Editor's key points

- This study aimed to assess the effects of the Triple C Competency-based Curriculum on residents' practice intentions. The goal of the Triple C curriculum is to ensure that FM graduates are ready to begin the practice of comprehensive family medicine in any community in Canada. Graduates providing comprehensive care, according to the definition used in the survey, provide care in multiple clinical settings, across multiple clinical domains, involving patients at different stages of the life cycle either individually or in teams.
- This study reports that 35.8% of exit survey respondents indicated a low likelihood of providing comprehensive care in 1 clinical setting, while 78.7% of exit survey respondents indicated a high likelihood of practising comprehensive care across multiple clinical settings. Most respondents indicated an intention to practise in a group physician practice (92.9%) or indicated they were highly likely to practise in an interprofessional team–based model (90.0%).
- A shift toward comprehensive care that includes a special interest might be occurring. A high percentage (70.8%) of exit survey respondents indicated a likelihood of providing comprehensive care with a special interest and a smaller number (36.6%) indicated a likelihood of providing care in a more focused practice.

Future practice of comprehensive care

Practice intentions of exiting family medicine residents in Canada

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Abstract

Objective To describe exiting family medicine (FM) residents' reported practice intentions after completing a Triple C Competency-based Curriculum.

Design The surveys were intended to capture residents' perceptions of FM, their perceptions of their competency-based training, and their intentions to practise FM. Entry (T1) and exit (T2) self-reported survey results were compared considering the influence of the curriculum change. Unmatched aggregate-level data were reviewed. The T1 survey was administered in the summer of 2012 and the T2 survey was administered in the spring of 2014.

Setting Six Canadian FM residency programs across 4 provinces in Canada (Alberta, Saskatchewan, Ontario, and Quebec).

Participants Overall, 341 entering FM residents in 2012 responded to the T1 survey and 325 exiting FM residents completing their residency programs in spring 2014 responded to the T2 survey.

Main outcome measures Self-reported data on FM residents' future practice intentions related to comprehensive care, providing care across clinical domains and settings, and providing comprehensive care individually or in teams.

Results A total of 341 (71.3%) residents responded to the T1 survey and a total of 325 (71.4%) residents responded to the T2 survey. Of these, 78.7% responded that they intended to provide comprehensive FM in multiple clinical settings in their future practices, with 70.8% indicating a comprehensive care practice with a special interest and 36.6% intending to provide care in a focused practice. Overall, 92.9% reported that they intended to work in group practice environments. Ninety percent reported they intended to work in interprofessional team practices.

Conclusion While an upward trend toward the practice of comprehensive care was demonstrated, findings also showed an increased trend toward providing care in focused practices. Further research is needed to better determine how FM residents understand the definition of comprehensive FM and its practice models. The survey provides an opportunity to explore questions related to practice intentions that could be helpful in work force planning. As the first study to compare entry and exit data from learners who have been exposed to a Triple C competency-based approach, this survey provides important baseline data for use by many.

Pratique future des soins complets et globaux

Intentions de pratique des résidents en médecine familiale en fin de formation au Canada

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Résumé

Objectif Décrire les intentions de pratique rapportées par les résidents en médecine familiale (MF) à la fin de leur formation, après avoir suivi le Cursus Triple C axé sur le développement des compétences.

Conception Les sondages avaient pour but de cerner les perceptions des résidents à l'égard de la MF et de leur formation axée sur le développement des compétences, de même que leurs intentions relativement à la pratique de la MF. Les résultats aux sondages selon la réponse des intéressés lors du début de la formation (DF) et de la fin de la formation (FF) ont été comparés en tenant compte de l'influence du changement du cursus. Les données agrégées non jumelées ont été examinées. Le sondage du DF a été effectué à l'été de 2012 et celui de la FF l'a été au printemps de 2014.

Contexte Six programmes canadiens de résidence en MF dans 4 provinces (Alberta, Saskatchewan, Ontario et Québec).

Participants Dans l'ensemble, 341 résidents en MF au début de leur formation en 2012 ont répondu au sondage en DF et 325 résidents en MF à la fin de leur programme de résidence ont répondu au sondage en FF au printemps de 2014.

Principaux paramètres à l'étude Les données signalées par les résidents en MF sur leurs intentions de pratique future en ce qui a trait aux soins complets et globaux, à la pratique dans divers domaines et milieux cliniques, et à la prestation des soins complets en solo ou en équipe.

Résultats Au total, 341 (71,3 %) résidents ont répondu au sondage en DF et 325 (71,4 %) ont répondu au sondage en FF. De ce nombre, 78,7 % ont répondu avoir l'intention de fournir des soins complets en MF dans de multiples milieux cliniques dans leur pratique future, 70,8 % indiquant vouloir une pratique de soins complets avec un intérêt particulier et 36,6 % ayant l'intention de fournir des soins dans le cadre d'une pratique ciblée. Dans l'ensemble, 92,9 % ont signalé leur intention de travailler dans des environnements de pratique en équipe. Dans une proportion de 90 %, ils ont exprimé leur intention de travailler au sein d'une équipe interprofessionnelle.

Conclusion Bien qu'on ait constaté une tendance à la hausse de la volonté de fournir des soins complets, les résultats ont aussi fait valoir une augmentation des intentions de fournir des soins au sein de pratiques ciblées. Plus de recherches sont nécessaires pour mieux cerner comment les résidents en médecine familiale comprennent la définition de la MF complète et globale et ses modèles de pratique. Le sondage a donné la possibilité d'explorer les questions entourant les intentions de pratique, ce qui pourrait être utile dans la planification des effectifs. Étant la première étude qui comparait les données en début et en fin de formation concernant les stagiaires exposés au Cursus Triple C axé sur le développement des compétences, ce sondage dégage d'importantes données de référence qui pourront servir à de nombreux chercheurs.

Points de repère du rédacteur

- Cette étude avait pour but d'évaluer les répercussions du Cursus Triple C axé sur le développement des compétences sur les intentions de pratique des résidents. Le Cursus Triple C vise à assurer que les diplômés en MF sont prêts à commencer la pratique de la médecine familiale complète et globale dans n'importe quelle communauté au Canada. Selon la définition utilisée dans le sondage, les diplômés qui fournissent des soins complets et globaux offrent ces soins dans de nombreux milieux cliniques, dans des domaines cliniques multiples, s'occupant de patients à diverses étapes de la vie, et ce, soit en solo ou en équipe.

- Cette étude signale que 35,8 % des répondants au sondage en fin de formation ont indiqué une faible probabilité d'offrir des soins complets dans 1 seul milieu clinique, tandis que 78,7 % signalaient une forte probabilité d'offrir des soins complets dans de nombreux milieux cliniques. La plupart des répondants mentionnaient leur intention d'exercer au sein d'un groupe de médecins (92,9 %) ou qu'il était très probable qu'ils exercent dans le contexte d'une équipe interprofessionnelle (90 %).

- Il semble se dégager une tendance vers une pratique de soins complets qui inclut un intérêt particulier. Un fort pourcentage (70,8 %) des répondants au sondage en fin de formation ont signalé une probabilité d'offrir des soins complets incluant un intérêt particulier, et un plus petit nombre d'entre eux (36,6 %) disaient qu'il était probable qu'ils offrent des soins dans le cadre d'une pratique plus ciblée.

In 2010, the College of Family Physicians of Canada (CFPC), the certifying and accrediting body for family medicine (FM), introduced a renewed approach to residency training through the Triple C Competency-based Curriculum (Triple C).[1] Family medicine training in Canada is based on residency programs delivered by 17 university departments working closely with the CFPC. Each year, more than 1200 FM graduates complete their residency training and subsequently challenge the Certification examination, which enables them to practise FM with qualifications recognized across Canada.

Triple C was introduced after an extensive 5-year consultation and review process. It provides a guide and framework to help FM residency programs design and refine their curricula for postgraduate FM training. The *C*s of Triple C denote a curriculum that is comprehensive in scope, focused on continuity of care and education, and centred on learning specific to the needs of family physicians. It is a competency-based curriculum, with competencies defined by the CFPC that must be achieved to receive Certification in the specialty of FM.[2] Residency programs that implement a Triple C approach meet the CFPC's standards for accreditation.[3] With this important curriculum change affecting future generations of family physicians in Canada, the CFPC implemented a program evaluation plan[4] to determine if expected outcomes were achieved.

Comprehensive care in FM

Comprehensive care is a term with many different interpretations and uses. The Institute of Medicine associated comprehensive care with the management of "any health problem at any given stage of a patient's life cycle."[5] Starfield considered comprehensive care a key component of primary care, which she described as

> that level of a health service system that provides entry into the system for all new needs and problems, provides person-focused (not disease-oriented) care over time, provides care for all but very uncommon or unusual conditions and co-ordinates or integrates care provided elsewhere by others.[6]

In this definition of primary care, the importance of continuity of care and coordinated care are highlighted along with the provision of care for "all but very uncommon or unusual conditions."[6]

The CFPC Patient's Medical Home model

The CFPC has described a "basket of services"[7] as a guide for what family physicians can include in their practices to inform the CFPC's team-based Patient's Medical Home (PMH) model (**Box 1**).[8] The PMH model reflects the CFPC's goal of ensuring that every Canadian has access to high-quality health care through teams of health care professionals working collaboratively with family physicians.[8] Central to the concept of the PMH is the notion that family physicians work with other family physicians and health care providers to offer a comprehensive menu of health care services. The move toward the PMH model comes at the same time as the CFPC advances Triple C.[1] The overarching goal of Triple C is to graduate family physicians ready to begin the practice of comprehensive FM in any community in Canada.

Box 1. Comprehensive "basket" of family practice services

A comprehensive basket of family practice services might include but is not limited to the following:

- Illness and injury prevention, screening, and health promotion
- Management of undifferentiated medical problems
- Care for persons of all ages
- Initial diagnosis and ongoing medical management of most illnesses and injuries
- Provision or arrangement of timely responses for urgent and emergency patient needs
- Chronic disease management
- Mental health care
- Palliative and end-of-life care
- Nursing home visits
- Provision or arrangement of maternity care (including prenatal, delivery, and postpartum care)
- Referrals for investigations, treatments, and other consultations

Data from the College of Family Physicians of Canada.[8]

Defining comprehensive care

Drawn from the literature sources identified above,[5,6] the following definition of *comprehensive care* was used for this study:

> Comprehensive care is the type of care family physicians provide (either on their own or with a team) to a defined population of patients across the life cycle in multiple clinical settings, addressing a spectrum of clinical issues.

The definition reflects the scope of care, the context or setting within which care is provided, the diversity of clinical presentations faced by family physicians, and the notion of continuous care provided to a specific population. It includes the notion that family physicians provide comprehensive care on their own or working in a collective with other family physicians or health care providers. Comprehensive care also includes care provided across specific clinical domains (eg, home visits, intrapartum care) outside ambulatory care clinical settings.

Designing FM residency education

Family medicine residency programs are given CFPC reference documents to support them in designing a Triple C

curriculum. The CFPC's "The Scope of Training for Family Medicine Residency"[9] document outlines the domains of clinical care that represent comprehensive FM as practised in Canada. It provides a description of the spectrum of clinical responsibilities managed by family physicians, contexts within which family physicians practise, clinical procedures performed, and populations served (**Box 2**).[9] The scope-of-training document, along with the CFPC competency frameworks (CanMEDS–Family Medicine[9] and the CFPC's evaluation objectives for the purpose of Certification[10]), guides Triple C's implementation.

Purpose

This article provides self-reported data on exiting FM residents' intentions to provide comprehensive care after experiencing Triple C. Six FM residency programs across 4 provinces in Canada (Alberta, Saskatchewan, Ontario, and Quebec) volunteered to participate in the study. The specific definition of comprehensive care above was used in the survey.

Methods

The Family Medicine Longitudinal Survey (FMLS) for residents was designed by the CFPC's Triple C Working Group for Survey Development with faculty affiliated with FM residency programs, medical schools, and medical education organizations across Canada.[4] The Triple C Working Group for Survey Development created a series of 3 surveys as part of the FMLS project: T1, T2, and T3. The surveys were to be implemented in a longitudinal manner as follows: the T1 survey would be given to residents on entry into the residency program, the T2 survey would be administered at the end of training (just before graduation), and the T3 survey would be given to the same set of residents 3 years after completion of the residency program. The FMLS is one of the components of the CFPC's program evaluation plan designed to understand the implementation and effect of Triple C.[4]

Family medicine residents from the 6 residency programs were asked to respond to either an online or a paper survey consisting of multiple-choice questions and Likert scale items relating to 5 categories: demographic characteristics, medical education to date, perceptions related to FM, problem solving and learning approaches, and practice exposure and intentions. Results of this study are from surveys designed to capture data on the same residents at 2 time points: the T1 entry survey between July and September of 2012 and the T2 exit survey between April and June of 2014. As survey participation was optional, it was possible for residents to respond to one but not the other survey.

The results are reported in aggregate, comparing T1 and T2 cohorts independently. Nonparametric tests were used to analyze nonnormally distributed variables. The χ^2 test of independence was applied to determine whether the types of FM practice envisioned by residents were independent from the time at which the survey was completed (ie, entry vs exit). Mann-Whitney *U* tests were used to assess whether residents' practice intentions in specific clinical domains differed from entry to exit. The α level of significance was set at .01 or the Bonferroni correction was applied to reduce the risk of type I error.

Ethics approval was obtained at each participating university residency program before survey distribution. Written information preceding the survey indicated that completion of the survey implied consent to participate in the study and agreement to have de-identified data entered into a secure national database held by the CFPC.

Box 2. Scope of training for family medicine residency

Residents should have experience in the following domains of care:

- Care of patients across the life cycle, including
  -children and adolescents;
  -adults;
  -women's health care, including maternity care;
  -men's health care;
  -care of the elderly; and
  -end-of-life and palliative care
- Care across clinical settings (urban or rural), including
  -ambulatory or office practice;
  -hospital care;
  -long-term care;
  -emergency settings;
  -home care; and
  -care in other community-based settings
- Spectrum of clinical responsibilities, including
  -prevention and health promotion;
  -diagnosis and management of presenting problems (acute, subacute, and chronic);
  -chronic disease management;
  -rehabilitation;
  -supportive care; and
  -palliation
- Care of underserved patients, including but not limited to
  -Aboriginal patients;
  -patients with mental illness or addiction; and
  -recent immigrants
- Procedural skills
  -as per the College of Family Physicians of Canada's list of core procedures (**www.cfpc.ca/uploadedFiles/Education/Procedure%20Skills.pdf**)

Data from the Working Group on Postgraduate Curriculum Review.[9]

Results

Demographic characteristics

Across the 6 participating FM residency programs, 341 (71.3%) of 478 incoming residents who started their programs in 2012 responded to the T1 survey. A total of 325 (71.4%) of 455 residents responded to the T2 survey upon completion of their residency programs in

2014. Demographic characteristics of the residents who responded to the T1 and T2 surveys are outlined in **Table 1**.

Comprehensive care

Residents were asked in both the T1 and T2 surveys to describe the type of FM they envisioned they would provide after residency. At the core of the questions was the intent to discern the level to which the respondents intended to provide comprehensive care as defined in the survey. If practising according to the definition, graduates providing comprehensive care would be providing care in multiple clinical settings and across multiple clinical domains involving patients at different stages of the life cycle and doing so either individually or in teams.

Cognizant that variations of practice exist in family practice, 2 questions were added to the T2 survey reflecting intentions to practice as

> family physicians with special interests ... [ie,] family doctors with traditional comprehensive continuing care family practices who act as the personal physicians for their patients and whose practices include one or more areas of special interest as integrated parts of the broad scope of services they provide [or] family physicians with focused practices ... [ie,] family doctors with a commitment to one or more specific clinical areas as major part-time or full-time components of their practices.[11]

Table 1. Demographic characteristics of residents who responded to the T1 and T2 surveys (aggregate data from 6 family medicine residency programs)

CHARACTERISTIC	T1, N (%)	T2, N (%)
Age, y		
• < 25	52 (15.2)	0 (0.0)
• 25-29	176 (51.6)	160 (49.2)
• 30-34	60 (17.6)	110 (33.8)
• 35-39	23 (6.7)	31 (9.5)
• ≥ 40	13 (3.8)	18 (5.5)
• No response	17 (5.0)	6 (1.8)
Marital status		
• Single	194 (56.9)	131 (40.3)
• Married	98 (28.7)	120 (36.9)
• Common law	45 (13.2)	59 (18.2)
• Divorced	4 (1.2)	8 (2.5)
• Prefer not to answer	0 (0.0)	5 (1.5)
• No response	0 (0.0)	2 (0.6)
Children		
• Yes or expecting	54 (15.8)	82 (25.2)
• No	285 (83.6)	238 (73.2)
• Prefer not to answer	2 (0.6)	3 (0.9)
• No response	0 (0.0)	2 (0.6)
Sex		
• Female	210 (61.6)	199 (61.2)
• Male	119 (34.9)	122 (37.5)
• Prefer not to answer	0 (0.0)	1 (0.3)
• No response	12 (3.5)	3 (0.9)
Childhood environment		
• Inner city	0 (0.0)	17 (5.2)
• Urban or suburban	222 (65.1)	195 (60.0)
• Small town	46 (13.5)	44 (13.5)
• Rural	42 (12.3)	34 (10.5)
• Remote or isolated	6 (1.8)	5 (1.5)
• Mixture of environments	22 (6.5)	23 (7.1)
• No response	3 (0.9)	7 (2.2)
Place of medical school graduation		
• Canadian medical graduate	276 (80.9)	271 (83.4)
• International medical graduate	55 (16.1)	51 (15.7)
• No response	10 (2.9)	3 (0.9)
Total	341 (100.0)	325 (100.0)

Table 2 reports the responses of learners across each of the 4 different practice types. Of note, there was a significant change between the T1 and T2 cohorts in the proportion of those who responded "neutral" to whether they were likely to provide comprehensive care in 1 setting or across multiple clinical settings ($P<.01$ for both). The shift indicates that learners were more definitive about the type of practices they envisioned themselves having by the time of exit from residency. Another significant change was found among T2 respondents indicating they were less likely to provide comprehensive care across multiple clinical settings ($P<.01$). Upward nonsignificant trends, however, were also found across the other categories, including providing care in multiple clinical settings. Because the questions related to intention to provide enhanced skills and focused practices were only asked in the T2 survey, no comparisons with results from the T1 survey can be made. However, a higher percentage of T2 respondents indicated a higher likelihood of providing comprehensive care that included a special interest (70.8%) versus a smaller number (36.6%) indicating a likelihood of providing a more focused practice.

Providing care across clinical domains and settings

Another approach to exploring intent to provide comprehensive care looks at the number of clinical domains that are typically outside ambulatory clinical settings (eg, end-of-life care, intrapartum care, long-term care facilities, emergency departments, hospital care, home care) respondents consider including in their future practices. **Table 3** reveals a shift toward inclusion of more than 1 of the 7 clinical domains in respondents' future practices, with intention to provide care across the life cycle. **Table 4**

Table 2. Type of FM practice envisioned

"AFTER COMPLETING YOUR RESIDENCY, HOW LIKELY ARE YOU TO PRACTISE IN THE FOLLOWING FM PRACTICE TYPES?"	DATA COLLECTION PERIOD			
	T1, %	T2, %	CI *P* VALUE	χ^2 *P* VALUE
Comprehensive care delivered in 1 clinical setting (eg, office) (N for T1 = 336, N for T2 = 316)				
• Not at all likely or somewhat unlikely	25.6	35.8	NS	< .001
• Neutral	31.8	8.5	< .01	
• Somewhat likely or highly likely	42.6	55.7	NS	
Comprehensive care provided across multiple clinical settings (eg, hospital, long-term care facility, office) (N for T1 = 340, N for T2 = 319)				
• Not at all likely or somewhat unlikely	5.6	15.0	< .01	< .001
• Neutral	24.7	6.3	< .01	
• Somewhat likely or highly likely	69.7	78.7	NS	
Comprehensive care that includes special interests (eg, sports medicine, emergency medicine, palliative care) (N for T2 = 312)				
• Not at all likely or somewhat unlikely	NA	14.7	NA	NA
• Neutral	NA	14.4	NA	
• Somewhat likely or highly likely	NA	70.8	NA	
Focused practice with a commitment to ≥ 1 specific clinical areas (eg, sports medicine, maternity care, emergency medicine, palliative care, hospital medicine) (N for T2 = 314)				
• Not at all likely or somewhat unlikely	NA	49.4	NA	NA
• Neutral	NA	14.0	NA	
• Somewhat likely or highly likely	NA	36.6	NA	

FM—family medicine, NA—not asked in T1, NS—not significant.

reveals a significant increase in intent to include a range of 4 to 7 clinical domains in the future practices of T2 respondents compared with T1 respondents ($P = .005$).

Comprehensive care provided individually or in teams

As part of the definition of comprehensive care used in the survey, comprehensive care can be provided either individually or in groups or teams. Only 6.8% of exiting FM residents stated they were somewhat likely or highly likely to practise in a solo practice model. Most indicated an intention to practise in a group physician practice (92.9%) or indicated they were highly likely to practise in an interprofessional team–based model (90.0%). These numbers did not change significantly between T1 and T2 respondents, reflecting a consistent practice vision that began when they started residency.

Discussion

This article provides self-reported data on FM residents' intentions to provide comprehensive care at the beginning of training and toward the end of experiencing Triple C. The results provide interesting insights for curriculum designers to consider.

Comprehensive care across multiple clinical settings

Given the definition of *comprehensive care* used in the survey, it was hypothesized that respondents would demonstrate an increased likelihood of providing comprehensive care across multiple clinical settings after exposure to Triple C, with a decreased likelihood of providing comprehensive care in 1 clinical setting. **Table 2** reports that 35.8% of T2 respondents indicated low likelihood of providing comprehensive care in 1 clinical setting. Accordingly, 78.7% of T2 respondents indicated a high likelihood of practising comprehensive care across multiple clinical settings. Although these changes were not significant, there was an upward trend. A significant finding ($P < .01$) was an increase in the proportion of respondents reporting a low likelihood of providing comprehensive care in multiple clinical settings—5.6% in the T1 survey, increasing to 15.0% in the T2 survey. The discordance might point to the fact that respondents could choose all possible approaches for their future practices and hence responded to both one and multiple clinical settings. The variation could also reflect differing interpretations of comprehensive care, despite the survey definition provided.

Table 3. Changes from entry to exit (T1 to T2) in residents' intentions to practise in domains outside the ambulatory clinical setting: *The 7 family medicine clinical domains outside of ambulatory care are palliative or end-of-life care, care in long-term care facilities, intrapartum care, care in emergency departments, in-hospital clinical procedures, hospital care, and care in the home.*

"IN YOUR FUTURE PRACTICE AS A FAMILY PHYSICIAN, HOW LIKELY ARE YOU TO PROVIDE CARE IN EACH OF THE FOLLOWING DOMAINS, PRACTICE SETTINGS, AND SPECIFIC POPULATIONS IN THE FIRST 3 YEARS?"	T1, N (%)	T2, N (%)
Care across the life cycle only	16 (5.8)	15 (5.6)
Care across the life cycle plus 1 domain	35 (12.8)	36 (13.3)
Care across the life cycle plus 2 domains	63 (23.0)	45 (16.7)
Care across the life cycle plus 3 domains	66 (24.1)	49 (18.1)
Care across the life cycle plus 4 domains	50 (18.2)	49 (18.1)
Care across the life cycle plus 5 domains	25 (9.1)	32 (11.9)
Care across the life cycle plus 6 domains	13 (4.7)	21 (7.8)
Care across the life cycle plus 7 domains	6 (2.2)	23 (8.5)
Total	274 (100.0)	270 (100.0)

Table 4. Change in the number of domains outside the ambulatory clinical setting residents report they are likely to include in their future practices

NO. OF DOMAINS OUTSIDE AMBULATORY CLINICAL SETTING	T1, N (%)	T2, N (%)	*P* VALUE*
Care across the life cycle plus 0 to 3 domains	180 (65.7)	145 (53.7)	.005
Care across the life cycle plus 4 to 7 domains	94 (34.3)	125 (46.3)	

*Fisher exact test.

Special interests or focused care practices

With the addition of the 2 survey questions highlighted in **Table 2**, further insights related to comprehensive care including a special interest or a focused care practice were explored. Given the high percentage (70.8%) of T2 respondents indicating likelihood of providing comprehensive care that included a special interest and 49.4% indicating a low likelihood of providing a focused practice, there might be a shift occurring. Analogous to undergraduate university students who choose a major and a minor for their bachelor degree programs, one might similarly think of FM residents choosing to major in the provision of comprehensive care and minor in a special interest area like sports medicine or care of the elderly. Practices would be a mix of comprehensive care with some part-time elements related to a special area of interest. Those who intend to focus their practices would conversely identify a major in a specific clinical domain with a minor in comprehensive FM. Concerns have been raised that FM, and hence more family physicians, is becoming more subspecialized.[12] With more than 1 in 10 family physicians reporting they have reduced their scopes of practice,[13] questions have been raised as to whether FM might be losing its broad scope. Triple C was aimed at reversing this trend at the residency level, reaffirming the goal of preparing residents to practise comprehensive care in any community in Canada.

Number of clinical domains and settings

It is encouraging to find a relative rise in the total numbers of clinical domains learners intend to include in their practices by the time they exit residency training (**Tables 3** and **4**). However, there is no benchmark that delineates how many clinical domains must be included in one's practice in order to be practising comprehensive FM. As FM is a generalist specialty, having learners leaving residency intending to provide care across multiple clinical domains allows them the opportunity to do so at the start of their careers. Once in practice, family physicians adapt to respond to the needs of their patients and communities. This adaptation might include maintaining the comprehensive scope of practice they were deemed competent to provide at the time of Certification. For others, based on their patients' needs, they might acquire more depth in 1 or more clinical domains to complement a skill set needed in their health care team. Still further, some family physicians might be called on to focus their practices in a specific clinical domain (eg, enhanced surgical skills or GP anesthesia) because their communities lack access to a specific health care domain. Without the CFPC's commitment to comprehensive FM, the discipline runs the risk of creating a more reductionist approach to residency training, with more limited scopes of practice offered by family physicians. This limited scope without the balance of comprehensive care could reduce public access.

Shifting practice trends

We acknowledge that once family physicians begin practice, they will make autonomous decisions to shape what they do and where they go. The aim of residency training is to provide FM graduates with the competence to begin practice with a wide scope, encouraging them to adapt as needed over time. This study highlights a trend toward intention to provide comprehensive care by the T2 respondents. The T3 survey, which is planned to be conducted 3 years after residency, will provide further information about their actual practice

patterns. With the definition of *comprehensive care* in the survey indicating it can be provided either individually or within groups or teams, perhaps the T2 respondents see their future practice of FM taking a PMH interprofessional approach. With 70.8% of T2 respondents indicating a likelihood of providing comprehensive care with a special interest, how comprehensive FM is provided with or without a special interest or a focused practice needs to be explored. It seems that learners are attracted to the provision of comprehensive care with a special interest (**Table 2**). Studies suggest that enhanced skills FM training can support family physicians in providing broad-scope comprehensive FM practices with a special interest as well as more narrowly focused family practices.[14-16] Further research exploring the graduates of Triple C and enhanced skills training and their approaches to comprehensive care would be worthwhile.

Limitations and directions for future research

Data limitations did not allow for direct, individual-level record linkage of the T1 and T2 survey responses. However, recognizing the longitudinal tracking benefits that come with linked data, we have enhanced the FMLS methods such that a system of unique identifiers is being used to support future studies. Results of this study must be interpreted with caution. As with all self-reported data, there is a possibility of inaccuracy, whether intentional or as a result of social desirability bias.[17] However, a study by Grierson et al[18] used self-reported data in an effective manner to examine factors contributing to practice intention using the theory of planned behaviour.[19] Another consideration relates to the differences in response rates between residency programs and the distribution of residents across provinces and territories. Survey results might be influenced by provincial practice policy variations. For example, some provinces limit the type of practice FM graduates are able to pursue. If larger numbers of residents from those provinces responded to the survey, the results might be skewed. An additional limitation is that graduating residents can migrate to practise anywhere in Canada. The study of migration patterns, including a specific look at whether certain provinces lose or gain recently graduated residents, could provide information about the influence of political climates or provincial policies and practice intentions. Further iterations of the FMLS are planned for implementation with all FM residency programs across Canada. Trends and actual practice decisions reported through the T3 survey will be important for future learning.

Conclusion

The goal of Triple C is to ensure that FM graduates are ready to practise comprehensive care in any community in Canada. The results of this study share the extent to which exiting FM residents from 6 residency programs intend to provide comprehensive care (using a specific definition of *comprehensive care*) after exposure to Triple C. In designing training, programs use "The Scope of Training for Family Medicine Residency"[9] (**Box 2**) to describe the breadth, settings, spectrum of illness, and specific populations to which FM residents should be exposed. Triple C cannot dictate what graduates will or will not include in their FM practices nor where they will practise. Alongside other influences, the contribution of Triple C to practice intention needs further study. Assuming the respondents answered surveys using the definition of *comprehensive care* provided, an upward trend toward the intention to provide comprehensive care individually or in teams was found. Future studies using matched responses will provide further information. With all 17 residency programs agreeing to participate in the FMLS as of 2017, more can and will be learned.

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Contributors

All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

Dr Oandasan's role as the Director of Education at the College of Family Physicians of Canada might be considered a source of bias. However, this was mitigated through the research team writing this article and ensuring consensus on the article content by all research team members. The article was written under **Dr Oandasan's** academic role at the University of Toronto.

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References

1. Tannenbaum D, Kerr J, Konkin J, Organek A, Parsons E, Saucier D, et al. *Triple C competency-based curriculum. Report of the Working Group on Postgraduate Curriculum Review – part 1.* Mississauga, ON: College of Family Physicians of Canada; 2011. Available from: **www.cfpc.ca/uploadedfiles/education/_pdfs/wgcr_triplec_report_english_final_18mar11.pdf**. Accessed 2016 Aug 11.
2. Allen T, Bethune C, Brailovsky C, Crichton T, Donoff M, Laughlin T, et al. *Defining competence for the purposes of certification by the College of Family Physicians of Canada: the evaluation objectives in family medicine.* Mississauga, ON: College of Family Physicians of Canada; 2010. Available from: **www.cfpc.ca/uploadedFiles/Education/Certification_in_Family_Medicine_Examination/Definition%20of%20Competence%20Complete%20Document%20with%20skills%20and%20phases.pdf**. Accessed 2018 May 25.
3. College of Family Physicians of Canada. *Specific standards for family medicine residency programs accredited by the College of Family Physicians of Canada. The red book.* Mississauga, ON: College of Family Physicians of Canada; 2016.
4. Oandasan I; Triple C Competency-based Curriculum Task Force. A national program evaluation approach to study the impact of Triple C. In: Oandasan I, Saucier D, editors. *Triple C competency-based curriculum. Report – part 2. Advancing implementation.* Mississauga, ON: College of Family Physicians of Canada; 2013. p. 121-32. Available from: **www.cfpc.ca/uploadedFiles/Education/_PDFs/TripleC_Report_pt2.pdf**. Accessed 2018 May 25.

5. Peterson ML. The Institute of Medicine report, "A manpower policy for primary health care": a commentary from the American College of Physicians. Introduction and discussion. *Ann Intern Med* 1980;92(6):843-51.
6. Starfield B. *Primary care. Balancing health needs, services and technology*. 2nd ed. New York, NY: Oxford University Press; 1998. p. 8-9.
7. Glynn P; Subcommittee on Primary Health Care of the Provincial Coordinating Committee on Community and Academic Health Science Centre Relations. *New directions in primary health care.* Toronto, ON: Ministry of Health; 1996.
8. College of Family Physicians of Canada. *A vision for Canada. Family practice: the patient's medical home.* Mississauga, ON: College of Family Physicians of Canada; 2011. Available from: **www.cfpc.ca/uploadedFiles/Resources/Resource_items/PMH_A_Vision_for_Canada.pdf**. Accessed 2018 May 25.
9. Working Group on Postgraduate Curriculum Review. The scope of training for family medicine residency. In: Oandasan I, Saucier D, editors. *Triple C competency-based curriculum. Report – part 2. Advancing implementation*. Mississauga, ON: College of Family Physicians of Canada; 2013. p. 13-8. Available from: **www.cfpc.ca/uploadedFiles/Education/_PDFs/TripleC_Report_pt2.pdf**. Accessed 2016 Dec 13.
10. Allen T, Crichton T, Bethune C, Brailovsky C, Donoff M, Lawrence K, et al. The evaluation objectives: relationship with the other Triple C frameworks. In: Oandasan I, Saucier D, editors. *Triple C competency-based curriculum. Report – part 2. Advancing implementation*. Mississauga, ON: College of Family Physicians of Canada; 2013. p. 39-58. Available from: **www.cfpc.ca/uploadedFiles/Education/_PDFs/TripleC_Report_pt2.pdf**. Accessed 2016 Dec 13.
11. *Section of Communities of Practice in Family Medicine* [website]. Mississauga, ON: College of Family Physicians of Canada. Available from: **www.cfpc.ca/SIFP_Whats_New**. Accessed 2017 Jun 9.
12. Dhillon P. Shifting into third gear. Current options and controversies in third-year postgraduate family medicine programs in Canada. *Can Fam Physician* 2013;59:e406-12. Available from: **www.cfp.ca/content/cfp/59/9/e406.full.pdf**. Accessed 2018 May 24.
13. College of Family Physicians of Canada, Royal College of Physicians and Surgeons of Canada, Canadian Medical Association. *National Physician Survey, 2013. Results by FP/GP or other specialist, sex, age, and all physicians. Q5.* Mississauga, ON: College of Family Physicians of Canada; 2013. Available from: **http://nationalphysiciansurvey.ca/wp-content/uploads/2013/08/2013-National-EN-Q5_last.pdf**. Accessed 2015 Apr 15.
14. Slade S, Ross S, Lawrence K, Archibald D, Palacios Mackay M, Oandasan IF. Extended family medicine training. Measuring training flows at a time of substantial pedagogic change. *Can Fam Physician* 2016;62:e749-57. Available from: **www.cfp.ca/content/cfp/62/12/e749.full.pdf**. Accessed 2018 May 24.
15. Green M, Birtwhistle R, MacDonald K, Kane J, Schmelzle J. Practice patterns of graduates of 2- and 3-year family medicine programs. In Ontario, 1996 to 2004. *Can Fam Physician* 2009;55:906-7.e1-12. Available from: **www.cfp.ca/content/cfp/55/9/906.full.pdf**. Accessed 2018 May 24.
16. Chan BT. Do family physicians with emergency medicine certification actually practise family medicine? *CMAJ* 2002;167(8):869-70.
17. Paulhus DL, Vazire S. The self-report method. In: Robins RW, Fraley RC, Krueger RF, editors. *Handbook of research methods in personality psychology.* New York, NY: Guilford Press; 2007. p. 224-339.
18. Grierson LEM, Fowler N, Kwan MYW. Family medicine residents' practice intentions. Theory of planned behaviour evaluation. *Can Fam Physician* 2015;61:e524-31. Available from: **www.cfp.ca/content/cfp/61/11/e524.full.pdf**. Accessed 2018 May 24.
19. Ajzen I. The theory of planned behavior. *Organ Behav Hum Decis Process* 1991;50(2):179-211.

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