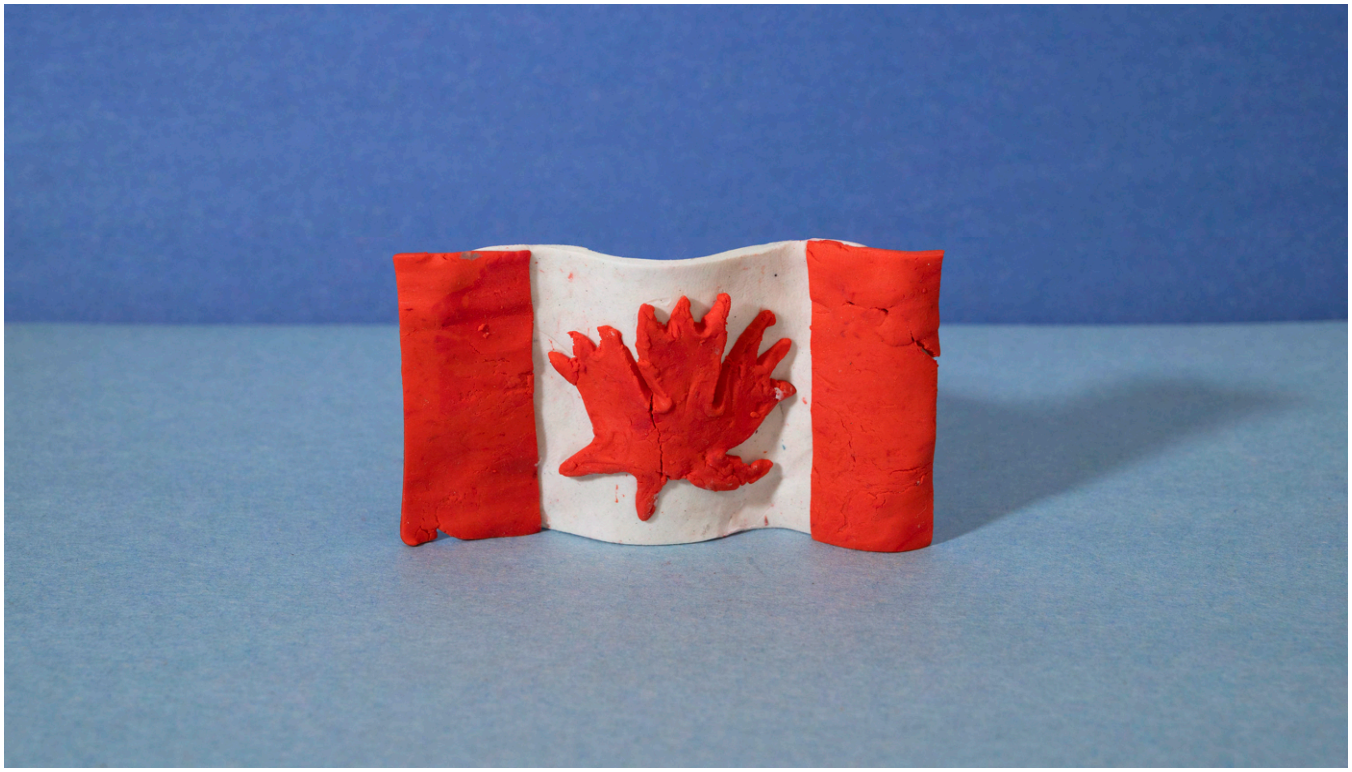


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Completing the Results of a Pan-Canadian Survey on the State of Oncology Education in Family Practice Residency Programs: Comparison of One Province to the Rest of Canada

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Abstract

Introduction: The incidence and prevalence of cancer in Canada is rising, and family physicians will increasingly provide care at all stages of a patient's cancer journey. This highlights the importance of adequate oncology education in family practice training programs. A survey study done in 2017 to assess the state of oncology education in Canadian family practice residency programs did not include the University of British Columbia (UBC). The purpose of our study was to obtain this data for the UBC family practice residency program and to compare the results to those from the rest of Canada.

Methods: A web-based survey was emailed to UBC family practice residents and program directors. The survey assessed depth of the oncology curriculum, current teaching methods and perceived gaps. Results were compared to the non-UBC survey data and interpreted with descriptive statistics.

Results: 54/348 UBC family practice residents and 10/20 program directors completed the survey. 3% of UBC and 7% of non-UBC family practice residents felt their program adequately prepared them to care for oncology patients. There was uniformity among all participants in ratings of perceived importance of a list of oncology topics expected to be covered in training for residents. There was discordance in the perceived frequency of topics taught between all family practice residents and program directors.

Conclusion: This study can inform further development of oncology specific curriculum in family practice residency programs. Further study is required to understand areas of discordance between family practice residents and program directors.

INTRODUCTION

Cancer has now surpassed cardiovascular disease as the leading cause of death in Canada, with incidence and prevalence continuing to increase.[1] In light of this, survival rates of roughly 60% from all cancers translates to ongoing care needs for cancer survivors where responsibility falls heavily on family doctors as they follow patients longitudinally through this process. Despite this growth, undergraduate and postgraduate medical curriculums remain largely unchanged regarding oncology teaching, and oncology education in undergraduate and family practice residency training is limited.[2-6] A Canadian study of oncology education in internal medicine and family practice residency programs found that oncology teaching comprised less than 10% of the curriculum, which focused largely on topics including cardiology, gastroenterology, respirology, and nephrology.[3] Only 12.5% of family practice residents reported more than one week of training in oncology, and 75% of the respondents reported that only 15% of their family practice curriculum focused on cancer.[3] Another Canadian study that surveyed 677 medical educators and learners from internal medicine and family practice found that none of the 8 training programs had a mandatory oncology rotation or a formal oncology curriculum, and only 2 programs had oncology specific objectives for their residents.[4]

The pattern of medical training programs lacking oncology education is not unique to Canada. A US study found that 97% of the PGY-3 internal medicine and family practice residents acted as primary care physicians for adult cancer survivors at some point during their training, yet only 27% reported formal education in oncology care.[6] The residents reported "rarely" feeling comfortable caring for oncology patients, despite being halfway through their postgraduate education.[6] In the US, there is a declining number of physicians training in preventative medicine for oncology care despite an increasing need.[7]

A study done in 2017 aimed to evaluate the adequacy of oncology education across Canadian family practice residency programs by surveying family practice residents and program directors in 16 of 17 Canadian medical schools.[2] As the University of British Columbia (UBC) was not included in the initial survey due to a logistical issue, the goal of this study was to assess the current state of oncology education in the UBC family practice residency program and compare and contrast the results to those of the national survey. The results will help characterize gaps in training and opportunities to capitalize on programs that are more successful in achieving these objectives.

METHODS

Survey and data collection

A survey tool (Qualtrics) was used as the platform for this self-administered, web-based survey. The research was approved by the UBC Cancer Research Ethics Board and targeted the UBC family practice residents (174 per year) and the 20 UBC family practice program directors. The survey was sent out by email from a UBC employee that was not involved with the research project. Data collection was completed between October 3 and November 15, 2019.

The framework for the survey used in this study was developed with best practices to educational survey development.[8,9] A group of Canadian physicians including a family practice residency program director, a chair and sitting member of the Family Physician Cancer Care Committee of the College of Family Physicians of Canada, a general practitioner oncologist, five medical oncologists, two radiation oncologists and one surgical oncologist were involved in its development. The original survey was reviewed for face and content validity and pilot tested by another group of 5 family physicians prior to dissemination. It was distributed in 2017 to all Canadian medical schools, excluding UBC, due to the original electronic platform not being compatible with research ethics guidelines at that time.

The survey further subclassified participants into program director or resident, and residents into their respective year and location of residency training. The survey assessed clinical exposure to oncology care where residents and program directors reported their perceived optimal method of teaching given the choices of didactic, case-based and clinical exposure. Given a list of relevant oncology topics, residents and program directors reported whether or not a specific topic was taught, and they were asked to rate the perceived importance of each topic to oncology care on a 5-point Likert scale, where 1 is least important and 5 is most important.

The survey data was collected by the UBC Qualtrics survey tool and exported to Microsoft Excel. Descriptive statistics were used for analysis.

The data from the national study was released to the study group in order to compare and contrast the non-UBC and UBC data.

REFERRALS TO MENTAL HEALTH PROFESSIONALS

The states and the District of Columbia agree that if a mental health referral is made, the patient may not receive the prescription until the mental health professional confirms the patient's eligibility.[18,19] However, there is interstate variability in the statutory constriction of these provisions, which may hold important implications for patient care and may contribute to health disparities."[17] (**Figure 2**).

The four DWDA jurisdictions—Oregon, Washington, District of Columbia, and Maine—require a "counseling" referral to confirm that the patient is capable and not suffering from impaired judgment if, "in the opinion of the attending physician or the consulting physician, a patient may be suffering from a psychiatric or psychological disorder or depression causing impaired judgement[.]"[6,18] It has been reported that Oregon wrote this safeguard into the law to ensure that an individual is competent and their request for PAD is not stemming from a treatable mental illness.[(19)] California uses a similar protocol for confirming a patient's capacity; however, the ELOA revises the statutory language to instead require referrals if "there are indications of a mental disorder[.]"[10]

Vermont, Colorado, and New Jersey also require referrals on a case-by-case basis. However, these states simply require referrals if either the attending physician or the consulting physician believes the patient may not be capable of making an informed decision.[9,11,14] Their statutes omit any explicit reference used by other jurisdictions related to a "*mental disorder*" or a "*psychiatric or psychological disorder or depression.*" Some have argued that these less-specific referral requirements are superior because they allow physicians to observe the patient's functioning relative to the capacity standards without searching for a specific mental disorder.[18]

Notably, the legislative history of Vermont's Patient Choice at End of Life Act reflects that when the bill was introduced in 2013, it required referrals

if, in either physician's opinion, the individual "may be suffering from a mental disorder or disease, including depression, causing impaired judgment."[20] However, this language was removed from the bill during legislative deliberation.[9,20]

Unlike the other eight physician aid in dying statutes, Hawaii's OCOCA makes referrals mandatory for *every* patient that makes a request for the medication—not just when there are indications of a mental disorder or psychiatric or psychological disorder or depression causing impaired judgment.[13] This decision came after a long, ongoing debate over whether states should require a referral for every patient.[18,19] Some argue that a mandatory referral requirement may create an unnecessary burden—both on the patient and the mental health professionals—and delay the process.[21,22] Some also worry that the mental health professionals' ethical and moral views on PAD may influence their assessments.[19] Others argue it is necessary to ensure that each individual is properly assessed to confirm that their request for medication is not rooted in a disorder or condition that can be treated.[23]

Additionally, mental health professionals in Hawaii are required to confirm whether the patient is "suffering from undertreatment or nontreatment of depression or other conditions which may interfere with the patient's ability to make an informed decision[.]"[13] The language "*undertreatment or nontreatment*" may be in response to historical concerns that some psychiatrists believed that the presence of a mood disorder should automatically result in a finding of incapacity to consent to PAD.[23] By focusing on the level of treatment of depression or other conditions, Hawaii seeks to avoid any presumptions that the mere presence of a condition precludes the evaluator from finding that the patient is capable and has the ability to make an informed decision.[13]

RESULTS

Demographics

The survey was completed by a total of 54 UBC family practice residents and 10 UBC program directors for a response rate of 15.5% (54/348) and 50% (10/20), respectively. This group will be termed UBC respondents. The national response rate was 17% (150/847) for residents and 89% (17/19) for program directors. This group will be termed non-UBC respondents. The demographic characteristics of all respondents are shown in **Table 1**.

Across all of Canada, second-year residents had a higher response rate compared to first-year residents, with this gap being more prominent in the non-UBC data. The majority of UBC residents (70%) were trained in urban sites, 15% in rural sites, and 15% in both.

Clinical Exposure

At UBC, 85% of residents and 90% of program directors stated that there was no mandatory oncology rotation/block (**Table 2**).

This was similar to the non-UBC data, with only 7% of residents stating a mandatory oncology block and no program directors reporting one. Only 3% of UBC residents believed there were oncology-specific learning objectives/competencies available to them, and all UBC program directors were unsure. At a slightly higher frequency, 11% of non-UBC residents and 29% of non-UBC program directors stated that these objectives exist in their programs. When asked if they felt their program adequately prepared them for caring for oncology patients, 3% of UBC residents and 20% of UBC program directors reported "yes" compared to 7% of non-UBC residents 13% of non-UBC program directors. Clinical exposure was overwhelmingly chosen as the optimal method of teaching oncology compared to didactic teaching and small group/case based (**Table 3**).

Of the UBC respondents, 54% of residents and 80% of program directors chose this method, similar to non-UBC respondents, where 65% of non-UBC residents and 80% of program directors were also in agreement.

Mean Importance

To understand the perceived importance of specific oncology topics, each topic was rated on a 5-point Linkert scale by residents and directors (**Table 4**).

The top two most important topics for all residents were performing pap smears and screening for common cancers, as represented by a mean importance of 4.9/5. Other relevant topics that scored 4.6 and higher included cancer prevention, breaking bad news, approach to patients with increased risk of cancer, appropriate cancer patient referrals, palliative care, approach to cancer diagnosis, and managing common complications. The majority of these high-yield topics were reported by UBC residents to be covered at a frequency of over 60%. However, managing common complications and appropriate referrals to cancer specialists were perceived by UBC residents to be taught at a low frequency of 24% and 37%, respectively, which differs from the UBC program directors' perception of 70% and 60%, respectively. Overall, out of 20 topics listed, 16 scored 4.0 or higher.

There was a relative uniformity among all groups, as shown by the linear trend, in perceived importance of each oncology topic (**Figure 1**).

There was minimal variation between the mean importance ratings, with the most and least important topics being rated as such by all UBC and non-UBC participants. This was in contrast to the difference between frequency of oncology topics taught between all residents and directors (**Figure 2**).

There was more discordance, however, amongst the topics UBC residents and UBC program directors perceived to be taught, compared to the non-UBC respondents. For 14 of the 20 topics, the difference was larger in the UBC data than the non-UBC data.

DISCUSSION

This study confirms the gaps identified in oncology education are consistent across all Canadian family practice programs. Low satisfaction reported with the overall level of oncology education and a low proportion of UBC and non-UBC respondents feeling prepared to care for oncology patients highlights a growing need for further training. When comparing UBC residents' and program directors' perceptions of oncology topics taught, residents reported topics being covered less frequently than program directors for most topics. This difference was less pronounced amongst the non-UBC data which could be partly attributed to the UBC program being highly distributed, with 18 different sites, making developing a consistent, identical curriculum across all geographical areas challenging. It may be beneficial to compare the various Canadian family practice residency oncology curriculums and the intended learning outcomes to UBC to evaluate any obvious differences. This may also point to the need to ensure residents are aware of curricular maps including objectives and instructional methods.

The evaluation objectives from the College of Family Physicians of Canada list several oncology-related proficiencies that are expected to be met by the end of training, but the UBC curriculum is less well defined with a more broadly stated oncology domain. The lack of clear objectives may contribute to UBC residents reporting a low frequency of highly important topics being taught. These identified knowledge gaps emulate those reported in the national study and provide useful information for targeting topics that require more focused attention, and for creating a starting point for curriculum adjustments.

This survey was based on consensus opinion of oncology topics felt to be most important to primary care. Those topics identified by currently practicing family physicians were similar to many of those recognized by UBC and non-UBC respondents, thus clearly indicating a nation-wide agreement on what oncology-related objectives warrant a larger focus [10]. The challenge to implementing change to the curriculum in order to address these needs may include cost, time constraints for teaching other topics, and the ill-defined role of the family physician in providing oncology care.[6] Utilizing the learning gaps identified in the Canadian studies may help guide formal and defined oncology-specific learning objectives/competencies and may aid in improving learning through clinical experience or education sessions. The former idea was supported in 2014 and 2016 by Tam et al. who found that the majority of post-graduate learners favoured a standard set of oncology objectives, and subsequently developed a set of national oncology objectives for medical students.[4,11] In 2020 Easley et al. suggested that joint education sessions with cancer specialists and tight collaboration between future family doctors and oncologists may help improve competency with a focus on the topics deemed of highest importance.[10] The competency-based curriculum in the UBC program has focused on developing approaches to clinical presentations and utilizing resources rather than objective-based evaluation. As such, rather than eval uation of specific topic knowledge, further investigation into residents' perceived ability to find the necessary information and think critically through topics they are less familiar with is needed in order to assess the optimal avenue for oncology education translating to patient care.

Table 1: General characteristics of survey respondents

Characteristics	Surveyed groups			
	UBC Residents (N=54)	UBC Program Directors (PDs) (N=10)	Non-UBC Residents (N=150)	Non-UBC Program Directors (PDs) (N=17)
Gender				
Male	20 (37%)	6 (60%)	36 (24%)	5 (29%)
Female	33 (61%)	3 (30%)	111 (74%)	12 (71%)
Other	1 (2%)	1 (10%)	3 (2%)	0 (0%)
Program year				
PGY-1	22 (41%)	N/A	32 (21%)	N/A
PGY-2	31 (57%)	N/A	113 (75%)	N/A
PGY-3	1 (2%)	N/A	5 (3%)	N/A
Number of years in practice				
<10	N/A	3 (30%)	N/A	2 (12%)
10-20	N/A	1 (10%)	N/A	4 (24%)
>20	N/A	5 (50%)	N/A	11 (65%)
Area of current clinical practice*				
Comprehensive care	34 (63%)	8 (80%)	116 (77%)	12 (71%)
Focused in oncology	2 (3%)	1 (10%)	3 (2%)	1 (6%)
Focused in other area	18 (33%)	1 (10%)	31 (21%)	4 (24%)
Location of current practice/training				
Urban	38 (70%)	5 (5%)	103 (69%)	5 (29%)
Rural	8 (15%)	3 (30%)	25 (17%)	0 (0%)
Both	8 (15%)	2 (20%)	22 (15%)	12 (71%)

*Anticipated area of practice listed for residents

Table 2: Status of current oncology education in family practice training programs

Questions	Surveyed groups			
	UBC Residents (N=54)	UBC PDs (N=10)	Non-UBC Residents (N=150)	Non-UBC PDs (N=17)
Is there a mandatory oncology clinical rotation/block?				
Yes	3 (6%)	1 (10%)	10 (7%)	0 (0%)
No	46 (85%)	9 (90%)	118 (79%)	15 (88%)
Unsure	5 (9%)	0 (0%)	2 (1%)	0 (0%)
No Response	0 (0%)	0 (0%)	20 (13%)	2 (12%)
Are there oncology learning objectives/ competencies?				
Yes	2 (3%)	0 (0%)	17 (11%)	5 (29%)
No	24 (44%)	0 (0%)	66 (44%)	9 (53%)
Unsure	28 (52%)	0 (0%)	47 (31%)	1 (6%)
No Response	0 (0%)	10 (100%)	20 (13%)	2 (12%)
Is the oncology education provided adequate?				
Yes	5 (9%)	2 (20%)	10 (7%)	3 (18%)
No	28 (52%)	8 (80%)	120 (80%)	12 (71%)
Unsure	20 (37%)	0 (0%)	0 (0%)	0 (0%)
No Response	1(2%)	0 (0%)	20 (13%)	2 (12%)
Does your PGME adequately prepare you to care for cancer patients?				
Yes	2 (3%)	2 (20%)	11 (7%)	2 (13%)
No	17 (31%)	2 (20%)	74 (49%)	3 (18%)
Unsure	14 (26%)	6 (60%)	45 (30%)	10 (59%)
No Response	19 (35%)	0 (0%)	20 (13%)	2 (12%)

Table 4: Oncology topic perceived importance and prevalence of current teaching

Topics	Surveyed groups							
	UBC Residents (N=54)		UBC PDs (N=10)		Non-UBC Residents (N=150)		Non-UBC PDs (N=17)	
	MI	CT	MI	CT	MI	CT	MI	CT
Performing pap smears	4.9	85%	4.9	100%	4.9	99%	5.0	100%
Screening for common cancers	4.9	89%	4.7	100%	4.9	100%	4.9	100%
Cancer prevention	4.8	78%	4.6	80%	4.7	95%	5.0	93%
Breaking bad news	4.7	93%	4.7	90%	4.8	96%	5.0	93%
Approach to patient with increased risk of cancer	4.7	72%	4.5	90%	4.7	92%	4.7	93%
Appropriate referrals to cancer specialists	4.7	37%	4.5	60%	4.2	52%	4.3	73%
Palliative care	4.6	85%	4.9	100%	4.6	89%	5.0	100%
Approach to diagnosis	4.6	61%	4.7	90%	4.5	89%	4.7	93%
Managing common complications	4.6	24%	4.3	70%	4.0	40%	3.6	40%
Providing psychosocial support	4.5	41%	4.6	50%	4.4	75%	4.8	87%
Performing skin biopsy	4.5	74%	4.3	90%	4.3	85%	4.9	100%
Post-treatment surveillance for recurrence	4.5	26%	4.5	40%	4.1	36%	4.0	47%
Managing common treatment side effects	4.5	28%	4.5	60%	4.0	39%	4.4	47%
Prognosis of common cancers	4.3	22%	4.1	20%	3.8	44%	3.6	20%
Management of long-term complications from treatment	4.2	11%	4	10%	3.7	18%	3.4	13%
Epidemiology of common cancers	4.0	54%	3.8	40%	3.9	80%	3.2	67%
Approach to cancer treatment	3.8	20%	3.9	50%	3.1	34%	3.7	64%
Performing fine needle biopsy	3.6	15%	3.5	0%	2.8	15%	2.9	21%
Approach to staging cancer	3.4	15%	3.2	20%	2.9	24%	2.5	20%
Performing bone marrow biopsy	2.4	0%	2.6	20%	1.8	3%	1.5	0%

MI: Mean importance; CT: Currently taught

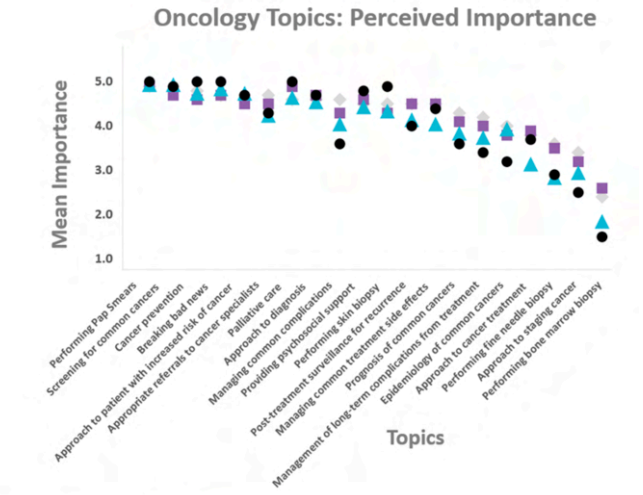


Figure 1: Perceived importance of oncology topics

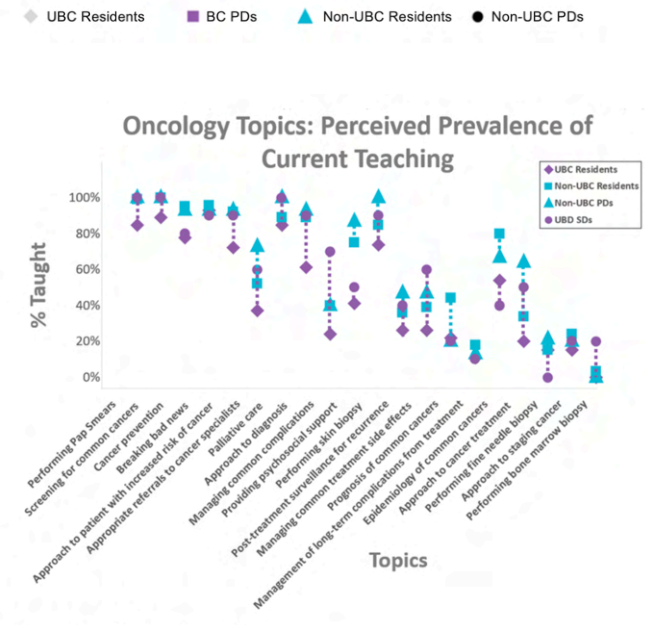


Figure 2: Perceived prevalence of teaching for each oncology topic

Table 3: Optimal method of teaching oncology to family practice residents

Optimal Method of Teaching	Surveyed groups*			
	UBC Residents (N=54)	UBC PDs (N=10)	Non-UBC Residents (N=150)	Non-UBC PDs (N=17)
Clinical Exposure	29 (54%)	8 (80%)	84 (65%)	12 (80%)
Didactic Teaching/Lectures from Specialists	15 (28%)	3 (30%)	37 (29%)	5 (33%)
Small Group/Case-Based Learning	6 (11%)	0 (0%)	32 (25%)	4 (27%)

*Survey respondents could list up to three responses, so responses do not add up to 100%.

AUTHORSHIP STATEMENTS AND RESIDENT CONTRIBUTION

Alanna Janz, UBC medical student, led the data collection and assisted with the interpretation of the findings. She led the literature review and took a lead role in writing the manuscript and disseminating the final report.

Lisa Wang, family practice resident SMH site, assisted with the development of the research question and adapted the survey tool for the current study. She reviewed the Ethics Review application, assisted with the data collection and reviewed the report.

Svetlana Bortnik, family practice resident SMH site, assisted with development of the research question and conduction of the literature review. She took a lead role in data analysis and reviewing the written report.

Jaspreet Garcha, family practice resident SMH site, assisted with the literature review and in reviewing the written report.

Vincent Tam is one of the creators of the original national-wide survey. He conducted the nationwide survey across all the other residency programs in the country and performed the subsequent data analysis. He was an editor in the written report.

Steven Yip is one of the creators of the original national-wide survey. He conducted the nationwide survey across all the other residency programs in the country and performed the subsequent data analysis. He was an editor in the written report.

Paris-Ann Ingledew is the principal investigator who supervised the BC-wide portion of this study. She is also a contributor to the original nation-wide study. She was an editor in the written report.

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POTENTIAL CONFLICTS OF INTEREST:

None.

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