Canadian Medical Education Journal

Scientific Reports

An assessment of family medicine residents' and early career physicians' perceptions of their training: a survey from a single Canadian university

Évaluation des perceptions des résidents en médecine familiale et des médecins en début de carrière concernant leur formation : un sondage mené dans une université canadienne

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Published ahead of issue: Jul 14, 2025; published: Sept 10, 2025. CMEJ 2025, 16(4) Available at https://doi.org/10.36834/cmej.81301

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Abstract

Background: To determine if family medicine residents and recent graduates believe that the current residency program is sufficiently meeting their training needs for independent practice.

Methods: In 2024, a brief online survey using Likert scale and open-text questions evaluated McGill University residents' and graduates' level of agreement that family medicine residency training allows them to develop the necessary clinical knowledge and skills across nine domains. Medians and interquartile ranges were calculated to understand agreement and consensus of responses. Latent content analysis was conducted on qualitative responses. **Results:** Across 10 sites, 31 of 158 senior residents responded and 59 of 452 residency graduates participated. With high levels of agreement and consensus, participants reported their learning needs were being met in most domains of care. However, graduate responses suggest that the program did not meet their learning needs for Indigenous health and procedural skills. Additionally, resident responses had low consensus around care of vulnerable and marginalized populations.

Conclusions: Learner needs may not be met in three domains of care within the family medicine residency program, a finding that aligns with the recent call for curricular reform in Canada. These results could help focus curriculum reform priorities to areas of greatest need.

Résumé

Contexte : Déterminer si les résidents en médecine familiale et les récents diplômés estiment que le programme de résidence actuel répond adéquatement à leurs besoins de formation en vue d'une pratique autonome.

Méthodes : En 2024, un bref sondage en ligne comportant des questions à échelle de Likert et des questions ouvertes a été utilisé pour évaluer dans quelle mesure les résidents et diplômés de l'Université McGill s'accordent à dire que la formation en médecine familiale leur permet de développer les connaissances et compétences cliniques nécessaires dans neuf domaines. Les médianes et les intervalles interquartiles ont été calculés pour analyser le niveau d'accord et le degré de consensus. Une analyse de contenu latent a été réalisée sur les réponses qualitatives.

Résultats : Dans les 10 sites, 31 des 158 résidents de dernière année ont répondu, ainsi que 59 des 452 diplômés. Les participants ont indiqué, avec un haut niveau d'accord et de consensus, que leurs besoins d'apprentissage étaient comblés dans la plupart des domaines de soins. Toutefois, les réponses des diplômés suggèrent que le programme ne répondait pas adéquatement à leurs besoins en matière de santé autochtone et de compétences procédurales. De plus, les réponses des résidents ont montré un faible consensus concernant les soins aux populations vulnérables et marginalisées.

Conclusions : Les besoins des apprenants pourraient ne pas être comblés dans trois domaines de soins au sein du programme de résidence en médecine familiale, ce qui concorde avec les appels récents à une réforme curriculaire au Canada. Ces résultats pourraient aider à orienter les priorités de réforme vers les domaines où les besoins sont les plus grands.

Introduction

Recent studies have found that family physicians are providing less comprehensive care than in the past.[1-4] Factors that influence trainees' future scope of practice are varied and have been grouped by personal (desire for work-life balance or interest in domain of care), workplace (siloed systems of care or health care regulations), environment (ready presence of specialty care in urban settings), and population (the increasing complexity of patient needs).[5] Others have grouped factors into three large categories: training, professional, and personal, all of which influence practice patterns.[6] Certainly, suboptimal training experiences can lead to feelings of unpreparedness for practice in some domains of care, which ultimately could impact career choices.[1] These observations raise the question of the impact of residency training on future practice patterns of family physicians. While it is understood that not everything a doctor needs to know can be taught in two years, the curriculum should provide a foundation that allows for expansion of knowledge and skills, i.e., adaptive expertise.[7]

To help address the reduction in scope of practice and ensure family physicians are prepared to care for the diverse communities throughout Canada, the College of Family Physicians of Canada (CFPC) undertook a national evaluation in preparation for a renewal of the existing residency training program. The CFPC reviewed the existing residency training program, and outlined the competencies future training programs should impart.[8]

To better understand to what extent residents and graduates perceive that the family medicine residency program is meeting their training needs, we conducted a survey in which we asked residents and recent graduates: "*Is the current two-year residency training program in family medicine meeting your educational and practice needs?*"

Methods

This study underwent ethics review and approval by the McGill Faculty of Medicine and Health Science's Institutional Review Board, August 24, 2023, #A08-E41-23B. The CROSS-reporting checklist was used when preparing this manuscript.[9]

Survey and data collection

We created a self-administered cross-sectional survey (Appendices A and B) using the online platform Qualtrics (Qualtrics, Provo, UT). This survey was developed by the research team based on existing literature. Face validity of the questions was verified on an initial draft that was circulated among research team members, and questions were adjusted based on feedback. The domains of practice that we explored were chosen due to their presence in the core family medicine residency program and their relevance as areas of societal need. Participants were questioned about domains of clinical practice. Resident learning experiences with some of these domains occur via dedicated immersive rotations (e.g., Obstetrics, Maternal and Newborn care rotation); experiences with other domains of care (e.g., Indigenous health) occur over the course of residency, via diverse experiences.

Survey distribution

Residents. We recruited residents in their second or third years of residency (those who had successfully completed at least 12 months of residency training). The principal investigator presented the study to current family medicine residents on an academic half-day to ensure residents had protected time to complete the survey. The postgraduate medical education program director (FHE) sent a reminder email two weeks after the presentation.

Recent graduates. Recent graduates, defined as being in their first five years of practice, were invited to participate in the survey. Potential participants were identified from databases of past residents in our program. The principal investigator (KJT) sent a reminder email two weeks after the initial email.

Survey construction

The survey gathered basic demographic information and training site locations for both resident and graduate participants. Resident participants were asked if they had completed training in each domain of care and were not presented with questions about domains to which they had not been exposed. If residents or graduates responded neutrally or disagreed with statements, they were invited to provide qualitative feedback on how the curriculum could be improved in those areas. Furthermore, for graduates, each domain question included a follow-up asking if it applied to their current practice, helping clarify its relevance. Additionally, all participants were asked open-text questions regarding what rotations they felt the least prepared in, whether they felt prepared to practice independently, and whether any rotations were unnecessary or too long in duration. Full versions of the surveys for both groups are provided in Appendices A and B.

Data analysis

Survey data was analyzed using the Statistical Package for the Social Sciences (SPSS 29). To determine the level of agreement among participants, we calculated the median response for each question. A median score of ≥4 indicates high agreement, a measure which has been used elsewhere.[10] Interquartile ranges (IQRs) were also calculated to determine the level of consensus for each domain of care within each participant group. An IQR of ≤1 indicates high consensus, while an IQR of ≥2 indicates low consensus.[11] To compare the levels of agreement between the resident and graduate respondent groups, we assessed the percentage of responses from each group indicating 'Agree' or 'Strongly Agree.' A percentage of ≥51% indicated agreement that the curriculum met participants' learning needs. To compare the degree of consensus in resident and graduate responses, we calculated the confidence intervals on the proportion of 'Agree' or 'Strongly Agree' responses for all domains of care.

We also performed latent content analysis on the open-text response questions, to understand the ideas expressed by both participant groups.[12,13] Coding was completed by two members of the research team (AS and SF). Codes were finalized through discussion between AS, SF, and KT.

Results

Demographics of respondents

Of the 131 second-year residents presented with the survey, 26 completed it (20% response rate); of the 27 third-year residents targeted, five completed it (19% response rate). In total, 31 of 158 senior residents (second- and third-year residents) responded (19.6% response rate). Most of the respondents (92%) were based at urban training sites (Table 1). The majority of graduates from the family medicine residency program were in their first four years of practice (98%) (Table 2). Of the 452 eligible participants, 59 responded (response rate of 13%). Of these, 33 (56%) worked in urban environments and 26 (44%) had completed additional training after graduation

Survey results

For most domains of care, responses from both residents and graduates revealed high levels of agreement that their learning needs were being met by the current curriculum (Table 3). Responses were consistent amongst respondents as indicated by the median and IQR for each domain of care (Table 3). The domains of Indigenous health and procedural skills had lower levels of agreement, as indicated by the median scores of 3. Additionally, IQRs for these domains of care were 2, indicating low levels of consensus amongst participants (Table 3). For the domain of vulnerable and marginalized communities, the median score of 4 indicated high levels of agreement among residents. However, the IQR for this domain was 2, suggesting lower consensus.

Table 1. General characteristics of residents

Characteristic	*N* = 31 (%)
Gender	
Female (70% of all residents)	24 (77.4)
Male (30% of all residents)	7 (22.6)
Medical school completed outside of Canada	
Yes	5 (16.1)
No	26 (83.9)
Year of residency	
Year 2	26 (83.9)
Year 3	5 (16.1)
Graduated from family medicine residency at McGill	
Yes	5 (16.1)
No	26 (83.9)
Training site	
Urban	24 (92.3)
Rural	2 (7.7)
Enhanced Skills program currently enrolled in	
Emergency Medicine	3 (60)
Sports and Exercise Medicine	1 (20)
Addiction Medicine	1 (20)

Table 2. General characteristics of graduates

Characteristic	*N* = 59 (%)
Gender	
Female (65% of all graduates)	32 (54.2)
Male (35% of all graduates)	21 (35.6)
Nonbinary	1 (1.7)
Prefer not to respond	5 (8.5)
Medical school completed outside of Canada	
Yes	4 (6.8)
No	55 (93.2)
Years of practicing family medicine	
Less than 1 year	17 (28.8)
1-2 years	24 (40.7)
3-4 years	17 (28.8)
5+	1 (1.7)
Environment you currently practice in	
Urban/suburban areas	33 (55.9)
Small town	6 (10.2)
Rural	7 (11.9)
Remote/isolated	3 (5.1)
Mixture of environments	10 (16.9)
Completed additional training	
Yes	26 (44.1)
No	33 (55.9)

No differences were observed between resident and graduate responses (Table 4). More than 51% of resident respondents across the domains of care agreed that their learning needs were being met. The curriculum met learning needs for all domains except for Indigenous health and procedural skills, as rated by the graduate participants.

Table 3. Descriptive statistics of all domains of care including median values and interquartile ranges (IQRs). An IQR equal to or less than 1 indicates high consensus within groups, and an interquartile range equal to or greater than 2 represents a low consensus level. A median of ≥4 indicates high agreement, whereas a median of ≤3 represents low agreement.

Domain of care	Residents (*n* = 31 (%))					Graduates (*n* = 59 (%))				
	Agree	Neutral	Disagree	Median	IQR	Agree	Neutral	Disagree	Median	IQR
Maternal and newborn care	27 (87.1)	3 (9.7)	1 (3.2)	4.00	0	48 (81.4)	10 (16.9)	1 (1.7)	4.00	0
Pediatrics	16 (55.1)	11 (37.59)	2 (6.9)	4.00	1	50 (84.7)	6 (10.2)	3 (5.1)	4.00	0
Care of the elderly	26 (89.6)	2 (6.9)	1 (3.4)	4.00	0	51 (86.4)	5 (8.5)	3 (5.1)	4.00	0
Palliative care	21 (80.7)	1 (3.8)	4 (15.4)	4.00	1	49 (83)	9 (15.3)	1 (1.7)	4.00	1
Rural medicine	19 (90.4)	1 (4.7)	1 (4.7)	4.00	1	46 (77.9)	13 (22.0)	0 (0)	4.00	1
Mental health and behavioural medicine	26 (92.9)	1 (3.6)	1 (3.5)	4.00	0	53 (91.4)	3 (5.2)	2 (3.4)	4.00	1
Indigenous health	12 (57.2)	7 (33.3)	2 (9.5)	4.00	1	28 (48.3)	14 (24.1)	16 (27.6)	**3.00**	**2**
Vulnerable and marginalized communities	7 (64)	1 (9)	3 (27)	4.00	**2**	40 (70.1)	9 (15.8)	8 (14.1)	4.00	1
Procedural skills	--	--	--	--	--	25 (43.9)	14 (24.5)	18 (31.6)	**3.00**	**2**

Table 4. Agreement, measured by the percentage of responses of 4 or 5 for domains of care and compared between groups. Confidence intervals are reported for the proportion of responses of 4 or 5.

Domain of care	Residents (*n* = 31)			Graduates (*n* = 59)		
		95% CI			95% CI	
	% 4 or 5	Lower Limit	Upper Limit	% 4 or 5	Lower Limit	Upper Limit
Maternal and newborn care	87.1	0.69	1.05	81.4	0.68	0.94
Pediatrics	55.1	0.36	0.74	84.7	0.72	0.98
Care of the elderly	89.7	0.71	1.09	86.4	0.73	0.99
Palliative care	80.7	0.61	1.01	83.1	0.70	0.97
Rural medicine	90.4	0.68	1.13	77.9	0.65	0.91
Mental health and behavioural medicine	92.9	0.73	1.12	91.4	0.78	1.05
Indigenous health	57.2	0.34	0.80	**48.2**	0.35	0.61
Vulnerable and marginalized communities	63.6	0.30	0.97	70.2	0.57	0.83
Procedural skills	--	--	--	**43.9**	0.31	0.57

Note: % 4 or 5 indicates the proportion of residents and graduates that responded 'Strongly Agree' or 'Agree.'

Illustrative qualitative data

To better understand the divergent opinions from our survey, we analyzed the qualitative submissions from participants. Only three domains of care were shown to have low agreement and low consensus within groups: care of vulnerable and marginalized populations, Indigenous health, and procedural skills.

Vulnerable and marginalized populations. Although 63% of resident participants agreed that the training was adequate for this domain, the IQR was 2, indicating low consensus. Unfortunately, few qualitative responses were submitted, and few residents indicated that they had been exposed to this domain. It is possible that the variability reflects differences between training sites: One respondent wrote, "*Again, very little exposure to vulnerable patients (homeless, refugee, addiction, etc.)"* while another wrote, "*good exposure at [our site]."*

However, among graduate responses, the most frequently expressed ideas were the need for more exposure to vulnerable and marginalized populations (five responses) and better integration of this content into the residency curriculum (two responses), both of which were also reflected in resident feedback.

Indigenous health. There was low agreement around how well the current curriculum prepares graduates to care for Indigenous persons. A few ideas emerged from our qualitative analysis: Most notably, graduates frequently reported minimal to no exposure to Indigenous health (10 responses) as a barrier, and emphasized the need for greater exposure, as raised by seven graduates and three residents:

> *Very little exposure outside of didactic teaching… Often in my practice we speak to MDs in receiving hospitals for transfer who have no idea about the realities of [I]ndigenous care.*

Other learners seemed to address their own interests through individualization of their training: "*I felt like I had competency because like I literally chose four electives to be done in rural [I]ndigenous care..."*

Moreover, graduates expressed the need to integrate more Indigenous Health into the curriculum (five responses).

Procedural skills. The final area with low agreement amongst graduate participants about adequacy of training was procedural skills, with 14 qualitative responses from graduates and seven from residents. The qualitative data suggests that there is significant variability in learning experiences in this area—some respondents noted the residual effects of the COVID pandemic on training: "*I did only two clinics of procedural skills. Not comfortable at all!"*

A second frequently expressed idea revolved around the need for additional rotations and exposure in procedure-linked domains, particularly emergency medicine. This need was frequently cited by both graduates (17 responses) and residents (14 responses). Others suggested addressing this gap with procedure courses: *"…ICU rotations/rotations in acute care, more courses on procedural skills."*

Little exposure and the high density of learners were also commonly raised. For example, many respondents discussed the lack of experiences with women's health procedures, such as the placement of intrauterine devices. Additionally, few rotations and high learner-to-teacher ratios appear problematic:

> *Two months of procedure clinic during family medicine rotations allowed me to be exposed to a total of 6 procedures … and greatly affected my procedure confidence...*
>
> *… doing procedures, we were too many learn[er]s for the number of cases, therefore forced to watch instead of do many procedures...*

Discussion

Overall, our survey found that residents and recent graduates endorse the statement that the core components of the curriculum are largely meeting their learning needs. Below, we will discuss the implications of our findings in the context of recent CFPC reports around residency curriculum reform.[8,14]

Areas of agreement

Vulnerable and marginalized communities. Our survey illustrated potential training gaps in providing care for vulnerable and marginalized communities. While responses vary, the overall findings highlight the need for greater curricular consistency and support in this domain, in line with several literature reviews calling for greater emphasis in medical education on health advocacy and the social determinants of health.[15,16] To this end, family medicine residency programs could explore options to improve academic teaching and clinical experiences with socially vulnerable populations.

Indigenous health. In line with the CFPC's suggestion, our survey found that the current curriculum in Indigenous health is not meeting all learning needs. Additionally, Waldner et al.[17] suggested curricula in Indigenous health should align with the needs of local Indigenous communities. Opportunities for curriculum development are, therefore, region-dependent.

Recent reports have shown the benefit of educational interventions, and have put forward strategies for evaluating patient-relevant outcomes.[18-20] For example, Kesler et al. found that incorporating education on traditional healing methods enhanced residents' knowledge and enabled them to apply these principles in practice[19]; Sauvé and colleagues examined interventions that teach social determinants of health and their impact on Indigenous health[20]; Smylie highlighted benefits of professionally facilitated workshops focused on Indigenous cultural safety[18]. These educational efforts aim to enhance the safety and efficiency of health care delivery for Indigenous patients while increasing residents' confidence and familiarity in providing culturally competent care.

Procedural skills. Family physicians in Canada practice in both outpatient and inpatient settings, and are called on to perform a variety of medical procedures. The CFPC suggested better training was needed to augment the provision of these procedures, and it outlined procedural skill competencies for residents.[8] The CFPC's suggestion is supported by our findings of graduates reporting suboptimal training in procedural skills. Others have reported similar findings in other settings in Canada: lower confidence performing procedures leads to more referral, and can cause a narrowing of practice.[1] To allow family physicians to continue providing comprehensive care to diverse Canadian populations, residency programs should continue to explore ways of increasing experiences with the procedures outlined by the CFPC.[8]

Areas of dissonance

Underpinning this work was the review and renewal of family medicine residency training.[14] Because the call for reform was received with some scepticism, we sought to understand the local perceptions of our residency program's performance. Findings from our survey did not always align with those of reported by the CFPC. For instance, learners and graduates from our program felt their training in mental health and care of the elderly was adequate. While these areas are current topics of much

discussion,[21,22] gaps in care are likely not simply due to a lack of training during residency.[22,23] While education has a role to play, health care delivery is complex, and many system-level concerns affect physician interest in working in a given area.[24]

Limitations

Our results report on the impressions of residents and graduates from our program. While we solicited both open-text and quantifiable responses, there was relatively limited detail in the open-text comments. Also, our overall response rates of 15-20% limit the generalizability of our results. In Family Medicine, where clinicians often manage high patient loads and administrative responsibilities, participation in voluntary research activities such as surveys can be particularly challenging.[25]

Another limitation of our study is survey development process, which did not include input from trainees or recent graduates during its design phase**.** Although piloting with research team members helped refine the tool, future work would benefit from a co-design approach involving trainees to ensure that the survey fully captures learner perspectives. Additionally, the resident respondents are largely representative of our urban training sites. Experiences at the three smaller rural sites were not well captured in this survey. These considerations limit our understanding of how the various perceived gaps identified in our study impact practice patterns. Ultimately, a more in-depth investigation involving discussions with residents and graduates might help us better understand how perceived training gaps influence career trajectory, and how curricular reform could support changes to practice patterns amongst family physicians.

Conclusion

Overall, our findings suggest that, after completing the two-year program, residents and graduates believe their training to be adequate in most domains of care. Trainees have identified shortcomings in the training around Indigenous health, care of vulnerable populations, and procedural skills; thus, these are areas where curriculum development could be prioritized. Delivering more training within a two-year residency remains a significant challenge that could be addressed through extending the residency program.

Conflicts of Interest: The authors have no conflicts of interest to declare.
Previous presentations: Poster presentation at the Richard and Sylvia Cruess Symposium on Scholarship in Health Sciences Education: Insights and Innovations, May 15, 2024, Montreal, Canada.

Acknowledgements: We thank the community members of McGill University for their contributions to this study and acknowledge the support from the Department of Family Medicine. Thanks to Renee Barter for her critical reading of this article.
Funding/Support: This study was funded by the Outcomes of Training Project and the College of Family Physicians of Canada.
Edited by: Marcel D'Eon (editor-in-chief)

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Appendix A. Online survey - Residents

1. To which gender identity do you self-identify?
    a. Nonbinary
    b. Female (including cisgender and transgender)
    c. Male (including cisgender and transgender)
    d. Prefer not to respond
2. Did you complete your medical schooling outside of Canada?
    a. Yes
    b. No
3. Have you graduated from the family medicine residency training program at McGill University?
    a. Yes
    b. No
4. **If answer NO to question 3:** What year of your residency are you currently in?
    a. Year 1
    b. Year 2
    c. Year 3
5. Which training site are you currently based in?
    a. St. Mary's
    b. Jewish General Hospital
    c. Queen Elizabeth
    d. Parc Ex
    e. CLSC Côte-des-Neiges
    f. Metro
    g. MedNam
    h. Val d'Or
    i. Gatineau
    j. Chateauguay
6. Have you completed a rotation in **maternal and newborn care**?
    a. IF YES:

Please rate your agreement with the statement below.

During learning activities focused on **maternal and newborn care**, I was able to develop the necessary clinical knowledge and skills for my future practice.

Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

7. Have you completed a rotation in **pediatrics**?
    a. IF YES:
        i. Please rate your agreement with the statement below.
        ii. During learning activities focused on **pediatrics**, I was able to develop the necessary clinical knowledge and skills for my future practice.

Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

8. Have you completed training in **care of the elderly**?
    a. IF YES:
        i. Please rate your agreement with the statement below.

ii. During learning activities focused on **care of the elderly**, I was able to develop the necessary clinical knowledge and skills for my future practice.

Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

9. Have you completed training in **palliative care**?
    - **a. IF YES:**
        - **i.** Please rate your agreement with the statement below.
        - ii. During learning activities focused on **palliative care**, I was able to develop the necessary clinical knowledge and skills for my future practice.

    Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

10. Have you completed a **rural** rotation(s)?
    - **a. IF YES:**
        - **i.** Please rate your agreement with the statement below.
        - **ii.** During learning activities focused on **rural medicine**, I was able to develop the necessary clinical knowledge and skills for my future practice.

    Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

    c. What skills or clinical rotations would you want to complete before training at a rural or remote site?

11. Have you completed a rotation in **mental health and behavioural medicine**?
    - **a. IF YES:**
        - **i.** Please rate your agreement with the statements below.
        - ii. During learning activities focused on **mental health and behavioural medicine**, I was able to develop the necessary clinical knowledge and skills for my future practice.

    Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

12. Have you completed training that included learning exposures around providing care for **Indigenous persons?**
    - **a. IF YES:**
        - **i.** Please rate your agreement with the statement below.
        - ii. During learning activities focused on providing care for **Indigenous persons**, I was able to develop the necessary clinical knowledge and skills for my future practice.

Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

13. Have you experienced adequate clinical exposure to patients in situations of **vulnerability** (e.g., housing or food insecurity, poverty, trauma, etc.) or in **marginalized** communities?
    - **a. IF YES:**
        - **i.** Please rate your agreement with the statement below.
        - ii. During learning activities focused on providing care for patients in situations of **vulnerability** (e.g., housing or food insecurity, poverty, trauma, etc.) or in **marginalized** communities, I was able to develop the necessary clinical knowledge and skills for my future practice.

    Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree

    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

14. Have there been any rotations you have completed during your residency training that you felt were unnecessary or too long in duration? (e.g., a three month rotation that could be have two months)
15. I feel that it would be valuable to have the option of customizing the rotations I undergo and their length during my residency training program to better mirror my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
16. A number of things occur in daily practice that do not in residency training due to workload policies and system structures such as block rotations. However, we would like to know what elements of independent practice would be helpful in preparing you for real-world, independent practice, if included in training. Please answer yes or no to the options below:
    a. Variable weekly schedule (half day of clinic, half day of walk-in, followed by OB call, followed by long-term care, half day of clinic, etc.)
    b. Extended call duties (up to 24 hrs)
    c. Tailoring call responsibilities to interest (e.g., only responsible for areas you want to practice in)
17. Please describe one episode or time that you felt solidified your identity as a family physician.
18. Overall, do you feel prepared to practice independently?

Appendix B Online survey - Graduates

1. To which gender identity do you self-identify?
    a. Nonbinary
    b. Female (including cisgender and transgender)
    c. Male (including cisgender and transgender)
    d. Prefer not to respond
2. Did you complete your medical schooling outside of Canada?
    a. Yes
    b. No
3. Have you graduated from the family medicine residency training program at McGill University?
    a. Yes
    b. No
4. **If answer YES to question 3:** How many years have you practiced family medicine in Canada since you completed your residency training?
    a. Less than 1 year
    b. 1-2 years
    c. 3-4 years
    d. 5+
5. Select **one** statement that best describes the environment you currently practice in:
    a. Urban/suburban areas
    b. Small town
    c. Rural
    d. Remote/isolated
    e. Mixture of environments: please elaborate [text response]
6. Which province or territory do you currently work in? Select all that apply.
    a. British Columbia
    b. Alberta
    c. Saskatchewan
    d. Manitoba
    e. Ontario
    f. Quebec
    g. Newfoundland and Labrador
    h. Nova Scotia
    i. Prince Edward Island
    j. New Brunswick
    k. Yukon
    l. Nunavut
    m. Northwest Territories
7. Have you completed any additional training beyond the 2-year core residency program in family medicine?
    a. Yes
    b. No

Please rate your agreement with each of the statements below as they relate to your residency training.

8. During learning activities focused on **maternal and newborn care**, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**

9. During learning activities focused on **pediatrics,** I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**
10. During learning activities focused on **care of the elderly**, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**
11. During learning activities focused on **palliative care**, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**
12. During learning activities focused on **rural medicine**, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**
    d. What skills or clinical rotations would you have liked to have before completing a rural rotation?
13. During learning activities focused on **mental health and behavioural medicine**, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**
14. During learning activities focused on providing care for **Indigenous persons**, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.
    c. This area of care applies to my current practice. **Yes/No**
15. During learning activities focused on providing care for patients in situations of **vulnerability** (e.g., housing or food insecurity, poverty, trauma, etc.) or in **marginalized** communities, I was able to develop the necessary clinical knowledge and skills for my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree: How can the residency training program be improved to better meet your learning needs in this area of care?
    c. This area of care applies to my current practice. **Yes/No**
16. The family medicine training program provided me with adequate training for the variety of procedural skills I needed for my current practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
    b. If answer Neither Agree or Disagree – Strongly Disagree, How can the residency training program be improved to better meet your learning needs in this area of care? Please write any comments below.

17. Was there a clinical domain or area of care (e.g., pediatrics, geriatrics) you felt the **least** prepared to practice in?
    a. Yes
    b. No

IF **YES**: Which area and why?

18. Were there any rotations you completed during your residency training that you felt were unnecessary or too long in duration? (e.g., a three month rotation that could have been two months)
19. Overall, did you feel prepared for your current practice as an independent family physician? Please write your comments below.
20. I feel that it would have been valuable to have the option of customizing the rotations I completed and their length during my residency training program to better mirror my future practice.
    a. Strongly Agree/Agree/Neither Agree or Disagree/Disagree/Strongly Disagree
21. A number of things occur in daily practice that do not in residency training due to workload policies and system structures such as block rotations. However, we would like to know what elements of independent practice would have been helpful in preparing you for real-world, independent practice, if included in training. Please answer yes or no to the options below:
    a. Variable weekly schedule (half day of clinic, half day of walk-in, followed by OB call, followed by long-term care, half day of clinic, etc.)
    b. Extended call duties (up to 24 hrs)
    c. Tailoring call responsibilities to interest (e.g., only responsible for areas you want to practice in)
22. Please describe one episode or time you felt solidified your identity as a family physician.