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Review of the Numbers of Family Physicians and Family Medicine Graduates Reported in Canada: An Outcomes of Training Project evidence summary

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Background

The federal government has identified access to a family physician as a key priority.¹ The goal of health human resource planning is to ensure we have the correct number of physicians available to meet the population's health needs. A robust understanding of the number of Canadian family physicians and the numbers that are graduating over time is necessary to support health human resource planning and decision-making related to the deployment and training of the physician workforce.

As part of the Outcomes of Training Project, we reviewed available data on the number of family medicine trainees, how many are entering the family medicine workforce, and the numbers of filled and unfilled seats in family medicine and extended training programs.* This information can inform decisions about the number of family medicine residency seats needed to meet the needs of the public.

Objective

As part of the College of Family Physicians of Canada (CFPC)'s social accountability mandate, the purpose of this study is to examine temporal patterns in the numbers of family medicine graduates and family physicians in Canada. Specifically, we examine these research questions:

1. How have the numbers of Canadian medical graduates in family medicine and extended programs changed over time? (This includes Category 1 and Category 2 programs.)
2. How has the number of family physicians in Canada changed over time?
3. How have the numbers of filled and unfilled spots for family medicine residency and extended training programs changed over time?

*For this report we are using the term extended training as we are basing the report on the Canadian Post-MD Education Registry's description of the numbers of residents in residency programs beyond core family medicine that they collect, which includes emergency medicine, care of the elderly, and public health and community medicine.

Methods

To examine the numbers of family medicine graduates over time, the **Canadian Post-MD Education Registry (CAPER)** was used as it maintains individual-level data for all postgraduate medical residents and fellows in Canada.² Data are captured longitudinally, from entry to training to the year of exit, and out into independent practice following residency training. These data are based on self-reported census data completed by all resident trainees, submitted by each Canadian medical school's postgraduate medical education office, and archived with CAPER.² CAPER collects limited data on family medicine Category 1 and 2 programs. Most family medicine residency Category 1 programs lead to a Certificate of Added Competence Special Designation from the CFPC. CAPER collects longitudinal data on third-year family medicine trainees who completed extended training in emergency medicine (Category 1 program), care of the elderly program (Category 1), or other Category 1 and Category 2 enhanced skills programs (see Appendix 1). For this study we define extended training to include any additional training beyond family medicine residency, which may or may not include certification.³ This includes emergency medicine and care of the elderly Certificates of Added Competence and all other enhanced skills (see Appendix 1). The population used to analyze trends in the number of family medicine graduates over time included Canadian citizens/permanent residents (both Canadian medical graduates and international medical graduates) who exited their family medicine programs or extended training programs between 2000 and 2018. Results for Canadian medical graduates are reported in this study.

To examine the number of family physicians, data from the **Canadian Institute for Health Information's Scott's Medical Database (SMDB)** were analyzed. The SMDB collects data on the number, distribution, demographics, and migration of physicians in Canada.⁴ These data are collected from organizations and institutions such as jurisdictional registrars, the Royal

College of Physicians and Surgeons of Canada (Royal College), and the CFPC and from physicians directly. Information on individual physicians is primarily derived from publicly available reports and/or registration directories issued by jurisdictional licensing authorities.⁴ In the SMDB, physician supply counts are based on the number of active physicians in Canada in a given data year and defined as individuals with MD degrees who have valid mailing addresses.⁴ Family physicians are defined as family medicine physicians and non-certified specialists from the Royal College. Data from 2000 to 2019 were used to explore trends in family physician numbers.

To examine trends in unfilled/filled family medicine residency positions over time and by program, data from the **Canadian Resident Matching Service (CaRMS)** were used. CaRMS matches medical students interested in starting postgraduate year one (PGY1) medical training with one of the 17 medical schools in Canada.⁵ As such, CaRMS collects data on unfilled and filled residency spots by specialty. Related to family medicine, CaRMS collects matching data on family medicine, family medicine/emergency medicine, family medicine/integrated emergency medicine, care of the elderly, and public health and preventive medicine programs. Based on the availability of CaRMS data, we examined trends for the period between 2013 and 2019.

Data from CAPER, the SMDB, and CaRMS were analyzed using trend analysis, commonly used to collect, analyze, and delineate data patterns over time.^{6,7} Descriptive statistics were used to analyze secondary data and summarize study outcomes.

Findings

Number of family medicine graduates

Number of Canadian medical graduates from family medicine programs by match year

The number of Canadian medical graduates from family medicine programs has steadily increased over time,

more than doubling (2.6 times) from 377 in 2004 to 999 in 2018. Before 2010 the largest number of Canadian medical graduates in any year was 532. After 2010 that number increased to almost 1,000 family medicine graduates annually. The number of Canadian medical graduates from extended training programs increased steadily, nearly doubling (1.9 times) from 149 in 2004 to 281 in 2018. Before 2010 the largest number of Canadian medical graduates in extended training programs in any given year was 171; after 2010, it rose to 281.

Number of Canadian medical graduates from family medicine extended training programs[†] by match year

Over time, the number of Canadian medical graduates completing extended training programs more than quadrupled (4.2 times) from 40 in 2004 to 168 in 2018. The number of Canadian medical graduates exiting from care of the elderly programs increased slightly from eight in 2004 to 13 in 2018. The number of Canadian medical graduates from emergency medicine programs fluctuated over time but has stayed relatively constant, with 101 graduates in 2004 and 100 graduates in 2018. The number of Canadian medical graduates in extended training programs has consistently increased since 2010; before 2010 the largest number of graduates was in 2008.

Number of family physicians

Number of family physicians in Canada by year

In Canada, the number of family physicians has risen from 9,598 in 2000 to 27,096 in 2019 (**Figure 1**). The population of family physicians has been growing since 2004, with the greatest rate of growth taking place between 2017 and 2019. Compared with the period from 2000 to 2010, the number of family physicians grew dramatically between 2010 and 2019.

Filled and unfilled residency training positions

Filled and unfilled training spots in family medicine program by match year

The number of filled positions in family medicine

[†]For this report we are using the term extended training as we are basing the report on CAPER's description of the numbers of residents in residency programs beyond core family medicine that they collect, which includes emergency medicine, care of the elderly, and public health and community medicine.

Figure 1. Number of family physicians in Canada by year

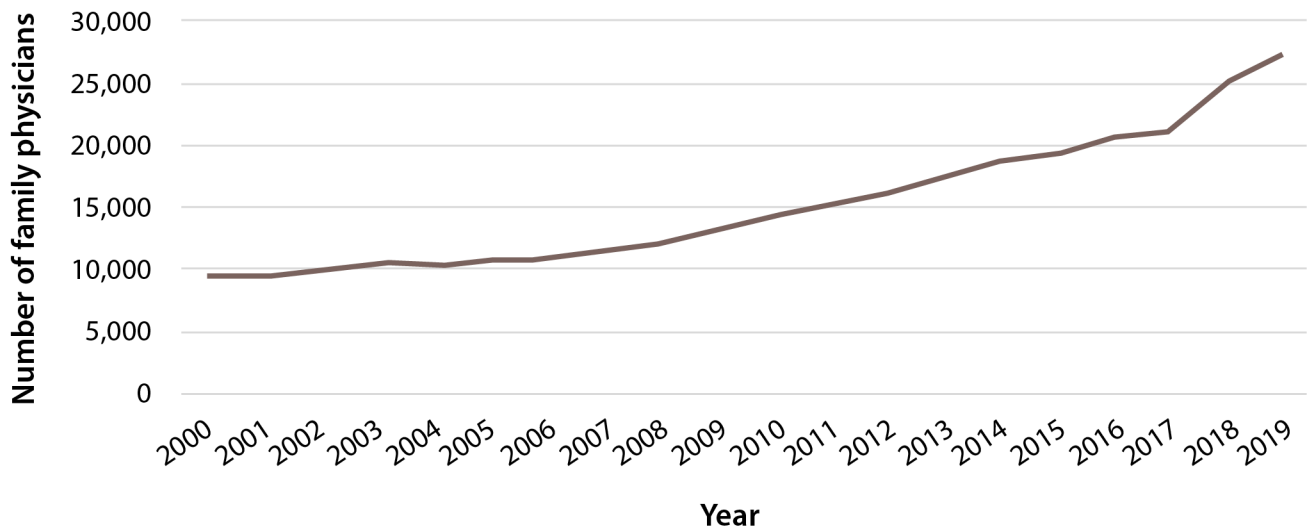
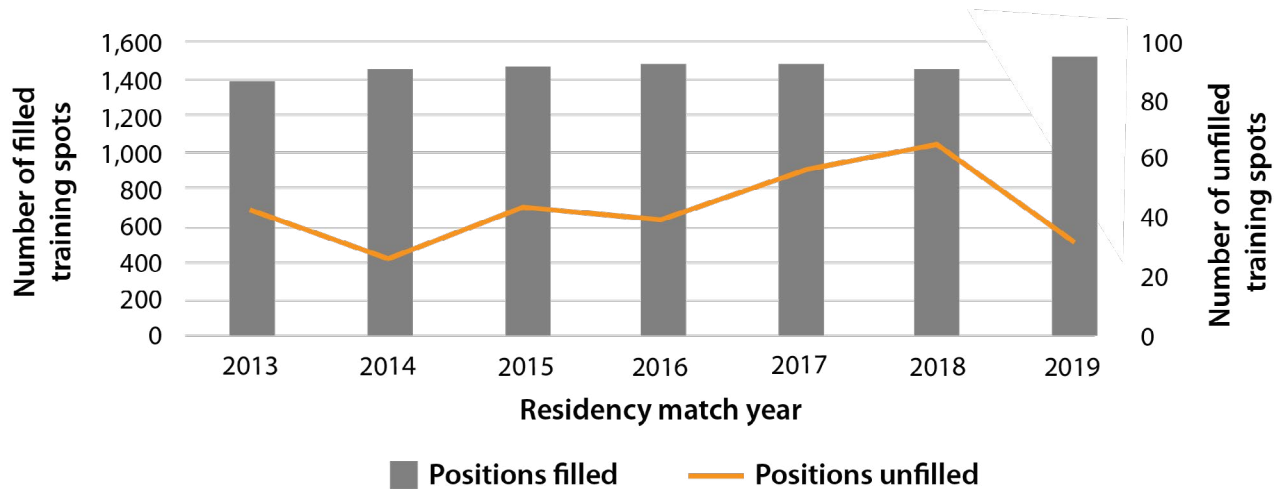


Figure 2. Filled and unfilled training spots in family medicine program by match year[‡]



programs increased from 1,379 in 2013 to 1,519 in 2019 (**Figure 2**). The number of unfilled positions in family medicine programs was consistent over time, from 43 unfilled positions in 2013 to 33 unfilled positions in 2019.

Filled and unfilled training spots in extended training by match year

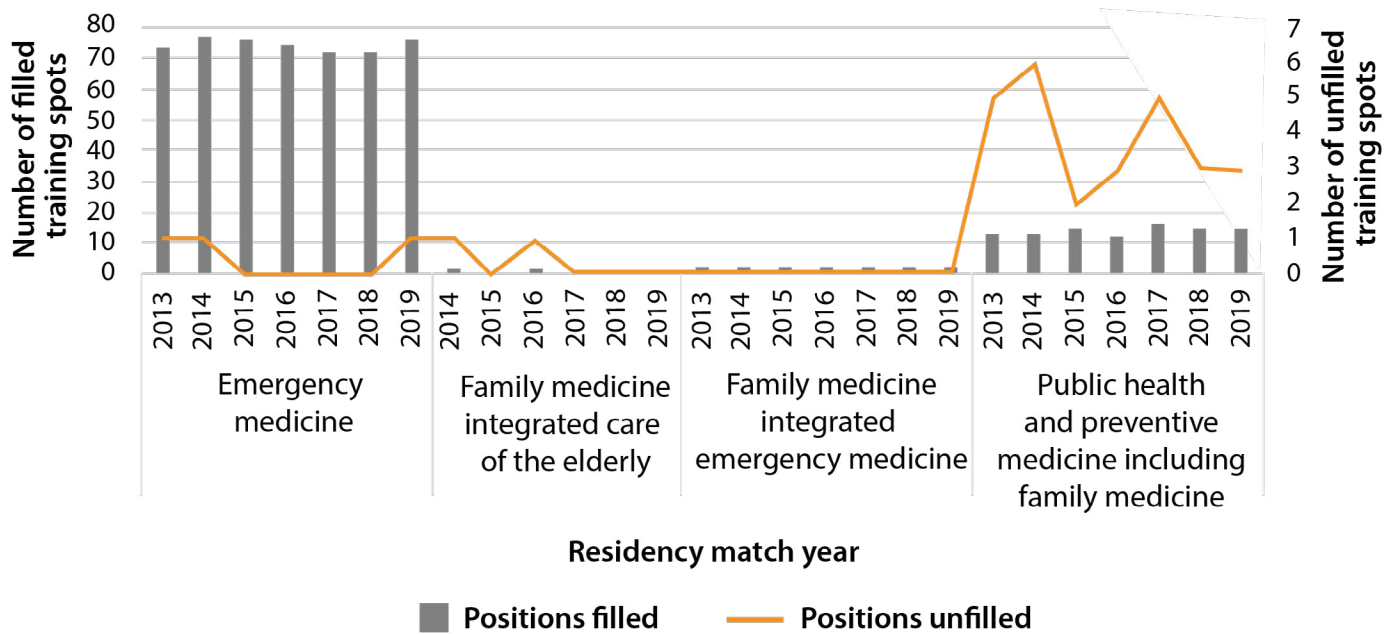
The number of filled positions in emergency medicine stayed consistent from 74 in 2013 to 76 in 2019 (**Figure 3**). The two available positions in integrated emergency medicine were filled each year. The number of filled

positions in care of the elderly varied between zero and one. The number of filled positions in public health and preventive medicine, including family medicine, stayed constant from 13 in 2013 to 14 in 2019.

Emergency medicine, integrated emergency medicine, and care of the elderly each had either zero or one unfilled training positions per year. Public health and preventive medicine had between two and six unfilled positions annually.

[‡]This graph has two y-axes. Only the axis on the right side should be used when assessing the number of unfilled positions.

Figure 3. Filled and unfilled training spots by extended training programs and match year[§]



Unfilled family medicine positions by residency program

Programs at francophone universities most frequently had unfilled family medicine positions between 2013 and 2019: the University of Montreal (ranging from five to 17), the University of Sherbrooke (ranging from three to 23), and Laval University (ranging from four to 31); see **Figure 4**. The number of unfilled positions for these programs fluctuated over time with no clear trend.

Limitations

Each database has limitations. CAPER collects limited data on family medicine Category 1 and 2 programs. Data are inputted for residents who completed the program based on the last time a school indicated a learner was registered. As a result, residents who dropped out may not be captured in the data. The reporting of PGY3 programs was sporadic in the first years reported to CAPER but has improved.

[§]This chart contains two y-axes. Only the axis on the right side should be used when assessing the number of unfilled positions.

The SMDB is unable to maintain a preferred mailing address for all physicians.⁴ Furthermore, the accuracy of the data at any given point in time is limited due to time delays in data collection and reporting.⁴ The number of active physicians, including those who work abroad, may be inaccurate as any physician record without a valid mailing address is considered inactive.⁴

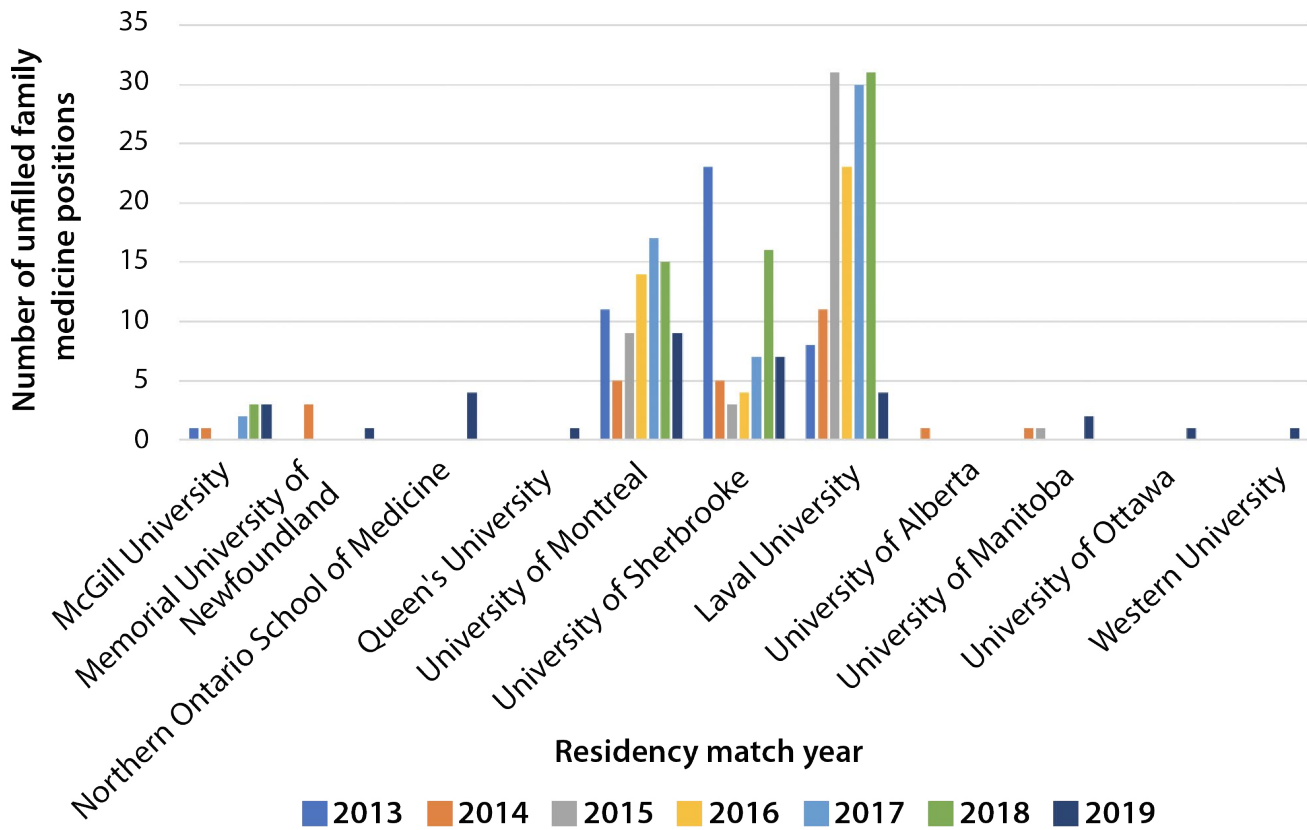
CaRMS data are limited in relation to the types of data that are collected for extended training programs.

Discussion

This review found the number of family physicians in Canada has increased over the past two decades, with the highest rate of growth occurring between 2017 and 2019.

The number of Canadian medical graduates from family medicine and extended training programs steadily increased between 2004 and 2018. The steady increases in extended training require examination of why learners

Figure 4. Unfilled positions in family medicine programs by match year[†]



[†]This graphic only includes Canadian universities with unfilled spots in family medicine.

are choosing to engage in further training beyond the core residency and which types of enhanced skills or added competence would be most beneficial to them based on the populations they serve.

The number of filled positions in family medicine programs increased over time while the number of unfilled positions has been relatively consistent over time, resulting overall in a higher proportion of filled residency positions. French-language programs have the most unfilled spots in family medicine.

Understanding trends in the numbers of Canadian medical graduates who fill family medicine residency positions is helpful for planning purposes.

Conclusion

This review found there was a consistent pattern of interest in family medicine by medical students and increases in the number of family physicians in Canada.

Further information

To read the full report—*Preparing Our Future Family Physicians: An educational prescription for strengthening health care in changing times*—and related evidence and scholarship, please visit <https://www.cfpc.ca/futurefp>.

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Appendix 1

List of Other Enhanced Skill Training Programs

Enhanced Skills: Addiction and Mental Health

Enhanced Skills: Anesthesia

Enhanced Skills: Breast Diseases

Enhanced Skills: Cancer Care

Enhanced Skills: Chronic Disease

Enhanced Skills: Clinical Scholarships

Enhanced Skills: Developmental Disabilities

Enhanced Skills: Environmental Health

Enhanced Skills: Global Health

Enhanced Skills: HIV/AIDS

Enhanced Skills: Hospitalist Medicine

Enhanced Skills: Indigenous Health

Enhanced Skills: Obstetrics

Enhanced Skills: Occupational Medicine

Enhanced Skills: Oncology

Enhanced Skills: Palliative Care

Enhanced Skills: Pediatrics

Enhanced Skills: Psychiatry

Enhanced Skills: Rheumatology

Enhanced Skills: Rural Skills

Enhanced Skills: Sports Medicine

Enhanced Skills: Surgical Skills

Enhanced Skills: Women's Health

Source: Canadian Post-MD Education Registry (CAPER)