ORIGINAL RESEARCH

Updated Inventory and Projected Requirements for Specialist Physicians in Geriatrics

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ABSTRACT

Background

The predicted growth of Canadians aged 65+ and the resultant rise in the demand for specialized geriatric services (SGS) requires physician resource planning. We updated the 2011 Canadian Geriatrics Society physician resource inventory and created projections for 2025 and 2030.

Methods

The number and full-time equivalents (FTEs) of geriatricians and Care of the Elderly (COE) physicians working in SGS were determined. FTE counts for 2025 and 2030 were estimated by accounting for retirements and trainees. A ratio of 1.25/10,000 population 65+ was used to predict physician resource requirements.

Results

Between 2011 and 2019 the number of geriatricians and COE physicians increased from 276 (235.8 FTEs) and 128 (89.9 FTEs), respectively, to 376 (319.6 FTEs) and 354 (115.5 FTEs). This increase did not keep pace with the 65+ population growth. The current gap between supply and need is expected to increase.

Discussion

The physician supply gap is projected to widen in 2025 and 2030. Increased recruitment and interdisciplinary team-based care, supported by enhanced funding models, and full integration of COE physicians in SGS could reduce this increasing gap. In contrast to pediatrician supply in Canada, the specialist physician resources available to the population 65+ reflect a disparity.

Key words: geriatric specialist, geriatrician, care of the elderly, physician human resources, Canada, specialized geriatric services, workforce projection, inventory

INTRODUCTION

The proportion of the Canadian population aged 65+ will grow from 17% in 2018 to an estimated 23% in 2031, exceeding the population aged 0–19.(1) Like other high-income countries, Canada faces increases in the number of older adults living with multiple comorbidities, frailty, and complex care needs.(2)

In 2015, the Canadian Medical Association recommended physician resource planning using pan-Canadian supply- and needs-based projections with the appropriate infrastructure and resources to match the projections.(3) As well, the 2017 Standing Senate Committee on National Finance recommended a national senior's strategy to control projected increases in spending growth, while ensuring appropriate and accessible care.(4) The Canadian health-care system will have to evolve in order to respond to these competing demands, with specific needs in areas such as physician resource planning and infrastructure development.

A core component of clinical care for older adults experiencing multiple comorbidities is the targeted use of comprehensive geriatric assessment (CGA), a systematic team-based approach to identifying underlying causes and optimal treatments for complex presentations. An interdisciplinary CGA addresses the biopsychosocial causes of interacting physical, mental, and functional health challenges, and results in the development and implementation of an interdisciplinary plan of care. CGA has been shown to improve health outcomes.(5) Specialized Geriatric Services (SGS) are the home of the

interdisciplinary teams with the additional training required to deliver CGA and its associated interventions. These services are organized in comprehensive, coordinated systems of hospital and community-based care that are able to assess, diagnose, and manage older adults with complex health conditions. Those working in SGS are trained, have the required expertise in the care of older adults, and have the skills needed to work effectively within interdisciplinary teams. In Ontario and other Canadian provinces, SGS is commonly understood to include physicians trained in geriatric medicine, geriatric psychiatry, and Care of the Elderly who work with other health disciplines, including nurses, pharmacists, social workers, physiotherapists, and occupational therapists, among others, in interprofessional geriatric teams.[6,7] These physicians are key to the provision of SGS, making physician human resource planning in geriatrics of particular relevance in addressing the anticipated growth in health service demand.

A working group of the Canadian Geriatrics Society (CGS) published a 2011 physician resource inventory quantifying certified and functional geriatric specialists in Canada.[8] It included the number and full-time equivalents (FTEs) of internist-trained geriatricians and family physicians with Care of the Elderly (COE) training working in each province and territory of Canada. A 1.0 FTE was defined as a physician working 10 half days or more per week.

This work was updated in 2019. Again, we focused on two types of physicians: geriatric medicine specialists with internal medicine training, and family physicians with COE training. Geriatricians are internists with subspecialty training in an accredited Royal College of Physicians and Surgeons Canada (RCPSC) geriatric medicine residency program. For geriatricians who have completed equivalent specialist and subspecialty training outside Canada, recognition can be provided by the relevant provincial regulatory college for physicians. COE physicians are certified by the College of Family Physicians of Canada (CFPC) as either having an additional 6–12 months of training in an accredited enhanced skills COE program or receiving a practice-based Certificate of Added Competence in COE from the CFPC.[9,10,11] We recognize that family physicians without COE recognition are responsible for, and provide the majority of, continuing primary care for older adults, but we did not include family physicians without COE designation in our inventory of physician resources. Our primary aim was to characterize the physician workforce in Canada that has undertaken additional training, as well as practice patterns and funding models that allow for the provision of episodic CGAs and specialized older adult care.

In this paper we provide the numbers of these physicians and the estimated FTEs in each province/territory for 2019. We also projected the future supply of geriatric physician human resources in Canada in 2025 and 2030, making assumptions about retirements and newly trained physicians. We extended estimates out to 2030, as it takes approximately a decade for an entering medical student to be fully trained as an internist geriatrician.

METHODS

Updating the 2011 Geriatric Specialist Human Resource Inventory

The 2011 inventory of specialist geriatricians and their practice locations was updated using data publicly available from the directories of the ten provincial Colleges of Physicians and Surgeons. Volunteer physician leads, including Division/Department Chairs and Residency Program Directors for geriatric medicine, were identified for all provinces and territories. They were asked to first verify the numbers for their region, province or territory, and then indicate if these individuals were based primarily in an Academic Health Science Centre or community practice and if they were full-time or part-time.

The final list of geriatricians included practice location, year of graduation, and part-time/full-time status for each individual. For FTE counts, part-time geriatricians were assumed to have an FTE of 0.5, while full-time geriatricians were all assumed to have an FTE of 1.0.

Benchmark to Project Current and Future Population Specialist Need

As in the 2011 inventory,[8] to compare current and future numbers with estimated need, a target ratio of 1.25 geriatricians per 10,000 population 65+ was used. Physician/population ratios for work force planning can be imprecise, as they do not accurately reflect actual population need or adjust for variations in the intensity of medical practice. However, the ratio noted was specifically developed to estimate the total physician work force needed to address academic and administrative requirements, as well as providing team-based specialty care of older persons in the Canadian context.[12] Particularly attractive for us was that opportunity to compare our results to the 2011 inventory, and use the ratio as a benchmark for current and anticipated requirements in specialized care for people 65+. This allowed for comparisons over time, and between provinces and types of specialists. Additionally, the Canadian Medical Association (CMA) uses ratios in their profiles of specialists serving the population.[13,14] A concern is that the work on which the ratio is based was done in the late 1980s,[12] but no more recent Canadian reference is available and the broad outline of the desired activities for geriatric specialists has remained consistent over the years. We applied this ratio to the current 65+ population census data and population projections for 2025 and 2030.[15]

Projecting Future Geriatrician Human Resources in Canada

To estimate future retirements, we assumed, on average, a physician will retire 40 years after attaining their medical degree. We estimated that for most, degree attainment occurs in their mid-20s. Hedden *et al*. confirmed that, in British Columbia, the average age of physician retirement was 65.1 (standard deviation 7.8 years).[16] We used the Canadian Post-M.D. Education Registry Census (CAPER) to estimate

the annual number of new geriatric trainees.[17] Our estimate of 32 postgraduate year 5 (PGY-5) trainees in Geriatric Medicine per year was obtained by averaging the number of PGY-5 trainees from 2015–2016 to 2019–2020 in Canada. Using the 2019 number of geriatricians as our baseline, we subtracted the anticipated number of retirements and added the estimated number of trainees entering practice between 2019–2025 and 2026–2030 to determine an approximate total geriatrician complement for 2025 and 2030.

We did not estimate how many established geriatricians might leave Canada or the number of internationally trained geriatricians who might be recruited to Canada between 2019–2025 or between 2026–2030.

COE-trained Physicians

We obtained a list of over 300 COE trained physicians from the CFPC directory.[18] We anticipated that most were not engaged in a practice with a special focus on older adults.[19] We, therefore, grouped COE physicians into four categories of practice: direct role in SGS, indirect role supporting SGS, working full-time in Family Practice either primarily with older patients or working with all ages (Table 1). We contacted physician and administrative leads to identify if and where COE physicians were working in their region, their practice capacity, and their full-time/part-time status. Where administrative leads had limited knowledge of the requested information, on occasion they were able to direct us to contacts who provided the required data.

Consistent with our approach with specialist geriatricians, we estimated that COE physicians would retire about 40 years after attaining their medical degree. A five-year average from 2015–2016 to 2019–2020 was calculated at 21 COE trainees/year using the CAPERS census.[17] We subtracted anticipated retirements and added the estimated trainees to the 2019 estimate for an approximate COE physician complement for 2025 and 2030.

RESULTS

The number of geriatricians increased from 276 (235.8 FTEs) to 376 (319.6 FTEs) between 2011 and 2019 (Tables 2 and 3). COE physician numbers increased more from 128 (89.9 FTEs) to 354 (115.5 FTEs working in SGS). The growth in overall COE numbers was mainly through the one-time leader

TABLE 1.
Current COE physician resource (2019) and projected retirements and trainees (2025 and 2030)

Province	*Number of COE MDs 2019*[a]	*FTE PT/FT*	*SGS Direct Support Role*[b]	*Estimated Number of Retirements 2019*	*Estimated Number of Retirements 2025*	*Estimated Number of Retirements 2030*	*Estimated Trainees 2019*[c,d]	*Estimated Trainees 2025*	*Estimated Trainees 2030*
BC	44	44	14.2	4	10	13			
Alberta	67	62	26	1	10	15			
SK	3	3	1	1	1	2			
Manitoba	15	14.2	8	2	4	6			
Ontario	151	140.8	30.05	9	19	34			
Québec	42	22.5	22.5	1	7	10			
NB	6	4.65	4.65	1	1	3			
PE	0	0	0	0	0	0			
NS	18	18	6	2	5	9			
NL	8	7	3.1	1	2	3			
Territories (NT, NU, YT)	0	0	0	0	0	0			
Canada	354	316.15	115.5	22	59	95		105	210
Totals (Total - Retirements + Trainees)							332	400	469

[a]CFPC website. https://www.cfpc.ca/en/members-list.
[b]Roles were requested but not enough data available: Directly employed in Specialized Geriatric Services (e.g., attending/working on a GRU or ACE unit, Day Hospital, outpatient or outreach assessments; Indirect role supporting SGS (e.g., a hospitalist in an acute care/sub-acute medicine unit (SAMU), attending on a complex continuing care unit, medical director for one or more Long Term Care /Nursing Home); Working in a Family Health Team (FHT) or equivalent organization but working primarily with the elderly; Working in an FHT or other family/general practice but with all ages.
[c]Estimated newly trained COEs; CAPERS Census: 2015–2020 average 21/yr.
[d]Included in current (2019) count.

TABLE 2.
Geriatricians and COE physicians (2011)[a]

Province	*2011 Population 65+*	*Ratio 1.25 per 10,000 (2011 population)[b]*	*Actual Number Geriatricians (2011)*	*Clinical FTE Geriatricians (2011)*	*Shortfall Geriatrician Supply*	*Shortfall Geriatrician Supply %*	*Number COE (2011)*	*FTE COE (2011)[c]*
BC	675,000	84.4	37	22	-62.4	-74	4	3
Alberta	399,300	49.9	20	16.9	-33	-66	23	12.4
SK	153,500	19.2	3	2.5	-16.7	-87	2	2
Manitoba	171,700	21.5	9	8.5	-13	-60	3	3
Ontario	1,836,300	229.5	116	98	-131.5	-57	34	24.3
Québec	1,209,900	151.2	65	64	-87.2	-58	24	23.5
NB	119,600	15	11	10.4	-4.6	-30	9	7.6
PE	22,200	2.8	0	0	-2.8	-100	2	1.5
NS	151,500	18.9	12	11.5	-7.4	-39	19	8.75
NL	78,000	9.8	3	2	-7.8	-79	7	3.5
Territories (NT, NU, YT)	7,800	1	0	0	-1	-100	1	0.3
Canada	4,823,000	602.9	276	235.8	-367.3	-60.9	128	89.9

[a]Hogan *et al*.[8]
[b]1.25 FTE required per 10,000 pop 65+ (Hogan *et al*.[8]).
[c] 2011 FTE based on part-time/full-time status.

TABLE 3.
Current geriatricians and COE physicians (2019)

Province	*2019 Population 65+[a]*	*Benchmark 1.25 Geriatricians/10,000 65 + years[b]*	*Actual Number of Geriatricians 2019*	*Clinical FTE 2019 Minus Estimated Retirement[c]*	*Shortfall Geriatrician Supply[d]*	*Shortfall Geriatrician Supply %*	*Number COE (2019)[e]*	*FTE COE in SGS (2019)[c]*
BC	946,900	118.4	60	48.3	-70.06	-59	44	14.2
Alberta	580,300	72.5	26	22	-50.54	-70	67	26
SK	184,400	23.1	3	3	-20.05	-87	3	1
Manitoba	214,100	26.8	7	7	-19.76	-74	15	8
Ontario	2,512,100	314	168	141.8	-172.21	-55	151	30.05
Québec	1,630,700	203.8	87	73.8	-130.04	-64	42	22.5
NB	165,700	20.7	13	12.9	-7.81	-38	6	4.65
PE	31,300	3.9	1	1	-2.91	-74	0	0
NS	201,900	25.2	10	8.8	-16.44	-65	18	6
NL	111,900	14	1	1	-12.99	-93	8	3.1
Territories (NT, NU, YT)	10,500	1.3	0	0	-1.31	-100	0	0
Canada	6,589,800	823.7	376	319.6	-504.1	-61.2	354	115.5

[a]Statistics Canada M1 population growth Table 17-10-0057-01;Projected population, by projection scenario, age and sex, as of July 1 (x 1,000); based on 2016 Census data—Projection.
[b]Assumes 1.25 FTE required per 10,000 pop 65+ (Patterson *et. al*.[12]).
[C]FTE as reported by Geriatric Division/Department Chairs/Program Directors/Administrative Leads.
[d]Does not include estimated trainees.
[e]CFPC website: https://www.cfpc.ca/en/members-list.

route option offered by the CFPC in 2015 (Tables 2 and 1). From 2011 to 2019, the population of Canadians 65+ grew from 4,945,055 to 6,589,800.00 (Tables 2 and 3), an increase of 33%.[15]

Using the benchmark ratio of 1.25 specialists/10,000 population over 65, there was a widening estimated gap in the supply of geriatricians with a shortfall of 471.7 noted in 2019 (Table 4) compared with 367.3 in 2011 (Table 2). This shortfall is projected to grow in 2025 and 2030, when it is estimated it will be 552 and 587, respectively (Tables 5 and 6). While the overall number of geriatricians will increase due to trainees entering practice, this is more than counter-balanced by the growth in the number of older adults in the Canadian population and anticipated geriatrician retirements over the next decade (Table 6). Moreover, the increase in the number of geriatricians is unequally distributed across Canada. Ontario and British Columbia accounted for most of the increase in geriatrician numbers since 2011. Some provinces, such as Nova Scotia and Manitoba, have seen an absolute decrease in their number of geriatricians since 2011 (Tables 2 and 3).

Of the geriatricians practicing in Canada, most are based at Academic Health Science Centres. We anticipate that the majority of retirements by 2030 will be from these Academic Health Science Centres (Table 6).

Despite a large increase in the number of COE physicians in Canada, we determined that only approximately a third were practicing in SGS.

DISCUSSION

Despite an increase in number and FTEs of geriatricians nationwide since 2011, the 2019 complement continues to fall below the numbers required to achieve a target ratio of 1.25/10,000 population 65+ in all provinces (Table 4). This shortfall is projected to increase by 2025 (Table 5) and 2030 (Table 6). Despite the noted relative undersupply, we acknowledge the significant increase in Canada's geriatrician complement since 2011, with 100 more geriatricians practicing in 2019 and an FTE increase of 110.7.

Our final geriatrician count in 2019 (376) is higher than the numbers reported by the CMA (304) and the Canadian Institution for Health Information (299).[13,20] We believe this is due to our extensive consultation with regional leads to identify all physicians practicing in their regions, making our numbers more accurate. Our final count is still substantially lower than the National Advisory Council on Aging estimate of 538 needed in 2006.[21]

The 2009 Special Senate Committee on Aging Final

TABLE 4.
Current geriatrician resource (2019)

Province	*2019 Population 65+*[a]	*Benchmark 1.25 Geriatricians/ 10,000 65 + yrs*[b]	*Actual # of Geriatricians 2019*	*Actual Geriatrician Clinical FTE 2019*	*Geriatricians Practicing Beyond Estimated Retirement*[c]	*Geriatrician Clinical FTE 2019 Less Estimated Retirement*	*Estimated Trainees*[d]	*Geriatrician Clinical FTE 2019 less Estimated Retirement plus Trainees*	*Total Estimated Shortfall*[e]
BC	946,900	118.4	60	52.3	4	48.3			
Alberta	580,300	72.5	26	23	1	22			
SK	184,400	23.1	3	3	0	3			
Manitoba	214,100	26.8	7	7	0	7			
Ontario	2,512,100	314	168	157.8	16	141.8			
Québec	1,630,700	203.8	87	78.8	5	73.8			
NB	165,700	20.7	13	12.9	0	12.9			
PE	31,300	3.9	1	1	0	1			
NS	201,900	25.2	10	9.8	1	8.8			
NL	111,900	14	1	1	0	1			
Territories (NT, NU, YT)	10,500	1.3	0	0	0	0			
Canada	6,589,800.00	823.7	376	346.6	27	319.6	32	352	471.7

[a]Statistics Canada M1 population growth Table 17-10-0057-01; Projected population, by projection scenario, age and sex, as of July 1 (x 1,000); based on 2016 Census data–Projection.
[b]Assumes 1.25 FTE required per 10,000 pop 65+ (Patterson *et. al.*[12]).
[c]Retirement based on year of medical degree + 40.
[d]CAPERS Census PGY-5 geriatric fellows: 2019 32 x 1 = 32.
[e]Benchmark minus clinical FTE (- estimated retirement + trainees); 823.7 – 352 = 471.7.

TABLE 5.
Projected geriatrician needs based on 2025 population, retirements, and trainees

Province	*2025 Population 65+*[a]	*Benchmark 1.25 Geriatricians/ 10,000 65 + yrs*[b]	*Actual Number of Geriatricians 2019*	*Cumulative Estimated Retirement*[c]	*Number of Geriatricians 2019 less Possible Retirements*	*Estimated Trainees* [d]	*Number of Geriatricians 2019 less Estimated Retirement plus Trainees*	*Total Estimated Shortfall*[e]
BC	1,172,200.00	146.5	60	8	52			
Alberta	776,800.00	97.1	26	5	21			
SK	223,300.00	27.9	3	0	3			
Manitoba	256,500.00	32.1	7	2	5			
Ontario	3,101,600.00	387.7	168	41	127			
Québec	1,971,800.00	246.5	87	13	74			
NB	199,100.00	24.9	13	0	13			
PE	38,200.00	4.8	1	0	1			
NS	241,600.00	30.2	10	5	5			
NL	133,400.00	16.7	1	0	1			
Territories (NT, NU, YT)	14,600.00	1.8	0	0	0			
Canada	8,129,100.00	1016.1	376	74	302[f]	162	464	552

[a]Statistics Canada M1 population growth Table 17-10-0057-01; Projected population, by projection scenario, age and sex, as of July 1 (x 1,000); based on 2016 Census data–Projection.
[b]Assumes 1.25 FTE required per 10,000 pop 65+ (Patterson *et. al*.[12]).
[c]Retirement based on year of medical degree + 40.
[d]CAPERS Census PGY-5 geriatric fellows: 2020-2025 32 x 5 = 162.
[e]Benchmark minus actual number of geriatricians 2019 (- estimated retirement + trainees); 1016.1 – 464 = 552.
[f]For 2025 and 2030 projections, estimated retirements are subtracted from number of geriatricians not CFTE.

Report "Canada's Aging Population: Seizing the Opportunity" recommended that the federal government support campaigns promoting geriatrics as a career choice and funding residency positions in geriatrics.[22] Despite the lack of government action on this recommendation, the average number of PGY–5's over the last five years has been 32 compared with an average of about 8 between 2001–2011.[17] We believe several factors may have contributed to this. The formation of Geriatric Interest Groups (GIGs) in Canada at the medical student level and Resident Geriatric Interest Groups (RGIGs) has increased awareness of, and interest in, geriatrics as a desirable career choice, and fostered mentorship relationships with practicing physicians.[23,24] The positive impact of such exposure on recruitment into geriatrics was also noted in a systematic review.[25] These student-led groups have chapters at each medical school, and are supported by the CGS and its Scholarship Foundation. As well, enhanced funding models and fee schedules in some provinces have led to higher remuneration for geriatricians, potentially attracting more trainees to geriatric medicine.[26] Two Ontario examples are: time-based fee-for-service codes specific to geriatric medicine and the Enhanced Care for the Frail Elderly Initiative funding model for geriatricians based in either Academic Health Science Centres or the community, and were implemented in 2007 and 2010, respectively. Both have supported the time-intensive practice of geriatrics in Ontario. The growth of interprofessional SGS team-based models supported by provincial ministries of health in some jurisdictions may also have improved the attractiveness of geriatrics as a career option. The value of team-based interdisciplinary care has long been recognized in geriatrics, as teams can provide better care to complex patients, optimize physician time, and extend the reach of SGS. Access to this desired form of care is improving.

The estimated population 65+ in 2030 will be 9,406,100 million. This will exceed the estimated 8,788,800 population of those aged 0–19 by nearly a million. In 2019, the CMA reported there were 2,973 pediatricians in Canada compared to 304 geriatricians (7.8 pediatricians per 100,000 population versus 0.8 geriatricians per 100,000 population).[13] CIHI reported an even larger differential with 4,055 pediatricians versus 299 geriatricians.[20] There are several explanations for this. The Canadian Pediatric Society estimates that 30% to 40% of children and youth see a pediatrician for primary care, whereas geriatricians in Canada do not provide primary geriatric care.[27,28] Also, the total count of pediatricians includes subspecialists such as pediatric nephrologists and pediatric cardiologists. Even after accounting for these differences between geriatric medicine and pediatrics, there remain

TABLE 6.
Projected geriatrician needs based on 2030 population, retirements, and trainees

Province	*2030 Population 65+*[a]	*Benchmark 1.25 Geriatricians/ 10,000 65 + yrs*[b]	*Actual Number of Geriatricians 2019*	*Cumulative Estimated Retirement*[c]	*Geriatricians 2019 less Estimated Retirement*	*Estimated Trainees*[d]	*Number of Geriatricians 2019 less Estimated Retirement plus Trainees*	*Total Estimated Shortfall*[e]	*Estimated Retirement 2030 Academic*[f]	*Estimated Retirement 2030 Community*[g]
BC	1,355,100	169.4	60	16	44				13	3
Alberta	940,900	117.6	26	7	19				6	1
SK	254,900	31.9	3	1	2				1	0
Manitoba	292,100	36.5	7	3	4				3	0
Ontario	3,631,000	453.9	168	58	110				25	33
Québec	2,226,600	278.3	87	21	66				18	3
NB	223,600	28	13	1	12				1	0
PE	44,100	5.5	1	0	1				0	0
NS	272,100	34	10	4	6				4	0
NL	147,900	18.5	1	0	1				0	0
Territories (NT, NU, YT)	17,800	2.2	0	0	0				0	0
Canada	9,406,100	1175.8	376	111	265[h]	324	589	587	71	40

[a]Statistics Canada M1 population growth Table 17-10-0057-01; Projected population, by projection scenario, age and sex, as of July 1 (x 1,000); based on 2016 Census data–Projection.
[b]Assumes 1.25 FTE required per 10,000 pop 65+ (Patterson *et. al.*[12]).
[c]Retirement based on year of medical degree + 40; for 2025 and 2030 projections, retirements are subtracted from number of geriatricians not CFTE.
[d]CAPERS Census PGY-5 geriatric fellows: 2020-2030 average 32 x 10 = 324.
[e]Benchmark minus actual number of geriatricians 2019 (- estimated retirement + trainees); 1175.8 – 589 = 587.
[f]Number of estimated 2030 retirement in academic-based positions
[g]Number of estimated 2030 retirement in community-based positions.
[h]For 2025 and 2030 projections, estimated retirements are subtracted from number of geriatricians not CFTE.

unexplained disparities between the number of pediatricians and geriatricians. While we agree with ensuring there are sufficient physician resources for children and adolescents, this comparison underlines the need also to ensure there are equivalent health-care resources for older adults with complex needs. Unless the number of trainees in geriatrics increases, these disparities are likely to continue. In 2019–2020, the number of fifth-year residents in pediatric training programs (n=130) was over threefold higher than those training in geriatric medicine (n=38).[17]

COE Physicians

Our results also show that only a proportion of family physicians with COE certification work within SGS. Of the 356 with COE certification, only 115.5 FTEs were found to be working directly within SGS. Across provinces, the number of COE physicians involved in SGS ranged from 20% to 50% of the total number of COE physicians. Enticing more COE to work within SGS would help address the shortfall we noted in physician human resources.

One potential way to enhance COE physician engagement in SGS is to establish new designated time-based fee codes or alternative payment plans (APPs) for COE physicians. Some regions in Ontario have been successful at engaging COEs in SGS with enhanced APP funding arrangements.[7] These regions have been able to increase substantially the trained geriatric expertise availability.

Limitations

As noted previously, the physician/population ratio we utilized is based on work done in the later 1980s.[12] The specific ratio used could be re-examined and modified as needed for the Canadian context. This would require that future supply- and needs-based methodology consider the availability of appropriate infrastructure and the impact of changing models of health-care delivery to more accurately estimate current and future need, and inform the optimal distribution of physician human resources.[3] For those physicians for whom we could not determine part-time or full-time status, we assumed a 1.0 FTE. This may have led to overestimating the FTEs of geriatricians and COE physicians in Canada. Occasionally, administrative leads were not always aware of how many COE physicians were working in their region or in which capacity they practiced, but were able to direct us to alternate contacts who were aware. While we did follow-up with these contacts, we may have underestimated the numbers of COEs working in SGS. We may have underestimated retirements, given that the median age of medical graduates is increasing. Our estimate of projected trainees is likely imprecise, as we assumed that the number of future trainees will not increase or decrease substantially from current levels. For 2025 and 2030, we are projecting numbers of physicians, not FTEs, because we do not know how geriatricians and COE physicians may practice in the future. As in 2011, this study did not include geriatric psychiatrists who, in some regions of Canada, are becoming increasingly integrated in models of interdisciplinary geriatric care.[7] Future studies of geriatric resources in Canada should include geriatric psychiatrists, and recognize the contributions of the interdisciplinary teams with whom all specialist physicians in geriatrics work.

CONCLUSION

There is an undersupply in the number of geriatricians and COEs in Canada relative to the current and future needs of the older adult population. Since 2011, numbers of geriatricians and COEs have increased; however, this has seemingly not been enough to keep pace with an aging Canadian population and estimated physician retirements. There is urgency for more physicians to be trained to provide comprehensive specialist care needed by older adults living with complex health conditions, and this need will intensify in the coming decades. Continued efforts to increase trainee recruitment to geriatrics, improve funding models, and prioritize the expansion of SGS interdisciplinary teams are three ways to increase availability of SGS. Engaging more COEs in SGS is an immediate solution to boost the overall geriatric expert physician complement.

Based on a clear and growing societal need, medical leaders, policy makers, and politicians should implement a pan-Canadian physician human resource plan for this area of practice, and use evidence to re-examine the relative number of trainee positions allocated to geriatrics compared to other specialties.

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CONFLICT OF INTEREST DISCLOSURES

The authors declare that no conflicts of interest exist.

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