RESEARCH PAPER

Training in Team-Based Practices: A Descriptive Analysis of Family Medicine Postgraduate Site Distribution across Canada

La formation dans les pratiques axées sur le travail d'équipe : une analyse descriptive de la distribution des sites de formation supérieure en médecine familiale au Canada

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Abstract

Background: College of Family Physicians of Canada accreditation policies contemplate exemplary ratings for postgraduate family medicine programs that train residents in sites aligned with the Patient's Medical Home (PMH) vision. This may overrepresent the PMH in training relative to what is available in independent practice.

Methods: We appraised training sites to describe the degree to which PMH features are present in family medicine education across the country.

Results: More than half (70.7%) of Canadian training sites reflect PMH features.
Conclusion: Education policy that incentivizes PMH in training may create downstream tension for physicians who find these practices unavailable upon graduation.

Résumé

Contexte : Les politiques d'agrément du Collège des médecins de famille du Canada prévoient des cotes exemplaires pour les programmes de médecine familiale de cycles supérieurs qui forment les résidents dans des établissements conformes à la vision du Centre de médecine de famille (CMF). Cela peut représenter une surreprésentation du CMF dans la formation par rapport à ce qui est disponible dans la pratique indépendante.
Méthodes : Nous avons évalué les sites de formation afin de décrire dans quelle mesure les caractéristiques du CMF sont présentes dans l'éducation en médecine familiale partout au pays.
Résultats : Plus de la moitié (70,7 %) des sites d'entraînement canadiens reflètent les caractéristiques du CMF.
Conclusion : Les politiques d'éducation qui incitent à adhérer aux pratiques du CMF pourraient créer une tension en aval pour les médecins qui ne rencontrent plus ce type de pratique après l'obtention du diplôme.

Introduction

Primary care is essential for a high-functioning healthcare system (Starfield et al. 2005). However, many in Canada experience challenges accessing comprehensive, continuous primary care (CIHI 2019), with millions of residents reporting that they either do not have a family physician (British Columbia College of Family Physicians 2022; OCFP 2022) or cannot access one in a timely manner (CBC News 2022; Hendry 2022). This crisis of access is expected to grow. At the same time, many family physicians are reporting intolerable rates of burnout and exhaustion (CFPC 2022a, 2022b; Payne 2022) due to the difficulties of building and managing a profitable practice (CFPC 2022b) and the financial and administrative burdens of completing medical forms (O'Toole et al. 2022), coordinating care across multiple health sectors and providers, updating medical records and managing increasingly complex care plans and patients. Accordingly, a growing number of family physicians are closing their practices (CMA 2022) and entering retirement – an exodus exacerbated by the fact that the discipline has become more and more unattractive to medical students and resident learners (CFPC 2022b). A significant portion of family medicine training positions are being left vacant (Frketich 2022; McKeen 2022), and more graduates are choosing not to join comprehensive family medicine practices (CMA 2022). In response, numerous stakeholders, system leaders and scholars have called for federal and provincial leadership and policy that reimagines and improves family medicine practice in Canada, focusing mainly on the need for increased government investment in interprofessional team–based practices (Kiran et al. 2022; McKay et al. 2022) that are supported by remuneration alternatives to fee-for-service

(FFS) payment, such as capitation and salary models (Bazemore et al. 2018; CFPC 2020; CHSRF 2010; Mitra et al. 2021).

These calls resonate with current advocacy for greater uptake of the College of Family Physicians of Canada's (CFPC's) Patient's Medical Home (PMH) vision (CFPC 2019a). The PMH vision is organized into 10 pillars and includes policy recommendations that span remuneration structures to better incentivize continuity-based and community-adaptive family medicine (Mitra et al. 2021) and increased investment in interprofessional healthcare teams that support family physicians in caring for patients across a full scope of services (Khan et al. 2008, 2022; Manns et al. 2012; Strumpf et al. 2017). To date, the recommendations have been moderately realized across the country, with several provinces investing in unique PMH policies that support some practice reform. In Ontario, for example, the government has endorsed Family Health Teams (FHTs), where physicians work with an interdisciplinary team to deliver continuity-based, comprehensive primary care within the community (Glazier et al. 2015). An interdisciplinary team in an FHT can be composed of varying numbers and types of healthcare professionals, including but not limited to nurses, social workers, dietitians, mental health workers, pharmacists, occupational therapists and/or other allied health professionals.

Other models include Family Health Organizations, Family Health Networks and Family Health Groups, which are operated by a group of family physicians who work together to deliver comprehensive care in traditionally underserved areas. These practice models are often associated with a combination of physician remuneration models, spanning FFS, enhanced FFS, capitation, blended capitation, salary and blended-salary models (Aggarwal and Williams 2019; HealthForceOntario 2019). Similar government-backed practice models have been established in several provinces: primary care networks (PCNs) in Alberta (Alberta Health, Primary Health Care 2020; Alberta Health Services n.d.; Leslie et al. 2021; Wranik et al. 2017) and British Columbia (CFPC n.d.a; General Practice Services Committee n.d.), My Health Teams in Manitoba (CFPC n.d.b; Government of Manitoba n.d.), Family Medicine New Brunswick in New Brunswick (Government of New Brunswick 2017; New Brunswick Medical Society 2019) and Groupes de médecine de famille in Quebec (Breton et al. 2011; CFPC n.d.d; Gouvernement du Québec 2022). However, in jurisdictions such as Prince Edward Island (Government of Prince Edward Island 2021), Newfoundland and Labrador (CFPC n.d.c), Nunavut (Department of Health, Government of Nunavut 2018), Saskatchewan (CFPC n.d.e) and Yukon (Government of Yukon 2023), the development of PMH-aligned practices is either in progress or has not yet been developed. In this regard, the widespread adoption and uptake of the PMH model have been elusive and remain incomplete across the country (CFPC 2019b; Katz et al. 2017; Wong et al. 2021).

The current crisis of family medicine access has also become an important consideration for those who develop and enact medical education policy in Canada. Systems of learner selection (Grierson et al. 2017), training and assessment (Asch et al. 2014; Elma et al. 2022),

professional remediation (Tamblyn et al. 2007) and physician certification (Grierson et al. 2021) have all been shown to have a meaningful influence on the effectiveness of healthcare systems. For example, national credentialling programs have been shown to impact the ways in which family physicians organize themselves relative to each other and influence the delivery of comprehensive care at the community level (Correia et al. 2022; Grierson et al. 2021, 2022; Thornton et al. 2022; Tong et al. 2022). In recognizing the influence of education, the CFPC has incentivized the development of PMH practices through accreditation policy that contemplates exemplary ratings for postgraduate family medicine programs that situate residents in clinical training environments embodying the PMH principles (CFPC 2022c).

Notably, however, medical education policies do not always operate in the intended manner. For example, residents and early-career family physicians often describe postgraduate training that is or was situated in interdisciplinary team–based models supported by alternative remuneration structures and a related preference for their independent professional practice to also be situated in these types of models (Grierson et al. 2023). However, given that the available opportunities to practise in such settings upon graduation are currently limited, we know that most will not be able to realize this preference (CFPC 2019b; Katz et al. 2017; Wong et al. 2021). If the CFPC's accreditation incentives have prompted a more rapid and complete development and operationalization of PMH practices within postgraduate training than has been realized in the rest of the country, then early-career family physicians may be faced with few opportunities to work in a healthcare environment that matches the quality of the one in which they trained. As a first step to determining whether this is the case, we set out to describe the characteristics of all the postgraduate family medicine training sites in Canada with respect to whether or not they operated under remuneration alternatives to FFS payment and/or in interprofessional team–based models. This description will set a foundation for understanding the extent to which postgraduate family medicine training is occurring in environments that exhibit key PMH features.

Methods

Study design

This is a cross-sectional descriptive analysis of the team-based and remunerative features of family medicine learning sites across the country.

Data foundations

Administrative data pertaining to the names and location of "clinical" and "administrative" learning sites affiliated with each Canadian family medicine residency program were retrieved from the CFPC. A clinical learning site is defined as "[a] hospital, clinic, or other facility that contributes to residents' educational experiences. There are sites that have both clinical teaching and administrative responsibilities (administrative learning sites) and sites

that are primarily limited to clinical teaching (clinical learning sites)" (CFPC 2022c: 27). These data are collected by the CFPC twice a year (January/February; July/August) from all 17 Canadian postgraduate family medicine training programs. Data were provided to the research team upon request from the CFPC in May 2022. Since clinical learning can occur in both clinical and administrative learning sites (CFPC 2022c), we compiled the sites pertaining to each category into a single data set for coding and analysis.

Data labels

Currently, the PMH model is organized within 10 pillars. In addition to pillars associated with administration and funding and interprofessional teams, the recommendations also include pillars dedicated to practice infrastructure, care connectivity, community adaptiveness and social accountability, accessibility, patient and family partnerships, continuity of care, quality improvement and education and training. Although we recognize the value and contribution of each PMH pillar to family medicine delivery and practice, the current health system calls focus on increased investment in team-based practices (Kiran et al. 2022; McKay et al. 2022) supported by remuneration alternatives to FFS payment (Bazemore et al. 2018; CFPC 2020; CHSRF 2010; Mitra et al. 2021). As such, we focused our appraisal of learning sites on the following two PMH pillars: administration and funding and comprehensive, team-based care with family physician leadership (CFPC 2019a). The administration and funding pillar describes recommendations for remuneration models that support team-based, patient-centred care. The comprehensive team-based care concept involves the delivery of a broad range of services by a multidisciplinary interprofessional healthcare team under the leadership of a family physician who coordinates and integrates all contributions to healthcare delivery.

We coded a learning site as an interdisciplinary team–based practice if it was composed of healthcare professionals from multiple disciplines who collaborate in a formal arrangement to provide primary care to a patient population. The healthcare team could include any combination or number of registered nurses, nurse practitioners, social workers, dietitians, physiotherapists, occupational therapists, pharmacists or other allied health professional provided that it also included family physicians that acted as the most responsible provider for their patient panel (CFPC 2019a). Practices were coded as having an alternative remuneration structure when physician payment was mediated through any mechanism other than FFS (e.g., capitation, salary), including mixtures of FFS with other remuneration structures (i.e., blended).

Coding the training sites

The coding of learning sites began with a comprehensive review of information published on the web pages of provincial and territorial governments, regional health authorities and physician associations concerning the types of primary care models in each jurisdiction (Alberta Health Services n.d.; Alberta Health Services & MyHealth Alberta n.d.; Alberta Primary

Care Networks n.d.; Divisions of Family Practice n.d.; Gouvernement du Québec n.d.; HealthForceOntario 2019; Island Health n.d.; Nova Scotia Health n.d.; Ontario Ministry of Health and Ministry of Long-Term Care n.d.). This review focused on each model's practice characteristics in terms of group composition, practice leadership and remuneration structure. If these published documents indicated explicitly that learning sites within our foundational data set fit into a category of practice models with particular features, then these data were used to code those sites according to our features of interest. Notably, a large portion of learning sites were not explicitly named within the available documents. As such, members of the research team addressed the outstanding coding through review of clinical learning site descriptions that could be extracted from the site's practice web page and/or the family medicine residency program websites. In some instances, the research team completed coding on the basis of discussions with health system leadership representatives of the relevant provincial and territorial health authorities (i.e., the ministries of health), residency training programs and/or medical or clinical leadership representatives of practices who provided information about the features of otherwise unidentifiable training sites.

The coding revealed that a number of training sites are situated in hospitals and focused practices. Hospital-based learning sites were analyzed to determine whether they included an embedded family practice in which residents completed their core family medicine training. If the hospital-based site had a family practice, then it was retained in the data set. However, if the hospital sites did not, then they were accordingly excluded. We corresponded with relevant postgraduate training leaders to confirm that hospital-based learning sites without an embedded family practice reflected locations where residents completed specialty-based rotations and did not receive training in comprehensive primary care. Similarly, training sites associated with focused practices, wherein family physicians specialize exclusively in certain clinical domains (e.g., sports and exercise medicine; addictions medicine), were also excluded.

Data analysis

Once the data were assembled and coded, frequency counts were generated that tabulated how many training sites were represented within each combination of the PMH practice features of interest: interprofessional team–based practice and alternative remuneration structure. We also were able to create counts that describe the total number of training sites that constitute *formal* PMH practices (i.e., endorsed by explicit government policy, such as FHTs and PCNs). This analysis was conducted in August 2022. Data were managed and analyzed on Microsoft Excel version 16 (Microsoft Corp., Redmond, WA).

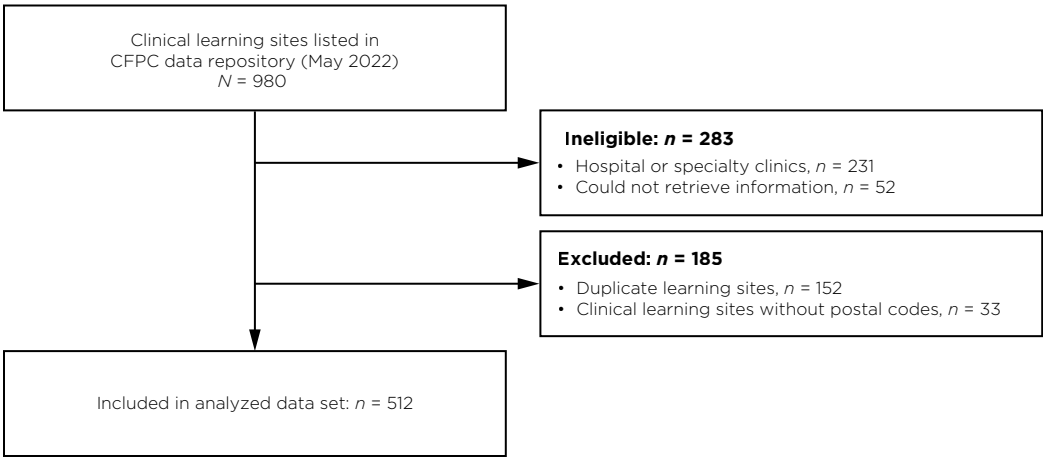
Ethics

This research did not involve human subjects and relied exclusively on analysis of data made readily available by the CFPC, postgraduate training programs and health authorities. Accordingly, it was not submitted for ethical review.

Results

The foundational data set from the CFPC listed 980 learning sites (Figure 1). Following the removal of duplicates, specialty rotation sites, focused practice sites, any learning site that was not associated with a postal code (and therefore of indeterminable location) and sites where we were not able to retrieve any information, 512 learning sites were included in the analysis.

FIGURE 1. Description of the number of family medicine learning sites included in this study



CFPC = College of Family Physicians of Canada.

Jurisdictional distribution of family medicine learning sites

Of the 512 learning sites, 263 were in Ontario (51.4%), 66 in Quebec (12.9%), 56 in Alberta (10.9%), 47 in Manitoba (9.2%), 29 in Newfoundland and Labrador (5.7%), 18 in Saskatchewan (3.5%), 9 in Nova Scotia (1.8%), 9 in New Brunswick (1.8%), 4 in the Northwest Territories (0.8%), 5 in British Columbia (1.0%), 3 in Nunavut (0.5%), 2 in Prince Edward Island (0.4%) and 1 in Yukon (0.2%) (Table 1). The number of sites in British Columbia was notably low as the data provided for this jurisdiction predominantly described hospital sites in which residents complete their hospital-based rotations in other specialties. As per the inclusion and exclusion criteria, these sites were excluded from analysis. The limitations of these data are addressed in the Discussion section.

TABLE 1. Jurisdictional distribution of family medicine learning sites across Canada reported within the May 2022 CFPC data repository

Province or territory	Learning sites		
	Included (*n* = 512) *n* (%)	Excluded (*n* = 468) *n* (%)	Total (*N* = 980) *n* (%)
Alberta	56 (10.9)	6 (1.3)	62 (6.3)
British Columbia	5 (1.0)	59 (12.6)	64 (6.5)
Manitoba	47 (9.2)	143 (30.6)	190 (19.4)
New Brunswick	9 (1.8)	7 (1.5)	16 (1.6)

Province or territory	Learning sites		
	Included (*n* = 512) *n* (%)	Excluded (*n* = 468) *n* (%)	Total (*N* = 980) *n* (%)
Newfoundland and Labrador	29 (5.7)	22 (4.7)	51 (5.2)
Northwest Territories	4 (0.8)	3 (0.6)	7 (0.7)
Nova Scotia	9 (1.8)	11 (2.4)	20 (2.0)
Nunavut	3 (0.6)	3 (0.6)	6 (0.6)
Ontario	263 (51.4)	182 (38.9)	445 (45.4)
Prince Edward Island	2 (0.4)	1 (0.2)	3 (0.3)
Quebec	66 (12.9)	30 (6.4)	96 (9.8)
Saskatchewan	18 (3.5)	1 (0.2)	19 (1.9)
Yukon	1 (0.2)	0 (0)	1 (0.1)

CFPC = College of Family Physicians of Canada.
Sites by jurisdiction are presented with respect to the number included and excluded within the current study.

Practice features of family medicine learning sites

Among the learning sites, 59.2% (*n* = 303) were situated in practices that were formally endorsed by the relevant provincial or territorial government as adhering to the PMH care model. We coded these practices as reflecting both features of interest; however, this does not necessarily mean that they are fully aligned with the PMH model (Table 2). The remaining learning sites were not part of the formally endorsed PMH initiatives; however, many of these sites embodied the two PMH framework tenets of interest. Fifty-nine sites (11.5%) were coded in this manner. Many of the learning sites included one or the other PMH feature of interest. The most common involved alternative remuneration without interprofessional support (87, 17.0%). Sites with interprofessional support but no alternative remuneration structure were less prevalent (28, 5.5%). Notably, less than 7% of the family medicine learning sites did not reflect either of the PMH features of interest (see Table 2).

TABLE 2. Number of clinical learning sites as a function of practice characteristics

Practice characteristics	No. of learning sites (%)
Interprofessional support and alternative remuneration (formal PMH practices)	303 (59.2)
Interprofessional support, family physician leadership, alternative remuneration (informal PMH practices)	59 (11.5)
Alternative remuneration (without interprofessional support)	87 (17.0)
Interprofessional support (without alternative remuneration)	28 (5.5)
No interprofessional support or alternative remuneration	35 (6.8)

PMH = Patient's Medical Home.

Discussion

This study describes the degree to which postgraduate family medicine teaching sites in Canada are organized as family physician-led interprofessional healthcare teams and/or supported by alternative remuneration structures, two recommendations of the PMH vision that have been avowed as crucial mechanisms for ameliorating the current primary care crisis (Bazemore et al. 2018; CFPC 2022c; Kiran et al. 2022; McKay et al. 2022; Mitra et al. 2021). Our findings reveal that clinical family medicine training is predominantly occurring in practices that avow both of these features, with more than half of all training sites in the country situated within PMH practices that have been formally endorsed and supported by the relevant provincial government. That training sites in Canada have a relative overrepresentation of these features may be driven in part by the CFPC's accreditation policy, which considers exemplary ratings for postgraduate family medicine programs that situate resident learners in environments that adhere to the principles of the PMH (CFPC 2019a, 2022c).

In characterizing the features of the training environment of family medicine training, we acknowledge that there is likely significant educational value in training residents in these types of practices. As the current "gold standard" for family medicine practice, these learning environments prepare trainees for the intricacies of collaborative work and the future of continuous, patient-centred, comprehensive family medicine (CFPC 2022c). However, these education experiences may also be problematic insofar as PMH practices are not prevalent and readily available to family physicians after graduation (CFPC 2019b; Katz et al. 2017; Wong et al. 2021). Herein we speculate that the accreditation policy has the potential to exacerbate a meaningful gap between the education residents receive and how family physicians practise post-training. If early-career family physicians are unable to work in practice environments that reflect the nature of their training, then they are likely to feel unprepared for practice (Fowler et al. 2022) and may be prone to reducing their practice scope away from comprehensive, continuous, community-adaptive family medicine (Weidner and Chen 2019). The extent to which this is the case is a topic for future research. From a policy perspective, our findings suggest a challenging dilemma for the accreditation policy makers of postgraduate family medicine education: how to enact aspirational policies that inspire and guide family physicians toward pursuing PMH-aligned practices while also providing them with the appropriate training and skill set that is required for the current realities of community-based family medicine. In the following sections, we offer options for reconciling this conundrum.

Most theories of education emphasize the necessity of exposure to the specific realities of practice to promote the transfer of learning from the training space into the space of criterion performance (Greeno et al. 1993; Grierson et al. 2019; Salomon and Perkins 1989). Taking this perspective leads to the suggestion that accreditation should ensure that residents are trained in the solo or loosely collaborative FFS-style practices that constitute the greatest proportion of family medicine practices in Canada. This would ensure that trainees grow confident and competent within these practice models before beginning their independent

work. Unfortunately, these practice arrangements are central to the current healthcare access crisis, posing time constraints for complex care needs and promoting throughput that favours the quantity of patients over the quality of services provided (Brcic et al. 2012; Glauser 2020). Thus, this suggestion is far from ideal. It is not justifiable to educate learners to be effective in a suboptimal healthcare system when better systems of care delivery are possible.

The more salient and responsible solution to this education-to-practice conundrum is to continue to push for widespread primary care reform (Bazemore et al. 2018; CFPC 2019b, 2020; Kiran et al. 2022; McKay et al. 2022; Mitra et al. 2021). By promoting uptake and implementation of practice environments that align with Canada's superlative clinical training environments, graduating residents will be able to fully apply their acquired competence toward the best health outcomes for our patients and communities. However, as family medicine residents continue to graduate and enter practice every year, we cannot simply wait for governments to invest sufficiently in team-based models with blended remuneration structures. Until this happens, we pose a second option where postgraduate training programs implement thoughtful and meaningful changes to the current curricula. These changes should empower trainees with competence in leadership and health system advocacy so that they might be champions for subsequent primary care health system reform. Our analysis identified training sites that have the PMH features of interest but that are not part of government-sponsored initiatives. Although our work cannot determine the underlying mechanism that enabled these practices to achieve the mentioned PMH principles, it does highlight the fact that achieving such a goal is possible. Residents may be trained in the type of change management and health system thinking that can lead the integration of PMH features into community-based practices (Metusela et al. 2021). Furthermore, curricula could also be diversified such that residents are intentionally exposed to a mixture of practice models, spending time in both solo or loosely collaborative FFS practices as well as physician-led interprofessional team–based practices that are funded via remuneration alternatives to FFS payment. With the curricular expansion toward three-year family medicine residency training in Canada on the horizon (Fowler et al. 2022), we currently have an opportunity to restructure training to equip residents with the competencies needed to navigate the gap between the education and practice landscapes.

There are several limitations in our study. First and foremost, the data on training locations provided by the CFPC reflected self-reports from postgraduate family medicine programs in Canada. Consequently, these data have not been validated for accuracy and may not represent the full or most up-to-date list of training sites in the country. This limitation appears very salient in the cases of Ontario, Manitoba and British Columbia, where a considerable number of sites reported in the data provided by the CFPC were excluded from analysis. In British Columbia, for example, a large majority of the reported training sites were excluded because they were situated in hospitals with no family practices. However, education leaders in British Columbia indicated that training does occur in numerous PMH-style practices within the province but were not able to provide a comprehensive list of locations

or to enumerate the degree to which this occurs. In this respect, we recommend that the CFPC conduct additional comprehensive review and ensure that the training site database is reflective of the most up-to-date changes concerning training opportunities and the national practice landscape. Furthermore, we acknowledge that not all learning sites coded in this study represent the primary locations in which residents complete their family medicine rotations. Therefore, it is possible that some residents spend only a very limited amount of time at some of the learning sites described here. Similarly, our analytic approach does not allow us to determine the number of residents who have trained at these sites. Another limitation in our analysis is that for some cases, we were unable to retrieve information concerning the presence or absence of the PMH features of interest. In these cases, it was assumed that the training site did not have the feature and was coded accordingly. Lastly, there is limited information concerning the number of available PMH-type practices across Canada. This makes it difficult to make a reasonable comparison between the number of PMH practices available during training relative to the full context of practice in Canada.

Conclusion

Family medicine residents are predominantly training in practice environments that align with key features of the PMH model. Although this supports the goals of Canadian family medicine accreditation policy, it also creates a gap between resident training and the realities of the family practice landscape. Postgraduate family medicine training can play an important role in shaping a well-prepared and competent workforce and influencing positive health system change. Medical education leaders should carefully consider the impact of current medical education policies on promoting health system reform and reflect on the opportunities they have to ease the transition from training to practice for new family physicians.

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