canada[a]

Clinic size	British Columbia	Alberta	Saskatchewan	Manitoba
1-person	45 (62)	37 (42)	43 (48)	44 (53)
2-person	32 (22)	29 (22)	28 (24)	22 (17)
3-person	11 (9)	17 (14)	14 (16)	15 (18)
4-person	12 (7)	17 (22)	15 (12)	19 (12)

[a] These data were obtained from the provincial veterinary directories published in 2006.

Table 2. Percentage (weighted) of time that practitioners in western Canada devoted to each species, by province ($n = 1774$)

	Small animal	Equine	Beef	Dairy	Swine	Other
BC	85	9	2	2	< 1	2
AB	67	11	15	2	2	3
SK	55	7	30	3	4	< 1
MB	66	7	13	5	11	< 1
Mean	73	9	11	2	2	3

Note: Columns and rows may not add up to 100 because of rounding.
BC = British Columbia, AB = Alberta, SK = Saskatchewan, MB = Manitoba.

increased demand for companion animal services. This increase may be related to the veterinarians having more time to cultivate the companion animal component of their practices and to an apparent overall increase in consumer spending on veterinary services for pets.

The objectives of this survey were to determine the number of hours practitioners in western Canada work per week, the allocation of their time across species, and the practices' hiring intentions for veterinary associates.

Materials and methods

Survey design and administration

A 1-page survey, consisting of 7 questions, was sent to 1099 veterinary clinics listed in the provincial veterinary directories of the 4 western provinces. Questions 1–3 requested background information on each clinic: clinic name, postal code, and practice radius (km). Question 4 sought data on each veterinarian in the practice: college and year of graduation, employment status (full-time, part-time, or casual), average number of hours worked per week, and percentage of time spent on each species. Questions 5–7 inquired as to whether the clinic was looking to hire another veterinarian, and if so, for how many months had they been looking and was the new associate(s) to replace someone who had left the practice, increase the number of veterinarians in the practice, or both.

A database of all the clinics and veterinarians in western Canada was compiled from the veterinary directories of British Columbia (BC), Alberta (AB), Saskatchewan (SK), and Manitoba (MB). The directories included all graduates up to and including the 2005 graduates. There were 1099 clinics, representing 2227 practitioners, and the breakdown of clinics by province was as follows: BC (486), AB (382), SK (120), and MB (111).

In June 2006, a personalized covering letter was mailed to all clinics advising them of the survey and that their regional Schering-Plough Animal Health (SPAH) representative would be assisting in its administration. The SPAH representatives provided the practice owners with a copy of the survey, which the owners could return to the representative, return directly to us via mail or fax, or complete online; the online service was provided by Insightrix Inc. (Saskatoon, Saskatchewan). The number of responses over the ensuing summer months was lower than expected ($n = 303$) and no further contact was made with the clinics until late September when a 2nd copy of the survey was mailed to all nonresponders. Nonresponders were contacted again in October and November by fax or e-mail.

Statistical analyses

At the completion of the survey the data were analyzed using statistical analysis software (Statistix, Version 8.1; Tallahasee, Florida, USA). A combination of descriptive and analytical statistics was used to assess the data at a significance level of $P < 0.05$ (two-tailed).

Each clinic provided data on the average number of hours each veterinarian worked per week and the percentage of time they allocated to each species. Veterinarians were then categorized by practice type according to the following criteria: CA practitioners devoted 100% of their time to small animals (SA) and/or horses; MA practitioners devoted 1% to 50% of their time to food animals; and FA devoted ≥ 50% of their time to food animals.

The total number of hours worked at each clinic and the amount of time apportioned to each species was also calculated. The same criteria for classifying the veterinarians were used to categorize the practices as CA, MA, or FA. Lastly, the percentage of time devoted to each species by all the veterinarians in western Canada was determined by dividing the total number of hours worked on each species by the total number of hours worked by all the practitioners.

Clinic vacancy data were reported as the number of vacancies, making no distinction between a part-time, full-time, or multiple position hire. Vacancies were also reported as full-time equivalents (FTEs), where a FTE is a veterinarian working ≥ 35 h/wk.

Results

Clinic data

Surveys were received between June 20 and December 18, 2007 from 706 (64%) clinics, representing 80% (1774/2227) of the practitioners in western Canada. Table 1 compares the survey response rate by clinic size and province, to the breakdown of clinics as determined from the provincial veterinary directories. These data show that there was a bias towards the 1-person practices being under-represented.

The clinic response rates by province, were: BC 60% (291/485), AB 67% (259/385), SK 71% (84/119), and MB 65% (72/111). Practices ranged in size from 1 to 13 veterinarians. The breakdown of clinics by size (number of veterinarians/practice) was as follows: 1-person, 41%; 2-person, 29%; 3-person, 14% and ≥ 4-person, 16%. A similar distribution was generated after normalizing the data to FTE positions: ≤ 1 FTE, 41%; > 1 to ≤ 2 FTEs, 31%; > 2 to ≤ 3 FTEs, 13%; > 3 to ≤ 4 FTEs, 8% and > 4 FTEs, 7%. Clinics average

Table 3. Frequency distribution of the number and percentage of full-time equivalent (FTE) vacancies in western Canada.

Vacancy (FTE)[a]	Frequency of vacancies	Percent of vacancies	Total FTEs
0.20	1	0.4	0.2
0.25	2	0.9	0.5
0.40	1	0.4	0.4
0.50	63	27.4	31.5
0.70	1	0.4	0.70
0.75	1	0.4	0.75
1.00	128	55.7	128.0
1.50	11	4.8	16.5
2.00	21	9.1	42.0
2.50	1	0.4	2.50
Totals	230	100.0	223.0

[a] Total FTEs" were calculated by multiplying the "vacancy (FTE)" by the "frequency of vacancies." Full-time equivalent (FTE) ≥ 35 h/wk of work.

2.2 [95% confidence interval (CI) = 2.1–2.4] veterinarians/practice and 2.0 (95% CI = 1.9–2.1) FTEs/practice.

Sixty-four percent (n = 451) of clinics were exclusively CA practices, whereas 4% (n = 27) were exclusively FA practices. Two-hundred and fifty-five (n = 255) MA and FA practices apportioned their time to each species as follows: small animal, 42%; beef cattle, 31%; equine, 12%; dairy, 6%; swine, 6%, and other, 3%.

Practitioner data

The practitioners (n = 1774) were categorized as follows: CA 66%, MA 19%, and FA 15%. While 66% of practitioners spent 100% of their time on companion animals (SA and horses), only 4% spent 100% of their time on food animals. Table 2 shows the average amount of time practitioners devoted to each species by province. British Columbian veterinarians spent 94% of their time attending to companion animals while veterinarians in Saskatchewan devoted 62% of their time to companion animals. Practitioners in western Canada devoted 73% of their time to small animals, 11% to beef cattle and 9% to horses.

Work weeks ranged from 1–100 h with a mean of 39 h (95% CI = 38–40) but this varied by practice type ($P < 0.001$): CA 36 h, MA 44 h, and FA 47 h. Most (74%) veterinarians worked full-time (≥ 35 h/wk), the remainder (26%) worked on either a part-time (< 35 h/wk) or on a casual basis. The percentage of practitioners who worked full-time varied by the type of practice ($P < 0.01$): CA 67%, MA 86%, and FA practitioners 88%.

Employee vacancies

There were 230 clinics looking to hire an associate and the vacancies ranged from 0.2 FTE to 2.5 FTEs. Companion animal practices had the greatest (P = 0.019) number of vacancies (n = 130), followed by MA (n = 70), and FA (n = 29). There were only 7 vacancies (5.5 FTEs) in exclusively FA practices. Large practices (≥ 4 veterinarians) were twice as likely as small practices (≤ 3 veterinarians) to have a vacancy (95% CI = 1.3–2.9; P = 0.002). The percentage of clinics, by province, reporting ≥ 1 vacancy was: AB — 35%, BC — 33%, MB — 26%, and SK — 28% (P = 0.42). Table 3 shows the range in vacant FTE positions (0.2 FTEs — 2.50 FTEs) along with the number (%) of vacancies by FTEs. If vacancy data were extrapolated to include the nonresponding clinics, western Canada could have had as many as 347 vacant FTEs [223 FTEs × (1099/706)].

Table 4. Number (percent) of veterinary clinics looking to replace a veterinarian in the practice, increase the number of veterinarians in the practice, or both

	CA	MA	FA	Totals[a]
Replace	38 (29)	21 (30)	4 (14)	63 (28)
Increase	59 (45)	30 (43)	17 (59)	106 (46)
Both	33 (25)	19 (27)	8 (28)	60 (26)
Totals	130 (57)	70 (31)	29 (13)	229 (100)

[a] One practice did not provide data for this question.

Food animal practices had the longest standing (P = 0.02) vacancies, mean of 13.2 mo, followed by the MA (9.7 mo), and CA practices (6.8 mo). The length of time that clinics had been looking to hire did not differ by province (P = 0.21). Large clinics (≥ 4 veterinarians) had been looking to hire for an average of 6.1 mo versus 9.2 mo for the small clinics (P = 0.02). Table 4 provides a breakdown of the types of vacancy (replacement, increase, or both) by practice type.

Discussion

Two-thirds of the 1099 veterinary clinics in western Canada participated in the survey, with similar response rates from all 4 provinces. Based upon the veterinary directory database, ~50% of veterinarians worked in a 1-person practice and ~25% in 2-person practices. In general, the 1-person practices were less likely to have participated in the survey (Table 1) and this is unlikely to have occurred by chance alone. Perhaps the 1-person practices lacked the time to complete the survey or they were less likely to have been looking to hire another associate and were, therefore, less likely to have responded to the survey. This lack of interest, or dissonance, has the potential to bias the data if the characteristics of interest in the target population differ between the responders and nonresponders (4). This potential bias should be considered when extrapolating the vacancy rates to the entire profession in western Canada.

A recall bias may have also skewed the data relating to hours worked per week and time spent on each species. Conceivably, veterinarians' recollections of their annual workload could have been biased by what they did most recently. This may be particularly true of the MA and FA practitioners because food animal practice is very seasonal. However, the direction and magnitude of such a bias would be difficult to predict because most respondents replied between June and early December, a period that spans both a slow and a busy time for food animal practice. It is unlikely that a recall bias would have markedly changed the key finding that 73% of practitioners' time was spent on small animals and 9% on horses. Two-thirds of the practitioners indicated that they devoted 100% of their time to companion animals and hence allocating their time to either SA or horses would have been straightforward. Whether the actual percentage of time spent on companion animals is 65% or 80% is perhaps moot, because the over-arching conclusion is that

practitioners in western Canada devoted most of their time to companion animals, a trend that appears to be on the increase.

If the veterinary profession approximates a free marketplace, then the number of practitioners and amount of time they spend on a particular type of practice is a surrogate indicator of consumer demand for that service. In 1961, there were 2266 registered veterinarians in Canada and ~10% classified themselves as SA practitioners (5). By the mid-1970's, a 3rd of Canada's 3000 veterinarians were in "urban" practice (6). More recently (2008), 58.9% of Canada's 2865 veterinary clinics were classified as companion animal (7), which closely mirrors the 64% reported in our study. If these historical Canadian statistics apply to western Canada, then the proportion of veterinarians who classify themselves as solely CA practitioners has increased 6-fold over the last 45 y. Furthermore, veterinarians in MA and FA practices are now devoting 54% of their time to small animals and horses.

The finding that almost as much time was devoted to horses as beef cattle is of interest, particularly because western Canada accounts for $>$ 87% of the nation's beef cattle (8). Furthermore, the increasing demand for companion animal services may be a harbinger of things to come. The number of farms in Canada has been on the decline since 1941 (9) and this trend is unlikely to change in the foreseeable future. This is significant because consolidation in the poultry and swine industries has resulted in an overall reduction in the number of veterinarians needed to service these industries. The degree of consolidation may even accelerate as the "baby boom" generation of livestock producers begins to retire; the average age of farm operators in Canada is 52 y and 41% of all operators are $\geq$ 55-years-old (10). As a result, the number of veterinarians required to service the livestock industry is likely to decrease. There are, however, 2 scenarios which could reverse the trend and result in a greater percentage of time spent on food animals. The first would be a radical change in rural practice, such as proposed by Nielson et al (11) in which, "The concept of rural community practice (RCP) envisages combining traditional services provided in a "mixed-animal" veterinary practice with an expanded portfolio of public-practice and communication services that meet the emerging animal, public, and ecosystem health needs of the collective community, not just those of animal owners." The second scenario is more market driven, higher livestock prices could have a pull through effect on increasing the demand for food animal veterinary services.

The high demand for companion animal services was echoed in the clinic vacancy rates. The CA clinics had the greatest number of vacancies; however, they also had the shortest vacancy period, which suggests that it may be easier to fill a CA vacancy. This may be related to a number of factors. Companion animal practices may be offering higher wages, more benefits, and a reduced workload. It is significant that the CA practitioners averaged 8–11 fewer hours per week than did their MA and FA colleagues; however, this may have been confounded by a greater percentage of CA workers working part-time. The shorter vacancy period may also be related to the fact that there is a much larger pool of practitioners involved in CA practice, which increases the odds of someone leaving a practice in search of another employer.

The high level of demand for CA services has implications for veterinary education, specifically the number and type (generalists or specialists) of practitioners who are needed to meet the future demands of the marketplace. We speculate that market demand will drive the profession towards becoming even more companion animal oriented and that over time veterinary practices servicing the food animal sector will evolve into 2 distinct types of practice. As the agriculture industry consolidates, the larger operators will seek out veterinarians who are specialists, a scenario that has already developed in the poultry, swine, and feedlot sectors. Only 4% of practitioners were exclusively FA oriented and we suspect that a similar percentage of practitioners will oversee most of the food animal production in western Canada. Mixed animal practitioners will continue to exist, providing emergency services to all livestock sectors and herd health based services to the smaller and mid-size producers. However, these practices will generate the majority of their net revenues from companion animals.

Concerns regarding a lack of FA practitioners and the "ever increasing demand for veterinarians in production animal health and food safety in North America…"(12) may be overstated. The demand for additional exclusively FA practitioners in western Canada was extremely low and these vacancies were dwarfed by the 130 vacancies in CA practice. While there were 99 vacancies in the MA and FA practices, 70% of these were in MA practices and by definition these practices devoted $<$ 50% of their time to food animals. Therefore, many of the MA clinics, and perhaps some of the FA practices, were probably seeking associates with a strong interest and skill set in companion animal medicine.

There are a number of important caveats that need to be considered when interpreting the vacancy data. The 1st is that those who responded to the survey may have been looking to fill a vacancy, and hence were more likely to be interested in completing the survey as opposed to the nonresponders who may not have been looking to hire. Therefore, extrapolating the vacancy rates to the nonresponders may not be appropriate. However, even if all the nonresponders are ignored, 706 clinics completed the survey and 230 reported looking for an associate(s), equating to 223 FTEs. The 2nd caveat is that the survey did not assess how much effort each practice put into attracting a new associate, that is, were they actively recruiting or were they content to wait until the ideal candidate came along. This is an important point because most veterinary graduates earn $\leq$ $65 000/y (13), which seems low given the apparent strong demand for veterinarians. This discordant relationship between low wages and high demand is not unique to western Canada. The United States appears to have a shortage of food animal practitioners (14), yet, the mean starting wages for 2007 graduates interested in SA practice exceeded the wages offered to their FA oriented counterparts (15).

More than 25% of practitioners were employed on a part-time or casual basis, which is consistent with data generated in other countries (16,17). It was also interesting that 30% of the clinics were looking to fill a part-time vacancy. The growing pool of part-time and casual workers probably fills an important employment niche for seasonal practices and practices that cannot justify hiring another FTE.

In summary, the veterinary profession in western Canada appears to be becoming increasingly companion animal oriented and this is unlikely to change in the foreseeable future. While there is a long-standing preoccupation within the veterinary profession to discuss the shortage of MA and FA practitioners (18–20), the survey shows that the majority of vacancies relate to companion animal practice. Additional studies are needed to determine how committed practice owners are to hiring new associates. CVJ

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