Extended family medicine training

Measuring training flows at a time of substantial pedagogic change

Steve Slade **Shelley Ross** MA PhD **Kathrine Lawrence** MD CCFP FCFP **Douglas Archibald** MA PhD
Maria Palacios Mackay DDS MSc PhD **Ivy F. Oandasan** MD CCFP MHSc FCFP

Abstract

Objective To examine trends in family medicine training at a time when substantial pedagogic change is under way, focusing on factors that relate to extended family medicine training.

Design Aggregate-level secondary data analysis based on the Canadian Post-MD Education Registry.

Setting Canada.

Participants All Canadian citizens and permanent residents who were registered in postgraduate family medicine training programs within Canadian faculties of medicine from 1995 to 2013.

Main outcome measures Number and proportion of family medicine residents exiting 2-year and extended (third-year and above) family medicine training programs, as well as the types and numbers of extended training programs offered in 2015.

Results The proportion of family medicine trainees pursuing extended training almost doubled during the study period, going from 10.9% in 1995 to 21.1% in 2013. Men and Canadian medical graduates were more likely to take extended family medicine training. Among the 5 most recent family medicine exit cohorts (from 2009 to 2013), 25.9% of men completed extended training programs compared with 18.3% of women, and 23.1% of Canadian medical graduates completed extended training compared with 13.6% of international medical graduates. Family medicine programs vary substantially with respect to the proportion of their trainees who undertake extended training, ranging from a low of 12.3% to a high of 35.1% among trainees exiting from 2011 to 2013.

Conclusion New initiatives, such as the Triple C Competency-based Curriculum, CanMEDS–Family Medicine, and Certificates of Added Competence, have emerged as part of family medicine education and credentialing. In acknowledgment of the potential effect of these initiatives, it is important that future research examine how pedagogic change and, in particular, extended training shapes the care family physicians offer their patients. As part of that research it will be important to measure the breadth and uptake of extended family medicine training programs.

EDITOR'S KEY POINTS

- The proportion of family medicine residents who pursue extended training has increased, particularly among Canadian medical graduates.
- There is considerable variation across faculties of medicine with respect to the proportion of their family medicine trainees who undertake extended training. Among those who completed family medicine training at the University of Montreal in Quebec from 2011 to 2013, 12.3% extended their training. In contrast, more than one-third (35.1%) of family medicine trainees at Queen's University in Kingston, Ont, extended their training during the same time period.
- It is not known how pedagogic change will affect future family medicine training trends and whether extended training will narrow or broaden future medical practice. It is important that future research examine how extended training shapes family physicians' future practice and, ultimately, the health care available to their patients.

This article has been peer reviewed.
Can Fam Physician 2016;62:e749-57

Augmenter la durée de la formation en médecine familiale

Mesurer les variations dans la formation à un moment où il y a des changements importants dans la pédagogie

Steve Slade **Shelley Ross** MA PhD **Kathrine Lawrence** MD CCFP FCFP **Douglas Archibald** MA PhD
Maria Palacios Mackay DDS MSc PhD **Ivy F. Oandasan** MD CCFP MHSc FCFP

Résumé

Objectif Examiner comment évolue la formation en médecine familiale à une époque caractérisée par des changements pédagogiques importants, avec un accent sur les facteurs résultant de du prolongement de la formation en médecine familiale.

Type d'étude Analyse d'une combinaison de données secondaires provenant du Répertoire canadien sur l'éducation post-MD.

Contexte Le Canada.

Participants Tous les citoyens et les résidents permanents du Canada inscrits dans les programmes de formation en médecine familiale des facultés de médecine canadiennes entre 1995 et 2013.

Principaux paramètres à l'étude Le nombre et la proportion des résidents en médecine familiale qui quittaient les programmes de formation en médecine familiale après 2 ans ou qui les prolongeaient au moins pour une troisième année, de même que le type et le nombre de programmes de formation additionnelle offerts en 2015.

Résultats Durant la période de l'étude, la proportion des résidents en médecine familiale qui prolongeaient leur formation a presque doublé, passant de 10,9% en 1995 à 21,1% en 2013. Ce sont les candidats mâles et les diplômés canadiens qui étaient les plus susceptibles de le faire. Dans les 5 dernières cohortes à compléter leur programme de médecine familiale (entre 2009 et 2013), 25,9% des hommes ont prolongé leur formation comparativement à 18,3% des femmes; et dans ces mêmes cohortes, 23,1% des diplômés canadiens ont fait des études additionnelles comparativement à 13,6 % pour les diplômés hors Canada. La proportion des résidents qui décident de prolonger leur formation varie considérablement entre les divers programmes de formation en médecine familiale, le pourcentage pouvant être aussi bas que 12,3% et aussi élevé que de 35,1 % chez ceux qui ont obtenu leur diplôme entre 2011 et 2013.

Conclusion Des initiatives telles que le Cursus Triple C pour le développement des compétences, les rôles CanMEDS – Médecine Familiale et les certificats de compétence additionnelle font maintenant partie intégrante de la formation et des diplômes en médecine familiale. En raison des effets éventuels de ces initiatives, il sera important que des études additionnelles vérifient en quoi de tels changements pédagogiques et, en particulier, le prolongement de la formation modifieront les soins dispensés par les médecins de famille. Ces études devront aussi évaluer l'ampleur des programmes de formation additionnelle ainsi que leur utilisation.

POINTS DE REPÈRE DU RÉDACTEUR

- Il y a de plus en plus de résidents en médecine familiale qui poursuivent leur formation après leur diplomation, notamment chez les résidents canadiens.
- La proportion des résidents en médecine familiale qui poursuivent leur formation varie considérablement d'une faculté de médecine à une autre. Entre 2011 et 2013, 12,3 % des diplômés en médecine familiale de l'Université de Montréal, au Québec, ont poursuivi leur formation, alors qu'à l'Université Queen's à Kingston, en Ontario, cette proportion était de plus d'un tiers (35,1 %).
- On ignore de quelle façon les changements pédagogiques en cours vont affecter les tendances futures dans la formation des résidents en médecine familiale et si le fait d'allonger la formation va élargir ou rétrécir le champ de pratique des médecins. D'autres études seront donc nécessaires pour vérifier de quelle façon le prolongement de la formation façonnera la pratique future des médecins de famille et donc, les soins de santé qu'ils offriront à leurs patients.

Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2016;62:e749-57

Family medicine, with its strong generalist tenets, has not escaped recent trends toward increased specialization. When asked, more than 1 in 10 family physicians reported that they had reduced their scope of practice and almost as many said that they had added a focused area or special interest to their practices.[1] For example, 16.5% of all family doctors say their practices focus on emergency medicine, 19.3% focus on care of the elderly, and 18.2% focus on hospital medicine.[2] No fewer than 1 in 10 family physicians focus their practices on other specific areas, such as maternity and newborn care, mental health, and palliative care.[2] While some of these areas of focused practice might overlap, the data suggest that a potentially large number of family doctors do not provide broad-scope care to a roster of patients throughout the patients' lifetimes.

The College of Family Physicians of Canada (CFPC) accredits family medicine training programs, confers Certification based on examination, and enables the continuing professional development of family physicians in Canada. While maintaining its commitment to comprehensive continuing care, the CFPC has established 19 communities of practice.[3] The CFPC awards Certificates of Added Competence (CACs) in 5 communities of practice, including care of the elderly, palliative care, emergency medicine, family practice anesthesia, and sport and exercise medicine.[4] The CACs correspond to category 1 programs identified in CFPC accreditation standards.[5] According to the CFPC, CACs "provide a means to recognize enhanced areas of expertise achieved, and maintained, by some family physicians."[6]

At the same time, the CFPC is implementing the Triple C Competency-based Curriculum. Building on core competencies identified in CanMEDS–Family Medicine (CanMEDS-FM), the Triple C curriculum gives new attention to family medicine residency training with an emphasis on core principles of comprehensive and continuous care centred in family medicine.[7-9] The aim is to "produce family physicians who are competent to practice comprehensive, continuing care."[10] Triple C architects acknowledge that family practice might extend beyond core generalist competencies. They recommend that enhanced skills training programs remain consistent with Triple C goals and that "skills in comprehensive, continuing care should be maintained during periods of extended training."[10]

This study examines trends in family medicine training at a time of substantial pedagogic change. Certificates of Added Competence, CanMEDS-FM, and the Triple C curriculum each contribute to a new—or perhaps *renewed*—conception of family medicine. This, in turn, might influence family physicians' career plans, and specifically the decision to pursue extended family medicine training. If family medicine training is at a watershed moment, it is time to take baseline measures against which to evaluate the effect of pedagogic change.

METHODS

Study results are based on data gathered by the Canadian Post-MD Education Registry (CAPER). The CAPER database contains basic education and demographic information for all residents and fellows registered in postgraduate training programs since 1988. This database includes all postgraduate training programs at all 17 Canadian faculties of medicine. To avoid analytical ambiguities, data predating the elimination of the rotating internship program were excluded (ie, data from before 1995). Legal status restrictions were also applied to the data selection: Canadian citizens and permanent residents were included and visa trainees were excluded. Thus, study results describe all Canadian citizens and permanent residents who were registered in postgraduate family medicine training programs within Canadian faculties of medicine from 1995 to 2013.

Descriptive statistics are used to present the main study outcomes, which are the numbers and proportions of family medicine trainees exiting from 2-year programs and extended (3 years or more) training programs. The results reflect the distribution of exiting trainees in each study year, regardless of the trainee's entry year, number of years in training, or initial training program or discipline. Study results also include re-entry trainees (ie, trainees who exit and then re-enter family medicine training after a period of absence). While the inclusion of re-entry trainees makes for a more complete counting of those in extended training, it is noteworthy that some trainees who are counted as second-year exits might, in future, re-enter training and undertake extended family medicine training. Whether extended training was taken immediately after or some time following completion of the 2-year family medicine program, trainees were only counted once and in their final exit program.

The CAPER database contains limited data on family medicine category 1 and 2 programs. All third-year family medicine trainees are coded as emergency medicine (category 1), care of the elderly (category 1), or enhanced skills (all other category 1 and all category 2) trainees. Preliminary analysis showed a relatively large number of emergency medicine trainees, sufficient to report trends throughout the study period. Care of the elderly trainees were few in number and were therefore grouped with trainees from all other non–emergency medicine extended training programs. Thus, for this study, the enhanced skills category contains all category 1 and 2 trainees, with the exception of those in emergency medicine.

The research team sought to explore factors that might relate to the choice of 2-year versus extended programs, including the faculty of medicine providing the postgraduate training, sex, and location of medical school graduation. To this end, outcome measures

are cross-tabulated against each of these nominal variables. Although many other factors could influence the decision to pursue extended family medicine training, the current analysis is limited to variables that are readily available in the CAPER database. Also, as noted, the CAPER database contains limited data on the types of extended programs completed by family medicine residents. To provide further insight, online enhanced skills program descriptions were reviewed and enumerated as of March 2015 for family medicine departments at Canada's 17 faculties of medicine.

RESULTS

During the 19-year study period the number of exiting family medicine trainees increased by 87.4%, going from 660 in 1995 to 1237 in 2013. Women represented an increasing proportion of exiting trainees, rising steadily from 50.3% to 62.4% during the study period. There has been an increase in the proportion of family medicine trainees who undertake extended training. At the start of the study period, 10.9% of family medicine trainees pursued extended training. In comparison, 26.0% of family medicine trainees who exited from 2003 to 2005 undertook extended training programs. Among the 5 most recent exit cohorts (from 2009 to 2013), 21.1% of family medicine trainees continued on to extended training programs. Throughout the study period, and in every year, men were more likely than women to take extended family medicine training. Among the 5 most recent family medicine exit cohorts, 25.9% of men and 18.3% of women completed extended training programs. These results are presented in **Table 1**.

While the total number of trainees exiting family medicine programs nearly doubled, there was an almost 7-fold increase in the number of international medical graduates (IMGs) exiting family medicine training programs during the study period. In 1995, 34 IMGs completed family medicine training in Canada, representing 5.2% of all exiting family medicine trainees in that year. In 2013, 226 IMGs completed family medicine training, accounting for 18.3% of all family medicine trainees exiting training in that year. In every year throughout the study period, Canadian medical graduates (CMGs) were more likely to undertake extended family medicine training compared with IMGs. Among the 5 most recent exiting cohorts, 23.1% of CMGs pursued extended training. In contrast, among the same exiting cohorts, 13.6% of IMGs went beyond 2 years of family medicine training. These results are presented in **Table 2**.

There is considerable variation across faculties of medicine with respect to the proportion of their family medicine trainees who undertake extended training. To illustrate this point, trainee counts for exiting cohorts from 2011 to 2013 were combined to calculate percentages based on sufficiently large numbers. Among the 302 trainees who completed family medicine training at the University of Montreal in Quebec from 2011 to 2013, 12.3% exited after completing a period of extended training. In contrast, more than one-third (35.1%) of family medicine trainees at Queen's University in Kingston, Ont, exited from extended training programs during the same time period. With the exception of those at McMaster University in Hamilton, Ont, family medicine trainees at faculties of medicine in Ontario and Saskatchewan were more likely to extend training. Those exiting programs at the University of Manitoba in Winnipeg and McGill University in Montreal were also relatively more likely to exit after a period of extended training. These results are presented in **Table 3**.

Apart from emergency medicine and care of the elderly, the CAPER database contains limited data on specific areas of extended family medicine training. However, online program descriptions provide insight on the types of extended training available to family medicine residents. As of March 2015, a total of 126 extended family medicine training programs were listed by Canada's 17 faculties of medicine. All 17 universities offered extended training in emergency medicine. Care of the elderly programs were listed by all but 2 of Canada's family medicine departments. Most universities also listed extended family medicine training in palliative care; anesthesia; obstetric, maternity, and perinatal care; clinician scholarship; and sport and exercise medicine. Various other programs are described, ranging from specific clinical areas, such as rheumatology, to less narrowly defined areas, such as hospital medicine and chronic disease. **Table 4** presents a detailed list of extended family medicine training programs as of March 2015.

During the 19-year study period, most family medicine residents who pursued extended training did so in emergency medicine. Of the 3039 family medicine trainees who completed extended training from 1995 to 2013, 1715 (56.4%) exited emergency medicine programs; the remaining 1324 (43.6%) completed other enhanced skills programs. In 2013, 134 family medicine trainees completed emergency medicine programs, compared with 40 in 1995. Similarly, 127 family medicine trainees completed enhanced skills programs in 2013, compared with 32 in 1995. **Table 5** shows the numbers and proportions of family medicine trainees exiting emergency medicine and enhanced skills programs each year during the 19-year study period.

DISCUSSION

The results of this study clearly demonstrate an increase in the number and proportion of family medicine

Table 1. Family medicine residents exiting 2-year and extended family medicine training programs, by sex, Canada, 1995–2013

	NO. EXITING 2-YEAR PROGRAMS		NO. EXITING EXTENDED PROGRAMS		TOTAL NO. EXITING FAMILY MEDICINE TRAINING			PROPORTION DOING EXTENDED PROGRAMS, %		
EXIT YEAR	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
1995	292	296	36	36	328	332	660	11.0	10.8	10.9
1996	306	313	54	47	360	360	720	15.0	13.1	14.0
1997	260	335	59	39	319	374	693	18.5	10.4	14.1
1998	268	333	64	47	332	380	712	19.3	12.4	15.6
1999	232	333	67	51	299	384	683	22.4	13.3	17.3
2000	217	304	76	59	293	363	656	25.9	16.3	20.6
2001	198	332	73	62	271	394	665	26.9	15.7	20.3
2002	161	306	83	66	244	372	616	34.0	17.7	24.2
2003	174	291	89	73	263	364	627	33.8	20.1	25.8
2004	172	300	84	83	256	383	639	32.8	21.7	26.1
2005	186	326	85	95	271	421	692	31.4	22.6	26.0
2006	178	385	74	87	252	472	724	29.4	18.4	22.2
2007	192	433	70	75	262	508	770	26.7	14.8	18.8
2008	222	512	66	114	288	626	914	22.9	18.2	19.7
2009	225	493	86	103	311	596	907	27.7	17.3	20.8
2010	262	479	104	96	366	575	941	28.4	16.7	21.3
2011	294	549	98	126	392	675	1067	25.0	18.7	21.0
2012	332	592	114	137	446	729	1175	25.6	18.8	21.4
2013	354	622	111	150	465	772	1237	23.9	19.4	21.1

trainees who undertake extended training (**Table 1**). While this study reports changes in the actual numbers of trainees exiting extended family medicine training programs, future research could reveal more about a possible unmet demand for extended family medicine training. For example, Canadian Resident Matching Service data suggest there might be an unmet demand for training in emergency medicine. Every year since 2007 there have been more applicants to emergency medicine programs than positions offered and most of the positions are filled each year.[11]

Extended family medicine training might be integrated into practice in a variety of ways. For example, it might support rural family practice, which is reportedly broader in scope.[12-18] Family medicine residents who plan to provide comprehensive care in rural communities might use extended training programs to prepare for the provision of surgical, obstetric, hospital-based, indigenous, and other types of care that are generally more characteristic of rural family practice. Other research suggests that rural family doctors might restrict their practices to specific areas, such as anesthesia care,[18-20] which might be enabled by extended training. Moreover, there is evidence to suggest that some family physicians might practise exclusively in emergency departments, sports medicine clinics, or tertiary care hospitals.[13,21,22] Family physicians might be motivated to take extended training for a variety of reasons. Some might be preparing for the broad health care needs of the geographic community they plan to serve. Others might be more focused on the demands of a particular type of clinical setting or health condition.

If there is uncertainty about how extended family medicine training influences future practice scope, there is no question about its variable uptake across faculties of medicine (**Table 3**). For example, approximately one-quarter of family medicine trainees at the Northern Ontario School of Medicine pursue extended training compared with slightly more than one-tenth of those at the University of Montreal. Many factors might contribute to cross-faculty variability in the proportion of family medicine trainees who pursue extended training. It might, in part, be linked to variations in provincial government funding for extended family medicine training. Cross-faculty variations in extended training might signal the particular emphasis faculties of medicine place on preparing family physicians for future practice in rural communities. More generally, extended training variations might reflect the unique pedagogic cultures and educational approaches of Canada's faculties of medicine. In an effort to better understand variations in extended training uptake, future research might

Table 2. Family medicine residents exiting 2-year and extended family medicine training programs, by place of medical school graduation, Canada, 1995-2013

	NO. EXITING 2-YEAR PROGRAMS		NO. EXITING EXTENDED PROGRAMS		TOTAL NO. EXITING FAMILY MEDICINE TRAINING		PROPORTION DOING EXTENDED PROGRAMS, %	
EXIT YEAR	IMGs	CMGs	IMGs	CMGs	IMGs	CMGs	IMGs	CMGs
1995	32	556	2	70	34	626	5.9	11.2
1996	37	582	5	96	42	678	11.9	14.2
1997	25	570	4	94	29	664	13.8	14.2
1998	34	567	5	106	39	673	12.8	15.8
1999	41	524	4	114	45	638	8.9	17.9
2000	37	484	5	130	42	614	11.9	21.2
2001	39	491	2	133	41	624	4.9	21.3
2002	37	430	9	140	46	570	19.6	24.6
2003	64	401	13	149	77	550	16.9	27.1
2004	99	373	11	156	110	529	10.0	29.5
2005	94	418	14	166	108	584	13.0	28.4
2006	149	414	21	140	170	554	12.4	25.3
2007	135	490	18	127	153	617	11.8	20.6
2008	184	550	20	160	204	710	9.8	22.5
2009	181	537	17	172	198	709	8.6	24.3
2010	183	558	36	164	219	722	16.4	22.7
2011	189	654	29	195	218	849	13.3	23.0
2012	194	730	36	215	230	945	15.7	22.8
2013	196	780	30	231	226	1011	13.3	22.8

CMG—Canadian medical graduate, IMG—international medical graduate.

Table 3. Family medicine residents exiting 2-year and extended family medicine training programs, by faculty of medicine in Canada, combined 2011-2013 exit cohorts

TRAINING FACULTY OF MEDICINE	TRAINEES EXITING 2-YEAR PROGRAMS, N (%)	TRAINEES EXITING EXTENDED PROGRAMS, N (%)	TOTAL NO. OF EXITING TRAINEES
Memorial University of Newfoundland	70 (85.4)	12 (14.6)	82
Dalhousie University	122 (87.1)	18 (12.9)	140
Laval University	203 (79.3)	53 (20.7)	256
University of Sherbrooke	197 (83.1)	40 (16.9)	237
University of Montreal	265 (87.7)	37 (12.3)	302
McGill University	164 (76.6)	50 (23.4)	214
University of Ottawa	144 (72.7)	54 (27.3)	198
Queen's University	98 (64.9)	53 (35.1)	151
University of Toronto	262 (71.8)	103 (28.2)	365
McMaster University	171 (80.7)	41 (19.3)	212
Western University	159 (76.1)	50 (23.9)	209
Northern Ontario School of Medicine	96 (73.3)	35 (26.7)	131
University of Manitoba	104 (75.9)	33 (24.1)	137
University of Saskatchewan	84 (71.8)	33 (28.2)	117
University of Alberta	180 (84.9)	32 (15.1)	212
University of Calgary	149 (81.9)	33 (18.1)	182
University of British Columbia	275 (82.3)	59 (17.7)	334
Total	2743 (78.8)	736 (21.2)	3479

Table 4. Extended family medicine training programs offered by Canada's 17 faculties of medicine as of March 2015

FAMILY MEDICINE EXTENDED TRAINING AREA	NO. OF UNIVERSITIES OFFERING PROGRAM
Emergency medicine	17
Care of the elderly	15
Palliative care	13
Anesthesia	11
Obstetric, maternity, and perinatal care	10
Sport and exercise medicine	10
Clinician scholar	10
Global health	5
Women's health	5
HIV-AIDS	4
Addiction and mental health	4
Hospital medicine	4
Oncology	3
Indigenous health	3
Surgical skills	2
Pediatrics	2
Cancer care	1
Chronic disease	1
Rheumatology	1
Breast diseases	1
Environmental health	1
Developmental disabilities	1
Rural skills	1
Occupational medicine	1
Total	126

Table 5. Distribution of exiting family medicine trainees across extended training areas in Canada, 1995–2013

EXIT YEAR	EMERGENCY FAMILY MEDICINE, N (%)	ENHANCED SKILLS FAMILY MEDICINE, N (%)
1995	40 (55.6)	32 (44.4)
1996	45 (44.6)	56 (55.4)
1997	56 (57.1)	42 (42.9)
1998	67 (60.4)	44 (39.6)
1999	74 (62.7)	44 (37.3)
2000	85 (63.0)	50 (37.0)
2001	81 (60.0)	54 (40.0)
2002	84 (56.4)	65 (43.6)
2003	93 (57.4)	69 (42.6)
2004	105 (62.9)	62 (37.1)
2005	100 (55.6)	80 (44.4)
2006	94 (58.4)	67 (41.6)
2007	83 (57.2)	62 (42.8)
2008	105 (58.3)	75 (41.7)
2009	109 (57.7)	80 (42.3)
2010	117 (58.5)	83 (41.5)
2011	126 (56.3)	98 (43.8)
2012	117 (46.6)	134 (53.4)
2013	134 (51.3)	127 (48.7)
Total	1715 (56.4)	1324 (43.6)

contrast the learning environments within family medicine departments that produce relatively more and relatively fewer extended training family physicians.

As shown in **Table 4**, there is a multiplicity of extended training programs that cut across a range of clinical areas. Some extended programs focus on specific procedural skills or health conditions that might be seen as peripheral to family medicine (eg, surgical skills, hospital medicine, occupational medicine). Other extended training areas, such as chronic disease, mental health, and care of the elderly, might be seen as the stock-in-trade of family practice. For each extended training area, family medicine educators might debate what learning is essential within the first 2 years of family medicine training and what additional learning might be more appropriately covered in extended training programs. Certainly, it will be interesting to monitor how new initiatives, like the Triple C curriculum and CACs, affect the number and breadth of as well as enrolment in extended family medicine training programs.

The current study shows that CMGs are almost twice as likely to pursue extended family medicine training as IMGs are (**Table 2**). Demographic statistics indicate that IMGs are, on average, considerably older than their CMG peers at the time of entering postgraduate training.[23,24] As a result, IMGs might be inclined to complete their residency training as quickly as possible to move on to fully licensed medical practice. At the same time, IMGs might be constrained by return-of-service agreements that preclude or limit their ability to pursue extended family medicine training. If IMGs are less likely to establish long-term practice in rural communities, as some research suggests,[20,25-27] then they might believe they are less in need of extended family medicine training. While the cause of IMG-CMG training differences might be complex, further study could improve our understanding of potential barriers to IMG participation in extended family medicine training programs.

Past research examines downstream family medicine practice, but much could be learned from studies that retrospectively or prospectively explore the relationship between extended family medicine training and scope of future medical practice. Extended and specialized training might prepare family physicians to practise within a narrower scope of health care delivery. Conversely, extended training might augment the otherwise

comprehensive practice of family physicians. For example, extended emergency medicine training might prepare family physicians to work exclusively in emergency departments or it might instill an "add-on" skill set, to be used by the family physician while away from her or his regular, broad-scope family practice clinic. Certainly, residency training is unique for each family physician; it takes place over a particular time period and in the context of a defined population. The study data presented here underscore the need for further research to understand how extended family medicine training shapes future medical practice and, ultimately, the role of family physicians in providing health care services to Canadians.

Limitations

Many factors could influence the decision to pursue extended family medicine training, and the current analysis is limited to variables that are readily available in the CAPER database. Further, this study is limited by a lack of data on the demand (ie, number of applicants) and opportunity (ie, number of positions) for extended family medicine training. Research on applicants and training positions could provide a more complete picture and improve our understanding of unmet demand as a possible driver of extended training.

Conclusion

Substantial pedagogic changes are occurring within family medicine. The Triple C curriculum and CanMEDS-FM are being implemented with a view to producing family physicians who are ready to begin the practice of comprehensive family medicine in any community in Canada.[8,28] At the same time, new CACs will recognize family physicians' expert competencies. Training statistics clearly show an increase in the proportion of family medicine residents who pursue extended training, particularly among CMGs and at particular universities. What is less certain at this time is how pedagogic change will (or will not) affect future family medicine training trends and how extended training narrows (or broadens) future medical practice. Acknowledging the potential effect of pedagogic change, it is important that future research examine how extended training shapes family physicians' future practice and, ultimately, the health care available to their patients. As part of that research agenda it will be important to measure, on an ongoing basis, the breadth and uptake of extended family medicine training programs.

Mr Slade is Director of Health Systems and Policy at the Royal College of Physicians and Surgeons of Canada in Ottawa, Ont. **Dr Ross** is Associate Professor and Education Researcher in the Department of Family Medicine at the University of Alberta in Edmonton. **Dr Lawrence** is Associate Professor and Postgraduate Program Director in the Department of Academic Family Medicine at the University of Saskatchewan. **Dr Archibald** is an education research scientist at the C.T. Lamont Primary Health Care Research Centre of the Bruyère Research Institute in Ottawa and Assistant Professor in the Department of Family Medicine at the University of Ottawa. **Dr Palacios Mackay** is Assistant Professor and Medical Education Specialist in the Department of Family Medicine at the University of Calgary in Alberta. **Dr Oandasan** is Director of Education and the lead for the national implementation of the Triple C Competency-based Curriculum at the College of Family Physicians of Canada in Mississauga, Ont, and Full Professor in the Department of Family and Community Medicine at the University of Toronto in Ontario.

Acknowledgment

The authors are extremely grateful to the Canadian Post-MD Education Registry (CAPER). The CAPER database is an invaluable resource to medical education researchers. We are particularly grateful to **Mr Leslie Forward**, CAPER Database Manager, for his expertise and extraordinary support in compiling data for this study.

Contributors

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

Competing interests

None declared

Correspondence

Mr Steve Slade; e-mail **sslade@royalcollege.ca**

References

1. College of Family Physicians of Canada, Canadian Medical Association, Royal College of Physicians and Surgeons of Canada. *National Physician Survey 2013. Q5 With reference to the last 2 years, check all the changes you have already made.* 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.
2. College of Family Physicians of Canada, Canadian Medical Association, Royal College of Physicians and Surgeons of Canada. *National Physician Survey 2013. Q2i Is your practice focused in any of the following areas?* Mississauga, ON: College of Family Physicians of Canada; 2013. Available from: **http://nationalphysiciansurvey.ca/wp-content/uploads/2013/08/2013-National-EN-Q2i-FP.pdf**. Accessed 2015 Apr 15.
3. College of Family Physicians of Canada [website]. *Section of Communities of Practice in Family Medicine*. Mississauga, ON: College of Family Physicians of Canada. Available from: **www.cfpc.ca/CPFM**. Accessed 2015 Apr 15.
4. College of Family Physicians of Canada. *Section of Family Physicians with Special Interests or Focused Practices (SIFP). Project status update*. Mississauga, ON: College of Family Physicians of Canada; 2014. Available from: **www.cfpc.ca/uploadedFiles/Directories/Sections/SIFP%20Progress%20Update%20(FINAL%20ENG%20July%205%202013).pdf**. Accessed 2015 Apr 15.
5. 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. Available from: **www.cfpc.ca/uploadedFiles/Red%20Book%20English.pdf**. Accessed 2015 Oct 21.
6. College of Family Physicians of Canada [website]. *Certificates of added competence in family medicine*. Mississauga, ON: College of Family Physicians of Canada. Available from: **www.cfpc.ca/CAC**. Accessed 2015 Apr 15.
7. Working Group on Curriculum Review. *CanMEDS–Family Medicine*. Mississauga, ON: College of Family Physicians of Canada; 2009. Available from: **www.cfpc.ca/uploadedFiles/Education/CanMeds%20FM%20Eng.pdf**. Accessed 2015 Apr 15.
8. College of Family Physicians of Canada [website]. *Triple C Competency based Curriculum*. Mississauga, ON: College of Family Physicians of Canada; 2013. Available from: **www.cfpc.ca/triple_C**. Accessed 2015 Apr 15.
9. Oandasan IF, Saucier D, editors. *Triple C Competency-based Curriculum. Report—part 2. Advancing implementation*. Mississauga, ON: College of Family Physicians of Canada; 2013. Available from: **www.cfpc.ca/uploadedfiles/education/_pdfs/triplec_report_pt2.pdf**. Accessed 2015 Apr 15.
10. 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 2015 Apr 15.
11. Canadian Resident Matching Service [website]. *FM/EM match reports*. Ottawa, ON: Canadian Resident Matching Service. Available from: **www.carms.ca/en/data-and-reports/fmem**. Accessed 2015 Nov 13.
12. Pong RW, Pitblado JR. *Geographic distribution of physicians in Canada: beyond how many and where*. Ottawa, ON: Canadian Institute for Health Information; 2005. Available from: **https://secure.cihi.ca/free_products/Geographic_Distribution_of_Physicians_FINAL_e.pdf**. Accessed 2015 Apr 15.
13. Wong E, Stewart M. Predicting the scope of practice of family physicians. *Can Fam Physician* 2010;56:e219-25. Available from: **www.cfp.ca/content/56/6/e219.full.pdf+html**. Accessed 2016 Nov 9.
14. Peterson L, Finnegan SC, Peabody M, O'Neill T, Phillips RL. *Family physicians' scope of practice varies by practice organization and rural/urban status*. Paper presented at: 2014 North American Primary Care Research Group Annual Meeting; 2014 Nov 25; New York, NY. Available from: **www.napcrg.org/Conferences/AnnualMeeting/AbstractSearch?m=6&s=12015**. Accessed 2015 Apr 15.
15. Baldwin LM, Hart LG, West PA, Norris TE, Gore E, Schneeweiss R. Two decades of experience in the University of Washington Family Medicine Residency Network: practice differences between graduates in rural and urban locations. *J Rural Health* 1995;11(1):60-72.

16. Hart LG, Salsberg E, Phillips DM, Lishner DM. Rural health care providers in the United States. *J Rural Health* 2002;18(Suppl):211-32.
17. Kingsmill S. Is rural medicine a discipline? *Can J Rural Med* 1997;2(2):141-2.
18. Rourke JT. Postgraduate training for rural family practice. Goals and opportunities. *Can Fam Physician* 1996;42:1133-8.
19. Brown G, Godwin M, Seguin R, Ashbury EL. Family medicine anesthesia. Sustaining an essential service. *Can Fam Physician* 2005;51:538-9. Available from: **www.cfp.ca/content/51/4/538.long**. Accessed 2016 Nov 9.
20. Rourke J. Increasing the number of rural physicians. *CMAJ* 2008;178(3):322-5.
21. Petterson S, Peterson L, Phillips RL, Moore M, Finnegan S, Coffman M, et al. One in fifteen family physicians principally provide emergency or urgent care. *J Am Board Fam Med* 2014;27(4):447-8.
22. Beaulieu MD, Rioux M, Rocher G, Samson L, Boucher L. Family practice: professional identity in transition. A case study of family medicine in Canada. *Soc Sci Med* 2008;67(7):1153-63. Epub 2008 Jul 20.
23. Armstrong S, François J, Li XM, Seo B. *Understanding Canadian and international medical graduate physicians in Manitoba.* Winnipeg, MB: University of Manitoba, Faculty of Medicine; 2013. Available from: **http://umanitoba.ca/faculties/health_sciences/medicine/education/cpd/media/Research-Understanding_CMGs_and_IMGs_in_MB.pdf**. Accessed 2015 Apr 15.
24. Crutcher RA, Banner SR, Szafran O, Watanabe M. Characteristics of international medical graduates who applied to the CaRMS 2002 match. *CMAJ* 2003;168(9):1119-23.
25. Buske L. First practice: family physicians initially locating in rural areas. *Can J Rural Med* 2013;18(3):80-5.
26. Canadian Foundation for Healthcare Improvement. *Myth: international medical graduates are the solution to the doctor shortage in underserviced areas.* Ottawa, ON: Canadian Foundation for Healthcare Improvement; 2013. Available from: **www.cfhi-fcass.ca/sf-docs/default-source/mythbusters/Myth-International-Med-Grads-E.pdf**. Accessed 2015 Apr 15.
27. Thompson MJ, Hagopian A, Fordyce M, Hart LG. Do international medical graduates (IMGs) "fill the gap" in rural primary care in the United States? A national study. *J Rural Health* 2009;25(2):124-34.
28. Lee J, McMillan C, Hiller LM, O'Brien G. Preparing residents for family practice: the role of an integrated "Triple C" Curriculum. *Can Med Educ J* 2013;4(1):e75-80.