Exploring the value that Registered Veterinary Technicians bring to Ontario companion animal practices

Prepared for:

Ontario Association of Veterinary Technicians

January 21, 2019.

Introduction

Registered veterinary technicians/technologists (**RVTs**) are highly trained professionals working as an integral part of the veterinary medical team. Typically employed in private veterinary practice, an RVT works under the supervision of a licensed veterinarian, employing their knowledge and practical skills in animal health and welfare to deliver a gold standard of veterinary care.

The Ontario Association of Veterinary Technicians (**OAVT**) is both a professional association and regulatory body, with a membership of approximately 3,700 RVTs (OAVT registry). With a vision to enhance the health and welfare of animals, OAVT works to define a legislated scope of practice for RVTs as regulated professionals and respected animal healthcare providers to promote team excellence.

As outlined in the OAVT Act (Bill Pr3-1993), the core objectives of the association are:

1. To promote, maintain and regulate the professional standards of veterinary technicians and veterinary technologists;
2. To promote and further the education of veterinary technicians and veterinary technologists;
3. To sponsor, encourage and promote liaison with other individuals, associations and groups engaged in similar or related fields of activity; and
4. To promote the interests of the Association.

Use of the title 'RVT' requires that an individual has completed a Veterinary Technician program at an accredited college, passed the Veterinary Technician National Exam completed a criminal record check, and registered with the OAVT. Further, to maintain the "RVT" title, members must pay annual dues and complete 20 credits of continuing education every other year.

The current priority areas of focus for the OAVT are to:

1. Obtain official recognition of RVTs with Ontario legislation and regulations.
2. Promote recognition of RVTs as an integral part of the professional veterinary care team amongst public and veterinary communities.
3. Enhance the health and welfare of animals by strengthening the regulations of the RVT profession.
4. Support RVT members and represent the RVT profession through a strong and united association.

In line with these priorities, the OAVT conducted a study that objectively explored the value RVTs bring to their workplace. Specifically, the study compared RVTs with unregistered assistants or technicians who may be doing the same tasks without the same education or registered status. One study quantifying the economic impact (as measured by gross practice revenue) of having a credentialed veterinary technician on staff observed a positive relationship between the number of credentialed technicians employed and gross practice revenue[1]. The study concluded that the average veterinarian's gross revenue would be increased by USD$93,311 for each additional credentialed veterinary technician per veterinarian[1].

Crucially, while this study provided useful insights into the value of an RVT to clinical veterinary practice, the numbers used represent the U.S. system and are now nearly 10 years old. **The objective of the current survey-based study was to explore the function, level of utilization, impact, and ultimately the value that RVTs bring to Ontario veterinary practices.**

Methods

Definitions

Value

For the purposes of our study, 'value' was measured through a survey, which captured information on clinic revenue, staff employed, and other qualifying questions. Value was also assessed qualitatively using Likert and open-ended questions corresponding to RVT contribution towards risk management, efficiency, and client satisfaction.

RVT

The title 'RVT' was the primary population of interest and corresponds to veterinary technicians currently registered with the OAVT. 'Veterinary Technician' was used to define non-credentialed veterinary technicians, which was subdivided into (a) those that have graduated from an accredited institution, but are not currently registered with the OAVT, and (b) those who are assuming the regular duties of an veterinary technician in clinical practice, but have not graduated from an accredited institution and are not credentialed (i.e. on the job trained).

Project Scope

This study focused on only RVTs and veterinary practices operating on companion animals (small animals, mixed practices, and equine-only practices). Future studies may broaden this study methodology to include veterinary practices working in large animal, shelters and/or RVTs working laboratories/research facilities.

Survey Development

Based on the list of "Essential Competencies" set out in the Objects By-Laws Code of Ethics of the Ontario Association of Veterinary Technicians, a survey was constructed to gain insights into the current utilization levels of veterinary technicians and the value that they bring to Ontario veterinary practices. Specifically, the survey explored practice demographics (e.g. species served, number of clients, number of employees), services provided (e.g. dental, nutritional consulting, physical therapy), and the current functions of both RVTs and non-credentialed auxiliaries in veterinary practice. The final survey is included in **Appendix 1**.

Survey Deployment

In order to reach the required audience, namely companion animal practices in Ontario, a variety of dissemination channels were employed. The target person(s) for survey completion were office/business managers and/or managing veterinarians of the practice. Persons filling these roles were expected to have intimate knowledge of the functions that RVTs play in their practice, as well as the financial status of the business.

The online survey was disseminated by email through the listservs of the OAVT and the Ontario Veterinary Medical Association (OVMA). In addition, social media platforms (Facebook, LinkedIn, and Twitter) were employed to further increase the reach of the survey within Ontario.

Data Analysis

Survey response data was downloaded from the survey delivery system and assessed for accuracy. All survey attempts that were made by non-target audiences (e.g. RVTs, non-managerial employees) were excluded from the dataset. The dataset was imported into STATA 14 (STATA Corp, College Station, TX) for statistical analysis. Descriptive statistics were generated for all variables. Data was assessed for outliers. All values provided that were not plausible were treated as entry errors and excluded from analysis. Values for

practice gross revenue were converted into numeric form (e.g. some values entered as 1 million and not $1,000,000). Composite variables assessing the degree to which RVTs and non-RVTs performed tasks within the core competencies of the RVT profession were constructed. Briefly, each clinic received a composite score by summing the ordinal numeric response variables assessing the frequency (0 = never, 1 = sometimes, 2 = often, 3 = always) of all technician activities within the clinic (Appendix 1, questions 12 [RVTs] and 13 [non-RVT]). The variable annual gross revenue per vet (**RPV**) was generated by dividing gross revenue by full time equivalent veterinarians at the practice. RPV was used as the primary outcome, as it indicates efficiency in practice – veterinarians able to generate more revenue per unit time are more efficient. **It was hypothesized that higher levels and utilization rates of RVTs in the clinic would be associated with increased efficiency as measured by RPV.**

All relevant survey variables were screened for their association with RPV via univariable linear regression. Any variable with a liberal statistical association ($P < 0.2$) was explored further in multivariable linear regression. All continuous variables that did not have a linear relationship with the outcome of interest were categorized into quartiles for further analysis.

A multivariable mixed model was constructed using geographic practice location as a random variable to account for clustering of responses within region (e.g. the association of geographic region with service and pharmaceutical sales prices). A step-wise backwards elimination model building strategy was employed, with all variables identified in univariable analysis initially included in the multivariable model. Variables were eliminated from the final model if the P-values of their association with RPV were > 0.05, they were not a part of a significant interaction, and they did not play a confounding role in the association of other variables with RPV (e.g. change in coefficient values of >20%). Residuals were assessed for homogeneity of variance and normality. All outliers were identified and examined for biological plausibility.

Open-Ended Response Analysis

Responses to open-ended questions were collated and reviewed for completeness. Incomplete or illegible responses were removed from analyses. Responses were imported into the qualitative analysis software Atlas.ti (Version 8; Scientific Software Development GmbH, Berlin) for further analysis. Responses to each question were individually reviewed and coded (labeled with a word or statement descriptive of the meaning of the response). Codes were reviewed and synthesized to produce a series of key themes that represented the primary feelings, attitudes, and sentiments from respondents. The key themes are described in more detail below, with verbatim quotes from selected respondents inserted to provide context and the reader with a description of the theme in respondents' own words.

Results

In total, there were 509 attempts to complete the survey. Of these, 163 were included for analysis (e.g. were answered by managing employees or owners of the practice). The primary reason for exclusion from the survey was being a non-manager of the clinic (e.g. RVT attempting to fill out the survey). **Figure 1** outlines the role of survey respondents within their clinics.

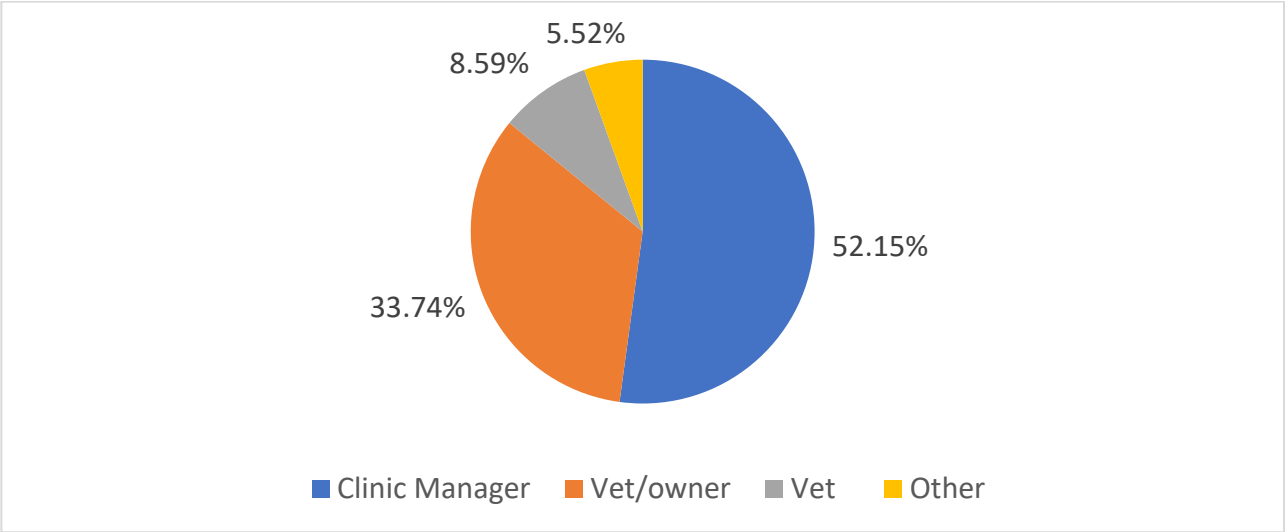

Figure 1. Overview of the role that each survey respondent had in their respective clinics.

The distribution of practice classes is outlined in **Table 1**. Overall, 90% of responding practices were small animal generalist practices, the target demographic of the survey.

Table 1. Distribution of practice classification for participating survey respondents.

Practice Class	Frequency	Percent
Equine	4	2.5
Mixed	4	2.5
Small Animal Specialty	8	5
Small Animal	147	90

Respondents represented every geographic region spanning across the province of Ontario, with most respondents from Toronto and south-central Ontario (**Figure 2**).

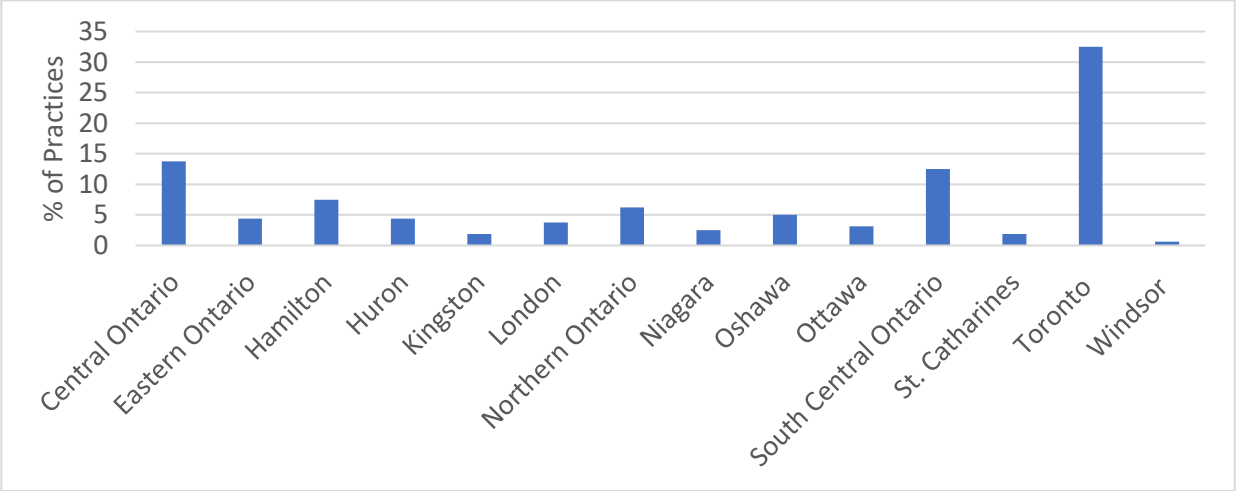

Figure 2. Respondent practice geographic distribution across Ontario.

Table 2 outlines some general practice demographics reported for participating respondents.

Table 2. Descriptive statistics of practice demographics for respondents

Variable	Mean	SD	Min	Q1	Median	Q75	Max
Practice Age	37.1	157.6	1	9	21	36	80
# Owners	1.9	3.2	0	1	1	2	20
Full-time Equivalent Vets	2.8	3.2	1	1	2	3	30
Full-time Equivalent RVT	3.2	3.7	0	2	3	4	40
Full-time Equivalent Non-RVT	3.5	8.9	0	1	2	4	100
RVT per Vet	1.4	0.94	0	1	1	1.7	5
# Clients	3304	4898	200	1344	2000	3500	25000
RVT Per Vet	1.39	0.94	0	1	1	1.71	5
Non-RVT Per Vet	1.23	1.01	0	0.5	1	2	5
Percent Technicians as RVTs	56.58	25.51	0	33.33	58.57	75	100

Most of the practices (>50%) were sole-owner practices with 2 or less (58% of practices) full time equivalent veterinarians on staff (**Figure 3**).

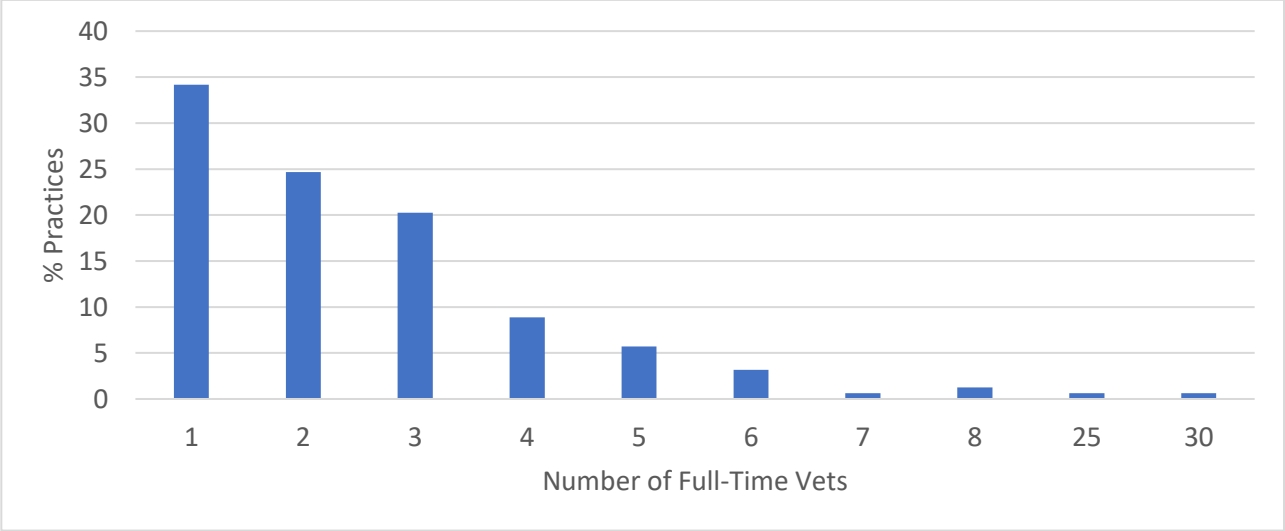

Figure 3. Distribution of full-time equivalent veterinarians across respondents.

Financial descriptive statistics are provided in **Table 3**. Gross yearly revenue (professional service charges plus sales) was reported by **112 respondents** and was an average of $1.5 million across practices. Average hourly rates were reported as $19.84 and $16.44 for RVTs and non-RVTs, respectively.

Table 3. Descriptive statistics of practice financial demographics (in Canadian dollars) for respondents

Variable	Mean	SD	Min	Q1	Median	Q75	Max
Gross Yearly Revenue	1,509,295	1,309,282	250,000	850,000	1,200,000	1,800,000	5,500,000
Yearly Revenue per Vet	601,538	262,771	125,000	435,667	559,536	725,000	1,300,000
RVT Hourly Rate	19.84	2.29	15	18	20	21	26
Non-RVT Hourly Rate	16.44	2.24	12	15	16	17	23

Most respondents agreed – 80% saw more value in RVTs over their untrained and uncredentialed counterparts, with 87% preferring RVTs over on-the-job trained technicians (**Table 4**). Interestingly, most (80%) found it hard to hire RVTs. Another interesting finding saw around one quarter of respondents reporting that veterinarians in their practice performed RVT duties often or always.

Table 4. The value of RVTs in the practices of respondents.

Question		Frequency	Percentage
RVTs have more value than non-RVT			
	No	27	19.71
	Yes	110	80.29
Prefer RVT over on-the-job trained technicians			
	No	18	13.04
	Yes	120	86.96
RVTs are difficult to find			
	No	28	20.44
	Yes	109	79.56
There are more opportunities for RVTs in my practice			
	No	58	42.65
	Yes	78	57.35
DVMs Perform RVT Duties			
	Never	16	11.68
	Sometimes	89	64.96
	Often	28	20.44
	Always	4	2.92

When asked about the frequency at which RVTs perform tasks related to the core competencies of their profession, the majority (>80%) of respondents reported that RVTs often or always did each of these tasks:

- performed radiographs,
- administered medications,
- restrained,
- administered anesthesia,
- performed diagnostic tests,
- performed dental scaling/cleaning, and
- assisted at surgery (**Figure 4**).

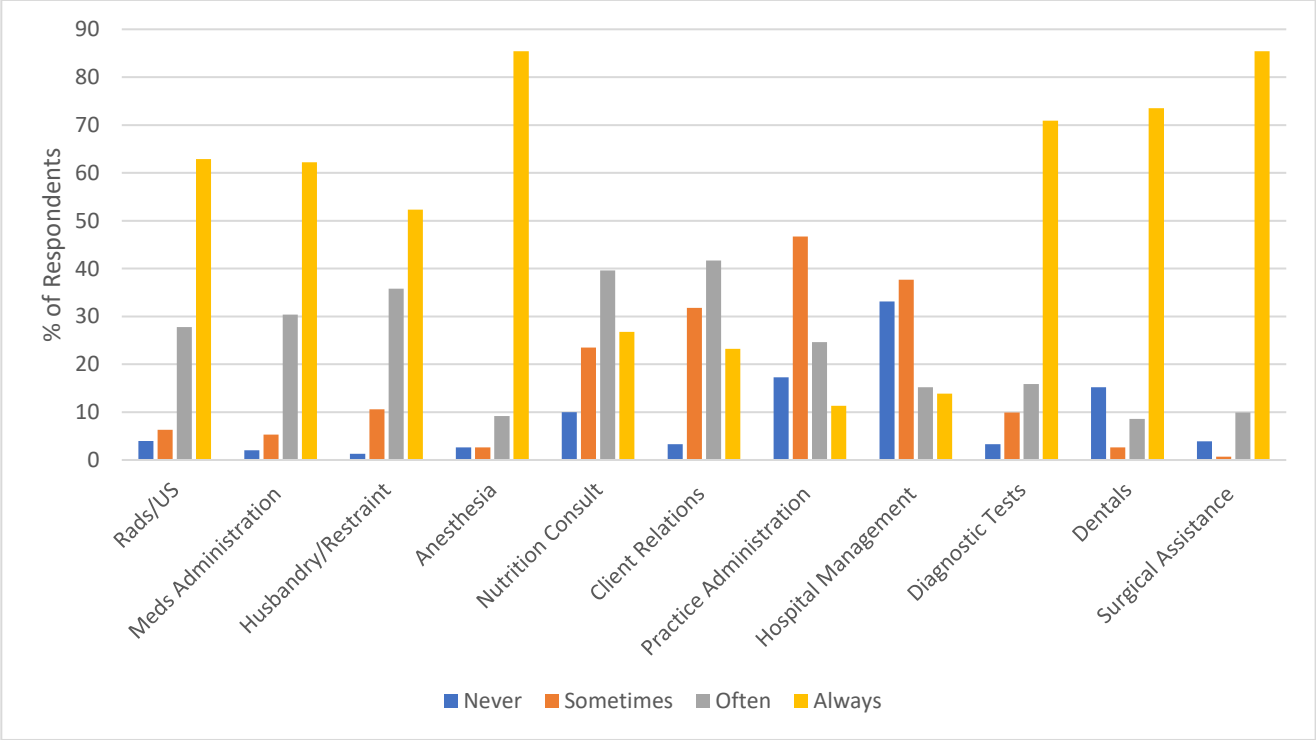

Figure 4. The frequency at which RVTs perform duties that are outlined in the RVT core competencies

Conversely, when asked whether non-RVTs performed tasks related to RVT core competencies, responses were far more variable, with most (>50%) practices reporting that non-RVTs rarely or never performed most of the RVT core competency functions (**Figure 5**).

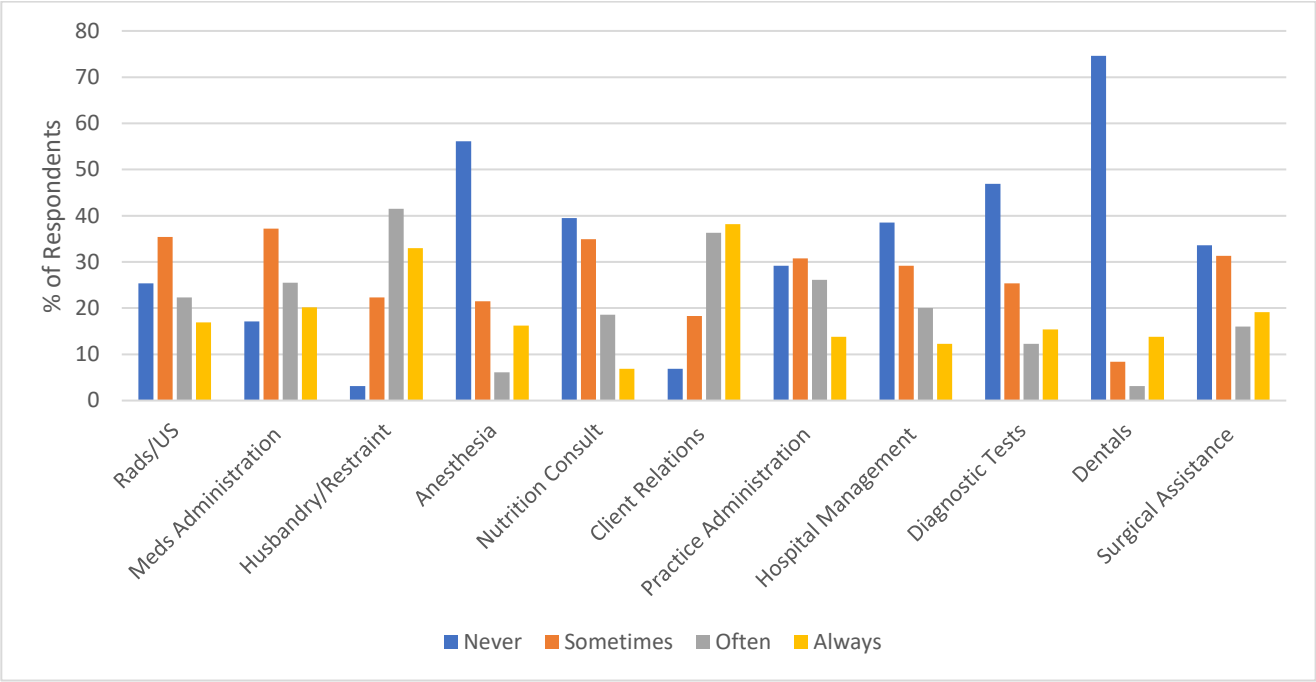

Figure 5. The frequency at which non-RVTs perform duties outlined in the RVT core competencies

Clinics varied in the types of services that they offered to their clients. Over 70% of survey respondents offered nutritional, dental, and client education services (**Table 5**).

Table 5. Services offered at respondent clinics

Service	Frequency	Percent
Nutrition	118	72.4
Dental	123	75.5
Rehabilitation	32	19.6
Therapeutic Laser	43	26.4
Extension/Client Education	131	80.4
Wellness Plans	55	33.7
Behaviour Counselling	70	42.9

Of the clinics that did offer the services outlined in Table 5, RVTs were often or always involved in their delivery in over 75% of respondent clinics for all but wellness plans and behaviour counselling (**Table 6**). Whenever value-added services are offered, RVTs are playing an integral role in their delivery.

Table 6. Frequency of RVT Involvement in clinic services

Service	Never	Sometimes	Often	Always
Nutrition	3.4	20.3	31.4	44.9
Dental	0.8	8.9	30.1	60.2
Rehabilitation	9.4	12.5	31.2	46.9
Therapeutic Laser	4.8	2.4	28.5	64.3
Extension/Client Education	0	12.2	30.5	57.3
Wellness Plans	15.1	22.6	32.1	30.2
Behaviour Counselling	14.3	37.1	30.0	18.6

Table 7 outlines the summary of composite core function scores across RVTs and non-RVTs. RVTs had much higher composite scores relative to non-RVTs (26.1 versus 15.5), indicating that veterinary clinics are using RVTs in a manner more in keeping with their core competencies, whereas non-RVTs fill less of these functions.

Table 7. Descriptive statistics of the level of RVT and non-RVT use relative to the core competencies of the RVT profession

	Average	SD	Min	Q1	Median	Q3	Max
RVT	26.1	5.6	0	23.5	27	30	35
Non-RVT	15.5	7.9	0	9	14	21	35

Univariable associations of interest

When screening variables for inclusion in the final model, there were a few interesting findings made. Note, these results present uncontrolled associations, and any conclusions that could be drawn must be made in the final, multivariable model after controlling for other factors that might affect the relationship. Interesting associations discovered in this stage included (**Table 8**):

- Clinics where the DVM frequently performed RVT duties had less annual revenue per veterinarian
- Clinics that frequently used RVTs to perform tasks within their core competencies had higher annual revenues per veterinarian
- Conversely, clinics that frequently used non-RVTs to perform tasks within the RVT core competencies had lower annual revenues
- There was an inverse relationship between the number of full-time veterinarians and clinic annual gross revenue per veterinarian – more vets meant lower revenue per vet in this study
- More RVTs per veterinarian, as well as a higher proportion of the technician staff being RVTs was associated with higher annual gross revenues per veterinarian.

Table 8. Univariable associations of interest with annual revenue per veterinarian

Variable	Estimate ($, annual revenue per vet)	Standard Error ($)	P-Value	95% Confidence Interval
DVM Performing RVT duties				
Never/sometimes	632,178	28,005	Ref	576678-687679
Often/always	505,078	49,690	0.02	406603-603554
RVTs Use to Relative* to core competencies				
<23.5	485,368	49436	Ref	387,355-583,381
23.5-27	571,428	50,378	0.225	471,548-671,308
28-30	656,566	46,899	0.014	563,583-749,549
>30	683,209	49,436	0.006	585,197-781,222
Non-RVTs Use relative to RVT core competencies*				
<9	670,340	62,275	Ref	546,674-794,007
9-14	654,224	50,407	0.84	554,125-754,323
15-21	582,675	41,395	0.22	500,470-664,879
>21	409,166	110,819	0.04	189,100-629,323
RVT Per Vet	154,433	21,921	<0.0001	110,976-197,889
Percent of Technicians as RVT	2,013	999	0.05	30-3995
Full-time Equivalent Veterinarians	-25,888	9,138	0.005	-43,997-[-7,778]

* **Note**: the values expressed here are composite numbers. Composite numbers were calculated by summing values for each sub-question within questions 12 for RVT and 13 for non-RVTs. Values were assigned as follows: 0 = never, 1 = sometimes, 2 = often, 3 = always. Scores could range from 0 - 36 (12 sub-questions x 3 [question max value]).

Multivariable regression

When making conclusions about relationships, it is important to control for other factors that may be affecting the relationship. For instance, imagine that we find single-vet clinics have a far lower revenue per veterinarian relative to multiple vet clinics. Further into our analysis, we notice that multiple-vet clinics are more likely to be in urban areas and can charge more for their services than their rural counterparts that are more likely to be single-vet practices. When you plug practice location into the model, the relationship between the number of vets and practice revenue is no longer significant. So, if we wouldn't have included practice location in the model, we may have made erroneous conclusions. This was just an example. Keep this in mind when comparing results from the multivariable analysis to those outlined in Table 8 for the univariable ("uncontrolled") analysis.

There was a significant interaction term between the number of full-time veterinarians practicing at the clinic and the frequency at which they performed RVT duties. **Single veterinarian clinics experienced the most significant increase in gross annual revenue per veterinarian when their veterinarians rarely performed RVT duties ($966,918 versus $611,570, P = 0.0001). This trend was also significant in two veterinarian clinics, with those reporting that vets rarely performed RVT duties having annual gross revenues per vet of $605,585 versus $393,880 for clinics where the veterinarians often performed RVT**

duties (P = 0.02). In larger clinics, the relationship was not significant (P = 0.27), although there was a numeric trend in the same direction as clinics with fewer veterinarians (**Figure 6**).

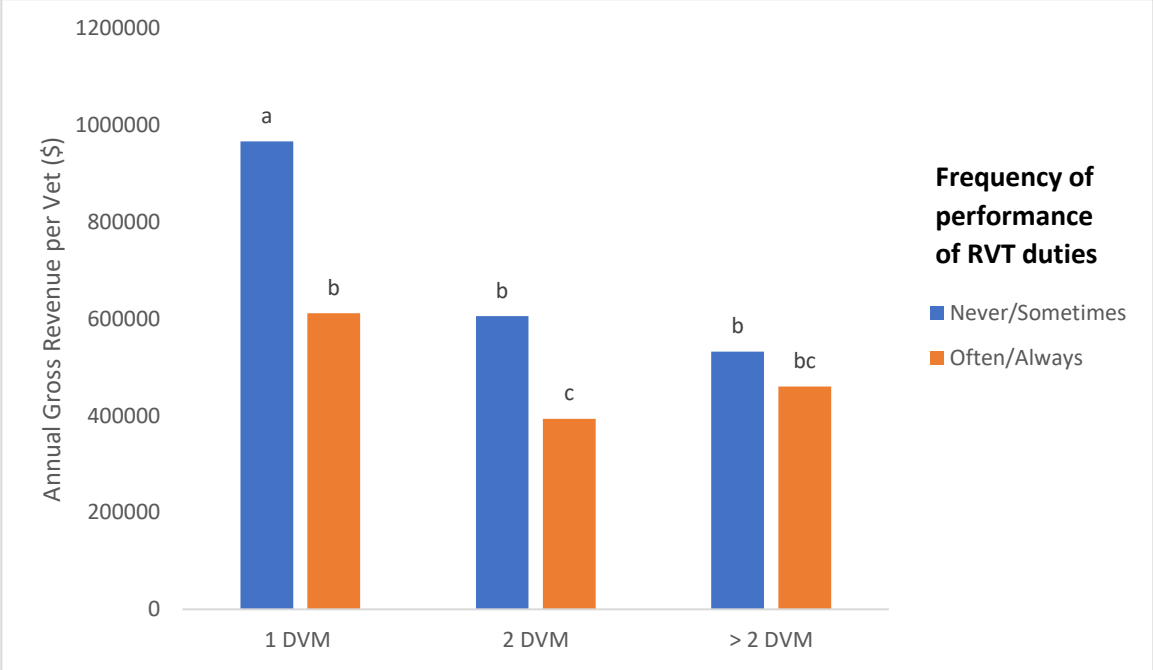

Figure 6. Annual gross revenue per veterinarian ($) stratified by number of full-time veterinarians and the frequency at which they perform RVT duties. Note: categories with differing superscripts are significantly different (P < 0.05).

The number of RVTs employed per full-time veterinarian was also significantly associated with an increase in gross annual revenue per vet. **For each additional RVT at the clinic, gross annual revenue per vet increased by $79,118 (FSE = $21,146, P < 0.0001, Figure 7)**.

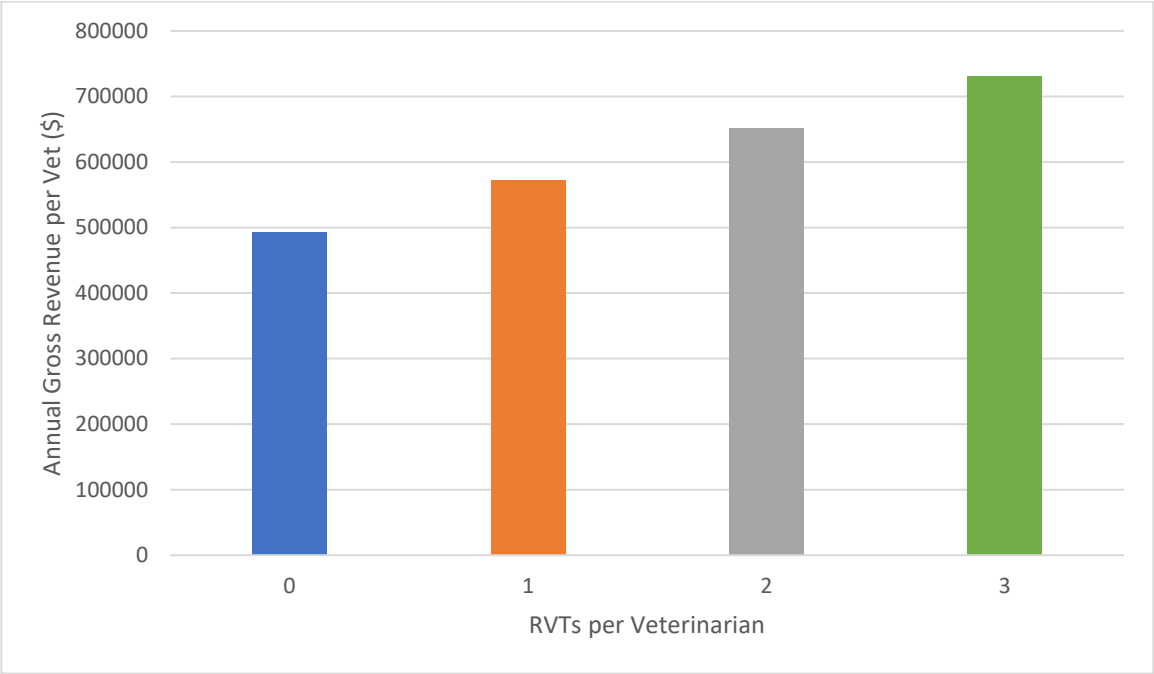

Figure 7. Linear prediction of annual gross revenue per veterinarian ($) by number of RVTs per full time veterinarian.

Note: each 1 unit increase in RVT/veterinarian is significantly associated with higher revenue per veterinarian (P = < 0.0001)

In addition, as RVT wages increased, so too did annual gross revenue per veterinarian. **Specifically, clinics who paid their RVTs over $21 per hour earned $122,342 more gross revenue per vet per year relative to clinics who paid their RVTs $15 or less (P = 0.03)**.

The class of practice participating in the survey also had a significant effect on annual gross revenue per veterinarian. Relative to small animal only clinics, specialty clinics participating in the study grossed $199,081 less per veterinarian per year (P = 0.04). Mixed animal clinics tended (P = 0.08) to gross less ($139,325 per veterinarian per year) than small animal clinics, although this was not a statistically significant difference.

Bringing it all together

Results from the open-ended questions are outlined in Appendix 2 and are highlighted below.

Perceptions of RVTs

- Most (>80%) found RVTs have more value than non-RVTs
- Most (>85%) preferred an RVT over an on-the-job trained technician
- Most (80%) said it was hard to find RVTs
- Even split - 57% thought there were more opportunities for RVTs in their practice

Duties of RVT - Who Performs them?

- Almost 25% of clinics said that their vets often or always perform RVT duties
- RVTs are far more likely to perform duties within RVT core competencies than non-RVTs

Effects on Annual Gross Revenue Per Vet

- Clinics where vets often or always perform RVT duties make less money per vet, and this is especially true in one- or two-vet practices
- Clinics that best-utilized RVTs (relative to core competencies) tended to make more money per vet, though this relationship disappeared on multivariable analysis - more study is needed!
- Clinics that had non-RVTs performing tasks within the core competencies of RVTs made LESS money per vet, though this relationship disappeared on multivariable analysis - more study is needed!
- There was a STRONG positive association between annual gross revenue per vet and the number of RVTs per vet - **each extra RVT per vet increased gross revenues per vet by over $78,000**
- The more RVTs are paid per hour, the higher the clinic gross annual revenue per vet
- **Economic effects were only seen for RVTs (NOT their non-credentialed counterparts)**

Discussion

The Value of RVTs

Survey respondents overwhelmingly value the expertise, compassion, and professionalism that RVTs bring to their clinic. Although most clinics do employ non-credentialed technicians for some technical tasks, they prefer RVTs. The following quote from one respondent provides a good example of common feelings towards RVTs:

> *"RVT's bring professionalism to the clinic and create excellent relationships with clients. Their broad knowledge and expertise are only part of what they bring to the job - they bring empathy to patient care and build confidence in our pet owners."*

RVTs – "We love 'em, but they're hard to find and keep"!

Despite this, most clinics found it quite difficult to hire and retain RVTs long-term. In most cases, the remote or rural location of a clinic was viewed as a barrier to hiring RVTs. Interestingly however, the concern over cost of living and the average RVT wage was raised as a barrier to attracting RVTs in more densely populated locations. Other respondents felt they did not know where to look, or how to attract RVTs when needed. Many cited that RVT retention is also a significant challenge, yet many others noted finding experienced RVTs is a challenge; perhaps suggesting that RVTs may be leaving the profession altogether, rather than finding new places for employment. A few good examples from respondents include:

> *"The industry is in crisis. The average working life expectancy for a technician is 5 years. Relatively low pay with long hours seem to be the main contributors to this issue. In our practice, we pay extremely well, pay for additional training (like VTS, etc.), pay for conferences...none of this seems to have helped."*

> *"The veterinary world is generally very underpaid, it is hard to attract RVT's - A) because there are not enough of them B) because we cannot afford to be very competitive due to our location, low socio-economic status of demographic and multiple clinics in the same area C) Great RVT's burn out and leave the industry D) don't want to hire a bad RVT - and there are quite a few graduating."*

How well are RVTs used?

Roughly half of all respondents thought that there were further opportunities for veterinary technicians in their practices. Quantitative survey results indicate that most respondents were using RVTs for functions within their core-competencies; however, there is room for improvement in certain areas, namely:

- Nutrition consulting,
- Client relations,
- Practice administration and hospital management,
- Behaviour counselling,
- Wellness plans, and
- Rehabilitation services.

Though there was an association between clinic annual revenue per veterinarian and the total composite score of RVT use relative to core competencies, this relationship was not significant in the multivariable analysis. One interesting take-away from the survey is that respondents tended to use RVTs much more

frequently than their uncredentialed technicians. Many open-ended answers prove that practices value the professionalism and training that RVTs bring to the job:

> *"They have been trained and taught many things that other, non RVT staff simply do not know. RVTs have gone through the program and have been graded on their knowledge and skill. When you hire an RVT you know you are getting someone who had to pass an actual test before they achieved their title."*

> *"They are professionals, they have a certified education, have passed a certification and are required to complete [continuing education] credits, they are up to date and able to aid me greatly. Having RVTs allows me as a veterinarian to focus more on my cases. They have a better understanding of why they do what they do and so are able to problem solve better if something is not working or responding."*

The economics of RVTs in practice

Overall, responding clinics that had more RVTs per veterinarian generated higher annual gross revenues per full-time veterinarian. Every increase in RVTs per veterinarian was associated with a $78,000 increase in gross revenue per veterinarian. Practices with higher RVT per veterinarian ratios are likely operating more efficiently – RVTs allow veterinarians to focus on medical, surgical, and consulting services. Lending credence to this theory is the finding that, for one and two vet practices (58% of practice respondents), for those practices whose veterinarians performed RVT duties often or always, practice revenue was significantly lower. This relationship was not significant for practices with three or more veterinarians; however, a general trend was there. Further study is warranted to ascertain the specific reasons for this association. Here's an example of one quote that embodies this finding:

> *"Helping us see more patients by allowing DVM team to focus on their roles as DVMs. We follow a high-density scheduling where 2 RVTs are paired with each DVM so we can still schedule 30-minute routine appointments with clients, but the RVT spends a good deal of time with client during that appointment which, in essence, allows DVM to essentially see 2 patients in the amount of time it might take another DVM at another facility to see 1. They simply help us cycle through patients more efficiently without compromising care."*

Finally, it is worth noting that those practices that paid their RVTs $21 or more per hour generated more annual gross revenues per veterinarian relative to practices that paid RVTs $15 or less. Remember that this is after controlling for the effect that geographic location has on practice revenue (e.g. cost of living in larger urban centers have higher salary and operational costs than those practices in rural areas). One potential explanation could be that clinics paying RVTs more per hour have higher RVT retention rates leading to a larger workforce of experienced, efficient RVTs. However, this hypothesis could not be supported by the current survey data though.

Simply put, clinics that are resistant to assigning RVTs more responsibilities and remunerating them at higher rates should be made aware of the economic benefits for their practices should they choose to more fully utilize RVTs.

What about non-credentialed technicians?

Although there were positive associations between RVTs per veterinarian, no such relationship was found when analyzing non-RVTs. Numerically, annual gross revenue per veterinarian actually decreased when:

- non-RVTs perform tasks within RVT core competencies,
- there were higher numbers of non-RVTs per veterinarian.

One key takeaway from this is that having more hands to assist in procedures does not necessarily translate into higher practice efficiency. Economic efficiency comes when those extra set of hands have undergone the substantial training and certification of an RVT professional.

Conclusion

RVTs are highly trained and regulated experts that add value to the veterinary practices in which they work. This survey lends further support to earlier work that supports the assertion that employing a higher number of credentialed RVTs per veterinarian is associated wither higher clinic revenues (1). Communication efforts to support the RVT profession should stress that:

- clinics that employ more RVTs per veterinarian were more profitable,
- higher RVT wages were associated with higher gross revenues per veterinarian,
- when veterinarians take on more RVT duties, their clinic gross revenues per veterinarian are lower,
- the advantages of higher revenues associated with more RVTs is not seen when those technicians are non-credentialed
    - The education and credentialing process are likely contributing to the gains in efficiency and practice revenue

References

1. Fanning J, Shepherd AJ. Contribution of veterinary technicians to veterinary business revenue, 2007. *JAVMA*. 2010;236(8):846. https://www.diabetes.org.uk/professionals/position-statements-reports/statistics.

Appendix 1: Final Survey

What is this survey about?

You are being asked to participate in a survey conducted by the Ontario Association of Veterinary Technicians (OAVT) to better understand the various roles non-veterinarians play in companion animal veterinary practices in Ontario. The primary objective is to explore the roles and value Registered Veterinary Technicians bring to clinical practice, and how this differs from other staff who may perform veterinary technician duties for the practice.

Definitions:

For the purposes of this survey, Registered Veterinary Technicians (RVTs) are those who have graduated from an accredited institution, have passed the Veterinary Technician National Exam, and are currently registered with OAVT. Other Non-RVT Technician Staff are those non-DVM and non-RVT staff who perform the duties of a veterinary technician (i.e. those who are on-the-job trained, veterinary assistants, and those who have graduated from an accredited institution but are not currently registered with OAVT).

Who Should Complete This Survey?

Please note, this survey is intended to be filled out once per veterinary clinic by someone who has knowledge of the clinic's services, revenue and roles and functions of veterinary staff, such as the primary clinic manager/owner. All participants will receive a full report on the outcomes of this survey.

The survey will remain open from June 18th, 2018 to September 30th, 2018 and is expected to take approximately 20 minutes to complete. Please keep in mind that confidentiality is of the utmost importance to us, and any information you share will be strictly confidential and completely anonymized for future aggregate reports.

Honorarium: **After completing this survey you may enter a draw to win an iPad or 1 of 15 pre-paid VISA cards (worth $50 each).**

Thank you for your time and participation,

Sincerely,

Rory Demetrioff

Executive Director & Registrar, Ontario Association of Veterinary Technicians

Clinic and Staff Demographics

Please note, this survey is intended to be filled out once per veterinary clinic, by someone who has knowledge of the clinic's services, revenue and roles and functions of veterinary staff, such as the primary clinic manager/owner.

* 1. Which one of the following titles best describes you? Please choose all that apply.

- [ ] Veterinarian
- [ ] Business owner
- [ ] Clinic manager
- [ ] Registered Veterinary Technician
- [ ] Other (please specify)

Clinic and Staff Demographics

* 2. Please select the primary classification of your practice.

- ☐ Small animal*
- ☐ Small animal specialty**
- ☐ Mixed animal***
- ☐ Food animal
- ☐ Equine

*Dogs, cats, and/or exotics

**At least one veterinarian at the clinic is certified in an AVMA-approved specialty in veterinary medicine

***Defined as veterinarians treating small animals combined with equine or food animals

Clinic and Staff Demographics

3. Approximately what proportion of your patients are each of the following species? (Note: answers should sum to 100)

Dogs and cats

Birds

Reptiles (e.g. snakes, lizards)

Small pet mammals (e.g. rabbits, guinea pigs, hamsters)

Horses

Food animals (e.g. cattle, pigs, chickens)

Clinic and Staff Demographics

4. How long has your practice been in operation?

Number of years:

5. In what town/city is your clinic located?

6. How many veterinarians currently own the practice?

Number of owners:

7. In the past 12 months, approximately how many active clients did your practice serve?

Number of clients:

Clinic and Staff Demographics

* 8. How many of each of the following currently work full-time (35+ hours) at your clinic? Please place a number beside each option:

Veterinarians

Registered Veterinary Technicians*

Other Non-RVT Technician Staff**

*__Registered Veterinary Technicians (RVTs)__ are those who have graduated from an accredited institution, have passed the Veterinary Technician National Exam, and are currently registered with OAVT.

**__Other Non-RVT Technician Staff__ are those non-DVM and non-RVT staff who perform the duties of a veterinary technician (i.e. those who are on-the-job trained, veterinary assistants, and those who have graduated from an accredited institution but are not currently registered with OAVT).

The role of non-DVMs in your practice

Definitions:

Registered Veterinary Technicians (RVTs) are those who have graduated from an accredited institution, have passed the Veterinary Technician National Exam, and are currently registered with OAVT.

Other Non-RVT Technician Staff are those non-DVM and non-RVT staff who perform the duties of a veterinary technician (i.e. those who are on-the-job trained, veterinary assistants, and those who have graduated from an accredited institution but are not currently registered with OAVT).

9. Approximately how many of the following staff would you say your clinic requires?

Registered Veterinary Technicians

Other Non-RVT Technician Staff

10. Over the past 5 years, approximately how many of each of the following staff would you say you have hired?

Registered Veterinary Technicians

Other Non-RVT Technician Staff

11. Over the past 5 years, approximately how many of each of the following staff would you say have left/quit your practice (not including temporary leaves such as maternity leave)?

Registered Veterinary Technicians

Other Non-RVT Technician Staff

The Role of Registered Veterinary Technicians in Your Practice

The following questions present a series of competencies and functions that Registered Veterinary Technicians (RVTs) may serve in clinical practice. With each question, try to give an honest estimate of the proportion of time that your RVTs are devoting to each activity.

12. How frequently would you say a Registered Veterinary Technician in your practice performs each of the following tasks/services?

	Never	Sometimes	Often	Always
Obtaining and processing diagnostic radiographs and ultrasound	○	○	○	○
Administration and dispensation of medications and treatments as prescribed by the attending veterinarian	○	○	○	○
Providing husbandry, restraint, and handling	○	○	○	○
Anaesthetic delivery and monitoring	○	○	○	○
Nutrition management (consultations with clients)	○	○	○	○
Client relations (booking appointments, reviewing DVM directives)	○	○	○	○
Professional practice administration (administrative, non-medical duties)	○	○	○	○
Veterinary hospital management (including HR duties, business logistics, and inventory)	○	○	○	○
Diagnostic laboratory tests (hematology, clinical chemistry, cytology, parasitology, urinalysis and microbiology)	○	○	○	○
Sanitation, sterilization, and disinfection controls and procedures	○	○	○	○
Dental cleanings (scaling and polishing)	○	○	○	○
Surgical preparation and assistance	○	○	○	○

The Role of Non-Registered Veterinary Technicians in Your Practice

13. How frequently would you say an other non-RVT technician staff* performs each of the following tasks/services?
Please skip if not applicable.

*Other Non-RVT Technician Staff are those non-DVM and non-RVT staff who perform the duties of a veterinary technician (i.e. those who are on-the-job trained, veterinary assistants, and those who have graduated from an accredited institution but are not currently registered with OAVT).

	Never	Sometimes	Often	Always
Obtaining and processing diagnostic radiographs and ultrasound	○	○	○	○
Administration and dispensation of medications and treatments as prescribed by the attending veterinarian	○	○	○	○
Providing husbandry, restraint, and handling	○	○	○	○
Anaesthetic delivery and monitoring	○	○	○	○
Nutrition management (consultations with clients)	○	○	○	○
Client relations (booking appointments, reviewing DVM directives)	○	○	○	○
Professional practice administration (administrative, non-medical duties)	○	○	○	○
Veterinary hospital management (including HR duties, business logistics, and inventory)	○	○	○	○
Diagnostic laboratory tests (hematology, clinical chemistry, cytology, parasitology, urinalysis and microbiology)	○	○	○	○
Sanitation, sterilization, and disinfection controls and procedures	○	○	○	○
Dental cleanings (scaling and polishing)	○	○	○	○
Surgical preparation and assistance	○	○	○	○

The Role of Registered Veterinary Technicians in Your Practice

14. In your own words, how do Registered Veterinary Technicians **RVTs**() add value to your practice:

15. Do you feel RVTs provide value to your practice over and above that of other non-RVT technician staff?

- ◯ Yes
- ◯ No

Why or why not?

16. Do you prefer to hire an RVT over someone who is on-the-job trained?

- ◯ Yes
- ◯ No

Why or why not?

17. Do you find it challenging to find an RVT for hire?

- ◯ Yes
- ◯ No

Why or why not?

The role of non-DVMs in your practice

18. How confident are you that your Registered Veterinary Technicians (**RVTs**) are being used to their full potential?

Not confident	Somewhat confident	Confident	Very confident
○	○	○	○

19. How often would you say that veterinarians in your practice perform duties that could be performed by an RVT?

Never	Sometimes	Often	Always
○	○	○	○

Please briefly explain your answer.

20. Do you feel that there are additional opportunities for the use of RVTs within your practice?

○ Yes

○ No

If yes, how?

21. Which duties do you find new hire RVTs require the most training on when integrating into your practice?

The role of non-DVMs in your practice

22. Below is a list of services that are offered by some veterinary practices. Please indicate which of the following services you currently offer.

	Currently Offered
Nutritional management program (e.g. assessment, diet and weight management programs, etc.)	☐
Dental health services (e.g. assessments/consultations, cleanings, etc.)	☐
Rehabilitation program (e.g. physical therapy, ultrasound, etc.)	☐
Use of therapeutic laser for non-rehab modalities (e.g. stomatitis in cats, pancreatitis and IBD, etc.)	☐
Demonstration of proper administration of medications to clients	☐
Development and administration of clinic annual wellness plan	☐
Behavioural assessment and/or counseling (e.g. anxious dogs, obedience, aggression, etc.)	☐

Copy of page: The role of non-DVMs in your practice

23. Below is a list of services that you identified as being on offer at your clinic. For each service, please indicate how involved your RVTs are in this service.

	Not involved	Sometimes involved	Often involved	Always involved
Nutritional management program (e.g. assessment, diet and weight management programs, etc.)	☐	☐	☐	☐
Dental health services (e.g. assessments/consultations, cleanings, etc.)	☐	☐	☐	☐
Rehabilitation program (e.g. physical therapy, ultrasound, etc.)	☐	☐	☐	☐
Use of therapeutic laser for non-rehab modalities (e.g. stomatitis in cats, pancreatitis and IBD, etc.)	☐	☐	☐	☐
Demonstration of proper administration of medications to clients	☐	☐	☐	☐
Development and administration of clinic annual wellness plan	☐	☐	☐	☐
Behavioural assessment and/or counseling (e.g. anxious dogs, obedience, aggression, etc.)	☐	☐	☐	☐

Basic Financial Questions

A major aim of this project is to gain a deeper understanding of the economic efficiency of veterinary practices, and how Registered Veterinary Technicians and other staff impact this efficiency. Keep in mind that confidentiality is of the utmost importance to us, and any information you share will be strictly confidential and completely anonymized for future aggregate reports.

* 24. In the past fiscal year, approximately what was your clinic's total gross revenue?

Gross revenue ($):

Notes on gross revenue:

Please only account for total revenue obtained through **clinic sales** (i.e. food, pharmaceuticals, other products) and **veterinary services** (i.e. surgeries, medical appointments, wellness consults etc.).

This survey is only concerned with revenue generated from veterinary-related activities. Please **do not** include adjustments that may be made to the income statement (i.e. income splitting, building ownership, personal auto use, or other personal deductions) or revenue associated with other services (i.e. dog grooming, kennels).

25. Where do you feel your RVT staff have the greatest impact on revenue?

Basic Financial Questions

26. On average, approximately how much are each of the following staff members paid on an hourly basis?

Registered Veterinary Technicians*:

Other Non-RVT Technician Staff**:

*__Registered Veterinary Technicians (RVTs)__ are those who have graduated from an accredited institution, have passed the Veterinary Technician National Exam, and are currently registered with OAVT.

**__Other Non-RVT Technician Staff__ are those non-DVM and non-RVT staff who perform the duties of a veterinary technician (i.e. those who are on-the-job trained, veterinary assistants, and those who have graduated from an accredited institution but are not currently registered with OAVT).

27. Please provide any other feedback you wish to share related to this survey.

Appendix 2. Thematic Results from Open-Ended Survey Questions

How do RVTs add value to your practice?

Survey respondents generally felt quite strongly that RVTs bring significant value to clinical veterinary practice. Respondents commonly made mention of the knowledge base and technical skills that RVTs possess right out of college; attributes that contributed to them being effective and efficient members of the practice team, with the ability to improve the efficiency of other team members (most notably, clinic veterinarians). However, the ability to perform specific technical tasks were not the only areas respondents highlighted. Respondents also commonly reported that RVTs bring significant value to the clinic in the form of building client trust and being leaders in client education and communication. A series of respondent answers are presented below:

"Our RVTs assist our DVM team to focus on DVM responsibilities by providing the care to our patients. We leverage our RVTs to help our DVM team see more patients and help them focus on diagnosing and treating, while the RVT team performs the technical and nursing duties as prescribed by the DVM. We would not be able to see as many patients in a DVM without the strong support of our RVT team."

"RVT's bring professionalism to the clinic and create excellent relationships with clients. Their broad knowledge and expertise are only part of what they bring to the job - they bring empathy to patient care and build confidence in our pet owners."

"Our practice utilizes RVTs to their fullest. We appreciate their knowledge and ability to deal with clients and all aspects of the practice. We do a lot of client education and they take on a major roll."

"Without an RVT, the hospital flow would be completely impaired. While it is true that some skills (such as animal restraint) can be taught, there are other skills that should only be taught in school (blood draws, cytology, urinalysis, radiographs etc). The value obtained in the knowledge that the person performing the task is trained, and going to do things appropriately, is immeasurable. They are invaluable!!!"

Do you feel RVTs provide value to your practice over and above that of other non-RVT technician staff?

A total of 109 respondents (80% of all respondents) agreed, while 28 respondents (20%) did not. When asked to elaborate and describe their answer, the primary themes surrounding "yes" responses related to the structured training and education RVTs receive. Overwhelmingly, respondents felt that the training RVTs provide them with the core knowledge and skills needed to competently perform technical

medical tasks and to support the regular functioning of the clinic. Respondents also often highlighted the added benefit of knowing RVTs are accountable to their association, have a defined scope of practice, and are required to take routine continuing education to maintain their skills. Lastly, numerous respondents noted that registration of their technicians instilled trust amongst their team members, and their clients, that RVT staff are technically trained as a professional. Some examples from respondents include:

"They have been trained and taught many things that other, non RVT staff simply do not know. RVTs have gone through the program and have been graded on their knowledge and skill. When you hire an RVT you know you are getting someone who had to pass an actual test before they achieved their title."

"They are professionals, they have a certified education, have passed a certification and are required to complete [continuing education] credits, they are up to date and able to aid me greatly. Having RVTs allows me as a veterinarian to focus more on my cases. They have a better understanding of why they do what they do and so are able to problem solve better if something is not working or responding."

Conversely, the primary theme surrounding "no" respondents was a belief that non-RVT staff have the ability to every bit as good as an RVT once in-clinic training had occurred. It is also important to note that several (n = 11) of these respondents noted that their technicians had been formally trained but had either been trained in a non-accredited institution, or had not taken, or passed, the OAVT registration exam.

Do you find it challenging to find an RVT for hire?

A total of 110 respondents (80% of all respondents) agreed, while 28 respondents (20%) did not. When asked to elaborate and describe their answer, the primary themes surrounding "yes" responses related to the clinic's geographical area. In most cases, the remote or rural location of a clinic was viewed as a barrier to hiring RVTs. Interestingly however, the concern over cost of living and the average RVT wage was raised as a barrier to attracting RVTs in more densely populated locations. Other respondents felt they did not know where to look, or how to attract RVTs when needed. Many cited that RVT retention is also a significant challenge, yet many others noted finding experienced RVTs is a challenge; perhaps suggesting that RVTs may be leaving the profession altogether, rather than finding new places for employment. A few good examples from respondents include:

"As an extremely busy clinic, we find new grads don't do well as it's hard to provide the mentorship needed. There seems to be less and less RVT's out there with several years' experience. Wage requirements have gone up considerably for RVT's with even no experience that our payroll can't support."

"The industry is in crisis. The average working life expectancy for a technician is 5 years. Relatively low pay with long hours seem to be the main contributors to this issue. In our practice, we pay extremely well, pay for additional training (like VTS, etc.), pay for conferences...none of this seems to have helped."

"The veterinary world is generally very underpaid, it is hard to attract RVT's - A) because there are not enough of them B) because we cannot afford to be very competitive due to our location, low socio-economic status of demographic and multiple clinics in the same area C) Great RVT's burn out and leave the industry D) don't want to hire a bad RVT - and there are quite a few graduating."

Do you feel that there are additional opportunities for the use of RVTs within your practice?

A total of 76 respondents agreed, while 58 respondents did not. When asked to elaborate and describe their answer, the primary opportunities "yes" respondents listed related to client education and communication; involvement in appointments, pre-exams and patient triage; clinic management and administrative duties; reception and inventory; nutritional assessment and consultation; rehabilitation programs. Some examples include:

"Even though they do a lot already, there is always room for additional duties. This makes the profession for the RVT more interesting, and for the veterinarian it gives more relief. feline castrations and more dentistry work, more initial history taking from clients, instructions for discharge routine surgery."

"If RVT's had the jurisdiction to run fluids on a farm, administer vaccinations, give sedation for the farrier/clipping - all without vet supervision."

Which duties do you find new hire RVTs require the most training on when integrating into your practice?

The primary themes relating to the duties requiring most training when hiring a new RVT were: interpersonal skills, technical proficiency, intrapersonal skills. Interpersonal skills such as client communication, ability to take a proper history from an oral consultation, and team communication

were identified as important areas needing improvement. Technical skills requiring improvement included: anesthesia, surgery preparation and monitoring, handling and restraint, radiograph positioning, blood collection, catheterization, and the speed with which these tasks are completed. Lastly, and perhaps most importantly, respondents noted that they needed to work with their RVTs to help them build confidence, integrate into the clinic culture, improved attitude. Some examples of respondent answers include:

"Depends on their level of experience. I have hired new grads but they do not have the technical skills we need for a smooth running of the day e.g. drawing blood, placing catheters, anesthesia monitoring. I realize these are skills that come with experience, which means our hospital may not be the best fit for a new grad given the role we expect them to play. I have also hired "experienced" RVTs but their experience has been different at other facilities where they did not have the same level of responsibility, for example, with anesthesia monitoring or dental scaling, so we have had to train. We've experienced that training someone with some technical experience in this role has gone well because they've picked it up quickly, but other times, it is like training a new grad because they've never used the technical skills they were trained to use and have "lost" them over time."

Where do you feel your RVT staff have the greatest impact on revenue?

Respondents listed several specific tasks and roles that RVTs perform that bring greatest impact to clinic revenue. These can be categorized into three main themes: service communication/promotion, technical duties/tasks, improved efficiency. In many cases, respondents noted that RVTs play an important role in communicating with clients about the importance and benefits of veterinary services. Respondents highlighted that RVTs promote the routine wellness programs and services offered and can be strong advocates for additional services such as dentistry and nutritional consultation, which generate considerable revenue for the clinic. Other respondents felt that RVTs bring most value in the completion of technical tasks, such as conducting appointments, prepping and assisting in surgery, and completing frequent, common procedures, such as bloodwork. Many other respondents suggested that the biggest monetary impact RVTs can have is to take on tasks and roles (such as the ones previously listed) that free up time for the veterinarians to focus on their specific roles. In doing so RVTs allow the higher earning team members to complete the tasks only they can perform, while ensuring all other tasks are competently and efficiently completed. A few examples of respondent answers include:

"Client education- building trusting, lasting relationships with clients in turn sells product and services. Time Management- having skilled RVT's allows doctors to spend time on what they are trained to do and not technical tasks client education, allowing the doctor to focus on making diagnosis and treatment plan and then the RVT carries out that plan."

"Helping us see more patients by allowing DVM team to focus on their roles as DVMs. We follow a high-density scheduling where 2 RVTs are paired with each DVM so we can still schedule 30-minute routine appointments with clients, but the RVT spends a good deal of time with client during that appointment which, in essence, allows DVM to essentially see 2 patients in the amount of time it might take another DVM at another facility to see 1. They simply help us cycle through patients more efficiently without compromising care."

"Our RVTs have the greatest impact on revenue in the area of surgical procedures. They are involved in the admitting, the actual procedure (prep/induction/monitoring), the discharge and the follow-up. They are the ones that bond with the clients and ensure their return. Our techs have their own appointments for vaccine boosters and blood draws so can see clients outside of DVM appointments and sell product."