

Understanding the Impact of the CFPC Certificates of Added Competence

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Contents

Contributions	2
Acknowledgements.....	2
Executive Summary.....	5
Objectives	5
Methods.....	5
Results.....	5
Conclusions	6
Recommendations	6
Glossary of Key Terms.....	7
Introduction	8
Background	8
Methods.....	10
Study Design	10
Phases of Research	10
Case Descriptions, Case Participants, and Survey Participants	12
Case Descriptions.....	12
Survey Participants	15
Results.....	18
Towards a fundamental profile for the CAC holder.....	18
The CAC holder is an Enhanced Skill Family Physician.....	18
Differences between CAC Holders and Other Enhanced Skill Family Physicians.....	20
A Caveat	20
Impacts of the CAC Program on the Provision of Comprehensive Care in Canada	20
A Framework for Appraising Impacts and Effectiveness of the Certificate Program	20
Impacts on the Patient Experience	21
Impacts on Care Team Well-Being.....	24
Factors that Influence the Effectiveness of the CAC Program.....	26
Collaborative Models of Care Delivery	26
External Forces.....	27
Community Culture.....	29
Summary	31
Member Experiences of the CAC Program	31

Motivations for pursuing a CAC	31
Barriers to pursuing a CAC	32
Perceptions of the CAC credential	33
Summary	34
Impact of the CAC Program on Trainee Decisions	34
Motivations to pursuing a CAC	34
Perceptions of the CAC credential	35
Benefits and Risks of the CAC Program	36
Benefits	36
Risks	36
Recommendations	38
Articulate the intended values of the CAC Program	38
Ensure person-centred, community adaptive family medicine forms the base of a fundamental profile for CAC holders.....	38
Identify potential areas for new Certificates of Added Competence	38
Determine a position on standardizing credentials for added competence	38
Ensure the perceived validity of the certificate	38
Encourage collaborative models of care that align with community need	39
Promote incentives for generalist practice	39
Conduct further research.....	39
Limitations	40
Conclusion.....	41
Appendix A: Phase 2 Interview Guide.....	42
Appendix B: Phase 3 Interview Guide.....	45
Appendix C: Survey Questionnaire (English).....	49
Appendix D: Survey Questionnaire (French).....	56
Appendix E: Survey Analyses (CAC Type by Practice Features)	64
Appendix F: Survey Analyses (Practitioner Type by Perceptions of CAC Holder Impact).....	67
Appendix G: Survey Analyses (Practitioner Type by Perceptions that CAC Holders Help Keep Rural and Remote Patients within their Regional Communities)	69

Executive Summary

Objectives

This research report examines the impact of the College of Family Physicians of Canada's Certificates of Added Competence (CAC) program. In 2015, the CFPC initiated CACs in four new domains of care: Care of the Elderly, Family Practice Anesthesia, Palliative Care, Sport and Exercise Medicine. The goal of the research is to provide an improved understanding of the impact of CACs and to give advice to the CFPC about whether and how to implement additional CACs in service of increasing coordinated, community-adaptive comprehensive care. This research goal was achieved through pursuit of the following objectives:

1. To inform the development of a fundamental profile for CAC holders
2. To develop an understanding of the impacts that the CAC program has on the provision of comprehensive care in Canada
3. To develop an understanding of the factors that influence the success of the CAC program in enhancing the provision of comprehensive care in Canada
4. To develop an understanding of the impact of the CAC Program on the experience of CFPC members.
5. To develop an understanding of the influence of the CAC program on trainee decisions.
6. To articulate the potential benefits and risks of the CAC program; with specific consideration for the introduction of new certificates.

Methods

A multi-case study approach was used. 6 cases were identified to represent a variety of salient features relevant to the impact of CACs. The 6 cases were groups of family physicians who worked in a coordinated manner. They represented a range of urban, suburban, rural and remote contexts, were located in regions with high and low concentrations of CAC-holders, served Anglophone, Francophone, and Indigenous populations, were located across Canada, and represented different remuneration arrangements and practice structures. After the completion of the case study, a pan-Canadian survey of practicing family physicians was conducted to confirm or refine the qualitative conclusions.

Results

There is considerable variation in the way that CACs are understood and operationalized by individuals, related to the specific domain of care, community, relationships between practitioners, motivations of the practitioner, and needs of the patient population. Accordingly, our description of the CAC holder is built upon a broad perspective that was tolerant of regular challenges to seemingly sound generalizations.

To begin, we draw attention to the idea that the CAC holder is fundamentally one type of enhanced skill family physician: a family physician who acts at or beyond the current edges of the scope of family practice; and often at the points of exchange between family medicine and specialist care. In making this assertion, we describe all enhanced skill family physicians as care providers who have both specific expertise in complex areas of care and an important grounding in family medicine that informs the way they practice, their role in the community, and their relationships with patients and other health care providers.

We move on to present examples of CAC holder activities that reinforce and undermine the principles of family medicine and the well-being of care providers, and to distill a collection of interactive elements

that influence the effectiveness of enhanced skill practices with respect to the delivery of comprehensive, community-adaptive care in Canada. This includes an outline of four typical models of care that CAC-holders adopt within a community, and a list of factors external and internal to each physician group that interact to influence the effectiveness of enhanced skill practice in ensuring comprehensive care for a group of patients.

From here, we highlight that the CFPC endorsement of the CAC program is the main distinction between CAC holders and those enhanced skill family physicians with non-CAC credentials or without credentials. This endorsement leads to the idea that the College will prioritize advocacy for health systems and hiring practices that favour CAC holders; a perception that has differential influence on practicing physician and resident trainee motivations for pursuing the certification.

Conclusions

There are some practice arrangements which facilitate comprehensive care through CAC holders and some practice arrangements which discourage it. In particular, CAC holders tend to have a positive impact on the delivery of comprehensive care when they work in collaborative models that align with the needs of communities and support local generalist family physicians. CAC holders are particularly effective when they are part of planned care delivery at the practice and community levels. Importantly, many of the factors that influence the effectiveness of the CAC program are outside of the direct scope of influence of the CFPC. However, through the CAC program, the CFPC does confer credibility and thus impacts the professional identity of its members, including those who do not hold a certificate. In this way, the program has a downstream impact on health care delivery practices, affecting the perceptions and motivations of individuals who are in the position to make changes that enhance community-adaptive comprehensive care within their community. We conclude with a summary of the potential benefits, risks, and possible implicit values associated with the CAC program, and present a series of recommendations for the CFPC to consider.

Recommendations

1. Articulate the intended values of the CAC Program, reflect upon the values which may be espoused implicitly and explicitly by the current program.
2. Emphasize the priority of person-centered, community adaptive family medicine as the base of the fundamental profile of CAC holders.
3. Identify potential areas for new CACs which consider the frequency of transitions of care, the emergence of new areas of need, the overall time physicians must dedicate to providing care and maintaining competence.
4. Work towards standardizing credentials for added competence in family physicians.
5. Ensure the perceived validity of the CAC by working towards minimum training standards as part of any application for certification.
6. Encourage CAC holders to work within collaborative models of care that align with community need.
7. Develop and implement incentives that promote generalist practice.
8. Conduct further research and evaluation into topics such as: how the distribution and mix of CAC physicians aligns with community needs, the factors that promote new graduates with CACs to seek out practices that serve populations with aligned needs, and the economic impact of the program.

Glossary of Key Terms

Generalist Family Physician (GEN): Family physician who does not identify as having an enhanced skill. This highly heterogeneous group is difficult to describe as a single category. Some generalist physicians have a full scope practice, including acute and in-patient coverage. Some generalist physicians have a comprehensive practice, providing care from cradle to grave in a clinic setting. Other generalist physicians may provide only parts of this care, or may have other areas of interest in which they concentrate their clinical activities. Due to this heterogeneity, generalist physicians may work in a variety of different settings and arrange their practice in innumerable ways. This term is often synonymous with comprehensive family physician and the two terms may be used interchangeably within the document and survey.

Enhanced skills family physician (ES): CPFC accredited physician who has, through training or the accumulation of experience, acquired extra clinical expertise and provides services in defined domain of care. This designation may be self-identified or credentialed. The report highlights that the CAC holder is a type of enhanced skill family physician; however, unless stated otherwise, use of the enhanced skill family physician term throughout is meant to denote those individuals that provide enhanced skill services but that do not have a certificate of added competence. Enhanced skill physicians may work in a *partially focused practice*, concurrently maintaining a *generalist practice*.

CAC holder: Enhanced skills family physician with a Certificate of Added Competence awarded by the CFPC.

Focused practice: Practice pertaining to an area of an enhanced skill, with or without a CAC designation. Practices may be *fully focused*, in the cases of physicians who do not maintain a generalist family practice. Practices may be *partially focused*, in cases where the physician splits time between practicing in their area of enhanced skill and practicing in a comprehensive way.

Generalist practice: Family medicine practice that is distinguished by a commitment to the breadth of Family Medicine and collaboration with the larger health care team in order to respond to patient and community needs.¹

Referring Physician: The generalist family physician who is responsible for coordinating the patient's care and who consults or refers out to a CAC holder, enhanced skills family physician, or specialist.

Trainee: medical learner of any level, including medical student, resident physician, or fellow.

¹ The Development of a National Consensus on the Definition of Generalism in Medicine; Meetings, Planning and Dissemination Grant- Canadian Institutes of Health Research (#236835) as present in: Royal College of Physicians and Surgeons of Canada. (2013). Report of the Generalism and Generalist Task Force. Education Strategy, Innovations and Development Unit. Ottawa, ON.

Introduction

Background

The College of Family Physicians of Canada (CFPC) is the professional home for family physicians who provide comprehensive, community-adaptive care to their patients, as well as family physicians who focus some or all of their practices in certain domains of care that help meet the needs of their patients and communities. Certificates of Added Competence (CACs) provide a means of recognizing enhanced areas of expertise achieved and maintained by some family physicians.

The history of added competence and special designation began with the establishment of the certification of family physicians in emergency medicine in 1982. Certificates of Special Competence (now CAC) have since been awarded to family physicians who successfully complete the examination of special competence in emergency medicine.

In 2015, a time-limited application was opened for the physicians who had previously acquired competence, either through residency training or through practice experience and professional development, in four new domains of care: Care of the Elderly (COE), Family Practice Anesthesia (FPA), Palliative Care (PC), and Sport and Exercise Medicine (SEM)

CACs were awarded based on the credentials and documented evidence of added competence of each applicant, as judged by a committee of peers (separate committees for each domain), using a structured review process. Committee recommendations were approved by the Board of Examiners. As of December 2019, a total of 1597 CACs had been awarded in the four domains of interest to this study: 346 in COE, 544 in PC, 385 in FPA and 322 in SEM. The current study was not commissioned to include the CAC in Emergency Medicine (3643 awarded as of December 2019), Addictions Medicine (268 awarded as of December 2019), Obstetrical Surgical Skills (awards pending), or Enhanced Surgical Skills (awards pending). There has been interest from other domains in Family Medicine and the CFPC had started to look at processes to assess the desirability of additional CACs. In spring 2017, the CFPC Board of Directors decided that it would be prudent to assess the impact of CACs to determine appropriate future direction for the CAC endeavour.

This research study uses a multiple case study methodology to identify and map the various impacts of Certificates of Added Competence (CACs) on family physicians and the clinical care they provide. Specifically, this work focuses on understanding the impact associated with the CACs in Care of the Elderly (COE), Palliative Care (PC), Family Practice Anesthesia (FPA), and Sport and Exercise Medicine (SEM), while also endeavouring to compare the influence that these CACs have on family physicians with the designation relative to those that do not. Through this research, we seek to provide an improved understanding on the impact of CACs and to give advice to the CFPC about whether, and how, to implement additional CACs in service of providing access to co-ordinated, community-adaptive, comprehensive care. We understand access to comprehensive care to be relevant at the levels of the individual, practice, and community.

In order to achieve its goal, this project pursued the following objectives:

1. To inform the development of a fundamental profile for CAC holders
2. To develop an understanding of the impacts that the CAC program has on the provision of comprehensive care in Canada

3. To develop an understanding of the factors that influence the success of the CAC program in enhancing the provision of comprehensive care in Canada
4. To develop an understanding of the impact of the CAC Program on the experience of CFPC members.
5. To develop an understanding of the influence of the CAC program on trainee decisions.
6. To articulate the potential benefits and risks of the CAC program; with specific consideration for the introduction of new certificates.

Methods

Study Design

In pursuit of the defined objectives, our group employed a mixed-methods approach beginning with multiple instrumental case studies.² Case study methodology is an empirical inquiry that investigates a phenomenon within its real-life context in order to develop a holistic understanding of a particular situation or experience. Case study methodology is particularly useful for exploring differences between bounded cases through the use of cross-case comparative analysis.

In this project, we define our “case” as a practice or a collective of family physicians working in an inter-connected community. We used the patient group to define “inter-connected”; that is, we looked for groups of physicians who would have contact with the same patient group. This scoping process allowed us to consider the delivery of comprehensive care from the perspective of a patient within the community rather than as a function of independent physician behaviour.

The flexibility of the case study approach allowed us to begin in an exploratory manner that accommodated early uncertainty of the outcomes and/or features of interest. Data analysis proceeded concurrently with data collection and as our understanding of the important features of CAC practice increased, we adapted future data collection to explore those areas of theoretical interest. As the project progressed, our methods shifted from a purely exploratory focus to a mix of exploratory-explanatory.³

This work was conceptualized as 4 successive phases. A visual representation of the following process can be found in Figure 1 (Analytic Framework).

Phases of Research

The first phase of the project began with scoping the cases. The research team worked with members from the CFPC’s CAC and Research departments to identify features of CAC practice that were salient to the research questions. The identification of these factors drew on these conversations, engagement with other stakeholders and a review of the literature. Once these salient features were prioritized, it was essential to identify particular practices that would exhibit a range of these features. In order to identify particular practices for consideration, we used the strategy of connecting with Regional Representatives, or family physicians knowledgeable about practices in particular geographic regions. Regional Representatives were identified by members of the research team and CFPC, and then contacted and invited to nominate a family practice that exhibited an appropriate mix of these salient features. Conversations with Regional Representatives were also helpful for informing us about the context of Family Medicine practice in particular areas. These conversations were not audio-recorded or entered as data. Rather, they constituted background contextual information. Several times we interviewed a Regional Representative and concluded there was no eligible or theoretically relevant case available in that region. Once particular practices were identified, we invited these practices to participate as “cases” for the initial phase of the study. The invitation was issued by the CFPC on behalf of the research team.

The goal in scoping the exploratory cases was to achieve maximum variation sampling across a number of relevant factors. In particular, we aimed for a set of cases comprised of family practices that were:

² Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1), 25-32.

1. Situated across urban, rural, and remote contexts;
2. Located across Canada;
3. Inclusive of Francophone and Anglophone practitioners and patients;
4. Characterized as pertaining to a variety of practice models including large Family Health Teams and loosely organized collections of independent family practitioners.

Moreover, in these early cases, we were intentional in choosing cases that were located in regions that were characterized by a variety of CAC types as well as high CAC density relative to the population. Through this purposive sampling approach, we ensured that the interview participants were appropriately positioned to provide perspectives from across the breadth of relevant contexts. Data concerning the geographic disposition and mix of Family Physicians with CACs were provided to the research team by the CFPC.

The second phase addressed objectives 1-4 through four exploratory case studies. After each case was identified through the process detailed above, we invited potential participants from each practice to participate in semi-structured interviews ([Appendix A](#)). Eligible participants were any professional whose work is related to the identified “case”, including Family Physicians, trainees, other physicians, clinic managers, and non-physician clinicians and staff. Recruitment was conducted through e-mails from the research team sent by the practice lead, and by posters circulated via the practice’s normal channels of internal communication (for e.g., e-mail listserv, bulletin board in staff room). All recruitment materials invited interested participants to contact the research team directly.

We also collected practice-specific documents relevant to the research objectives including job postings, relevant policy documents, and internal unpublished reports, as well as a small number of key informant interviews. These interviews were with policy stakeholders and practice leaders who were not technically part of the case but who had information relevant to Family Medicine practice in a region, or who could speak on issues that were relevant to our case study findings but not adequately represented in any particular case. All interviews and focus groups were audio-recorded and transcribed for analysis. Once all data were in textual form, analysis began first within-case and then proceeded to comparisons across cases. Following Yin, we used a descriptive approach to qualitative analysis, engaging in a staged process of coding. Analysis began in an inductive mode; and we expected that findings from the first case would inform our approach to coding for future cases.³ Members of the research team participated in analysis to generate multi-perspectival findings to inform future case studies in the third phase.

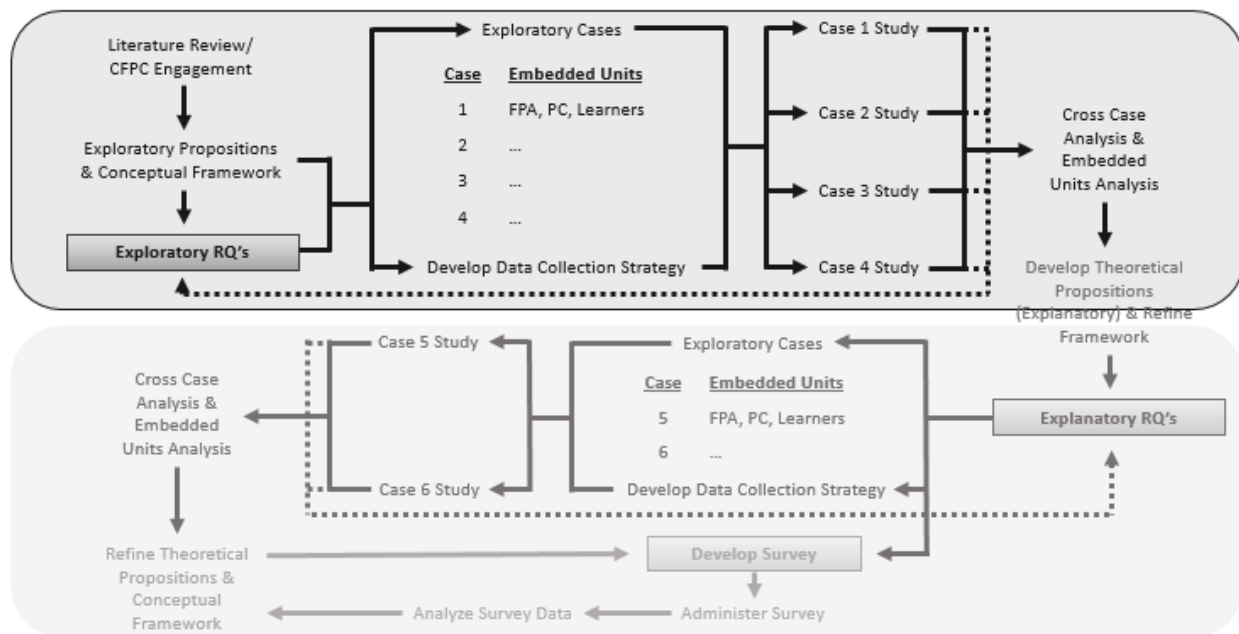
The third phase of research built upon the findings of the second phase, expanding them to two additional *explanatory* case studies ([Appendix B](#)). An explanatory case study is one driven by an existing theory with the intent of confirming, refining, and adapting that theory to a different context. In this project, the existing theory was the emerging theory developed through our initial four exploratory case studies.

In the fourth and final phase, we moved away from the case study approach in order to undertake a survey of CFPC members more broadly. The purpose of this survey was to “test” the consistency and utility of the thematic descriptions generated in the qualitative case study by asking focused questions to a larger sample of Canadian family physicians. Specifically, the survey was distributed to active family physicians across Canada, a total of 23,916 individuals (20,719 English-speaking and 3,197 French-speaking). The goal was to garner as many respondents as possible. Survey distribution was facilitated by the College and data

³ Yin, R. K. (2011). Applications of case study research. Sage.

collation was facilitated via internet-mediated survey software (LimeSurvey). The survey was not distributed to CFPC members who are not practicing independent family physicians (e.g. residents, researchers, nurses). Survey analyses included the generation of descriptive statistics, which were used as additional data to confirm or refine the propositions developed through the multiple case studies.

Figure 1. Analytic Framework



Case Descriptions, Case Participants, and Survey Participants

Case Descriptions

Case 1 was organized around the physicians of a Family Health Team (FHT) in an urban centre in Ontario. The FHT has more than 36 family physicians and 81 residents at two family medicine clinics and a maternity centre, serving over 33,000 patients per year. The FHT is also associated with an academic training program and most of the family physicians hold faculty positions. Using the patient population to define the boundaries of the case, our interviewees included family physicians who were part of the FHT as well as family physicians who were not core members of the FHT but who offer regular consultation to patients of the FHT. We conducted a total of 6 interviews including 3 CAC holders, 2 ES family physicians, and 1 trainee. Two of the CAC holders had partially focused practices and one had a fully focused practice; of the two ES physicians without CACs, one had a fully focused practice while the other identified as a generalist family physician with an area of enhanced skill.

Case 2 centered around 51 family physicians staffing two medical clinics and a regional health centre in rural Manitoba, approximately one hour from a large tertiary care centre. Each of the two clinics serve family practice patients in their respective communities with a combined population of 22,979 (2016 Census, Statistics Canada). The regional acute care health centre has 94 beds and serves a population of approximately 50,000 patients in the region. The health centre is primarily staffed by family physicians providing in-patient coverage, emergency room coverage, surgical assist, anaesthesia, palliative care, oncology, dialysis, high and low-risk obstetrics, minor orthopedic surgeries, and non-surgical

musculoskeletal (MSK) coverage, as well as a variety of other enhanced skills practices. The health centre also offers a small number of RCPSC-accredited specialist services, including general surgery, orthopedic surgery, obstetrics and gynecology, and radiology. At the time of data collection, two additional specialists, in Pediatrics and Internal Medicine, were expected to join the community. There is independence between the two clinics, with each having its own management, billing, and electronic medical record systems. However, we sampled both clinics and the health centre as a single case because there is significant communication and cooperation between the clinics and the health centre, including common referral patterns, coordinated hiring for the clinics and health centre, and specialized health clinics offered to patients of both clinics and the region. Additionally, patients living in the region are likely to seek care at multiple locations. The medical clinics and health centre are also academic training sites for family medicine residents. 15 interviews were conducted with 13 family physicians and two administrators, including: 5 family physicians who held CACs and maintained a partially focused practice, 5 family physicians with enhanced skills partially focused practices (but no CAC), 2 generalist family physicians with no specific enhanced skills or focused practice, and one trainee. The communities in this case have an unofficial requirement for family physicians to maintain a generalist practice at one of the two medical clinics in addition to any enhanced skills work they provide. Only one family physician interviewed was exempt from this requirement due to a high number of years of service.

Case 3 was situated in an urban centre in Atlantic Canada and organized around a group of nine generalist family physicians in solo practices who provide a broad scope of care, including in-patient coverage at one of two hospitals in the city. Family physicians in Case 3 serve both French and English-speaking populations. The hospital they work at is a Level 2 trauma centre with 381 beds and wide range of specialist services. CAC holders in COE and PC provide referral-based consult services through the palliative and geriatric programs and the geriatric program is staffed by a team of two CAC holders (COE) and two geriatricians, while the palliative program is run by family physicians with CACs and without. The hospital is also an academic training site for family medicine residents. Notably in this community, all family physicians are required to maintain privileges at the hospital and provide in-patient care as part of their generalist practice. This policy does not apply to family physicians with enhanced skills and focused practices in PC or COE. Data collection in Case 3 included 8 interviews: 3 generalist family physicians, two of whom also serve in administrative roles at the hospital; 3 CAC holders with entirely focused practices, and 2 trainees.

Case 4 was organized around the 20 family physicians staffing a medical clinic in a remote urban centre in a northern Canadian Territory, where they maintain generalist practices including in-patient coverage and, in most cases, at least one area of enhanced skill. Most of the family physicians in the community provide a combination of community and hospital-based medicine to the urban population and surrounding region, including Indigenous communities. The local hospital offers a small number of specialist services to the region including general surgery, orthopedic surgery, otolaryngology, psychiatry, obstetrics and gynecology, and pediatrics. The Department of Anaesthesia is led by one RCPSC-accredited anesthesiologist along with a team of seven family physicians with enhanced skills in FPA, some with CACs and some without. The palliative care program is based at the hospital and led by two CAC holders (PC) who work together and offer consult-based services. Sports and exercise medicine is provided through the orthopedic therapy clinic at the hospital and led by a CAC holder (SEM) working closely with the orthopedic surgeon. Case 4 is an academic training site for family medicine residency and for an FPA PGY3 Program core rotation. Data collection for Case 4 included five interviews: 4 CAC holders who had partially

focused practices and 1 generalist family physician. All family physicians who are privileged through the hospital are expected to maintain a generalist practice that includes in-patient coverage. Exceptions have been made for a small number of family physicians with entirely focused practices.

Case 5 was organized around 35 family physicians privileged through a rural community hospital in British Columbia that serves the local population as well as the surrounding First Nations and rural communities. The case included the generalist family physicians who work in the community and provide in-patient coverage to their own and unattached patients. It also included family physicians with focused practices in emergency medicine, family practice anaesthesia, and oncology; the latter of whom provide consults for palliative care. Bounded by the patient experience, this case also extended to include a CAC (COE) holder and a RCPSC-accredited geriatrician providing care to patients of the case group. The local hospital has a 105 bed capacity and provides a small number of specialist services including plastic surgery, general surgery, orthopedic surgery, internal medicine, obstetrics and gynecology, pediatrics, and otolaryngology services. Another equally sized community hospital is located approximately one hour away and the nearest tertiary care hospital is over 3 hours away by car. Data collection included 8 interviews: 2 CAC holders with entirely focused practices, 1 generalist family physician, 3 family physicians with enhanced skills and partially or fully focused practices, 1 RCPSC specialist, and 1 trainee.

Case 6 was defined around a group of more than 100 generalist family physicians who operate solo practices in a large suburban centre in Ontario with a significant South Asian and new immigrant community. The family physicians are loosely connected to each other through a Family Health Group (FHG) structure, which allows fee-for-service physicians to share call schedules. There are no academic trainees associated with the FHG and the generalist practice does not include in-patient care. The city has a large tertiary care hospital serving over 500,000 people. Given this context, the bounds of Case 6 therefore included family physicians providing care to patients of FHG physicians through a variety of referral pathways, including the tertiary palliative care program at the hospital, palliative care physicians based in the community at family health organizations (FHO)s, long term care physicians, and sports and exercise medicine physicians. Data collection included 6 interviews: 1 generalist family physician, 3 CAC holders, two of whom maintain partially focused practice, 1 enhanced skills family physician with a partially focused practice, and 1 trainee.

Table 1: Overview of case features

Case	Geography				Community or Academic		Tertiary-Level Hospital
	Urban	Suburban	Rural	Remote	Community	Academic	
1	x					x	x
2			x			x	x
3	x					x	
4						x	
5			x	x		x	
6		x			x		x

Table 2: Overview of participants, by number and type, within each case

Case	Total Participants	CAC Holders								Resident	RCPSC	Administrative
		PC	COE	FPA	SEM	EM	AM	ES	GEN	Trainee	Specialist	Staff
1	6	1	1	0	1	0	0	2	0	1	0	0
2	15	1	0	3	0	0	1	5	2	1	0	2
3	8	1	2	0	0	0	0	0	3	2	0	0
4	5	1	0	1	1	0	0	1	1	0	0	0
5	8	0	1	0	0	1	0	3	1	1	1	0
6	6	1	1	0	1	0	0	1	1	1	0	0
Total	48	5	5	4	3	1	1	12	8	6	1	2

Survey Participants

Eligible participants to complete the survey included all active family physicians in Canada. On November 6, 2019, the CFPC distributed the survey to all active family physicians in Canada (N=23, 916). The survey was distributed in both English and French. A reminder was sent to all eligible participants on December 4, 2019. 1525 individuals completed the survey for an overall response rate of 6.38%.

Of these participants, 757 (49.6%) identified as women, 731 (47.9%) as men, 2 (0.1%) as non-binary, and 35 (2.2%) preferred not to answer. Furthermore, 1219 (79.9%) participants were Canadian Medical Graduates (CMG), 289 (18.95%) were International Medical Graduates (IMG), and 17 (1.1%) did not identify themselves as either a CMG or IMG. The average age of participants was 48.9 (± 12.1) years and the average number of years in practice was 17.0 (± 11.9) years. There were 1401 (91.9%) respondents that identified English as their preferred language, and 124 (8.1%) that identified French.

Of the 1525 participants, 647 were comprehensive family physicians, 278 were enhanced skill practitioners without a CAC, and 600 participants were CAC holders. Of the CAC holders, 540 held only one CAC, while 37 held 2 CACs and 3 held 3 CACs. Accordingly, 643 certificates were represented by these 600 participants. Considered with respect to the population of certificate holders, this sample represented 11.7% of all certificates awarded in Canada. With respect to the CACs of interest to this study, there were 108 PC (19.5% of all PC certificate holders), 70 COE (20.2%), 79 SEM (24.5%), and 77 FPA (20.0%) certificates represented in this study. The remaining 309 certificates indicated by respondents were either in the domains of Emergency Medicine (267; 7.3%) or Addictions Medicine (42; 15.7%). Participants indicated that these 643 certificates were acquired in a variety of ways: Residency Training (319), Leadership Route (122), Competency Verification Route (87), and Challenge Exam (99). Acquisition pathway was not disclosed for 16 certificates. Among all respondents who held CACs, 274 indicated that their certificate was required for privileging.

The survey was structured so that the unit of analysis was individual member of the CFPC, and not awarded certificates. Accordingly, it was necessary to label each participant as a particular type of physician: a CAC holder in a particular domain, an ES family physician, or a generalist family physician. This process required us to make decisions about the label assigned to those individuals with multiple certificates. Considerable heterogeneity in the combination of multiple certificates made it difficult to classify a meaningful group of multiple CAC holders. As such, for those physicians with two or more CACs, we simply assigned the label associated with the certificate relevant to our study (PC, COE, FPA, or SEM). In cases where the physician held multiple CACs of interest, we assigned the label associated with the CAC they listed first in the survey. This coding process reduced the number of CACs reflected in the survey data from 643 to 600 – equivalent to the number of respondents - with the majority of the removed certificates being associated with the Emergency Medicine (n = 28) and Addictions Medicine (n = 6) designations.

Table 3: Overview of number of survey participants in each physician type, by language, gender, residency status, province/territory, practice region, and distance to tertiary care. The table also presents the mean (SD) age in years and number of years in practice of survey respondents by physician type, and the percentage of respondents by physician type that maintain comprehensive practice or have practice and/or privileging requirements.

	PC	COE	FPA	SEM	EM	AM	ES FP	GEN
Total Number	106	66	76	77	239	36	278	649
Age (years)	49.9 (11.7)	50.0 (13.5)	47.6 (10.8)	50.0 (11.7)	46.2 (10.8)	51.2 (10.6)	50.6 (12.5)	48.7 (12.4)
Survey Language								
<i>French</i>	8	8	2	3	13	6	28	56
<i>English</i>	98	58	74	74	226	30	250	591
Gender								
<i>Woman</i>	61	36	19	35	87	18	144	357
<i>Man</i>	42	25	54	42	146	18	131	273
<i>Non-Binary</i>	1	0	0	0	0	0	1	0
<i>Prefer Not to Answer</i>	2	5	3	0	6	0	2	17
Residency Status								
<i>CMG</i>	92	55	61	69	223	30	195	494
<i>IMG</i>	14	11	15	7	15	5	80	142
Years in CCFP Practice	17.4 (11.0)	18.6 (12.1)	15.9 (10.9)	19.1 (11.3)	16.5 (10.5)	21.2 (9.2)	17.5 (12.4)	16.3 (12.4)
Province/Territory								
<i>Newfoundland</i>	1	2	0	0	4	0	3	29
<i>Prince Edward Island</i>	2	0	0	0	2	0	1	3
<i>Nova Scotia</i>	9	5	0	3	9	4	6	28
<i>New Brunswick</i>	4	2	1	1	2	0	6	18
<i>Quebec</i>	10	7	1	7	42	1	15	49
<i>Ontario</i>	41	21	32	39	99	15	134	252
<i>Manitoba</i>	4	4	5	3	7	2	6	28
<i>Saskatchewan</i>	2	0	3	0	11	0	6	31
<i>Alberta</i>	11	13	21	15	20	4	49	91
<i>British Columbia</i>	21	11	8	9	34	10	40	106
<i>Nunavut</i>	1	0	2	0	0	0	0	1
<i>Northwest Territories</i>	0	0	1	0	2	0	4	2
<i>Yukon</i>	0	0	1	0	1	0	1	1
Practice Region								
<i>Urban</i>	64	48	7	48	135	25	130	306
<i>Suburban</i>	17	10	10	16	50	7	57	120
<i>Rural</i>	22	6	54	10	45	4	74	176
<i>Remote</i>	2	1	4	2	5	0	8	25
Distance to Tertiary Care								
<i>< 30min</i>	61	45	9	57	137	28	146	344
<i>30min-1h</i>	16	8	15	8	47	6	45	115
<i>1h-4h</i>	22	7	35	8	37	2	54	139
<i>>4h</i>	3	4	13	4	12	0	22	33
<i>No road access</i>	1	0	3	0	0	0	2	1
Practice Details								
<i>Hospital Privilege Required (%)</i>	29.2	28.8	23.7	14.3	16.7	16.7	25.9	25.7
<i>Family Practice Required (%)</i>	11.3	9.1	13.2	9.1	7.1	8.3	21.9	16.1
<i>Maintains Comprehensive Practice (%)</i>	18.9	22.7	48.7	28.6	15.9	38.9	54.7	66.0

In addition to the questions pertaining to identity features, practice type and location, and training experiences that generated the data presented above, the survey queried respondents with respect to propositions related to their general perceptions of the impacts of the CAC program, their perceptions about the specific way in which CAC holders organize their activities collaboratively with other physicians, and, for those respondents that identified as CAC holders, the outcomes they have experienced as a consequence of obtaining the certificate.

The questions about general perceptions of the CAC program and the collaborative organization of CAC holders were answered via independent 7-point Likert scale, anchored from strongly disagree (1) to strongly agree (7). These data are presented as means (and standard deviations) in relevant places throughout the forthcoming results section. The questions of certificate impact posed only to CAC holders were addressed by way of fixed-choice “yes” or “no” answers. These data are presented as percentages, proportions, or frequency counts, similarly, in the relevant places within the results section.

The English and French versions of the full survey appear in [Appendix C](#) and [Appendix D](#) respectively.

Analyses of survey responses that delineate characteristics of the CAC holders practice (i.e., maintenance of a comprehensive practice, geographic region, and distance between practice and tertiary care) as a function of CAC type (SEM, PC, FPA, COE) appear in [Appendix E](#).

Results

The main finding of our research is that there is considerable variation in the way that communities of family physicians across Canada organize their practices, their relationships to other practitioners, and their commitments to the communities they serve. This variation extends to the ways that the CACs are understood and operationalized by individuals. As such, in presenting the following detailed account of the study results, we acknowledge that there is no one, all-encompassing way to describe a CAC holder. In this regard, the following Results should be understood as an expression of robust *analytic generalizations* of the impacts and influences of the CAC program at a level that is relevant across contexts and domains of added competence, enhanced skill, and generalist family medicine practice.

Towards a fundamental profile for the CAC holder

The CAC holder is an Enhanced Skill Family Physician

Enhanced skill family physicians are family physicians who act at or beyond the current edges of the scope of family practice; and often at the points of exchange between family medicine and specialist care. CAC holders are one type of enhanced skill family physician. When examining the impact of the CAC program, it is helpful to remember that CAC holders are similar to other enhanced skill family physicians, and many of the results are relevant to all enhanced skill family physicians.

Enhanced skills are often associated with practices that fall outside the traditional basket of family practitioner skills. They can, however, also be associated with specialized advances in aspects of care that are considered to be fundamental components of family medicine practice.

“CACs are really important. I understand that family medicine and primary care is about generalism, but with the increased complexities for the people we serve in our communities and the limits of the infrastructure within which we work ... there is a growing need for an understanding of why these CACs are important. And, if they weren't important, people wouldn't find clinical work in them. They're finding clinical work, because these are holes in our system.” Case 6 Participant 2 CAC (PC)

Many participants described the interplay between generalism and enhanced skill, providing salient clinical examples where patient needs departed from what would be reasonable for every family physician to be able to manage alone. Starting off by describing the burden of addiction that many of their patients face, Participant 4 described when this type of care departed from their own area of comfort: *“if you're getting to the point where you think someone needs to be on a methadone maintenance therapy, that should be someone who has, obviously, special training in that”* Case 2 Participant 4

Important in understanding enhanced skill family physicians is that they are uniquely situated as care providers insofar that they have additional expertise in complex areas of care and a grounding in family medicine that informs the way they practice, their role in the community, their relationship and approach to the patient, as well as their relationship and communication with the consulting or referring family physicians and RCPSC specialists:

“I would say that one of the strengths that the family medicine trained providers bring is that they bring the philosophy of family medicine with them. So, not only are they focused on the secondary, tertiary palliative care issues in terms of complex symptom management or complex delivery of care in the home, they are also focused on the person's story and if they're taking

over the primary palliative care from the person's regular family physician or the person they've had a long-standing relationship with, how we can involve that physician in their care in a meaningful way. Whether that's working in a consultative way with symptom management or if it's have the family physician, give them a little bit of direction around those things and lay off for a little bit and then if there become complex needs, be re-consulted and join the patients care." Case 6 Participant 4 Trainee

This idea was affirmed by the survey finding that 33.9% of responding enhanced skill family physicians (both CAC and otherwise) maintained a comprehensive family practice. When survey participants were asked whether they agreed that CAC holders apply a family medicine approach to their work in an area of specialized health care delivery, their collective response indicated high agreement (5.4 ± 1.5).

Because of this unique combination of enhanced skill and grounding in generalism, enhanced skills family physicians characterized themselves as a distinct type of clinician: both fundamentally different from generalist and specialist physicians. Yet, they pointed to the influence of family medicine in shaping their focused practice as the primary locus of this difference.

"If somebody goes to a pain clinic in [Urban Centre 1 hour away], they get a very different service than they get when they come see me. I'm not saying one is better than the other. We have to be careful with that, because I think they have wonderful expertise as anaesthesiologists and I often I defer to them and I refer to the pain clinic too. But I do think that a family physician brings a very different set of skills. We are holistic thinkers. We get to know our patients in their setting, in their homes. I do home visits. I used to be a full-fledged physician from cradle to grave. I don't do that anymore because I couldn't maintain that. But I think that brings a very special set of skills and I think it has value and I think patients, when they come to see a family physician with expertise in a certain area, they feel listened to, they feel that we have some bedside manner. We have a different set of skills and a different approach than people in a tertiary care centre, and the patients feel managed differently." Case 2 Participant 7 CAC (AM)

The survey affirmed that all participants perceive CAC holders differently than comprehensive family physicians and specialists, while also applying a family medicine approach to their work. These affirmations were consistent across the various CAC holders queried as well as comprehensive family physicians.

Table 4: Mean (SD) survey respondent agreement (out of 7) with propositions concerning the Certificate of Added Competence and their holders (Survey Section 3; Questions 1-3) by physician type.

	PC	COE	SEM	FPA	Comp	All Respondents
CAC holders are fundamentally different than:						
<i>Comprehensive family physicians</i>	4.8 (1.7)	4.7 (1.5)	5.4 (1.5)	4.7 (1.5)	4.7 (1.6)	4.5 (1.6)
<i>Specialists</i>	4.2 (1.6)	4.8 (1.7)	4.8 (1.7)	4.6 (1.7)	4.5 (1.5)	4.7 (1.6)
CAC holders apply a family medicine approach to their work in an area of specialized health care delivery.	6.1 (1.1)	6.1 (1.2)	5.8 (1.3)	5.5 (1.5)	5.2 (1.5)	5.4 (1.5)

Analyses of survey responses that delineate perceptions of the CAC holder impact and the CAC Program as a function of practitioner type (SEM, PC, FPA, COE, EM, AM, ES, COMP) appear in [Appendix F](#).

Differences between CAC Holders and Other Enhanced Skill Family Physicians

There are a variety of ways in which family physicians in Canada come to identify as enhanced skill family physicians. For many, the classification as an enhanced skill family physician is *self-determined* as a function of completed training in a particular enhanced skill domain and the subsequent establishment of clinical practice within that domain. In these cases, we recognize that there are no standardized criteria that underpin the enhanced skill practitioner designation and that the relevant training may take many forms, including: accredited fellowship years of post-graduate residency training, multiple CME courses, extended apprenticeships with recognized enhanced skill family physicians, online programs, and a variety of formal training programs of variable length. There are also numerous formal credentials that denote a family physician as an enhanced skill family physician. These credentials are administered via provincial and territorial health authorities or recognized physician membership organizations and are usually obtained through some combination of specific training, application review, and validated assessment (for e.g., Dipl. Sports Med, GP-Oncology).

Certificates of Added Competence are one type of formal enhanced skill credential. Specifically, the CACs recognize the achievement of additional competence in specific family medicine domains for which the CFPC has defined eligibility and approved standards of assessment - Emergency Medicine, Palliative Care, Care of the Elderly, Family Practice Anesthesia, Sports and Exercise Medicine, Addictions Medicine, Enhanced Surgical Skills, and Obstetrical Surgical Skills. Given that the CFPC is the professional organization responsible for establishing standards for the training, certification, and lifelong education of family physicians, the CAC designation is recognized as a relevant marker of quality training and potential lever for explicit standards for attaining focused practice designations.

“If a hospital or a recruiter saw that they had a CAC in a particular domain, if I was recruiting new students or new doctors I would look at that and say they’ve been recently trained. They’re qualified to provide anaesthesia whereas, if it was someone who trained in the pre-CAC era I might wonder what were their skills, like are they up to date with certain techniques” Case 2 Participant CAC (FPA) FPA PGY3 Program Director

A Caveat

An important caveat is that our analyses indicate that although family physician members of the CFPC are universally aware that there are enhanced skill practitioners across numerous domains of family medicine, they are regularly inaccurate in identifying those domains of care that are recognized formally by the CAC program. This inaccuracy comprises instances of including non-certificate domains within the program (i.e., obstetrics, hospital medicine), not realizing certain domain are recognized by the program (i.e., addictions medicine), ascribing the certificate to colleagues that do not have one, and not ascribing the certificate to colleagues that do have one. Across all cases, it was typical that participants conflated the CAC program with enhanced skills training programs in general: *“I was looking into the CAC for hospital medicine, which I think is offered in BC, and so that was another one that I was aware of that was available.”* Case 3 Participant 5 FM Res

Impacts of the CAC Program on the Provision of Comprehensive Care in Canada

A Framework for Appraising Impacts and Effectiveness of the Certificate Program

The appraisal of the impact and influence of the CAC program on the provision and outcomes of comprehensive community-adaptive care in Canada required a reference for effectiveness. In this regard,

we made use of the Quadruple Aim Statement, a framework for healthcare improvement that highlights the importance of the Patient Experience, Population Health, Reduced Costs, and Care Team Well-Being.

Our methodological approach yielded data that informed on the categories of Patient Experience and Care Team Well-Being. We further considered the Patient Experience category with consideration to the way the certificate may function to promote the 4 Principles of Family Medicine within the relevant case:

1. The family physician is a skilled clinician
2. Family Medicine is a community-based discipline
3. The family physician is a resource for a defined group of patients
4. The patient-physician relationship is central to the role of the family physician

In doing so, we took the position that practice behaviours that enhanced one or more of the 4 Principles were likely to improve the patient experience.

Impacts on the Patient Experience

Impacts on the family physician as a skilled clinician.

The CAC supports the family physician as a skilled clinician by enabling enhanced expertise in a domain of practice either at the edge or just outside of the typical family medicine basket of skills to both their patients and the local health care community.

The CAC detracts from this principle when it promotes a belief in family physicians that they cannot perform certain aspects of generalist family medicine without it. This can result in increased referrals and a potential degradation of particular skills:

“For someone like myself who, this is what I do every single day, that if in order to provide palliative care I had to do CAC, and in order to provide geriatrics-type care, I had to do a CAC, and in order to provide low-risk obstetrical care, I had to do a CAC, and in order to do ... You can imagine that in this community, I would need four CACs just to do what I do every single day. And I hope that that doesn’t mean that I’m not competent to provide the care that I’m providing right now.” Case 3 Participant 7 GEN

The survey data also highlights both support and diminution for the CACs impact on the family physician as a skilled clinician. In particular, respondents indicated strong agreement with the idea that CAC holders address specific community needs; but more strongly that they have taken over some of the scope of practice that used to be in the purview of comprehensive family physicians. However, the survey data also reveal that this shift in service provision is not necessarily conflated with a devaluing of the expertise of the comprehensive family physician or enhanced skill physician without a CAC; although, that theme was prevalent throughout our cross-case analyses. Notably, the comprehensive family physicians that responded to the survey were in greater agreement that the CAC devalued the expertise of physicians without the certificate than were the CAC respondents.

Table 5: Mean (SD) survey respondent agreement (out of 7) with propositions concerning the Certificate of Added Competence and their holders (Survey Section 3; Questions 8, 11, 25) by physician type.

	PC	COE	SEM	FPA	Comp	All Respondents
CAC address specific community needs:	4.2 (1.7)	3.9 (1.6)	4.3 (1.4)	4.4 (1.5)	5.2 (1.4)	4.5 (1.5)
CAC holders have taken over some of the scope of practice that used to belong to comprehensive family practice:	6.0 (1.2)	5.9 (1.2)	6.2 (1.0)	6.1 (1.3)	4.6 (1.5)	5.5 (1.3)
The availability of CACs devalues the expertise of family physicians who do not hold one:	2.9 (1.7)	2.5 (1.3)	2.5 (1.4)	3.1 (1.6)	4.2 (1.9)	3.6 (1.9)

Impacts on family medicine as a community-based discipline.

The family physician with a CAC helps keep patients within their regional communities, by reducing the need for specialist care that may only be available at a distance. This is particularly relevant in rural and remote communities. The wider range of physician options in urban areas reduces the impact of the CAC on community-adaptive family medicine. For example, in Cases 4 and 5, family physicians practicing anaesthesia allowed this community of rural physicians to provide surgical services close to home, obviating the need for patients to travel to the urban centre for small or urgent procedures.

Where CAC holders are not well connected to the other practitioners in the community, however, the gaps in care may not be addressed. For example, in Case 5 we interviewed a COE practitioner who works independently at a long term care facility while geriatric referrals continue to go to a part-time RCPSC-accredited geriatrician who is nearing retirement.

The survey data indicate clearly that the CAC holder is perceived as instrumental in facilitating the delivery of health care within rural and remote communities. This was understood with particular relevance to the way in which the added competence provided opportunities to avoid referrals that would otherwise require patients to travel outside of their community to engage with a specialist.

Table 6: Mean (SD) survey respondent agreement (out of 7) with propositions concerning the Certificate of Added Competence and their holders (Survey Section 3; Question 10) by physician type.

	PC	COE	SEM	FPA	Comp	All Respondents
CAC holders help keep rural and remote patients within their regional communities:	5.6 (1.5)	5.6 (1.4)	5.8 (1.1)	6.0 (1.4)	5.4 (1.4)	5.5 (1.4)

Analyses of survey responses that delineate perceptions that CAC holders help keep rural and remote patients within their regional communities as a function of practitioner type, practice region, and distance to tertiary care appear in [Appendix G](#).

Impacts on the family physician as a resource for a defined group of patients.

The family physician with a CAC serves as a community resource by providing adaptability and flexibility to a practice that involves either addressing a specific area of need or coordinating with other practitioners to allow them to address a specific area of need. For example, in Case 1 CAC holders in COE and PC work as part of a team of comprehensive family physicians in a Family Health Team, providing direct care to patients, consults to referring family physicians, and education to the entire team. In Case

4, a family physician with a CAC in FPA pursued additional skills and certification in PC to enhance the availability and quality of care provided locally. This CAC holder uses the flexibility of their skill set to provide palliative care two days a week and anaesthesia two days a week, while maintaining a small generalist practice in a community experiencing a shortage of family physicians.

However, the CAC family physician that does not maintain a roster of patients and does not address comprehensive family medicine needs can lessen the degree to which the family physician serves effectively as a resource to a group of patients. For example, in multiple cases we encountered SEM holders who work in communities where there are no other SEMs, but who have chosen to only see athletes. This creates a gap for the generalist family physicians in the community who have patients with musculoskeletal issues who are not athletes. One generalist family physician described this challenge:

“I usually just refer my patients to physio. There is a GP with sports med, his added competency, in [nearby town] so we would refer patients there. A couple of times a year, and more my athletes, he likes to see athletes. I have this competitive gymnast who is having this injury. He’s not a huge fan of shoulder pain, frozen shoulder. If there was to be someone with the sports medicine capacity, that was happy to [pause] but they have to see all comers of MSK concerns, they can’t just be higher-level athletes with an actual problem, they need to see, my body hurts everywhere. I’m sure this is not a rheumatological problem, how do we help this person. So far the guy and I’m not sure if he’s the only one with the competency in [region], but he’s not interested in those.” Case 5 Participant 5 GEN

The survey data indicate that respondents generally agree with the propositions that the CAC holder enhances the capacity of family physicians to provide comprehensive care within a community, and that collaboration with CAC holders allows generalist family physicians to spend more time on other aspects of patient care.

Table 7: Mean (SD) survey respondent agreement (out of 7) with propositions concerning the Certificate of Added Competence and their holders (Survey Section 3; Questions 6, 7) by physician type.

	PC	COE	SEM	FPA	Comp	All Respondents
CAC holder enhances the capacity of family physicians to provide comprehensive care within a community:	5.5 (1.3)	5.5 (1.7)	5.8 (1.3)	5.7 (1.4)	5.1 (1.5)	5.3 (1.5)
Collaboration with CAC holders allows comprehensive family physicians to spend more time on other aspects of patient care:	5.4 (1.2)	5.3 (1.5)	5.7 (1.3)	5.2 (1.2)	4.8 (1.5)	5.0 (1.4)

Impacts on the patient-physician relationship as central to the role of the family physician.

Many family physicians with CACs work with patients and other family physicians in shared care collaborative models. These models are particularly prevalent in the palliative care domain and involve the CAC physician offering consultation and some *in-the-moment* decision making without taking over primary responsibility of the patient from their regular family physician. This arrangement allows the CAC physician to share their expertise while also allowing the primary family physician to maintain continuity with their patient.

In one case, a CAC holding palliative care physician describes their role as a resource to patients and to both specialist and family physicians as a way of enhancing palliative care throughout the whole community:

“Part of our role, as well as consultants, and if you have the experience and the extra training, and you have, I guess, the recognition, part of your job is also to do education to the primary care providers. Your job is not just to see patients, your job is to educate as well. We do a lot of the teaching sessions for LEAP and whatever, but [the PC research nurse] and I have a road show for the next two months scheduled throughout the hospital doing some education for the nurses on the surgery floor, nurses on the orthopaedic floor, because people die everywhere, they don’t just die in the Palliative Care Unit.” Case 3 Participant 4 CAC(PC)

There are also other examples of CAC holders operating to preserve the relationship between a patient and their own family physician. This commonly occurred when difficult news needed to be delivered to a patient. For example, we heard about a family physician with the COE certificate that would be asked to tell patients that their driver’s license was to be revoked. This action was presented as protecting the relationship between the patient and the referring family physician.

In some cases, however, administrative barriers led to additional transfers of care and breaks in continuity between family physician providers. In Case 5, for example, family physicians providing community-based palliative care consults are unable to access privileges at the hospital where the tertiary care palliative program is based. As a result, patients who are transferred from their comprehensive family physician to the care of a community-based palliative physician may then be admitted to the care of a hospital-based palliative physician, and then transferred back to community program, potentially changing providers multiple times.

The survey data affirm the idea that CAC holders are perceived as helping maintain patient continuity with their primary family physician.

Table 8: Mean (SD) survey respondent agreement (out of 7) with propositions concerning the Certificate of Added Competence and their holders (Survey Section 3; Question 9) by physician type.

	PC	COE	SEM	FPA	Comp	All Respondents
CAC holders help maintain patient continuity with their primary family physician:	5.1 (1.3)	5.1 (1.3)	5.4 (1.1)	4.7 (1.4)	4.2 (1.4)	4.5 (1.5)

Impacts on Care Team Well-Being

The data suggest that the CAC can be effective in enhancing the well-being of health care providers. In particular, many CAC-holding physicians are able to arrange practices characterized by less complexity and higher acuity in patient presentations and better remuneration and work hours, each of which fosters fulfillment and reduces work-related burnout. This impact is often also realized by the comprehensive family physician who experiences less complexity because services requiring added competence are provided by the CAC family physicians. One comprehensive family physician describes the impact of the presence of two CAC-PC holders in the community:

“What I would say is that’s kind of taken a rather large load away, because at any one time, you might have three or four patients that are requiring chemo, cyclical basis and whatnot. So, that has helped sort of to lighten the load, let’s say. ... I get them [CAC PCs] involved at some point, because again, I know a fair amount about it, but it rolls off of them much easier than for me.”

Case 4 Participant 4 GEN

Another generalist family physician in Case 3 put it this way, identifying the potential benefit to her well being if there were even more CAC providers available in the community:

I think that any time that you add more players to any team, you improve access to them, and you offload the other part of the team...If we were flush with people that had that training that could do that, would I tap into that resource more often? Sure, I would because those people are better trained than me. And I would use those resources because it would mean that my plate had less on it. And I could fill up that plate with either things that just make me happier, or I’d like to do more of, or I’d actually just have more energy doing what I am currently doing with those couple of things removed, and patients would get a better me because of it.”

Participant 7 GEN

Table 9 presents the survey responses of CAC holders with respect to outcomes experienced as a consequence of obtaining the certificate. Several of these outcomes resonant with the ideas of improved feelings of work-life balance and greater enjoyment through work. Notably, they can differ as a function of the CAC designation.

Table 9: Percentage of survey respondents with CACs that indicated agreement (yes/no) with propositions concerning the outcomes experienced as a consequence of obtaining a Certificate of Added Competence (Survey Section 2; Questions 21) by CAC domain.

Outcome	PC	COE	SEM	FPA	All CAC Holders
Higher remuneration	17.0	6.1	9.1	23.7	17.8
Salaried fee structure	15.1	16.7	1.3	1.3	7.7
Longer appointment times with patients	23.6	37.9	24.7	1.3	13.2
Improved control over work hours	14.2	27.3	14.3	10.5	15.3
Greater enjoyment from practice due to higher acuity	28.3	28.8	18.2	36.8	40.8
Greater enjoyment from practice due to less uncertainty	19.8	21.2	14.3	10.5	22.0
Greater enjoyment from practice due to more variation	16.0	21.2	10.4	35.5	23.7
Greater enjoyment from practice due to more time spent in the parts of practice that interest you the most	43.4	53.0	41.6	40.8	46.2
Greater enjoyment from practice due to greater level of expertise within a smaller scope	45.3	54.5	42.9	27.6	44.0
New leadership roles related to your CAC (e.g. academic, administrative, political)	48.1	48.5	27.3	21.1	37.7
A partially focused practice (i.e., maintain some comprehensive practice patient load)	11.3	19.7	16.9	22.4	15.3
An entirely focused practice (i.e., do not maintain comprehensive family practice)	37.7	39.4	26.0	13.2	33.5
Increased opportunities to educate other family physicians in your community in your domain of added competence	54.7	51.5	42.9	26.3	39.7
Increased opportunities to provide consult services in your domain of added competence to other family physicians in your community	50.0	47.0	50.6	31.6	36.7
A change in professional identity	31.1	22.7	13.0	17.1	25.8
No change at all	30.2	25.8	32.5	36.8	24.8

Factors that Influence the Effectiveness of the CAC Program

The analysis suggests that the effectiveness of enhanced skill family physicians, including those with PC, COE, FPA, and SEM certificates, in ensuring comprehensive care for a group of patients is influenced through the interaction of 3 set of factors: those that describe the collaborative relationships between practitioners, those that describe the forces external to the community, and those that characterize the internal community culture.

Collaborative Models of Care Delivery

The data highlight 4 organizational models that describe the way in which enhanced skill family physicians make use of their specialized domains of care and work collaboratively with other practitioners.

- *Enhanced scope of services model*: The enhanced skill family physician provides an extended set of services to their own patients without referral or consultation. It is essentially a non-collaborative model.
- *Shared-care model*: The enhanced skill family physician works *with* the referring family physician but does not *take-over* the role of primary family physician.
- *Family physician-aligned transfer of care model*: The enhanced skill family physician works *for* the referring family physician. The patient is referred to the enhanced skill family physician, who takes over the care of the patient for the specific referred issue and performs the services. In some cases, the patient will return to the referring family physician; in others, the enhanced skill family physician will take over care of the patient.
- *Specialist-aligned transfer of care model*: This model is similar to the family physician-aligned transfer of care model; insofar that it involves the enhanced skill family physician working *for* the referring family physician. What distinguishes this model is that the transfer of care is from a family physician to a specialist service, and the enhanced skill family physician sees the patient because of formal relationship within the particular specialist context.

Importantly, although certain CACs are typically associated with a particular collaborative model, they are each sufficiently flexible to operate in each type of model. For example, FPA physicians are almost always thought of as operating in a specialist-aligned transfer of care model that captures their activities in a hospital-based operating room setting. However, we interviewed an FPA family physician who used their CAC within a generalist family practice to treat chronic pain to their patients in an enhanced scope of services model. With this application in mind, one could imagine how this same certificate could also be used effectively in a shared-care model or a family physician-aligned transfer of care model.

That said, many participants described distinct advantages to their model of care. For example, one SEM family physician described how working in a specialist-aligned transfer of care model shortened the waiting time for patients referred to see an orthopedic surgeon, allowed the surgeon to work at the top of their own scope of practice, and enriched the care the SEM holder provided as part of their own practice:

“If I see a patient that I think becomes surgical, I will fast-track them to [the orthopedic surgeon]. Meaning, it doesn’t take them nine months to see him, it takes them maybe a month to see him, because I have seen them, I have triaged the patients, and now I know, okay, now it’s time for an assessment in surgery, so they get fast-tracked. I call him all the time. I work with him also in the operating room. I assist. This is one of the nice things about being in a

community up north is doctors assist doctors, whereas in big cities it would be residents assisting doctors or nurses. So, being a sports doc, it's really nice to assist the surgeon, because you learn a lot of what can be done, so I think you can counsel patients way better also." Case 4
Participant 3 CAC (SEM)

The perceptions of the survey respondents corroborate the idea that CAC holders of each type work within each of the proposed models of care. Notably, these data show that this perceived variability also resonates with those that hold CACs.

Table 10: Mean (SD) survey respondent agreement (out of 7) with statements about how CAC holders in each domain work with other physicians in their community (Survey Section 4; Questions 32-34) by physician type.

	PC	COE	SEM	FPA	All Respondents
CAC-PC holders work in a model that involves:					
<i>Shared Care</i>	5.7 (1.3)	5.6 (1.4)	5.7 (1.5)	5.8 (1.2)	5.3 (1.6)
<i>Family Medicine-aligned Transfer of Care</i>	5.1 (1.6)	5.1 (1.7)	5.7 (1.5)	5.1 (1.4)	5.1 (1.6)
<i>Specialist-aligned Transfer of Care</i>	4.9 (1.7)	4.4 (1.8)	5.0 (1.9)	4.9 (1.8)	4.8 (1.8)
CAC-COE holders work in a model that involves:					
<i>Shared Care</i>	5.6 (1.3)	5.8 (1.4)	5.9 (1.3)	5.9 (1.1)	5.3 (1.5)
<i>Family Medicine-aligned Transfer of Care</i>	4.9 (1.5)	4.8 (1.8)	5.2 (1.5)	5.1 (1.5)	4.7 (1.6)
<i>Specialist-aligned Transfer of Care</i>	4.6 (1.6)	3.9 (1.7)	4.4 (1.9)	4.6 (1.7)	4.4 (1.7)
CAC-SEM holders work in a model that involves:					
<i>Shared Care</i>	6.0 (1.2)	5.5 (1.7)	6.0 (1.2)	5.8 (1.3)	5.5 (1.5)
<i>Family Medicine-aligned Transfer of Care</i>	5.1 (1.7)	4.7 (1.8)	5.7 (1.5)	5.3 (1.5)	4.9 (1.7)
<i>Specialist-aligned Transfer of Care</i>	3.9 (1.7)	3.7 (1.6)	4.2 (1.9)	4.4 (1.7)	4.2 (1.7)
CAC-FPA holders work in a model that involves:					
<i>Shared Care</i>	5.7 (1.8)	5.3 (2.0)	5.9 (1.5)	5.9 (1.4)	5.4 (1.8)
<i>Family Medicine-aligned Transfer of Care</i>	5.3 (2.0)	5.0 (2.0)	6.0 (1.3)	5.8 (1.7)	5.5 (1.8)
<i>Specialist-aligned Transfer of Care</i>	3.9 (2.1)	3.9 (2.1)	4.4 (2.0)	4.9 (2.0)	4.6 (2.0)

External Forces

The data revealed influential *factors* that act upon the physicians that work within a community:

Community Need: At the heart of the effectiveness of enhanced skill practice are patient needs which require enhanced skill. However, patients also need generalist care delivered across the lifespan and health care contexts. It is essential that these two components of family practice (enhanced and generalist care) are balanced in each community.

For example, in Case 2 we encountered a highly coordinated recruitment effort that puts family physicians with enhanced skills at the centre of the health services strategy:

"It's really sort of a regional approach to recruitment. We do a good portion of planning our recruitment based on things like patients needing access, wait time to see people. That would be typical for primary care. Each clinic would probably monitor their own situations for that kind of care and that kind of recruitment, but then the specialty services that we provide, both with

specialists, and with family medicine individuals with additional training, we would coordinate that, certainly, to some degree, at least. Obviously, the significant ones ... anesthesia is a significant piece because of the surgical program that we run. Obstetrics is a big piece. As this area has grown, and it's been undertaking lots of growth in the last little while, we have looked for opportunities to bring services closer to home for patients so they can get serviced here, and certainly have added palliative care at some point. We actually have a number of family docs who have both official and unofficial specialty skills that they are using. We purposely look for some of those and we also purposely encourage individuals to even go back and get some training for a skill set that we see a need for." Case 2 Participant 10 Administrator.

While we encountered no enhanced skill practices that were organized around an insufficient patient population, we did see family physicians delivering enhanced skill care on a part-time basis while also maintaining either a partially or completely focused practice. Case 2 and Case 4 are rural and remote communities that recognized a community need for generalist physicians, as well as several areas of enhanced practice. They formulated community policies to meet these needs, offering only part-time positions in areas of enhanced skill (e.g. FPA) as a way of attracting providers while endeavouring to ensure that patients in the community had their care needs met.

Access to Resources: The organization and effectiveness of enhanced skills practitioners within communities are influenced by the availability of resources within that community. Here, access to resources can be understood as distance to tertiary care, the density of specialists or enhanced skill practitioners available to referring physicians within the region, and access to education through affiliations with an academic community.

In rural areas, for example, enhanced skill providers were actively utilized as a resource to extend the scope of services available in the local community from family medicine providers: "[CACs] provide another layer of expertise where they could handle something or diagnose something in that area of expertise, and then the patient doesn't have to go to [the urban centre] or go to a specialist so the care can happen quicker and within the same community." Case 2 Participant 9 GEN

In urban and suburban communities, the access to enhanced skill care was mediated by the level of awareness of available services and the connectivity between referring family physicians and available providers. For example, in Case 6 we heard from a comprehensive family physician practicing in a large, urban, high-volume solo practice who was loosely connected to other family physicians through an optional shared call group. Due to the high availability of RCPSC specialists in this urban centre and the low connectivity between family physicians, patients with needs that could have been addressed by a family physician with enhanced skills (e.g. geriatric or obstetrical care needs) were typically referred to specialist physicians.

Remuneration Arrangement: The arrangement and effectiveness of enhanced skill practices within communities is influenced by the remuneration structure under which the physician is working. This is particularly meaningful with respect to the way certain financial arrangements facilitate more time with patients and the way that enhanced skill care often requires more time with patients.

"I was fee-for-service when I was family practice and I'm on salaried position now. I couldn't do what I do fee-for-service. For one thing, the geriatricians have actual billing codes for what we

do, family practice does not have billing codes for what I do. Because, we do comprehensive geriatric assessments, they take an hour to an hour and a half. They have a consultation code, they have an in between, if they see the patient so many days afterwards then they have a follow-up code. So, their codes actually pay them for what we do. The family practice codes are all office visits. When I had my practice, I saw, I don't know, 40 patients a day. I see not that many now. It takes me an hour, hour and a half to see a consult. So, you couldn't possibly bill family practice codes and do geriatric care. Even the internists that we work with, they're on salary as well." Case 3, Participant 2 CAC(COE)

In each jurisdiction, participants discussed particular remuneration idiosyncrasies and the way they influenced care:

"I just want to be clear, you cannot do shared care and have both doctors paid at the same time in the model that we're in. ... We're fee-for-service, so you really can't do shared care. So, if a family doctor wants to do shared care, obviously they're going to bill for it, that's kind of the point and the incentive, so we kind of work for free in those cases. And, I do it, to build capacity, but I'm not getting remunerated for it. So, you see how the system kind of pushes people into either you or us." Case 6 Participant 2 CAC (PC)

Formal Privileging and Practice Requirements: Across the cases, we observed policies that required family physicians to maintain generalist practice and policies that required family physicians to maintain hospital privileges and provide in-patient care. For example, in Case 4, family physicians who would like to have hospital privileges related to their enhanced skills work must also participate in either a family practice or a shared in-patient call schedule. Choosing not to participate would mean exclusion from financial incentives provided by the territorial medical association.

"I said, okay, when you come here as a family doctor there are lots of big incentives, like, financial. So, obviously you're interested in that. Like, well, I'm a family doctor, I should be able to access that as well. That's what made it a little bit harder for me to only do sports med, because I was like, well, I want to do sports med, but I also want to access the family med stuff. That's when I met with the hospital here and I told them, I am ready to do whatever you want me to do, to be able to access those things as well, at the same level as my other colleagues. So, in the end, I made it work out, because I agreed to take part in the call schedule. But, I'm not obliged to. If I didn't want to, I could stop. But then, I wouldn't have the financial compensation for being in a northern community as a family doctor." Case 4 Participant 3 CAC (SEM)

Community Culture

The data reveal that the personal and professional goals of the physicians that work within a community, and how these operate at individual and group levels, are influential factors on the effectiveness of CAC holders on health care delivery within a community.

Practice norms: In each community we visited, there was a sense of the way “things are done” in that area, which we understood to be the traditions of practice. These practice norms had an undeniable influence on the way new practices were received in the community, in turn affecting how family physicians were able to organize their own practices. Sometimes, this created barriers for new CAC holders who wished to set up practices that were not typical of the family medicine culture in that area:

“I tried to start a primary care sports medicine clinic, based out of a physiotherapy clinic, last fall. The idea with that was to increase access to sports medicine, because many patients, well, some patients, a percentage of patients here don’t have a family doctor, so they cannot be referred to me. So, I thought by creating that I could increase access to sports medicine or MSK care. But, because there has never been a sports doc here before, the community doesn’t have the culture of that, so what I ended up doing was a lot of doubling up on what the family docs were already doing or on what the Emerg was doing. ... I think part of the reason it didn’t work is because there is no culture of sports med and patients don’t really know what I can do and cannot do and what’s my role kind of thing. They didn’t necessarily even know I was a doctor.” Case 4 Participant 3 CAC (SEM)

Practice norms also included the expectation or requirement of a credential to substantiate enhanced skills expertise, or whether reputation was deemed sufficient:

“I’ve been able to put (PC) behind my CCFP, that’s it really. I mean, there’s no change in ... I don’t think any of my colleagues even really noticed for the longest time. But they know me by the fact that I have extra training and I’ve been able to help them out of difficult situations. That’s how you make the impact.” Case 2 Participant 8 CAC (PC)

Individual values and attitudes – Each health care community is composed of the practitioners that work within the formal constraints of their health authority and community. We noted that independent practitioner values about personal-professional balance and health care delivery served as major contributors to the way in which practice decisions about enhanced skill work and the CACs were made. Individual practitioners were required to balance structural requirements and expectations against their own values about personal life and professional practice:

“I enjoy doing the work that I do at the care home. I don’t know if I would need or, honestly, want the extra one because I think if I did do the Care of the Elderly, then there would probably be a reasonable expectation that I was going to provide extra services to the region and I don’t know if I have time in my practice or my life to do that.” Case 2 Participant 4

For some generalist family physicians, there was a high value placed on self-sufficiency and on providing timely care. These physicians were willing to provide the care themselves if timely care could not be easily accessed. As one family physician put it:

“it’s not to say that I wouldn’t value having more people in those [CAC] roles because if that improved my access, I would use some of them more. But I trained through a time and worked in a time where that accessibility wasn’t always there. And so, I’ve learned how to not need them until I really need them. And then when I really need them, they’re great about responding because they don’t hear from me unless I really need them. Case 3 Participant 7 GEN

Summary

Individual family physicians and communities of family physicians across Canada organize their practices, their relationships to other practitioners, and their commitments to the communities they serve in a wide variety of ways, and this variability means that the experiences and practices of each CAC holder is unique. The organizational models and influential factors presented here reflect our best efforts to capture the elements that have some transcendental influence on how family physicians with CACs in the PC, COE, SEM, and FPA domains contribute to the delivery of comprehensive, community-adaptive care in Canada.

Given the models and factors that define any one community, family physicians are afforded different levels of opportunity to arrange their practices in ways that are mutually beneficial to both their professional aspirations and comprehensive care within that community. Although these models and factors are delineated above, they should be understood as inherently interactive; co-varying as a function of one another. In particular, we see that CAC holders tend to have a positive impact on the delivery of comprehensive care when they work in collaborative models that align with the needs of communities and support local generalist family physicians. These arrangements are particularly effective when they are part of planned care delivery at the practice and community levels.

Member Experiences of the CAC Program

Our investigation yielded considerable data concerning the motivations, barriers, and perceptions that CFPC members experienced with respect to the CAC Program.

Motivations for pursuing a CAC

Across our data set we identified that CFPC members are motivated to pursue enhanced skill training for a variety of reasons. For some individuals, the aim is to avoid difficult, under-resourced, and overly constrained contexts of generalist family practice:

“When I left to go to [a locum], I don’t know how many people asked to take my cancer care position or my palliative care position. Other family doctors that were like, I am so burnt out from family medicine and I just don’t want to do it anymore. ... I also think people just want to get away from family practice. That’s why I feel like we’re going to see more people wanting to get into these little niches.” Case 5 Participant 8 GP-Oncology and CAC (PC) applicant denied

In others, it’s to develop an enhanced skill practice that is responsive to the health care needs of their community. *“I feel heavily committed to this one location so if I was going to pursue extra training, it would be in conversation with the other physicians who work here.”* Case 2 Participant GEN

In both instances, the CAC can be seen as a favourable choice because of the formal College endorsement. *“In general, I like official stuff. When this was offered to me, I thought, well, why not? Because, this is one more paper confirming that I’m trained to do what I do. But also, because it’s something pan-Canadian and that’s coming from my direct origin, you know, family physicians of Canada.”* Case 4 Participant 3 CAC (SEM)

This perception extended to the idea that the certificate is likely to become an explicit standard for attaining focused-practice designations.

“Yeah, don’t be mistaken that if I do this CAC it’s for any other reason because I know it will get me job security with the government. [...] These certificates have created this playing field where those of us with them are going to get potentially financial advantages and job security, contract advantages with government but I do think that the entire premise that they were built on is wrong.” Case 4 Participant 2 CAC (COE) applicant

However, the opinion of the CAC as necessary to secure positions was not universally held. Indeed, some enhanced skill family physicians with full or partially focused practices and who have completed substantive formal training in a domain of care are reluctant to apply for a CAC because of a lack of clarity about how the additional certification would benefit their practice:

For me, it doesn’t really matter all that much to me. It would be the sort of thing, if somebody came up to me and said, hey, if you fill out this application and send us your credentials and we’ll give you this, then I’d be like, yeah, for sure. But it wouldn’t be something that I would really go out of my way to do, just because in terms of my practice, in terms of the way I provide care for patients, in terms of my skill set, in terms of opportunities to get further skills, it doesn’t open any other doors for me. Case 2 Participant 14 non-CAC SEM

Barriers to pursuing a CAC

The data reveal how many members experience barriers to pursuing additional training once they are embedded in a practice and a community, including the personal and professional cost to leaving one’s practice, the lack of coverage for patients, and the impact on their family’s lives:

“I think what makes it challenging for people to go back when they’re out in practice is if you have a family practice, what the heck do you do with your family practice? Then knowing that you’re getting extra skills, what are you planning to do afterwards, and can you continue to meet the demands of that family practice? ... Then you have to figure out what your new role is going to be coming back. It’s a lot if you’ve got a family at all. Moving your family just for one year is a big ask, or not moving them and then travelling them back and forth. Changes to income structure as a resident salary is not the same as a working physician’s salary so you have to plan for what that means to your lifestyle and maintaining skills that you’re not practising very often if you want to keep using them afterwards is a challenge.” Case 4 Participant 1 (PC) (FPA)

These impacts were particularly felt in rural communities where attending a PGY3 year would require relocation.

Interviewer: *what would happen if you left for a year? Somebody would take over your practice?*

Respondent: *No. There’s nobody. There are a ton of people on a waitlist for a doctor so there’s no way that any physician here could manage my patients. I have 1,200 patients. Some physicians here, that do more other work at the hospital, only have 500 patients so they can’t take 1,200 of mine and look after them so they would be stuck. I would have to probably figure out a way to get my most sick and complicated patients and spread them out amongst a few people. Then everyone else would probably just have to go to the walk-in.* Case 2 Participant 9 ES in low risk OB

In some places, these barriers were addressed in part or in full by provincial and territorial support via formal programs: *“With the GP Oncology program here in the territory, if someone goes and does the training, there is supplemental income support for them while they’re away for the time of their training, and also support for them to find locums and things.”* Case 4 Participant 1 (PC) (FPA)

In other instances, enhanced skills training is supported informally by colleagues who recognize the community need:

“We have actually had docs that have practiced for many years and gone back and done the anesthesia program. If there is a need, we have figured out how to make it happen. ... In some cases, it was just managing their patient load that they had established for this period of time while they were away. The rest of the group picked them up and took care of them and said we would manage that for them. We, as a clinic, have provided some financial support for them while they have been away.” Case 2 Participant 10 Administrator

Perceptions of the CAC credential

Across cases there was an acknowledgment that the College’s endorsement of the CAC Program served as a key validation of the quality of the enhanced skill work that enhanced skill family physicians are already doing.

“So, when the opportunity to get a CAC came about, that was really important to me, because I felt that it validated the work that I had done and it actually gave me the credentials I felt that I probably had worked at. So, that other people would recognize that I knew what I was doing. I’m not sure that I really want anybody to know that, but, anyway, I’m sure that’s part of it. Because, I always felt like I was, not that I was a fraud, because I didn’t feel like I was a fraud, but I was worried that other people thought that I was doing something that maybe I wasn’t skilled enough to do or that I didn’t deserve to do. So, getting that designation, for me, was really important.” Case 3 Participant 2 CAC holder

Similarly, this validating power was also experienced by those practitioners that we interviewed who had made application for the CAC but were ultimately unsuccessful. In these situations, the individuals felt that the decision to not certify their added competence was an indication that the College does not value their enhanced skill work.

“It [having application for a CAC via the leadership route declined] made me feel devalued. I think it made it feel like you’re not doing ... I’m not the only one. I know there was a colleague of mine that also had the same rejection and actually was told the same kind of thing that it makes you feel like the work you do is not valued because it’s not in a hospital system. It also makes you feel like well everybody could do what you’re doing so it’s not a big deal.” Case 6 Participant 3 CAC (COE) PC denied

Importantly, most participants we interviewed expect that the College will lobby Provincial and Territorial authorities and advocate for CAC holders in their pursuit of practice designation, access to billing codes, and the organization of more favourable remuneration structures. The potential for this advocacy is perceived as a key benefit of pursuing the CAC designation where it is available.

Summary

Taken together, the analysis shows that the CAC program impacts the professional identity of its members with and without the certificate; validating the enhanced skill work of certificate holders, and devaluing the work of enhanced skill family physicians without the certificate and generalist family physicians in solo practice. Through this conferment of credibility, the CAC program has an indirect, or downstream, impact on health care delivery practices above and beyond the direct outcomes of the enhanced skill work. It supports certain individuals in negotiations related to hiring, privileging, billing, and funding for programs, which have the potential to improve access to resources within a community. It enhances and lessens a policy-maker perceptions of physician expertise or leadership in the field. It is also often intangible, altering a physician's confidence in their personal ability or legitimacy to lobby for system improvements.

"You don't need a CAC to do long-term care and memory clinic and stuff, but what you can with a CAC is maybe you can talk to the Ontario Long Term Care Association and say, like look I have this expertise, like I'm interesting in doing some advocacy work. Or you can partner with a resident or a patient council, or when you apply for a grant it gives you that much more kind of like optics that you are engaged in this. So, I think that's how I see my CAC is that I'm leveraging it for those things and not necessarily to get a more defined care of the elderly practice." Case 1 Participant 1 CAC (COE)

Impact of the CAC Program on Trainee Decisions

The case study and analysis provided important data about the impact that the CAC program had on the motivations and experiences of family medicine trainees. These data included contribution from 6 trainee participants as well as several early career family physician participants who were able to reflect on the factors that influenced their decisions during training.

Motivations to pursuing a CAC

Our analysis indicated that there are a variety of reasons why trainees are motivated to pursue enhanced skill training.

Many trainees find particular aspects of family medicine practice preferable and more fulfilling than others. This reason was very consistently noted and took a variety of forms. Some trainees felt a particular affinity to one part of family practice, and others seemed to be seeking to bring diversity to their generalist practice by pursuing particular aspects they enjoy: *"I really enjoy it, I like the variety of the practice. I also, I love clinic, but I can't do it that many days in a row."* Case 2 Participant 1 CAC (FPA).

Others were attracted to the acuity and opportunity to feel confident in the boundaries of one's skills that particular domains of care provide:

"I think that is a major draw in the way you're trained in anaesthesia is to have a sense of all the possible ways things could go wrong or all the things that you have to do. And there's a bit of a security in knowing, well, I know these are the things that I can do, and these are the things that I would do in these situations and it falls into this narrow spectrum. Whereas in family practice and clinic practice, it seems endless. The breadth is just daunting. So, there's a draw to a more focused part of medicine where you can feel more comfortable, even if it is more acute and

maybe more dangerous but you know where your limits are, and you know what you can do.”

Case 2 Participant 3 Trainee

Many trainees indicate that they intend to work in regions where enhanced skill work is anticipated to be particularly useful. For instance, individuals who hoped to work in rural contexts perceived enhanced skill practice as particularly useful in addressing gaps in health care delivery in these communities. *“The whole reason I did anaesthesia in the first place was to be comfortable working in a rural emergency room.”* Case 2 Participant 2 CAC (FPA)

Some trainees also espoused the idea that they perceive that family medicine practice with an enhanced skill focus will permit professional work that has better hours and remuneration and that is more easily balanced with other aspects of life:

“In the O.R., you are exposed to all the specialties. I enjoyed my specialty, I still do, I thoroughly love it. It fit my personality in terms of what I wanted, I didn't want to be office-based, I preferred to be hospital-based. I enjoyed being in the hospital and when I was in the hospital I was working and when I wasn't working I would go home. I didn't have to go to the office and secretaries, I didn't have to worry about expenses, so for my personality it was a good fit.” Case 5 Participant 3 FPA (no CAC)

There are also trainees that consider enhanced skill training because they aspire to be academic, community, and clinical leaders in particular areas of family medicine practice.

“I think the CAC program provides us, as continuing trainees, a little bit of expertise in that specific field and taking on more leadership roles and academic roles, in terms of furthering the field that way.” Case 6 Participant 4 Trainee

Perceptions of the CAC credential

When we spoke with current trainees and recent graduates about enhanced skills training and credentialing, we heard that they recognize numerous options for pursuing enhanced skills practice including and beyond the CAC program, and that they need to make decisions about the programs and designations that best facilitate their goals.

In this regard, we identified some salient perceptions that impacted trainees' considerations to pursue enhanced skills training, and CACs in particular.

Specifically, most trainees and recent graduates articulated a belief that those responsible for hiring and privileging value the CAC credential preferentially. Accordingly, they indicated that they felt that this particular designation would position them most favourably for attaining the type of work arrangement that they desired. *“Some positions are quite competitive now in terms of job opportunities. So, in the region I live currently, it's actually quite difficult to get a nursing home position, for example, so I thought having extra training and extra experience in this field would provide me with the skills needed to be more competitive in the job market.”* Case 1 Participant 3 PGY3 recent graduate (COE)

Although this belief was consistent throughout the trainee data, we did not identify any formal hiring policies that required the certificate.

Benefits and Risks of the CAC Program

The major external forces that drive health care behaviour in Canada are either an ecological function of the population demographics or established at provincial and territorial levels; and both these functions operate beyond the scope of the CFPC's direct influence. However, our study shows that the College does have the ability to influence health care delivery through aspects of its membership structure. With specific respect to the CAC Program, we see that the certificate confers credibility and promote the professional identity of those who hold it. By shifting perceptions about expertise, the CAC program influences the way in which family physicians refer patients between each other and coordinate care within a community. All of this sets a foundation for the types of challenges and rewards a family physician can reasonably expect to encounter through their work within a community. These expectations, in turn, influence the way in which physicians balance decisions against their personal and professional motivations. Through this mechanism the CAC Program is understood to create both benefit and risk for the delivery of comprehensive, community-adaptive health care in Canada.

Benefits

For any one community, CAC holders may employ a collaborative model of care that leverages the intersection between the external forces that act upon a community and the pervasive culture of that community to improve the family medicine services that patients can access, the relationships between patients and their family physicians, and the well-being of the care providers.

Specifically, the CAC program:

- Elevates the clinical skill base of a community of physicians. This occurs when CAC holders accept referrals to provide enhanced skills, and when they provide formal and informal education opportunities to their colleagues.
- Helps keep patients within their regional communities. The CAC holder can reduce the need for specialist care that may only be available at a distance. This is particularly relevant in rural and remote communities.
- Provides adaptability and flexibility in the resource that family medicine practices can offer patients. This is accomplished when the CAC holder addresses a specific area of community need and when they coordinate with other practitioners so as to allow them to address specific areas of need.
- Works to maintain continuity between patients and their family physicians. This occurs when CAC holders work with patients and other physicians in collaborative models.
- Improves the well-being of members of the care team. This happens for the CAC holders themselves, who may be able to arrange nuanced practices that foster fulfillment and reduce work-related burnout, and for comprehensive family physicians, who can experience less complexity because services requiring added competence are provided by CAC holders.

Risks

The Certificate program does not universally benefit the delivery of comprehensive care in Canada. The influence of the CAC program ranges from promoting, to neutral, to discouraging comprehensive care, depending on the intersection between the factors of influence and the way care is organized in a community.

In this regard, the risks of the CAC Program include:

- A decrease in the number of family physicians that are willing and able to provide comprehensive care to patients. This may occur when CAC holders focus their practice and do not maintain their generalist skills.
- An increase in physician groups that are not able to meet the comprehensive primary care needs of their communities. This may occur when CAC holders focus their practice without adequate consideration for community needs.
- An erosion of morale in generalist family medicine. Personal and professional incentives currently reward enhanced skills practitioners with partially or fully focused practices, while generalist family practice is rarely incentivized and typically enforced through policy requirement. Continuation of these one-sided incentives risks creating division between College members.
- Undervaluing the work of family physicians without formal enhanced skills training who provide services in the same domains of care. In this regard, the standards for added competence serve to communicate a desired demarcation between in-basket generalist family medicine skills and additional competence worthy of a CAC.
- Encouraging credential creep. This is problematic because it increases the burden of training on the College membership, shifts the focus of the professional base away from generalism, and devalues the standard CCFP designation (Table 11).

Table 11: Mean (SD) survey respondent agreement (out of 7) with propositions concerning the Certificate of Added Competence and their holders (Survey Section 3; Questions 32) by physician type.

	PC	COE	SEM	FPA	GEN	All Respondents
The CAC will inflate the minimum credentials required to practice family medicine:	3.2 (1.3)	3.0 (1.4)	2.9 (1.4)	3.4 (1.4)	4.1 (1.7)	3.8 (1.6)

As an important final note about potential risks, our analysis has highlighted that the CAC program inspires many different perspectives among the CFPC membership. Like any set of policies, the CAC program risks communicating support of values not held by the CFPC. For example, interpretation of the CAC Program may suggest that the College values:

- Differences in the nature of expertise held by its members.
- Fewer transitions between family physicians and specialists is preferable, such that more patient care is managed by family physicians;
- Vertical integration of family medicine and specialist care that promotes efficient and effective patient transitions into and out of acute care scenarios;
- Coordinated health provider approaches to generalist practice;
- Family medicine practices that are structured around the interests to the practitioners;
- The identification of new physician graduates as leaders in particular domains of health care prior to their establishment of ongoing relationships within communities of patients;
- Additional training and experience for some domains of care that are in the purview of family physicians, and not for others.

Recommendations

Articulate the intended values of the CAC Program

The CFPC should reflect on the potential values espoused implicitly and explicitly by the CAC program, avowing those which are intended and disavowing those that are unintended. Articulation of these values will provide direction to quality improvement processes.

Ensure person-centred, community adaptive family medicine forms the base of a fundamental profile for CAC holders

CAC holders are enhanced skill family physicians. Although they have additional expertise in areas of complex care, their expertise is grounded in person-centred, community-adaptive family medicine. Any fundamental profile of CAC holders should emphasize this grounding. The College may consider developing a profile that is built directly upon the Family Medicine Professional Profile, which describes all family physicians in Canada. Perhaps the Family Medicine Professional Profile can be sufficiently adapted to reflect all family physicians, those with enhanced skill practices or otherwise; or made to accommodate a secondary level of description that provides unique characterization of the enhanced skill practitioner, either across domains of added competence or uniquely for each relevant domain.

Identify potential areas for new Certificates of Added Competence

Despite the stated risks, the recognition of benefit suggests the possibility that additional certificates may be warranted and provides the impetus for careful implementation of any new CAC. The identification of areas of care that are at the *current* edges of scope for the generalist family physician will help to define the appropriate domains of competence, if any, for additional certificates. In identifying areas for certificates, the CFPC may consider:

- The frequency of transitions of care between family physicians and specialists in the domain.
- The amount of practice that learners receive in the relevant skills during residency or throughout their career.
- The emergence of new commitments to areas of need (e.g. addictions medicine).
- The overall time that physicians need to devote to the provision of care, formulation of treatment plans, assessments, and follow-ups in the relevant area of care.
- The benefit of access to alternate funding plans that allow different structures of work.

Determine a position on standardizing credentials for added competence

There are numerous ways in which a family physician may be designated as an enhanced skill practitioner with added competence. It is important for the CFPC to consider the relationship of the CAC program to the other existing credentials for added competence offered by other organizations. For example, the CFPC could consider whether it wishes to apply its credentialing standard to areas of added competence that are endorsed by other organizations. Alternatively, the CFPC may wish to consider working with organizations who offer other credentialing standards to align efforts, or reduce duplication.

Ensure the perceived validity of the certificate

The effectiveness of CAC physicians within communities is influenced by perceptions of practitioner's competence. Our data suggest that longer term training, particularly over consecutive months, is perceived to result in greater standards of knowledge, skill, and competence than *ad hoc* trainings over the course of a career. This has implications for the way that the leadership application route to

certification is perceived relative to the postgraduate fellowship and return-to-training routes to certification. The CFPC should contemplate minimum training standards as part of any application for certification. Given the evidence of the difficulty that mid-career physicians have with engaging in this kind of training, the CFPC may also wish to consider potential sources of support for mid-career physicians who return to seek training that facilitates their ability to provide care aligned with community need.

Encourage collaborative models of care that align with community need

CAC holders tend to have a positive impact on the delivery of comprehensive care when they work in collaborative models that align with the needs of communities and support local generalist family physicians. The CAC holder is particularly effective when they are part of planned care delivery at the practice and community levels. In our data, this planned care delivery happens through leadership at the community level. This means that it occurred inconsistently, with some communities having little coordination resulting in CAC holders not practicing in a collaborative, community-adaptive way. The CFPC may wish to consider what mechanisms are available to them to support individual communities of physicians in the creation and maintenance of collaborative structures.

This recommendation is one of our most vague, but also one of our strongest. Across the 6 cases, the embeddedness of CAC-holders in collaborative models that were aligned with community need was a strong predictor of positive impact. These models were not present in all communities. The establishment of these models typically relied on leadership and collaboration amongst physicians in the local group. To ensure continued success of the CAC program, the CFPC may wish to think about opportunities to support members in the identification of community need and the establishment of collaborative models of care.

Promote incentives for generalist practice

The CFPC should be aware that focused, enhanced skill practice is promoted in different provinces and territories through incentives that often include higher remuneration, salaried fee structure, and improved control over work hours; while generalist care is primarily encouraged through policy edicts and contract agreements, rather than incentives. The CFPC brand means that College members expect the certificate to have sufficient clout to facilitate their self-advocacy for these incentives or for the College to engage in advocacy for these incentives on their behalf. The College may consider ways in which they can advocate for greater financial and work structure incentives that encourages generalist practice.

Conduct further research

This analysis yielded considerable data that highlighted the effectiveness of the Certificate of Added Competence program as it pertained to the Quadruple Aim components of *'Improving the Patient Experience'* (as understood through the 4 Principles of Family Medicine) and *'Enhancing Care Team Well-Being'*. The impacts of the CAC Program on the Quadruple Aim components of *'Population Health'* and *'Reducing Health Care Costs'* remain areas for greater understanding. In this regard, we recommend fulsome inquiry into the way in which the distribution and mix of CAC physicians is aligned with the health care needs of communities throughout Canada, and to investigate the factors that promote new graduates with these certifications to seek out practices that serve these populations. Furthermore, we also recommend economic analysis on the impact that the certificate program has on the number of health care concerns addressed by family physicians as well as on the overall costs to the health care system. This work may consider the way in which these factors promote more robust family medicine and primary care approaches to health delivery.

Limitations

In this study, the cross-case methodology required that our analysis generate factors of influence that were broadly relevant across the country. This meant that aspects of local contexts that may resonate strongly within a particular community may not be represented within the scope of analytic generalizations. In this regard, we recognize that the list of factors presented here may not be exhaustive; the selection of 6 different cases may have resulted in a different articulation of CAC impact. That said, the multi-phase and multi-case approach to this research gives us confidence that our conclusions are strong.

A similar limitation relates to the way in which we have reported influences and impacts in clearly defined categories. We acknowledge that this approach is overly simplistic to the interactive way that external and internal tensions emerge within communities. In this regard, we recognize that it may be difficult to fully comprehend the essence of a single set findings in isolation from all the findings.

The survey response rate with respect to the entire population of the CFPC membership is admittedly low (6.4%). This certainly impacts the explanatory power of the survey responses. Of note, however, is that the response rate associated with the population of CAC holders in the PC, COE, SEM, and FPA domains is considerably higher (19.5%-24.5%).

Notably, we considered the features of provincial regulations, licensing and privilege status, and various fee structures associated with healthcare delivery across Canada in delineating influential factors. However, given the project scope relative to the breadth in differences in provincial approaches to these activities, we must acknowledge that it is not possible to determine the specific vectors of influence that each of these factors have on the impact of the CAC program across Canada.

Lastly, at the time that this study was conducted, there were considerably more certificate holders in the domains of interest that had acquired their designation via return to training or leadership routes than there were new practitioners that had started independent practice with the certificate. This is a natural function of the time course in which these certificates were introduced. Accordingly, it was typical for us to see referrals and care coordination driven primarily by perceptions of physician expertise in areas of added competence that were formed through firsthand knowledge of expertise, rather than recognition of an enhanced skill designation; CAC or otherwise. As new graduates enter into independent practice, we anticipate the certificate will more regularly denote to communities of practice those individuals that are most prepared and appropriate to provide health care services that rely on the relevant enhanced skills.

Another implication of studying the CAC programs 4 years after their introduction is that we observed a large proportion of physicians who had developed their enhanced expertise as a function of being embedded in a community with a need for that care. As a larger proportion of CAC-holders achieve their CAC through an additional postgraduate year before beginning independent practice, CACs may become less aligned with community need and more aligned with physician interest.

Conclusion

The study highlights that the effectiveness of the certificate program relies on the establishment of practice arrangements that use CACs to promote collaborative organizational models that enhance patient care. It emphasizes the potential for significant benefits from the CAC program, including the opportunity to enhance the ability of family physicians to provide comprehensive care to patients within their regional communities, by increasing the capacity of family physicians in that area and offering additional services. Our data also strongly demonstrated that the CAC program improves the well-being of members of the care team by permitting CAC holders to engage in medical practice which fosters fulfillment and for alleviating particular types of complexity in the practice of the generalist physician.

The CAC program is not without risks. As focused practice is increasingly incentivized through opportunities for increased remuneration and improved quality of professional life, family physicians may move away from generalist practice. This will have the effect of reducing access to comprehensive family medicine practice, and devaluing the skills of the comprehensive family physician, some of whom may provide similar services without formal enhanced skill training. This report encourages the CFPC to consider the values communicated by their support of the CAC program, and to work within the mechanisms available to them to encourage CAC holders to work in collaborative models aligned with community need.

Appendix A: Phase 2 Interview Guide

Title: Understanding the Impact of CFPC Certificates of Added Competence

Physician Interview Guide

Thanks for participating in this research study. As you know, we have been contracted by the CFPC to study the impact of the Certificates of Added Competence. We're especially interested in the CACs in Care of the Elderly, Palliative Care, Family Practice Anesthesia, and Sport and Exercise Medicine. Our research objective is to understand how CACs impact the scope of the care that family physicians provide, as well as how they impact regulatory, licensing, and privilege status, as well as fee structures.

We're undertaking this research by studying particular family practices or inter-connected communities of primary care, and looking deeply at how family physicians with CACs impact practice in those groups. We'll then compare how they are working across groups. Finally, we'll conduct a pan-Canadian survey to see whether our findings are representative of how family physicians with CACs impact practice across the country.

Right now we are at the beginning of this research, still trying to explore what factors may be relevant or influential. I have a number of questions for you, but I'd also invite you to tell me anything you think is important for us to know about how CACs impact your own practice or how your practice group works together.

1. To begin, let's talk a little bit about you. What's your job here at [PRACTICE]?
 - a. How long have you been in independent practice?
 - i. Do you hold a CAC? In what? When/how achieved?
 - b. Please describe the type of practice group you work in.
 - c. What's your role within this group?
 - i. Do you have any clinical specialties, or groups of patients that you tend to see more frequently than others?
2. **[If yes to 1.a.i, they have a CAC]** So, you have a CAC in [TOPIC]. Tell me about why you decided to pursue that, and what you had to do to get that certification.
 - a. Were you in independent practice before getting that CAC, or did you earn it as part of your residency training?
 - b. What motivated you to apply for a CAC? What benefit did you perceive from obtaining it? Was the benefit realized?
 - c. **[If yes to 2a, they were in independent practice before getting that CAC]** Could you think back to what your practice looked like before getting that CAC and compare that to the work you started doing after earning the CAC? What changed?
 - i. {probes if needed} patient population, relationship to colleagues within practice, relationship to FP colleagues outside of practice, relationship to specialist colleagues, fee structure, involvement in research, geographical reach of care, physical place of work (e.g. specialized clinic or hospital privileges)
 - d. We're interested in referral patterns within [PRACTICE]. Many of these CACs provide additional training in aspects of care that are part of what every family physician will

encounter in a general practice. When should your colleagues refer patients with needs relevant to [your CAC] to you, and when should they maintain care of these individuals themselves?

- e. Is this typically how it happens? Talk to me about actual practices in terms of where your FP referrals come from. Why do you think it is like this?
 - i. Are patients aware of why they are being referred to you?
- 3. **[If no to 1ai, they do not have a CAC].** Could you identify for me which of your colleagues at [PRACTICE] have a CAC?
 - a. [note to analyst- compare to list of CACs- who is a visible CAC holder?]
 - b. Think about your patient population compared to the groups seen by these colleagues. How are they different?
 - c. Under what circumstances would you refer a patient to one of your colleagues at this practice, who holds a CAC? When might you keep them yourself?
 - i. [if needed- what about elderly patients, or those you have seen for a long time but now reaching end of life- how do you decide what is outside of your own scope]
 - ii. I'm going to ask you to think about a particular patient in your practice who came to you with a sports-related injury [or needed palliative care, or other CAC present in their practice]. Could you give me a high level description of their case? How did you decide whether or not to refer this person to [Previously identified CAC holder].
 - 1. What would have changed your decision? You could think of factors related to the patient's presentation, their social needs, your practice load etc.
 - d. Have you considered obtaining a CAC? Why or why not? (Probe: perceived benefit, impact on scope of care/individual practice)
- 4. Let's talk about the comprehensiveness of care provided by the group at [PRACTICE].. We're interested in understanding whether a colleague within your practice or other affiliated team with a CAC can help this, and if so, how.
 - a. Please tell me about the comprehensiveness of the care you personally provide. Are there some areas of family medicine that aren't part of your practice? [probe: *Obstetrical care, palliative care, care outside of office, e.g. in hospital or home*]
 - b. And thinking about your whole group, are there others who you can refer your patients to if they need someone who does [tasks identified previously?].
 - i. Under what circumstances would you refer a patient another primary care physician outside of your practice?
 - ii. What role would a CAC designation play, or not play in terms of who you referred your patient to?
 - iii. Would this change depending on the patient's particular needs, the setting (e.g. in another family practice, vs. hospital vs a long term care centre), or any other factors?

- c. Are there other family health teams that refer their patients to you, or to members of your physician team who are CAC holders?
 - i. Can you tell me about a time when this occurred?
 - d. What are the holes or gaps in the care your practice group is able to provide?
 - i. Why do these exist? What are some of the reasons that this care isn't provided?
 - ii. Where do patients go for this?
 - iii. Is it accessible?
 - iv. Who is providing this care?
 - e. With these gaps we just discussed, would additional training help?
 - i. Would CAC recognition of that training be of help?
 - ii. Are there any other areas of practice that you wish additional training was available in?
 - iii. Would it be important to you that this training was recognized by a CAC?
- 5. Let's talk about regulatory status, credentialing, and privileges to practice. What are the challenges you face in these areas?
 - a. Has the addition of CACs effected any of these at all?
 - b. Are these effects felt at the individual physician level, or at the practice group level?
- 6. I'd like to turn now to talking about fee structures and compensation. How is your practice funded?
 - a. What are some of the benefits of this funding structure?
 - b. What aspects of practice are challenging under this funding structure?
 - c. All forms of fee structures incentivize some types of practice behaviours and disincentivize others. We're interested in understanding some of the funding-related constraints on your ability to provide full scope, generalist care. I'll tell you what we are trying to get at here- one of the motivations for the CACs was to ensure that family physicians in each community have added expertise needed to provide full scope care for patients in that community. However, we recognize that knowledge or expertise is not the only constraint in providing this care, that often funding structures make certain services difficult to incorporate in a busy family practice.
 - i. Are there particular types of care you have decided not to provide because of funding? For example, we often hear that home visits are difficult to do because they are compensated at a fairly low amount for the time required.
 - ii. Are there models of funding which encourage you to provide particular types of care?
 - d.
- 7. The last topic we'll discuss is future directions for CACs. CFPC is newly offering CACs in Enhanced Surgical Skills and Addictions Medicine. There is the possibility that CFPC may continue to develop additional CACs.
 - a. What do you think about the expansion of CACs to include new areas of additional training?
 - b. Do you think there should be consideration for new CACs? Why?
 - c. What other clinical areas should the CFPC consider establishing a CAC in, if any?
 - i. [Probe the gaps mentioned in question 4]

Appendix B: Phase 3 Interview Guide

1. To begin, let's talk a little bit about you. What's your job here at [PRACTICE]?
 - a. How long have you been in independent practice?
 - i. Do you hold a CAC? In what? When/how achieved?
 - b. Please describe the type of practice group you work in.
 - c. What's your role within this group?
 - i. Do you have any clinical specialties, or groups of patients that you tend to see more frequently than others?
2. [All FPs with ES] Can you tell me about why you decided to pursue additional training in these domains of care?
 - a. At what point in your career did you decide you wanted ES training?
 - b. What benefits did you foresee? Any challenges?
 - c. What changes or benefits were realized to you personally or professionally after obtaining ES skills?
(Probe: sense of validation, privileging concerns, access to different fee structures or billing codes, ability to reduce general practice, improved work-life balance, administrative, political, or academic positions, get to do more of what you like to do)
 - d. What do you think the impact of your ES training has been on your community?
 - e. How many years of generalist practice did you have before pursuing ES training?
 - f. How has your generalist practice changed since obtaining ES training?
3. What role did the return to training supports play in your decision to pursue ES in GP-Onc? In PC?
 - a. Can you tell me about the supports you were able to access?
 - b. How did you determine there was a community need, and how did you make the case?
 - c. Did you intend to get a CAC when you started this process?
 - d. Anything else to know about the REAP funding?
4. [FP ES w/CAC] Can you tell me about why you decided to pursue the CAC certification?
 - a. What motivated you to apply for a CAC?
 - b. How many years had you been practicing in FM with your ES training before pursuing the CAC?
 - c. What changes or benefits did you anticipate from obtaining it?
(Probe: sense of validation, privileging concerns, access to different fee structures or billing codes, ability to reduce general practice, improved work-life balance, administrative, political, or academic positions, get to do more of what you like to do)
 - d. Did you perceive there to be any additional expectations or responsibilities as a result of obtaining your CAC?
5. Once you got the CAC, what changes or benefits were realized to you personally or professionally?
(Probe: validation, hireability, access to new fee structures, became an authority, education role, job security...)

- a. What changes have you seen at the community level after obtaining your CAC?
 - b. If you think about the work you do with a CAC and compare that to the work you would be doing if you had the ES but did not have a CAC, can you tell me what difference you see?
 - i. Amount of time in generalist practice; access to positions of authority, educational roles, leadership positions, relationships to colleagues within practice, relationship to FP colleagues outside of practice, relationship to specialist colleagues, fee structure, involvement in research, geographical reach of care, physical place of work (e.g. specialized clinic or hospital privileges)
6. I'd like to turn now to talking about fee structures and compensation. How is your practice funded?
 - a. What are some of the benefits of this funding structure?
 - b. What aspects of practice are challenging under this funding structure?
 - c. How does your CAC impact your funding? (Probe: negotiation, access to special fee structures, special billing codes?)
 - d. [If you do not have a CAC] what would change in terms of your privileging, remuneration, or billing if you had a CAC?
7. Can you tell me more about privileging requirements in this community?
 - a. Is a CAC required for your work?
 - b. [If no] What might be the impact on your work if the CAC became a requirement for practice? What about on the care provided in the community en whole?
8. Can you tell me about the referral process from other family physicians in the community?
 - a. How do comprehensive family physicians become aware of your consult services?
 - b. When should comprehensive family physicians refer to you and when should they maintain care of their own patients?
 - i. [where secondary and tertiary programs both exist] when should comprehensive family physicians refer to community-based palliative physicians and when to the hospital-based palliative physicians?
 - c. Is this what typically happens? What is the ideal way that you think this should work?
 - d. Who do you consult with if you come to the edge of your scope?
9. Can you tell me about the relationship between you and the referring physician after you have been consulted? (probe: level and type of continued involvement by referring physician after referral; preferred level of communication between fp and consultant, aspects of education in consult note or shared care)?
10. [If they maintain a full-scope practice] When you are referring your patient to other family physicians with ES:
 - a. How do you evaluate the competence of family physicians with ES? What role does a CAC play in this assessment? How does your assessment of their competence impact the way you engage with them around patient care?
 - b. What are some of the factors that you use to evaluate your colleagues' competence when referring? (probe: formal vs. practice-based training, the recency of training, length of program, location/competitiveness of the program, other factors)

11. Let's talk about comprehensive care in this community.
 - a. What are some of the strengths? What are some of the challenges to providing care?
 - b. Are there any services you would like to provide but cannot? Where do patients go for those services?
 - c. Are there any particular incentives or disincentives to providing these aspects of care to patients as part of comprehensive care practice?
 - d. Are there other areas of care you think should be more incentivized? What would be the best way to do this in your view?
 - i. What impact would a new CAC have in incentivising FPs to train in this domain of care?
 - ii. What role do you feel return to training supports can play in terms of helping to meet emerging community needs? Have you seen this happen?
12. The last topic we'll discuss is future directions for CACs. There is the possibility that CFPC may develop additional CACs.
 - a. New CACs you'd like to see
 - b. Any cautions
 - c. Requirement to maintain gen practice?
 - d. What about other areas? Any other areas of practice that you wish additional training or specialization was available in? Are there any other areas the CFPC should consider establishing a CAC in?
 - i. [Probe the gaps mentioned in question 8]

Selected interview questions for trainees

13. Why did you choose to pursue Family Medicine?
 - a. How do you envision your future practice?
 - b. Do you have any areas within Family Medicine that you feel particularly interested in?
 - i. How aware are you of the areas of ES that have CACs?
 - ii. Are there any areas of FM that you feel like you'd like to avoid?
14. Do you have any intentions to pursue additional training in these domains of care?
 - a. At what point in your career do you think you'd like to pursue training?
 - i. What do you think the benefits would be of doing the training right after residency?
 - ii. What about after you've established a practice in a community?
 - b. What benefits do you foresee from having an area of enhanced skill
(Probe: sense of validation, privileging concerns, access to different fee structures or billing codes, ability to reduce general practice, improved work-life balance, administrative, political, or academic positions, get to do more of what you like to do)
 - c. What do you think the impact of your ES training has been on your community?
 - d. How many years of generalist practice do you think you'd like to have before pursuing ES training?
 - e. How would you see your generalist practice changing if you obtained ES training?
15. In some provinces you may have access to return to training supports. How aware are you of this funding and what role does it play in your thinking about pursuing an enhanced skill directly after residency versus later in your career?
16. What incentives might you anticipate from pursuing a CAC certification?
 - a. What changes or benefits would you anticipate from obtaining it?
(Probe: sense of validation, hirability, privileging concerns, access to different fee structures or billing codes, ability to reduce general practice, improved work-life balance, administrative, political, or academic positions, get to do more of what you like to do; relationship to specialist colleagues, fee structure, involvement in research, geographical reach of care, physical place of work (e.g. specialized clinic or hospital privileges))
 - b. Did you perceive there to be any additional expectations or responsibilities as a result of obtaining your CAC?
 - c. Would you expect to have the same benefits from an ES if it was not connected to a CAC?

Appendix C: Survey Questionnaire (English)

*** Each page: You can skip any question you do not want to answer. You can also submit your incomplete survey by clicking the "**Next**" button to the end of the survey and then click the "**Submit**" button. If you wish to stop and do not want your survey data to be recorded, you can exit the study by closing your browser or clicking on the "Exit and clear survey" button at any point.

Section 1

1. Year of Birth (Write in or select from option list; answer should be 4 digits, for example, 1984)
2. Gender (Select from following options):
 - a. Woman
 - b. Man
 - c. Non-Binary
 - d. Prefer not to answer
3. Are you a Canadian Medical Graduate or International Medical Graduate? (Select one):
 - a. Canadian Medical Graduate
 - b. International Medical Graduate

Please indicate the year in which you were certified to practice Family Medicine by the College of Family Physicians of Canada. (Write in/Select from list)

4. Have you completed or been previously enrolled in a RCPSC Residency Program? (Y/N)
If yes, which one:
5. Please indicate whether you have other Health Professions Education training (Select from the list).
6. Do you hold any Certificates of Added Competence? (Y/N)

If yes

- In which domain of care? (Select from list (PC, COE, SEM, FPA, EM, AM, (+ option to specify the another CAC if participant has more than one)

For each domain of care

- By which route was it obtained? (Select from list (Leadership Route; Residency Route; Competency Verification Route; Challenge Exam)
- Is it currently required for your relevant privileges to practice?
- In what year did you obtain this CAC? (Write In)
- Did you use any Return to Training supports to obtain the required training for your CAC? (Y/N)

If yes

- What kind of supports did you access? (Select all that apply (tuition coverage, financial assistance to cover practice-associated costs, assistance finding locum, financial assistance to cover costs of living, other (write in))

7. Do you have any formal Enhanced Skill Training without a CAC? (Y/N)

If yes

- In which domain(s) of care? (Write In)
- What is the relevant certificate or diploma? (Write In)
- Where did you receive the relevant training? (Write In)
- What year did you complete this training? (Write In)
- Did you use any return to training supports to obtain this training? (Y/N)

If yes

- What kind of supports did you access? (select all that apply (tuition coverage, financial assistance to cover practice-associated costs, assistance finding locum, other (write in))

Section 2

The following questions ask you to describe your **practice**, and refer to your community as you perceive it.

Please note, a **Comprehensive Family Physician** is understood as one that offers continuing care to a defined group of patients across the life-cycle and in a variety of settings.

In answering these questions please consider all facets of your practice:

8. In what Province/Territory do you practice? (Select from list; include YK, NVT, and NWT)
9. Is your community urban, suburban, rural, or remote? (Select one)
10. Does your community have a general hospital, with an emergency room, and fewer than 100 beds? (Y/N)
11. Does your community have a general hospital, with an emergency room, and 100 beds or more? (Y/N)
12. What is the distance by car to the nearest tertiary-care hospital for specialist and sub-specialist care for patients with life-threatening illnesses and/or unstable vitals? (Select from list (more than 4 hours, 1-3 hours, 30min – 1hour, less than 30 minutes)
13. What type of practice do you have (select all that apply)? (Select from the list below)
 - Office-based practice (Group)
 - Office-based practice (Solo)
 - Hospital-based
 - Long term care facility
 - Academic centre

- Mainly consists of locums
- Walk-in clinic
- Specialized clinic (for e.g., sports med, geriatrics clinic, chronic pain, etc.)
- Other

14. Is there a requirement to maintain hospital privileges in order to practice family medicine in your community? (Y/N)

15. Is there a requirement to maintain a comprehensive family practice to a defined group of patients in order to practice in your community? (Y/N)

16. Do you currently maintain a comprehensive family practice? (Y/N)

If yes

- How many days/week are you in clinic? (Write In)
- Approximately how many patients are in your practice? (Write in)

If no

17. Have you ever previously had a comprehensive family practice? (Y/N)

If Yes

- For how many years? (Write In)
- Approximately how many patients were in your practice (write in)

18. Do you work alongside other CAC holders in your practice? (Y/N/Unsure)

If yes

- In which domains? (Select from list (PC, SEM, COE, FPA, EM, AM))

19. Do you refer patients to other CAC holders (Y/N)

If yes

- In which domains? (Select from list (PC, SEM, COE, FPA, EM, AM))

20. How are you paid (pick more than one option if blended)? (select from following list)

- Fee for Service
- Salary
- Capitation
- Other (include option to specify other)

If Answer to Q6 was yes, then these questions are available here

21. As a consequence of obtaining a CAC, have you experienced any of the following? Check all that apply:

- Higher remuneration
- Salaried fee structure
- Longer appointment times with patients
- Improved control over work hours
- Greater enjoyment from practice due to higher acuity
- Greater enjoyment from practice due to less uncertainty
- Greater enjoyment from practice due to more variation
- Greater enjoyment from practice due to more time spent in the parts of Family Medicine that interest you the most
- Greater enjoyment from practice due to greater level of expertise within a smaller scope.
- New leadership roles related to your CAC (e.g. academic, administrative, political)
- A partially focused practice (i.e., maintain some comprehensive practice patient load)
- An entirely focused practice (i.e., do not maintain comprehensive family practice)
- Increased opportunities to educate other family physicians in your community in your domain of added competence
- Increased opportunities to provide consult services in your domain of added competence to other family physicians in your community
- A change in professional identity
- No change at all
- Other:

Section 3

The following questions ask you to indicate your level of agreement with a series of statements concerning the Certificate of Added Competence and their holders.

In answering these questions, please reflect on your personal experiences.

*****The following questions should all be answered on a 7-pt Likert scale w. 1 as Strongly Disagree, 3 as Disagree, 5 as Agree, and 7 as Strongly Agree)*****

1. CAC holders apply a family medicine approach to their work in an area of specialized health care delivery.
2. CAC holders are fundamentally different from other specialists working in the same domain of care.
3. CAC holders are fundamentally different from full-scope, comprehensive family physicians.
4. CAC holders are fundamentally different from Family Physicians who have enhanced skills training but do not hold CACs.
5. Prior experience in a comprehensive family medicine practice improves the care that CAC holders provide.
6. The CAC holder enhances the capacity of family physicians to provide comprehensive care within a community.
7. Collaboration with CAC holders allows full-scope comprehensive family physicians to spend more time on other aspects of patient care.
8. CAC holders have taken over some of the scope of practice that used to belong to comprehensive family practice.
9. CAC holders help maintain patient continuity with their primary family physician.
10. CAC holders help keep rural and remote patients within their regional communities by taking referrals that would otherwise require them to travel to a specialist outside the community.
11. CAC holders address specific community needs.
12. The CAC is becoming increasingly required for privileging.
13. The CAC designation promotes sub-specialization among family physicians.
14. The CAC designation is not an incentive for family physicians to pursue new enhanced skills .
15. CAC holders provide leadership, advocacy, and education within their domain of practice.
16. A CAC obtained through the residency route is a valid marker of competence within a domain of care.
17. A CAC obtained through the leadership route is a valid marker of competence within a domain of care.
18. CAC obtained through the competency verification route is a valid marker of competence within a domain of care.
19. CAC obtained through the challenge exam is a valid marker of competence within a domain of care.
20. The requirements for obtaining a CAC are clear and transparent.
21. The criteria for obtaining a CAC are applied consistently.
22. Knowledge of a physician colleague's training and reputation is a higher marker for trust and referrals than their CAC status.
23. Family physicians that choose to pursue a CAC do so because of community need that grows out of experience in comprehensive family practice.

24. Family physicians that choose to pursue a CAC do so mainly for personal-professional reasons (i.e., lifestyle, remuneration, interest, validation of expertise, privileging).
25. The availability of CACs devalues the expertise of family physicians who do not hold one.

In thinking about where the CAC program may go in the future:

26. CAC holders should be required to maintain their competence in full-scope, comprehensive Family Medicine.
27. CAC holders should have access to unique payment and fee structures that recognize and facilitate the use of their additional qualifications.
28. The CAC program should be cancelled.
29. The introduction of CACs has affected how regulatory authorities recognize or credential comprehensive family physicians.
30. CAC holders should apply their added competence to address local gaps in care
31. CAC holders should have greater access to employment opportunities within the relevant domain of care.
32. The CAC will inflate the minimum credentials required to practice family medicine.
33. What areas of care do you feel would benefit from a CAC? (Write In)

Section 4

The following questions ask you to indicate your level of agreement with statements about how CAC holders in each domain work with other physicians in their community.

In answering these questions, please reflect on your personal experiences.

*****The following questions should all be answered on a 7-pt Likert scale w. 1 as Strongly Disagree, 3 as Disagree, 5 as Agree, and 7 as Strongly Agree)*****

34. CAC holders work in a model wherein they provide patient care or advice to the referring physician without breaking the patient's continuity with the primary family physician. Consider for each of the following domains.

	1	2	3	4	5	6	7
PC							
SEM							
COE							
FPA							

35. CAC holders work in a model that involves the transfer of patient care from the primary family physician to the CAC holder for a period of time and/or a specific issue. Consider for each of the following domains.

	1	2	3	4	5	6	7
PC							
SEM							
COE							
FPA							

36. CAC holders work in a model that involves the transfer of patient care from the primary family physician to a specialist-directed practice with which the CAC holder is aligned. Consider for each of the following domains.

	1	2	3	4	5	6	7
PC							
SEM							
COE							
FPA							

37. Feel free to use the comment box below to share any other thoughts and/or comments regarding CAC. (Free Text)

Appendix D: Survey Questionnaire (French)

***Chaque page : Vous pouvez sauter une question si vous préférez ne pas y répondre. Vous pouvez également envoyer vos réponses au questionnaire même si vous ne l'avez pas terminé, en cliquant sur le bouton « **Question suivante** » jusqu'à la fin du sondage, puis sur le bouton « **Envoyer** ». Si vous souhaitez arrêter et que vous ne voulez pas que vos réponses soient enregistrées, vous pouvez quitter le sondage à n'importe quel moment en fermant votre navigateur, ou en cliquant sur le bouton « Quitter et effacer les réponses ».

Première section

22. Votre année de naissance (Inscrivez l'année ou faites un choix dans la liste d'options. Votre réponse doit comporter 4 chiffres : 1984 par exemple.)

23. Votre sexe (Sélectionnez l'une options suivantes.)

- a. Femme
- b. Homme
- c. Non binaire
- d. Je préfère ne pas répondre.

24. Avez-vous obtenu votre diplôme de médecine au Canada ou à l'étranger? (Ne choisissez qu'une seule réponse.)

- a. Diplôme de médecine obtenu au Canada
- b. Diplôme de médecine obtenu à l'étranger

Veuillez indiquer l'année durant laquelle vous avez obtenu l'autorisation d'exercer la médecine familiale du Collège des médecins de famille du Canada. (Inscrivez la date ou faites un choix dans la liste.)

25. Avez-vous suivi un programme de résidence du Collège royal des médecins et chirurgiens du Canada (CRMCC), ou vous êtes-vous déjà inscrit ou inscrite à un tel programme? (O/N)

Si oui, lequel?

26. Veuillez indiquer si vous avez d'autres formations dans une profession liée à la santé. (Faites vos choix dans la liste.)

27. Détenez-vous un certificat de compétence additionnelle? (O/N)

Si oui :

- Dans quel domaine de soins? (Faites votre choix dans la liste suivante : SP, SPA, MSE, AMF, MU, MT, [+ option permettant de sélectionner un autre CCA au cas où le médecin en aurait plus d'un]).

Pour chaque domaine de soins :

- Par quelle voie l'avez-vous obtenu? (Faites votre choix dans la liste suivante : la voie des leaders; la voie de la résidence; la voie de la vérification de la compétence; la voie de l'examen de compétence additionnelle.)
- Devez-vous actuellement détenir un CCA pour vos droits hospitaliers connexes dans le cadre de l'exercice de votre profession?
- En quelle année avez-vous obtenu ce CCA? (Écrivez l'année.)
- Avez-vous eu recours à des mesures de soutien au retour aux études pour obtenir la formation nécessaire à l'obtention de votre CCA? (O/N)

Si oui :

- À quel type de soutien avez-vous eu recours? Cochez tout ce qui s'applique. (droits de scolarité; aide financière pour couvrir les coûts associés à l'exercice de votre profession; aide pour trouver un remplaçant; autre [précisez]).

28. Avez-vous suivi un parcours officiel de perfectionnement de vos compétences non reconnu par un CCA? (O/N)

Si oui :

- Dans quels domaines de soins? (Écrivez les domaines.)
- Comment s'appelle le diplôme ou le certificat? (Écrivez votre réponse.)
- Où avez-vous reçu cette formation? (Écrivez votre réponse.)
- En quelle année avez-vous mené cette formation à terme? (Écrivez l'année.)
- Avez-vous eu recours à des mesures de soutien au retour aux études pour obtenir cette formation? (O/N)

Si oui :

- À quel type de soutien avez-vous eu recours? Cochez tout ce qui s'applique. (droits de scolarité; aide financière pour couvrir les coûts associés à l'exercice de votre profession; aide pour trouver un remplaçant; autre [précisez]).

Deuxième section

Les prochaines questions vous amèneront à décrire votre **pratique**, et se rapporteront à votre collectivité, telle que vous la percevez.

Remarque : Nous entendons par **médecin de famille en soins globaux** tout médecin qui offre des soins en permanence à un groupe donné de patients, de la naissance jusqu'au décès, dans divers contextes.

Lorsque vous répondez aux questions qui suivent, veuillez tenir compte de tous les aspects de votre pratique :

29. Dans quelle province ou quel territoire exercez-vous? (Faites votre choix dans la liste, qui comprend le Yukon, le Nunavut et les Territoires-du-Nord-Ouest.)
30. Est-ce dans une collectivité urbaine, périurbaine, rurale ou éloignée? (Ne choisissez qu'une seule réponse.)
31. Dans votre collectivité, y a-t-il un hôpital général qui comporte un service d'urgence et qui compte moins de 100 lits? (O/N)
32. Dans votre collectivité, y a-t-il un hôpital général qui comporte un service d'urgence et qui compte 100 lits ou plus? (O/N)
33. Quelle est la distance en voiture jusqu'à l'hôpital de soins tertiaires le plus proche qui offre des soins spécialisés et surspécialisés aux patients atteints d'une maladie mortelle ou dont les signes vitaux sont instables? (Faites votre choix dans la liste suivante : plus de 4 heures, 1 à 3 heures, 30 min à 1 heure, moins de 30 minutes.)
34. De quel type est votre pratique? (Choisissez toutes les réponses qui s'appliquent dans la liste ci-dessous.)
 - Dans un cabinet qui compte d'autres médecins
 - Dans mon cabinet privé
 - À l'hôpital
 - Dans un établissement de soins de longue durée
 - Dans un centre d'enseignement
 - Surtout à titre de remplaçant
 - Dans une clinique sans rendez-vous
 - Dans un centre spécialisé (p. ex., médecine sportive, soins gériatriques, douleur chronique, etc.)
 - Autres
35. Devez-vous conserver vos droits hospitaliers pour pouvoir exercer la médecine familiale dans votre collectivité? (O/N)
36. Devez-vous exercer la médecine familiale globale auprès d'un groupe donné de patients pour pouvoir exercer dans votre collectivité? (O/N)
37. Exercez-vous actuellement la médecine familiale globale? (O/N)

Si oui :

- Combien de jours par semaine êtes-vous en fonction? (Écrivez le nombre de jours.)
- Environ combien de patients avez-vous? (Écrivez le nombre de patients.)

Si non :

38. Avez-vous déjà exercé la médecine familiale globale? (O/N)

Si oui :

- Pendant combien d'années? (Écrivez le nombre d'années.)
- Environ combien de patients aviez-vous alors? (Écrivez le nombre de patients.)

39. Exercez-vous aux côtés d'autres détenteurs d'un CCA? (O/N/Peut-être)

Si oui :

- Dans quels domaines? (Faites votre choix dans la liste suivante : SP, SPA, MSE, AMF, MU, MT.)

40. Dirigez-vous des patients à d'autres détenteurs d'un CCA? (O/N)

Si oui :

- Dans quels domaines? Faites votre choix dans la liste. (SP, SPA, MSE, AMF, MU, MT)

41. Quelle est votre forme de rémunération? (Choisissez plus d'une option au besoin, en faisant vos choix dans la liste suivante.)

- Paiement à l'acte
- Salaire
- Dotation par patient
- Autre (Prévoir une option permettant de préciser quelle autre forme.)

Si la réponse était oui à la question n° 6, les questions suivantes seront accessibles ici.

42. Avez-vous constaté les répercussions suivantes après avoir obtenu un CCA? Cochez tout ce qui s'applique.

- Augmentation de votre rémunération
- Rémunération selon un barème de salaires
- Prolongation de la durée des rendez-vous avec les patients
- Augmentation de la flexibilité de l'horaire de travail
- Exercice plus intéressant de la profession en raison de l'augmentation de l'acuité
- Exercice plus intéressant de la profession en raison de la diminution des incertitudes
- Exercice plus intéressant de la profession en raison de l'augmentation de la diversité
- Exercice plus intéressant de la profession en raison de l'augmentation du temps consacré à des domaines de la médecine familiale qui vous intéressent davantage
- Exercice plus intéressant de la profession en raison de l'augmentation du degré d'expertise dans un champ d'activité plus restreint.
- Nouveaux rôles de chef de file liés au CCA (p. ex. enseignement, administration, politique)
- Exercice plus ciblé de la profession (p. ex., maintien d'un certain volume de patients à qui offrir des soins globaux)

- Une pratique entièrement ciblée (c.-à-d., une pratique qui ne comporte pas l'offre de soins globaux.)
- Augmentation des occasions d'enseignement aux autres médecins de famille de votre collectivité dans votre domaine de compétence additionnelle
- Augmentation des occasions d'offrir des services de consultation dans votre domaine de compétence additionnelle à d'autres médecins de famille de votre collectivité
- Modification de votre identité professionnelle
- Absolument aucun changement
- Autres :

Troisième section

Les prochaines questions vous amèneront à préciser dans quelle mesure vous êtes d'accord avec une série d'énoncés concernant les certificats de compétence additionnelle et leurs titulaires.

En répondant à ces questions, songez à vos expériences personnelles.

*****Le choix de réponses aux questions suivantes correspond à une échelle de Likert en 7 points, qui se lisent comme suit : 1 : Tout à fait en désaccord; 3 En désaccord; 5 : D'accord; 7 : Tout à fait d'accord)***.**

38. Les titulaires d'un CCA appliquent à leur travail dans un domaine spécialisé des soins de santé une façon de faire propre à la médecine familiale.
39. Les titulaires d'un CCA sont fondamentalement différents des autres spécialistes du même domaine de soins.
40. Les titulaires d'un CCA sont fondamentalement différents des praticiens polyvalents en médecine familiale globale.
41. Les titulaires d'un CCA sont fondamentalement différents des médecins de famille qui ont reçu une formation spécialisée, mais qui ne détiennent pas de CCA.
42. L'expérience antérieure en médecine familiale globale permet aux titulaires d'un CCA d'offrir de meilleurs soins.
43. Le titulaire d'un CCA augmente la capacité des médecins de famille d'offrir des soins globaux à une collectivité.
44. La collaboration avec les titulaires d'un CCA permet aux praticiens polyvalents en médecine familiale globale de consacrer plus de temps à d'autres aspects des soins aux patients.
45. Les titulaires d'un CCA ont repris une partie du champ d'exercice qui appartenait auparavant à la médecine familiale globale.
46. Les titulaires d'un CCA contribuent au maintien de la relation suivie entre le patient et son médecin de famille personnel.
47. Les titulaires d'un CCA contribuent à garder les patients des régions rurales ou éloignées au sein de leur propre collectivité, en acceptant des demandes de consultation qui seraient autrement dirigées à un spécialiste de l'extérieur de la collectivité.
48. Les titulaires d'un CCA répondent aux besoins particuliers d'une collectivité.
49. Le CCA devient de plus en plus indispensable pour les droits hospitaliers.
50. L'attribution des CCA favorise l'acquisition d'une sous-spécialité par des médecins de famille.
51. L'attribution des CCA n'incite pas les médecins de famille à perfectionner leurs compétences.
52. Les titulaires d'un CCA jouent un rôle de chef de file, de porte-parole et d'enseignant dans leur champ d'exercice de la profession.
53. Un CCA obtenu par la voie de la résidence est un marqueur valide de compétence dans un domaine de soins.
54. Un CCA obtenu par la voie des leaders est un marqueur valide de compétence dans un domaine de soins.
55. Un CCA obtenu par la voie de la vérification de la compétence est un marqueur valide de compétence dans un domaine de soins.

56. Un CCA obtenu par la voie de l'examen de compétence additionnelle est un marqueur valide de compétence dans un domaine de soins.
57. Les exigences d'obtention d'un CCA sont claires et transparentes.
58. Les critères d'obtention d'un CCA sont appliqués de façon uniforme.
59. La connaissance de la formation et de la réputation d'un collègue médecin est un indice plus fiable que le fait de détenir un CCA, pour ce qui est de lui faire confiance et de lui diriger des patients.
60. Les médecins de famille qui choisissent d'obtenir un CCA le font en raison d'un besoin de leur collectivité, que leur expérience en médecine familiale globale leur a permis de déceler.
61. Les médecins de famille qui optent pour l'obtention d'un CCA le font surtout pour des raisons personnelles et professionnelles (style de vie, rémunération, intérêt, validation de l'expertise, droits hospitaliers).

En lien avec la future orientation possible du programme des CCA :

62. Les titulaires d'un CCA devraient avoir l'obligation de maintenir leur compétence dans le champ d'exercice polyvalent de la médecine familiale globale.
63. Les titulaires d'un CCA devraient avoir accès à un barème de rémunération et d'honoraires unique qui reconnaît et facilite l'utilisation de leur compétence additionnelle.
64. Le programme de CCA devrait être annulé.
65. L'introduction des CCA a influé sur la façon dont les organismes de réglementation reconnaissent ou autorisent les praticiens en médecine familiale globale.
66. Les compétences additionnelles des titulaires d'un CCA devraient servir à combler les lacunes locales en matière de soins.
67. Les titulaires d'un CCA devraient avoir plus facilement accès aux possibilités d'emploi dans le domaine de soins lié à leur CCA.
68. Selon vous, quels sont les domaines de soins qui devraient faire l'objet d'un CCA? (Écrivez les domaines de soins.)

Quatrième section

Dans les prochaines questions, on vous demande jusqu'à quel point vous êtes d'accord avec les énoncés sur la façon dont les titulaires d'un CCA travaillent avec les autres médecins de leur collectivité dans chaque domaine.

En répondant à ces questions, songez à vos expériences personnelles.

*****Le choix de réponses aux questions suivantes correspond à une échelle de Likert en 7 points, qui se lisent comme suit : 1 : Tout à fait en désaccord; 3 En désaccord; 5 : D'accord; 7 : Tout à fait d'accord)***.**

69. Les titulaires d'un CCA œuvrent dans un modèle qui les amène à fournir des soins ou des conseils au médecin traitant qui leur dirige en patient, sans rompre la relation suivie de ce patient avec son médecin de famille personnel. Indiquez votre réponse pour chacun des domaines suivants :

	1.	2.	3.	4.	5.	6.	7.
SP							
MSE							
SPA							
AMF							

70. Les titulaires d'un CCA œuvrent dans un modèle dans lequel les médecins de famille dirigent leurs patients vers le titulaire d'un CCA pour une certaine période de temps ou pour un problème donné. Indiquez votre réponse pour chacun des domaines suivants :

	1.	2.	3.	4.	5.	6.	7.
SP							
MSE							
SPA							
AMF							

71. Les titulaires d'un CCA œuvrent dans un modèle dans lequel les médecins de famille dirigent leurs patients vers une discipline dirigée par un spécialiste en lien avec le titulaire. Indiquez votre réponse pour chacun des domaines suivants :

	1.	2.	3.	4.	5.	6.	7.
SP							
MSE							
SPA							
AMF							

N'hésitez pas à inscrire vos réflexions et autres commentaires sur les CCA dans la case prévue à cette fin ci-dessous. (Texte libre)

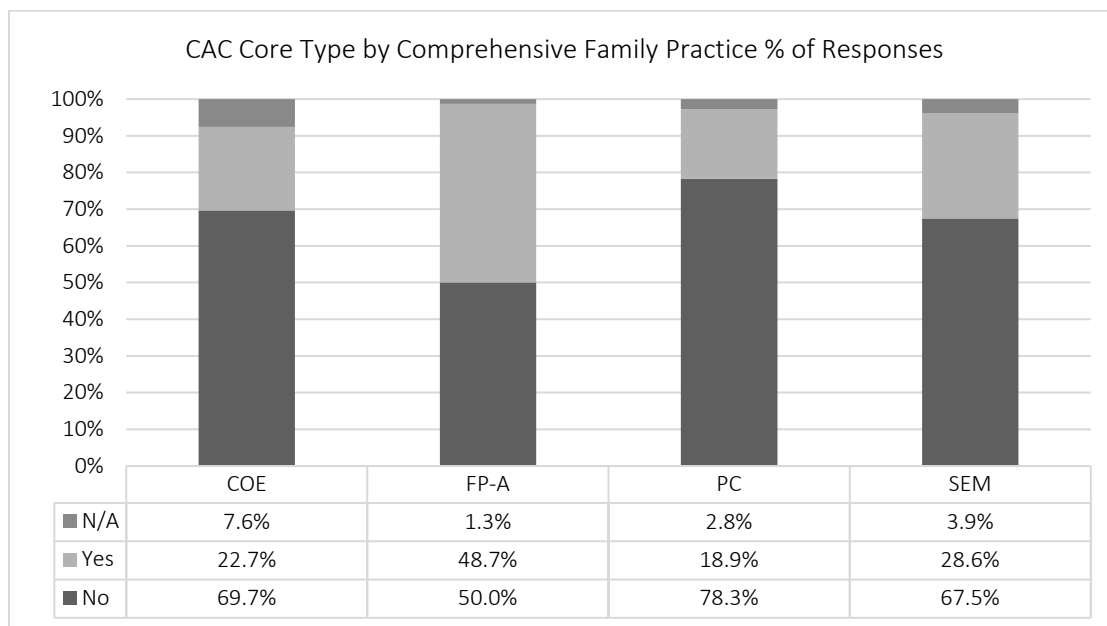
Appendix E: Survey Analyses (CAC Type by Practice Features)

Phi measures of association were calculated to determine whether there was a statistical relationship between the 4 core CAC Types and survey participants' responses regarding the region; hospital privileges requirement; family practice requirements, comprehensive family medicine practice, and distance to tertiary care that characterized their practices.

Statistical differences were observed between CAC Type and Comprehensive Family Practice, Region and Distance to Tertiary Care. No statistical differences were observed between CAC type and the need to maintain hospital privileges or a family practice.

CAC Type by Comprehensive Family Practice

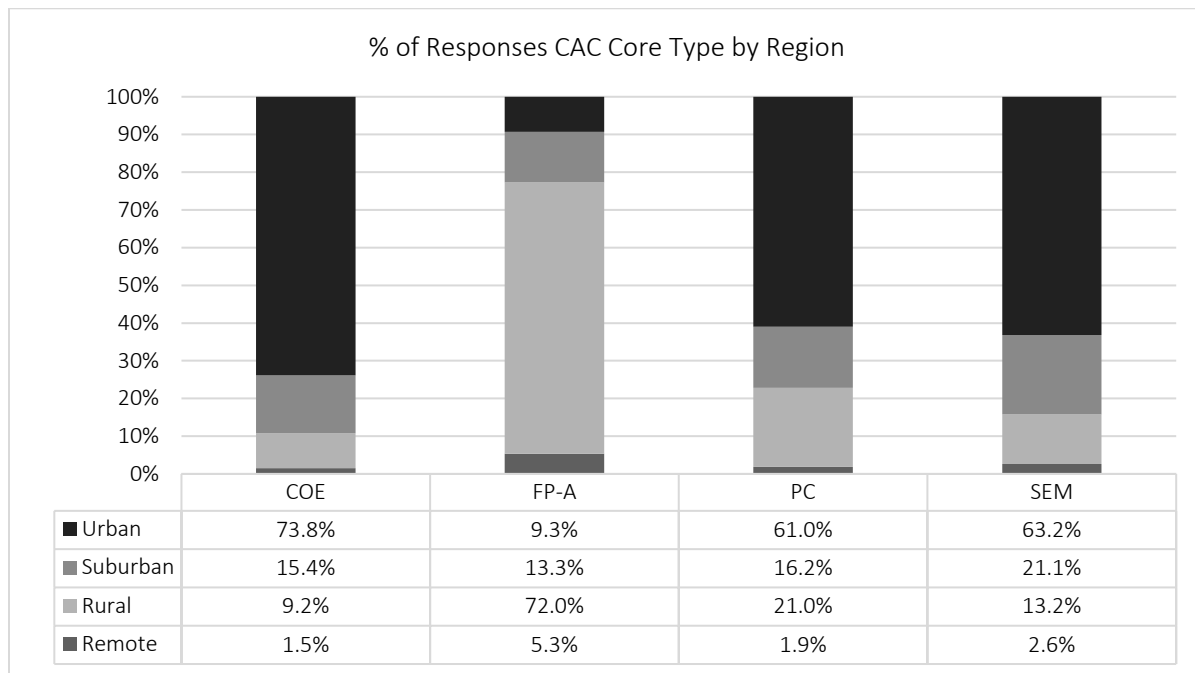
Table 12: Percentages of survey responses indicating the maintenance of a comprehensive practice (Section 2, Q16) presented as a function of the 4 CAC holders of interest.



The Phi statistic revealed significant differences between the 4 types of certificate holders with respect to maintaining a comprehensive family practice ($p < 0.001$). To determine the locus of the statistical differences the 'Comprehensive Family Practice' response categories were recoded into a dichotomous variable and subjected to a cross-tab Chi square analysis. This test compares the responses of each CAC holder group against the responses of all the other CAC holders combined. The results showed that FPA-CAC respondents ($\Phi = 0.241$, $p < .001$) indicated that they do maintain a comprehensive family practice to a significantly greater degree than the other CAC holders, and that PC-CAC respondents ($\Phi = -0.154$, $p = .005$) indicated that they maintain a comprehensive family practice to a significantly lesser degree than the other CAC holders.

CAC Type by Region

Table 13: Percentages of survey responses indicating the type of region in which the respondent's practice is located (Section 2, Q9) presented as a function of the 4 CAC holders of interest.



The Phi statistic revealed significant differences between the 4 types of certificate holders with respect to the region of practice ($p < 0.001$). The locus of statistical difference was determined as in the same manner described above. The results are presented in Table 13.

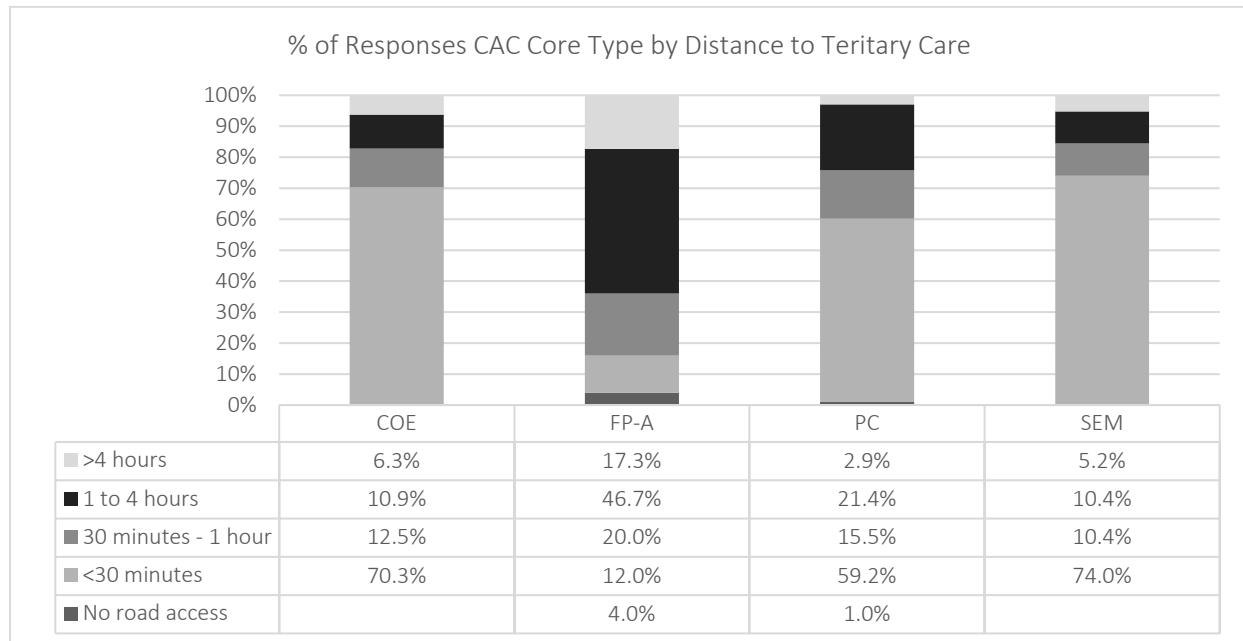
Table 14: Statistical differences between type of practice region as a function of CAC type. Within each practice region, a significant p-value indicates that the responses associated with that CAC holder are statistically different than those associated with the other CAC holders combined.

Region Category	Core CAC Type	Phi-Value	P-Value
Urban	COE	0.220	<0.001
	FP-A	-0.472	<0.001
	PC	0.125	0.026
	SEM	0.124	0.026
Rural	COE	-0.208	<0.001
	FP-A	0.446	<0.001
	PC	-0.112	0.044
	SEM	-0.123	0.028
Remote	COE	-0.220	<0.001
	FP-A	0.472	<0.001
	PC	-0.125	0.026
	SEM	-0.124	0.026

No significant differences between CAC type were observed within Suburban Region category ($p > .05$).

CAC Type by Distance to Tertiary Care

Table 15: Percentages of survey responses indicating the distance their practice and tertiary care (Section 2, Q12) presented as a function of the 4 CAC holders of interest.



The Phi statistic revealed significant differences between the 4 types of certificate holders with respect to the distance to tertiary care ($p < 0.001$). The locus of statistical difference was determined as in the same manner described above. The results are presented in Table 16.

Table 16: Statistical differences between the distance to tertiary care as a function of CAC type.

Distance to Tertiary Care	Core CAC Type	Phi-Value	P-Value
No Road Access	FP-A	0.137	0.015
<30 Minutes	COE	0.179	0.037
	FP-a	0.493	<0.001
	SEM	0.235	0.001
1 to 4 Hours	COE	-0.139	0.013
	FP-A	0.320	<0.001
	SEM	-0.164	0.003
>4 Hours	FP-A	0.206	<0.001
	PC	-0.121	0.031

No significant differences were observed between CAC type with practices located within 30 minutes to 1-hour distance to tertiary care ($p > .05$).

Appendix F: Survey Analyses (Practitioner Type by Perceptions of CAC Holder Impact)

The Survey asked respondents to rate their perceptions around various propositions pertaining to the CAC Program and the impacts of CAC Holders (Section 3). One-way analyses of Variance (ANOVA) with practitioner type as the only factor (COE, FPA, SEM, PC, EM, AM, ES, GEN) were conducted on the responses to a selection of questions of interest:

- Q5 Prior experience in a comprehensive family medicine practice improves the care that CAC holders provide.
- Q6 The CAC holder enhances the capacity of family physicians to provide comprehensive care within a community.
- Q7 Collaboration with CAC holders allows full-scope comprehensive family physicians to spend more time on other aspects of patient care.
- Q9 CAC holders help maintain patient continuity with their primary family physician.
- Q10 CAC holders help keep rural and remote patients within their regional communities by taking referrals that would otherwise require them to travel to a specialist outside the community.
- Q12 The CAC is becoming increasingly required for privileging.
- Q15 CAC holders provide leadership, advocacy, and education within their domain of practice.
- Q26 CAC holders should be required to maintain their competence in full-scope, comprehensive Family Medicine.
- Q28 The CAC program should be cancelled.

Given the number of analyses (9), a Bonferroni correction was applied that set the alpha value for significance at $p \leq .005$.

Results

Table 17. Questions for which significant differences between practitioner type responses were observed.

Question	P-value
Q5	<0.001
Q6	<0.001
Q7	<0.001
Q9	<0.001
Q10	0.001
Q12	<0.001
Q25	<0.001
Q26	<0.001
Q28	<0.001

Post-Hoc Analysis

Tukey's HSD *post hoc* method was used to decompose the locus of statistical differences between practitioners for each question (Table 18).

Table 18. Results of the *post hoc* analyses

Item	Difference Observed		Mean Difference	Std. Error	Sig.	95% C.I. Lower	95% C.I. Higher
Q5	EM	ES	-.66085	0.13802	<0.001	-1.0798	-0.2419
	EM	GEN	-.64593	0.11872	<0.001	-1.0063	-0.2856
Q6	GEN	SEM	-.70274	0.18361	0.003	-1.2601	-0.1454
Q7	EM	SEM	-.72766	0.18886	0.003	-1.3009	-0.1544
	GEN	PC	-.59575	0.15567	0.003	-1.0683	-0.1232
	GEN	SEM	-.81614	0.17241	<0.001	-1.3395	-0.2928
Q9	COE	EM	.75678	0.20239	0.005	0.1424	1.3712
	COE	GEN	.87565	0.18650	<0.001	0.3095	1.4418
	EM	PC	-.75584	0.17384	<0.001	-1.2835	-0.2281
	EM	SEM	-1.07024	0.19474	<0.001	-1.6614	-0.4791
	ES	SEM	-.88287	0.19038	<0.001	-1.4608	-0.3050
	GEN	PC	-.87472	0.15504	<0.001	-1.3454	-0.4041
	GEN	SEM	-1.18911	0.17816	<0.001	-1.7299	-0.6483
Q10	EM	FP-A	-.75359	0.18837	0.002	-1.3255	-0.1817
	FP-A	EM	.75359	0.18837	0.002	0.1817	1.3255
Q12	EM	GEN	.77061	0.14075	<0.001	0.3433	1.1979
	EM	ES	.67548	0.16378	0.001	0.1782	1.1727
	GEN	SEM	.91410	0.23536	0.003	0.1995	1.6287
	ES	SEM	1.00923	0.24982	0.001	0.2507	1.7677
	EM	SEM	1.68471	0.25142	<0.001	0.9214	2.4481
	COE	EM	-1.58510	0.25484	<0.001	-2.3588	-0.8114
	PC	SEM	1.17750	0.28535	0.001	0.3111	2.0439
	COE	PC	-1.07789	0.28837	0.005	-1.9534	-0.2023
	AM	EM	-1.69036	0.33311	<0.001	-2.7017	-0.6790
Q25	EM	GEN	-1.07285	0.13897	<0.001	-1.4947	-0.6510
	EM	ES	-.76584	0.16123	<0.001	-1.2552	-0.2764
	GEN	PC	1.27200	0.19185	<0.001	0.6897	1.8543
	ES	PC	.96499	0.20854	<0.001	0.3320	1.5980
	FP-A	GEN	-1.05889	0.21808	<0.001	-1.7209	-0.3969
	GEN	SEM	1.64361	0.22202	<0.001	0.9697	2.3175
	COE	GEN	-1.62569	0.23388	<0.001	-2.3356	-0.9158
	ES	SEM	1.33659	0.23659	<0.001	0.6184	2.0547
	COE	ES	-1.31868	0.24776	<0.001	-2.0707	-0.5666
	AM	GEN	-1.75239	0.31571	<0.001	-2.7107	-0.7941
	AM	ES	-1.44538	0.32613	<0.001	-2.4353	-0.4555
Q26	ES	GEN	-.49533	0.13310	0.005	-0.8993	-0.0913
	EM	GEN	-1.78879	0.13870	<0.001	-2.2098	-1.3678
	EM	ES	-1.29346	0.16149	<0.001	-1.7836	-0.8033
	GEN	PC	1.71062	0.19181	<0.001	1.1284	2.2928
	ES	PC	1.21529	0.20888	<0.001	0.5812	1.8493
	FP-A	GEN	-1.04007	0.22022	<0.001	-1.7085	-0.3716
	GEN	SEM	1.80403	0.22153	<0.001	1.1316	2.4765
	COE	GEN	-1.18366	0.23478	<0.001	-1.8963	-0.4710
	ES	SEM	1.30870	0.23647	<0.001	0.5909	2.0265
	AM	GEN	-1.21262	0.31689	0.003	-2.1745	-0.2507
Q28	EM	GEN	-1.14124	0.13014	<0.001	-1.5363	-0.7462
	EM	ES	-1.05035	0.15197	<0.001	-1.5116	-0.5891
	GEN	PC	1.10127	0.17767	<0.001	0.5620	1.6406
	ES	PC	1.01038	0.19422	<0.001	0.4208	1.5999
	GEN	SEM	1.05496	0.20970	<0.001	0.4184	1.6915
	COE	GEN	-1.30320	0.21967	<0.001	-1.9700	-0.6364
	ES	SEM	.96406	0.22390	<0.001	0.2844	1.6437
	COE	ES	-1.21230	0.23326	<0.001	-1.9204	-0.5042

Appendix G: Survey Analyses (Practitioner Type by Perceptions that CAC Holders help keep rural and remote patients within their regional communities)

Question 10 by Practitioner Type and Region

4 independent one way Analyses of Variance (ANOVA) with Practitioner Type as only factor (PC, COE, SEM, FPA, EM, AM, ES, COMP). Each ANOVA compared practitioner responses to Question 10 within the Practice Region Type indicated by the respondents. Tukey's HSED *post hoc* method was then used to examine the locus of differences within any region demonstrating a significant effect.

The results revealed a significant differences between practitioner type in the Rural region ($F(6,363) = 4.469, p < .001$). Post hoc decomposition of this effect highlighted that this difference was realized between the perceptions PC-CAC holders and Comprehensive Family Physicians (Table 19).

Table 19: Results of the *post hoc* analysis

Region	Item	Difference Observed		Mean Difference	Std. Error	Sig.	95% C.I. Lower	95% C.I. Higher
Rural	P10	PC	COMP	1.10998	0.34235	0.022	0.0949	2.1250

Question 10 by Practitioner Type and Distance to Tertiary Care

The same Analysis of Variance (ANOVA) and Tukey's post-hoc approach was conducted to examine whether differences were observed between Practitioner Type, responses to Question 10, and the distance between the respondent's practice and tertiary care.

These analyses revealed no statistical differences between practitioner types within any of the distance from tertiary care categories.