

BACKGROUND PAPER

Review of Family Medicine Within Rural and Remote Canada: Education, Practice, and Policy



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Commissioned by



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Société de la Médecine Rurale du Canada

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Review of Family Medicine Within Rural and Remote Canada: Education, Practice, and Policy

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The College of Family Physicians of Canada

Roles of CFPC and SRPC

College of Family Physicians of Canada (CFPC)

Established in 1954 and representing more than 34,000 members across Canada, the CFPC is responsible for establishing standards for training, certification, and lifelong learning for family physicians. The CFPC accredits postgraduate family medicine training in Canada's 17 medical schools. The CFPC establishes the criteria for certification by defining competencies required in supporting the high standards of medical education at all levels. The CFPC also plays an important role in the certification and continuing professional development of its members. Considered the voice of family medicine in Canada, CFPC supports family physicians through certification, advocacy, leadership, research, and learning opportunities, which enable these physicians to provide high-quality health care for their patients and their communities.

Society of Rural Physicians of Canada (SRPC)

Founded in 1992, the SRPC is the lead advocate and representative for over 3,000 rural physicians practising in Canada. Its mission is to provide leadership for rural physicians and to promote sustainable conditions and equitable health care for rural communities. The SRPC performs a wide variety of functions, such as developing and advocating for health delivery mechanisms, supporting rural doctors and communities in crisis, promoting and delivering continuing rural medical education, encouraging and facilitating research into rural health issues, and fostering communication among rural physicians and other groups with an interest in rural health care. The SRPC's leadership includes prominent experts in the development of rural physician education programs, such as those at the Northern Ontario School of Medicine (NOSM) and Memorial University, which have also been strong advocates for physician rural health and education globally, through their participation in international rural physician organizations.

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1.0 Executive Summary

The College of Family Physicians of Canada (CFPC), in collaboration with the Society of Rural Physicians of Canada (SRPC), has embarked on a joint initiative to obtain a better understanding of the status of rural medical education and how it is meeting the health care needs of rural Canada. In a 1999 report, the CFPC released a series of recommendations on core elements in the training, curriculum, education, and competencies that are to be included in both undergraduate and postgraduate education for rural family medicine in Canada's medical schools.¹ In the fall of 2013, a background paper was commissioned to provide an overview, or report card, on the implementation of the 1999 recommendations, as well as a report on the realities of the challenges/issues that continue to emerge, impacting rural practice and education for family physicians working in rural communities. The overall goal of this paper is to help leaders to identify what yet needs to be done to assist family physicians to acquire, maintain, and enhance the competencies and resources needed to provide comprehensive care to Canadians who live in rural and remote communities in Canada.

While some strides have been made since 1999, such as increases in numbers of graduating rural physicians, increases in exposure to rural training in all undergraduate and postgraduate programs in Canada, and the development of rural-specific streams for training in family medicine, more can be done. Challenges still persist in terms of recruitment and retention, lack of infrastructure, and needed resources to support education offered to promote rural practice.

Through a literature review, using both peer and grey literature, and informal discussions with national and international rural education experts, this background paper aims to uncover the realities taking place in Canada, as well as the lessons that can be learned from the experiences in other jurisdictions, such as Australia, in their approach to rural medical education for family physicians. This paper is not meant to be a systematic literature review, as many have been conducted in recent years. It builds upon the good work conducted by others who have brought their knowledge to bear on the study of rural medical education. As a focused synthesis, this background paper aims to identify opportunities for action.

Rural Practice Within the Broader Health Care System

- Evidence has shown that countries that have strong primary care systems that enable their populations to have access to primary care have better health outcomes.² Access to primary care, as one of the key indicators of quality health care, remains an issue in rural and remote Canada.³⁻⁶ As such, it has been identified as a top priority for health system reform.⁷
- Given the diverse health care needs of Canada's rural population, additional efforts are necessary to have a better understanding of what resources are needed within the health care and education systems. Family physicians must act as advocates to ensure that they facilitate or lead in obtaining the resources, including by forming health care teams leveraging health care professionals and specialty colleagues in order to address rural health care needs. Health care decision makers are demanding more efficiency and accountability from health care providers in the drive to provide integrated health care delivery regardless of where they live.⁸⁻¹⁰

- In 2013, data from Canadian Institute for Health Information (CIHI) indicated that from 50 to 53 per cent of the physician workforce in Canada was represented by family physicians. Fourteen per cent of these family physicians were located in rural Canada.¹¹ The recruitment of international medical graduates (IMGs) into rural Canada has been a key strategy for physician human resource planning by many provinces and territories.¹²

Rural Education Within the Broader Health Education System

- Medical education plays an important role in the recruitment and retention of rural physicians in Canada. Educating physicians for rural and remote practice has become a vital societal need, and yet students, residents, and faculty face many challenges given the unique context. Strategies such as the following would prepare them to provide care in this context:
 - Integrating rural medicine into medical school curricula
 - Providing positive rural learning experiences for medical students
 - Providing specific rural residency training for rural family medical practice
 - Connecting education to recruitment and retention processes in rural communities
- Rural clinical teaching sites, supporting distributed medical education (DME) in faculties of medicine, play increasingly significant roles in the training of physicians across Canada. DME campuses and use of community clinical teaching sites have developed rapidly over the last decade,¹³ with the Canadian Resident Matching Service (CaRMS) identifying a 300 times increase in family medicine clinical teaching sites being used as primary sites for family medicine residency training. All Canadian medical schools are engaged in some form of DME at the undergraduate and postgraduate levels. The teaching roles of rural physician preceptors need to be recognized as the emphasis shifts to more use of distributed learning sites away from the traditional urban-based teaching sites located near main university campuses. DME approaches have played a key role in establishing local infrastructures in the teaching and learning of not only physicians but of other health care professional students as well.
- CFPC's Triple C Competency-based Curriculum provides a nationally based approach to family medicine residency education that aims to provide learning that addresses the needs of all Canadians, preparing family medicine graduates to begin the practice of comprehensive family medicine. University departments of family medicine are responsible for implementing Triple C in a way that ensures equity of experience no matter where the clinical teaching site learners are training.
- Four factors have consistently been shown to be associated with an increase in the probability of physicians choosing to practise in rural and remote communities: 1) rural upbringing; 2) positive undergraduate rural exposure; 3) targeted postgraduate exposure outside urban areas; and 4) stated intent/preference for general or family practice primary care.¹⁴ These four factors have helped to inform the development of an intentional and longitudinal approach to rural education referred to as the "rural physician workforce pipeline." The pipeline approach, or parts of it, has been applied in various ways by medical schools. Despite the success at universities such as the Northern Ontario School of Medicine, Memorial University, and Queen's University, a consistent and replicable approach has not been adopted across Canada.

Supporting Rural Medical Education Through Policy Levers

- The federal government and its provincial and territorial counterparts have provided levels of support toward medical education as part of their regional physician human resource strategy plans. They have used a number of incentive programs to attract physicians to practise in rural and remote areas. There has been little evaluation of the impact of financial incentive programs on improved retention, including long-term retention rates.¹⁵ Evidence from other jurisdictions, such as Australia, note that the efforts alone, through recruitment and retention programs, in attracting physicians into rural and remote regions is not enough to address rural health care needs.¹⁶ A more coordinated, interprofessional approach is needed.
- Some successes are being seen, with increasing numbers of Canadian-trained medical graduates (CMGs) choosing to practise and staying in rural and remote communities.* Although the numbers seem to be rising with increasing numbers of CMGs, it is recognized still that most rural and remote areas of the country have proportionately more IMG vs CMG physicians providing care; however, more longitudinal research is needed.
- Since the 1990s, the CFPC and the SRPC have worked collaboratively on rural family physician education initiatives aimed at ensuring that family medicine residents are offered quality educational experiences in rural and remote clinical environments. Recruitment and retention of rural family physicians is a multifactorial, complex issue.¹⁷ Each rural and remote community is unique, and the needs and expectations for physicians in these communities vary significantly. Rural/remote environments provide further opportunities for family physicians to develop additional competencies, driven by community needs, in the absence of other specialists who would more traditionally provide needed services. As such, family physicians, as a central resource to their communities, while practising full-scope family medicine, may need to acquire further competencies to meet community need. This is most prevalent in remote Canada. The need to consider the identification and teaching of full-scope family medicine competencies as foundational to all residents beginning practice in Canada, and to consider other specific competencies that may need to be acquired and taught when identified by specific community need, is warranted.

Support for Rural Practice to Meet Canadian Needs

- To advance the future of health care in rural Canada, both education and practice must be considered together. Infrastructures are needed to support family physicians, enabling them to practise comprehensive family medicine within a team-based approach with other rural generalists, including those from other health professions. The health care system, together with the communities within which Canadians live, must also ensure that the lifestyle in the rural and remote north is attractive and that the physicians and their families are well supported.

* Upon CFPC request in November 2013, CIHI provided specific data on the family physician workforce in urban and rural Canada as well as on CMGs and IMGs over a 13-year period, which have not been published.

By the Numbers

Key statistics on rural education for family physicians and rural Canada, 2013–2014:

6 million	or 18% of Canadians live in rural and remote communities
85%	of Canadians have a family physician
50–53%	of the total physician workforce is made up of family physicians
14%	of family physicians in Canada practise in rural or remote areas
17	university-based family medicine residency programs
873	clinical teaching facilities
Over 160	rural-based family medicine teaching sites
160	rural family medicine teaching sites with direct match from CaRMS
1,395	first-year entry positions for family medicine
446	earmarked positions for rural focus stream for family medicine = 26% rural-focused positions
1,200	average number annually of family medicine graduates
75	teaching sites with primary focus of longitudinal learning in a rural/remote community (as defined by teaching programs)
35%	increase of part-time faculty between 2003 and 2007, from 16,061 to 21,687
40%	a strategic goal set by the CFPC—the percentage of medical students to select family medicine as their first choice, by 2017

The following report card highlights the adoption of the 1999 CFPC recommendations.¹

1999 CFPC Recommendations – A Report Card

1999 CFPC RECOMMENDATIONS A REPORT OF THE WORKING GROUP ON POSTGRADUATE EDUCATION FOR RURAL FAMILY PRACTICE	1	2	2014	3	4	5
	MINIMALLY ADOPTED		MODERATELY ADOPTED			FULLY ADOPTED
A. CORE UNDERGRADUATE EDUCATION						
1. Core undergraduate rural educational experiences are necessary for all medical students			✓			
B. CORE POSTGRADUATE EDUCATION						
1. Core postgraduate rural/regional community-based rotations are desirable within all programs along with sufficient rural elective opportunities for all residents					✓	
2. Rural family medicine training streams should be developed as appropriate postgraduate training for rural family practice						✓
3. Rural family medicine training streams should be community-based integrated programs with full academic support			✓			
4. The learner–teacher dyad should be based on the preceptorship model for both family medicine and specialty-based educational experiences/rotations						✓
5. Competency in the knowledge, skills, and attitudes for rural family practice should be the goal for rural family medicine residency training			✓			
6. Hospital experiences or rotations should be appropriate for the residents’ learning needs for future rural practice					✓	
7. Universities should support and develop rural physician teachers as integral faculty members						✓
8. University faculty and programs should nurture and develop present and future rural family medicine residents			✓			
C. SPECIAL RURAL FAMILY MEDICINE SKILLS						
1. Additional third-year positions of flexible duration (3–6 months) to develop special skills			✓			
D. ADVANCED RURAL FAMILY MEDICINE SKILLS						
1. Access to essential health services, anesthesia, maternity care, general surgery, and other training programs of CFPC and medical schools			✓			
2. Curriculum guidelines for advanced rural family physicians’ skills	✓					
3. Accreditation for advanced rural family medicine skills training program	✓					
4. Competency-based training (6–12 months)			✓			

Policy Considerations

Based upon the review conducted, the following policy themes are suggested for consideration in advancing rural education to support the development of family physicians ready to practise in rural and remote Canada.

POLICY THEME	STRATEGY
1. Evaluation	<ul style="list-style-type: none">• Evaluating Canada's rural education models, including those implementing a pipeline approach to identify innovative models• Creating centralized opportunities for data sharing and dissemination with comparative indicators
2. Rural education for programs	<ul style="list-style-type: none">• Developing or refining current competencies for readiness to practise comprehensive family medicine that would ensure family physicians/learners are able to begin practice in rural and remote contexts• Defining a process of determining enhanced competencies required based upon community need and learning requirements, methods of learning, and assessing competency acquisition that can be attested to/certified by the CFPC• Defining the role of the CFPC as the national accrediting and certifying body, related to the expanded numbers of rural family medicine practice settings in Canada
3. Support for rural clinical teachers	<ul style="list-style-type: none">• Enhancing support provided to the rural clinical teaching sites, including faculty development, administrative coordination for learners to assist with scheduling, and coordination of learning and assessments
4. Policy changes for support and funding	<ul style="list-style-type: none">• Aligning education curricula with health system needs for both urban- and rural-based programs and that reflect government health policy priorities• Investing in rural education infrastructure, especially in distributed medical education sites, to support clinical teachers given increased roles in teaching and assessment of competence• Reviewing the production capacity of education programs, including education curricula, and analyzing the extent to which current curricula align with health system and policy needs (based on established indicators)
5. Pan-Canadian approach for family physician rural education	<ul style="list-style-type: none">• Creating opportunities for the role of (F/P/T [federal/provincial/territorial]) governments, physicians, other health practitioners, and academia to collaboratively impact and facilitate a pan-Canadian approach to rural education/practice• Undertaking leadership roles in education and coordinating between governments, medical schools, and physician groups

Next Steps

Enhancing education and training programs for family physicians practising in rural communities is important but it will not be enough to solve the health care challenges in rural and remote Canada. There is little evidence-based physician resource planning at the national and provincial levels to provide direction to the medical education system.¹⁸ An integrated approach to identifying priorities and allocating resources is needed. Governments have a role to assist rural communities and physicians in acquiring the knowledge, competencies, skills, and tools needed to improve access to health care services. Medical schools have an important social responsibility to ensure that the rural education curricula align with population health needs, including a sufficient family physician workforce. Efforts should be taken to ensure that rural communities are not left behind. It will also be important to remain vigilant in addressing recruitment and retention issues of physicians pursuing practice in rural settings, while at the same time taking steps to better prepare them to provide quality health care in rural regions.

The positive trends that have been emerging in advancing the numbers of family medicine graduates practising in rural Canada are promising but more can be done. There should be commitment and social accountability by all stakeholders to look for ways to enhance the education of family physicians in their competence to practise in rural communities. An opportunity presents itself to create a vision with a plan that brings together educators and health human resources (HHR) planners to build a systematic approach to advancing rural medical education that is properly supported. This background paper provides the basis for the physician leadership from the CFPC and the SRPC to co-create a process to develop this shared vision and plan, in collaboration with medical schools, governments, planners, learners, and the rural communities, and to provide solutions to advancing family physician rural education.

2.0 Introduction

This background paper is prepared for the physician leadership of the College of Family Physicians of Canada (CFPC) and the Society of Rural Physicians of Canada (SRPC). In considering the roles of the CFPC and the SRPC (see page ii) in advocating the advancement of rural medical education, the opportunity presents itself for creating a cohesive approach leveraging the strengths and supports of the membership of both organizations.

The purpose of this paper is to inform the work of the CFPC and SRPC in determining the next steps to create a strategic plan that incorporates key priorities and processes in the advancement of family medicine education to support rural and remote communities in Canada. The envisioned plan hopes to address:

- The enhancement of education and training requirements of family physicians practising in rural and remote Canada
- The effectiveness of family medicine education to meet rural health needs of Canadians living in rural/remote communities
- The infrastructures and supports needed to provide family medicine education, to facilitate not only rural education needs but also the recruitment and retention of the family physician workforce in rural Canada
- Effective collaboration among educators, practitioners, the CFPC, the SRPC, health system planners, residents, and other key stakeholders, including the Royal College of Physicians of Canada (RCPSC), Association of Faculties of Medicine of Canada (AFMC), and other medical education and practice organizations

The paper reviews the status of rural education based on CFPC's 1999 recommendations from its report entitled ***Postgraduate Education for Rural Family Practice: Vision and Recommendations for the New Millennium***.¹ This paper provides an overview of the adoption of the 1999 recommendations and how Canadian medical schools have responded to physician resource planning and health education reforms to support rural education for family medicine.

The overview conducted is based on an environmental scan and a literature review, using both peer and grey literature, as well as informal discussions with Canadian and international leaders in family physician rural education conducted from August to December 2013. This background paper aims to uncover the realities taking place in Canada as well as the lessons to be learned from the experiences of other jurisdictions such as Australia in their approach to rural medical education for family physicians. This paper is not meant to be a systematic literature review, as many have been conducted in recent years. Rather, it builds upon the good work conducted by others and brought to bear on the subject of rural medical education. As a focused synthesis, this background paper aims to identify opportunities for action.

This paper begins with a synopsis of the state of rural education and practice in Canada at the health system and education levels and how it has impacted the family physician workforce in rural communities. In doing so, this paper uncovers some of the many complex relationships between education and practice in rural and remote Canada. Issues affecting rural medical education affect rural practice. Likewise, issues affecting rural practice affect rural medical education. While the focus is on the postgraduate level of family medicine training to support rural family practice, this paper acknowledges the importance of undergraduate issues and continuing professional development, especially in the early years of practice. Using Pong's¹⁴ rural education pipeline model as a reference for considering key factors that influence choice of practice in rural and remote communities, this paper uncovers the realities that exist in supporting each of the factors, along with the gaps that still need to be filled. This paper raises key issues for consideration, shares examples of potential approaches and opportunities, and provides suggestions for policy enhancements to address the gaps.

3.0 State of Rural Canada and Medical Education

The following section highlights key factors that have impacted the state of rural health care within the health care system, with changes recognized in medical education and the family physician workforce.

A) Rural Health Population in Canada

In 2012, with a Canadian population of over 35 million, 6 million or 18 per cent of Canadians lived in rural and remote communities across the country.¹² While 50 to 53 per cent of the physician workforce are family physicians, 14 per cent of these family physicians work in rural/remote communities.¹¹ According to a Canadian Medical Association (CMA) report, 3.1 per cent of specialists practise in a rural setting.¹¹ In the territories, family physicians account for 72 to 84 per cent of the physician workforce. Between the 2006 and 2011 censuses, the population in rural areas increased by 1.7 per cent. By comparison, between 2008 and 2012, the number of physicians in rural areas increased by 10.3 per cent.¹¹ According to Statistics Canada, most rural regions experienced weak demographic growth and in some cases their population declined. Between 1971 and 2001, the population living in metropolitan areas jumped by 45 per cent, more than three times the rate of growth of only 13 per cent in rural areas.¹⁹ The reason behind the variance among these rural regions and how it has impacted the population demographics among rural Canadians and physicians is not known.

B) Definition of Rural

The definition of “rural” or “rural community” has evolved to incorporate a more comprehensive view of what rural has come to constitute. Rural does not simply mean “not urban”⁶ and there is no common definition being used by physicians, decision makers, researchers,²⁰ and government planners. There are several definitions of rural available for national and provincial analysis using databases at Statistics Canada^{21,22} as well as physician databases that are captured through Canadian Post-MD Education Registry (CAPER), National Physician Survey (NPS), Scott Directory, CaRMS, and CMA. Linking education and practice databases that are both national and provincially based is challenging in making evidence-based, informed decisions about workforce planning and systemic changes.²³ Definitions of rural emphasize different criteria and ask different questions; head-count approach, population size, and geographic distances are measured in diverse ways. As a result, definitions generate varied information about rural that makes it difficult to capture accurate data on health status, Canadians living in rural communities, and the physician workforce, including the number of rural physicians practising in rural communities. For the purposes of this paper, the definition from Statistics Canada is used.^{21,24}

RURAL DEFINITION

Statistics Canada

If one definition is to be recommended as a starting point or benchmark for understanding Canada's rural population, it would be the “rural and small town” definition. This is the population living in towns and municipalities outside the commuting zone of larger urban centres (ie, outside the commuting zone of centres with populations of 10,000 or more).

C) Health Disparities

Canadians who live in rural communities tend to present with poorer health than that of their urban counterparts as a result of apparent differences in rural realities and their health needs.^{6,25} In general, the smaller, poorer, and more isolated a rural community is, the more difficult it is to ensure the availability of high-quality health services. Limited funding and cultural differences are also factors impacting health status.²⁶ Overall, determinants of health within the rural population have shown that there is higher incidence of chronic disease, mortality, injury, and poor diet.⁶ The one determinant of health that specifically illustrates the underlying difference in rural health is that of socioeconomic status²⁷ and its influence in rural health outcomes.²⁸ Compared with urban communities, rural communities tend to have fewer health care groups and professionals of all types, less choice, and broad variation in the availability at the local level of health care services.²⁹

Disparity in health status of rural Canadian communities is directly related to their distance from urban centres.^{28,30} In responding to these disparities, measures have been put into place, from providing incentives to physicians to practise in rural/remote communities, improving communications in remote communities through ehealth and telemedicine,³⁰ and increasing health human resources such as nurse practitioners and physician assistants. However, these disparities continue to exist,³¹ which further reinforces the importance of more effective measures to truly assess impact in order to determine, more accurately, resources needed to address health care access for rural Canadians. For example, information and communication technology has become essential as support for rural physicians in their education and practice.³² While the past decade saw few notable improvements in measures of patient care and health outcomes, Canada's performance demonstrated continued health disparities³³ between those in urban versus rural communities.^{28,34} Levels of access³⁵ and types of access to specific services vary more among rural than among urban communities.^{36,37} For indigenous populations, who often live in rural and remote communities, greater difficulties are experienced comparatively in receiving regular access to and use of primary care services.³⁸

Family physician shortages pose even greater problems for populations that have historically faced disproportionately greater challenges in accessing health care services. One of Canada's most serious population health challenges is that which confronts Indigenous communities.³⁵ The Indigenous population continues to experience the absence of coordinated health care services to meet their complex needs, despite federal government funding for services such as public health and promotion, long-term care, and community care.³⁹ Family physicians in these communities should possess cultural competencies and provide cultural safety in their practices in order to effectively communicate and provide health care services to meet this population's health and social needs.⁴⁰⁻⁴²

D) Access to Primary Care

Many rural communities have difficulty attracting and retaining physicians because of concerns about isolation, limited health facilities, or a lack of employment and education opportunities for their families.²⁹ In most rural communities, they have reported a shortage of primary care physicians for many years and felt this chronic shortage longer and more severely than have urban areas. Access to physicians and other health care providers is an ongoing issue that is experienced across Canada but particularly in rural and remote communities.

Access, as one of the key indicators of quality health care, remains an issue in rural and remote Canada.³⁻⁶ Primary care has been identified as a top priority for health system reform.⁷ Primary care delivered by family physicians plays a significant role within our health care system.^{4,10,26,43} In 2003 and 2004, the First Ministers of Health set a target that by 2011 at least 50 per cent of Canadians should have access to an appropriate primary care provider 24/7 regardless of where they live.⁹ However, in its 2012 report,⁴⁴ the federal Standing Senate Committee on Social Affairs,

Science and Technology drew attention to the failure of the provinces and territories to meet the key Accord goal of ensuring that 50 per cent of Canadians had 24/7 access to multidisciplinary teams by 2011, and recommended to re-establish the goal of ensuring that 50 per cent of Canadians have 24/7 access to multidisciplinary health care teams by 2014.

Access to primary care leads to better health outcomes in any health care setting.^{2,45} Within many Indigenous communities, there is limited access to primary care, and as a result their health status and outcomes are worse.⁴⁶ In 2000, the Canadian government and its provinces and territories had committed to introducing new models of primary care delivery. Since then, many different models have been implemented, addressing issues of patient access, alternative models of physician financial remuneration, multidisciplinary team approaches, and enhanced use of information technology.⁴⁷ While primary care reforms were evolving, some reports began to question the future need and role of family physicians.⁴³ Yet, in small towns, rural communities, and remote regions, where specialists are few and far between, family physicians have an especially important role to play.⁴⁸ By ensuring they are able to work to full scope of family medicine practice, including working in different care settings and performing clinical tasks that might typically be done by specialists in urban centres, their comprehensive family medicine practices and provision of enhanced care help to fill critical service gaps. According to the World Health Assembly, family practice is pivotal to the development of a health care system.²⁶

E) Medical Education and Social Accountability

Medical education has gone through significant changes since the 1990s. Key developments that have affected the Canadian medical education system include⁴⁸:

- The policy decision by federal and provincial governments, through the ministries of health,⁴⁹ to reduce medical school enrolment in the early 1990s. As a result, medical schools across the country curtailed the intake of new students by about 10 per cent.
- The realization in the late 1990s that Canada would face a physician shortage, due to reduced numbers of physicians graduating coupled with a growing and aging population, as well as to the number of physicians due for retirement in the coming years.⁵⁰
- Many Canadians' expressed difficulties in finding a family doctor, as well as reports about long waiting lists, which forced federal and provincial governments to take action. This led to a major policy reversal in the early 2000s in the form of expanding medical school enrolment across the country^{50,51} and allowing more international medical graduates to access postgraduate training, with a view to increasing the supply of physicians more quickly.
- Growing trends toward specialization and sub-specialization in medicine that impacted a decline in interest in primary care among medical students and graduates. According to an Organization for Economic Cooperation and Development (OECD) report in 2008, specialists greatly outnumber generalists on average across OECD countries, including Canada, although the gap between specialists and generalists in Canada is much smaller than in many other OECD countries.⁵²

In concert with the need for governments to ensure the right number of physicians is available to meet the needs of Canadians, the medical education community is committed to the premise of social accountability, as articulated by the World Health Organization.^{53,54} Representing the 17 university-based medical schools, the Association of Faculties of Medicine of Canada (AFMC) took action and strongly advocated that all medical schools embed a social responsibility mandate directing their education toward addressing the priority health needs of the community. Adopting this premise, the AFMC's The Future of Medical Education in Canada (FMEC) project laid the foundation to ensure that the curriculum in Canadian faculties of medicine is well-aligned with societal needs.⁵⁵

Cognizant of the lack of physician access in rural and remote communities, certain medical schools with advanced mission-specific goals address this issue. NOSM in 2004, for example, designed its medical school curriculum with a specific rural education focus.⁵⁶ Others, including Memorial University,⁵⁶⁻⁵⁹ are well known for taking an active role in exploring the meaning of social accountability in providing teaching and learning focused on the needs of local rural and remote communities.

The shift toward competency-based curriculum for postgraduate medical education (PGME) further assists the advancement of medical schools' social accountability mandate. The CanMEDS⁶⁰ and CanMEDS-FM⁶¹ competency frameworks used by the RCPSC and the CFPC were developed to better describe the types of competencies graduates should demonstrate for readiness to practice. Subsequently, both Colleges have created curriculum approaches through the RCPSC's Competency by design⁶² and the CFPC's Triple C⁶³ to structure residency training to ensure competencies are acquired. The AFMC, through the FMEC-PG project, supports the two Colleges' approaches with recommendations that were articulated by the medical education community as advancing both competency-based medical education and competency-based assessment. Further, FMEC-PG recommends the need for the postgraduate medical education community to cultivate social accountability by providing learners with direct experiences in diverse learning and work environments to help them respond to the health care needs of all and to help learners explore possibilities for future career decisions beyond academic health science centres.⁶⁴

F) Medical Education Reform and Physician Workforce

Medical education has an important role to play in providing adequate training for rural and remote practice.³² There is clear evidence that physician characteristics, training environments, and a rural training curriculum are important factors that interact with one another and influence recruitment and retention. The social accountability vision^{55,64} agreed to by major medical education organizations in Canada provides the backdrop to reinforce the orientation of medical education toward rural medicine issues. In doing so, this means making rural medicine practice experiences into required components of both undergraduate training and residency in family practice.^{41,65}

Health care decision makers are demanding more evidence of quality, effectiveness, efficiency, and accountability from health care providers in the provision of integrated health care delivery models to meet population health care needs regardless of where they live.⁸⁻¹⁰ The Canadian health care system has not historically addressed issues of either recruitment or retention of physicians in rural areas as well as development of the appropriate education infrastructure in order to nurture and sustain physicians practising in rural communities.¹⁰ The link between medical education and its influence on recruitment and retention of physicians in rural and remote communities needs to be fostered if issues of access and quality are to be positively addressed.

Internationally, there has been much discussion that health professions education has not kept up with health system challenges. As a result, emphasis has been placed on health professions education reforms^{10,66} in order to respond to health care and system needs. Health human resources planning strategies that have been implemented have not considered the importance of health professions education and how the level of education in terms of training and competencies can adequately serve the population health needs of the communities that they serve.^{66,67} A "one size fits all"³⁰ approach in responding to the challenges of the health human workforce and local health care systems, or to those of postgraduate educational training, is not practical. Creating a stable health workforce requires using innovative, flexible ways to educate physicians and prepare them to work in rural communities.

4.0 Rationale for Family Medicine Rural Education

A) Defining Family Medicine/General Practice/Generalist Roles Within a Rural Education Context

Family physicians practising in rural communities provide a broad scope of practice. Adhering to the principle of family medicine that recognizes the role of the family physician as a resource to the population he or she serves, rural family physicians are skilled in understanding the health system needs for their patients. Equipped with foundational knowledge, skills, and behaviours from their residency training, they adapt and fine-tune the competencies they need to address their communities' health care needs. The notion of what constitutes the competencies required by rural physicians has generated much debate and dialogue most recently. The debate includes discussions related to who provides care for rural and remote communities, the title given to these physicians, the certification offered, and the implications for medical education, as well as for health human resources.⁶⁸⁻⁷² Three key issues seem to be emerging:

- What are the competencies required for physicians to practise in rural health care settings?⁷³
- What type of learning opportunities must be provided—by whom? to all? and where?^{26,32}
- How should accreditation for training programs and certification be aligned?

Family medicine, with its roots firmly entrenched within generalism, is often identified in many international jurisdictions as “general practice.” In the definitions used within Canada, the United Kingdom, and Australia to describe general practice, concepts such as comprehensiveness, community-based, patient-centred, preventive care, primary care, and the provision of continuing comprehensive whole-patient medical care are all common themes.⁷⁴⁻⁷⁸

In the fall of 2013, a consensus statement was created for the term “rural generalist” in Cairns, Australia, that builds from the Royal College of General Practitioners' definition of generalists⁷⁸:

Generalists are professionals who are committed to you as a person. They do not have to give up on or pass on your care because your problems do not fit their expertise; they can deal with many issues of prevention, diagnosis and problem management without referral; and they can recognise their own limits and yours, while orienting their service to your world views and character. A good generalist is trustworthy, therapeutic in relationship, and makes judgements that are safe for the individual and the system.

In Canada, the use of the term “family medicine” was adopted to distinguish the discipline of general practice from other medical specialties and highlights the fact that it is the “the only medical discipline to define itself in terms of relationships rather than a particular body system, technology or technique.”⁷¹ The change in terminology has been helpful, particularly in advancing family medicine education programs, but challenging in propagating difference rather than similarities among those who are generalist physicians.

For the purposes of this paper, the use of the term “family physician” will be considered analogous to general practitioner and rural generalist. The family physician is a skilled clinician who is a resource to the rural community he or she serves and is committed to providing relationship-centred care that spans the life cycle of

patients; addresses a spectrum of clinical presentations, within multiple care settings; is skilled to carry out both clinical and surgical procedures and tasks when needed by the community. Rural family physician practices are characterized as adhering to the principles of family medicine:

- The family physician is a clinician skilled in providing comprehensive care and specifically needed clinical/surgical procedures
- Family medicine is a community-based discipline that ensures continuity of care that crosses different settings
- The family physician is a resource to a defined practice population
- The physician–patient relationship is central to the role of the family physician

B) Rural Practice by Family Physicians

As generalist physicians, family physicians working in rural, remote, and isolated communities offer care that reflects community need. Many have acquired additional or enhanced skills including, but not limited to, the areas of general practice anesthesia, general practice surgery (including operative obstetrics), emergency medicine, palliative care, psychotherapy, oncology, and addictions medicine. Rural generalists, including family physicians, have traditionally had a much wider scope of practice than their urban colleagues. This broad scope of practice allows more rural Canadians to receive care closer to home. Although primary care is often associated with family medicine, the reality is that rural family physicians provide primary, secondary, and, at times, tertiary care. As generalists, rural family physicians rely on a local team of health care providers, with whom they work collaboratively. Collaboration with consultant Royal College colleagues by phone, in person, by videoconference, or through transfer of care to urban centres, enables quality care to be offered to those who live in rural, remote, and isolated communities. With the number of Royal College specialists working in rural and remote communities lower than the number of family physicians,¹¹ family physicians with enhanced skills working in teams with access to specialist colleagues are critical to health service delivery.

Rural practice is medical practice outside urban areas, where the location of the practice obliges some general practitioners to have, or to acquire, procedural and other skills not usually required in urban practice.

Adopted from Strasser (May 1995)⁷⁰

According to the National Physician Survey,⁷⁹ the descriptions of what rural physicians versus urban physicians do within their practices vary. For rural family physicians, the majority of their work is conducted in community hospitals and emergency departments, as compared to their urban counterparts:

FM RURAL PRACTICE CHARACTERISTICS OF HEALTH CARE SETTINGS

- 53% of rural FPs provide services in community hospitals vs. 19% of urban FPs
- 49% of rural FPs provide services in emergency departments vs. 13% of urban FPs
- 34% of rural FPs provide services in nursing homes vs. 13% of urban FPs
- 31% of rural FPs provide services in community health centres vs. 12% of urban FPs

Based on a review conducted in 2003–2004, it was noted that there was growing concern between 1992 and 2001 that family physicians might be providing less comprehensive care, have less advanced procedural skills, and be performing fewer surgical and obstetrical services.^{43,80} According to CIHI, because family physicians in urban and rural areas tend to have different practice characteristics, rural family physicians are more likely to have a broader scope of practice and perform a broader range of clinical procedures. Although rural family physicians tend to have a broader scope of practice than their urban counterparts, several studies have shown that comprehensiveness of practice by Canadian family physicians has been declining in the last decade or so.⁸¹ This may reflect the already low involvement in these services by urban family physicians, whereas in many rural areas these services are being consolidated into regional hospital centres instead of occurring in local, smaller rural communities.

C) Advancing a New Approach to Training – The CFPC’s Triple C

To prepare family physicians for practice, the CFPC provides the direction for how residency programs structure their training and define competencies for readiness to practise. Introduced in 2011, the Triple C Competency-based Curriculum (Triple C) aims to ensure that graduates are ready to begin the practice of comprehensive family medicine

in any community in Canada.^{63,82} The Triple C incorporates the best of what is already occurring in many residency programs, including those situated in rural and remote Canada. With a focus on acquisition of competencies through contextually relevant learning opportunities that cross the clinical domains⁸³ of family medicine, Triple C aims to graduate residents ready to begin the practice of comprehensive family medicine.

DOMAINS OF CLINICAL CARE IN FAMILY MEDICINE⁸³

- Care of patients across the life cycle
 - 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)
 - Ambulatory/office practice, hospital and long-term care, emergency settings, care in the home
- Spectrum of clinical responsibilities
 - Prevention and health promotion, diagnosis and management of presenting problems, chronic disease management, rehabilitation, supportive care, palliation
- Care of marginalized/disadvantaged patients
 - Including, but not limited to, Indigenous patients, patients with mental illness or addiction, recent immigrants
- Procedural medicine
 - Technical skills, and higher level competence, in 65 core procedures (www.cfpc.ca/uploadedFiles/Education/Procedure%20Skills.pdf)

What is different in Triple C is the requirement of residency programs to define competencies expected of learners by the time of graduation and to ensure learners are assessed for acquisition of these competencies within the residency program. The CFPC’s Certification Examination becomes an added assessment process above and beyond the assessment conducted within the residency programs. This further requirement of providing evidence of competence attainment of learners by the residency programs has

created a greater partnership to be forged between the university-based residency programs and the clinical teaching sites within which residents are primarily based. Clinical preceptors assigned to residents during their residency are expected to help residents gain the relevant learning experiences needed to enable them to acquire and to demonstrate competencies expected of them. Using the process of repeated observations of learners in the clinical setting, there is a

growing movement of greater reliance on the judgments made by clinical preceptors related to clinical competence. Their attestation of competence, coupled with further and more formal assessment methods during their residency training and the CFPC's certification examination, provides evidence of physicians' readiness to begin the practice of comprehensive family medicine in any community in Canada.

Questions have been raised as to whether the competencies that have been defined by the CFPC in assessing readiness to "begin the practice of comprehensive family medicine" and the curriculum approaches used align with the needs of rural and remote communities. A key component of Triple C training (and challenge) for family physicians headed for rural practice will be the learning of the contextual competencies for rural practice that recognizes the differences in knowledge, skills, and attitudes needed to thrive and survive in practice where specialist support is limited locally and difficult to access. A process to review these competencies will be critical in determining the effectiveness of the Triple C. The curriculum methodology depends upon a good understanding of competencies required of family physicians who are to provide care that is responsive to the needs of rural and remote communities.

D) Rural Competencies and the Rural Context

COMPETENCIES DEFINED INTERNATIONALLY

In looking at how other countries have approached the issue of training physicians for readiness to work in rural and remote communities, one source to consider is the Australian College of Rural and Remote Medicine (ACRRM).^{72,75,84,85} ACRRM's Primary Curriculum aims to produce physicians who can function as safe, confident, and independent general practitioners across a full and diverse range of health care settings in Australia, with particular focus on rural and remote settings. In the most recent release of the curriculum, the document describes the assessable knowledge, skills, and attitudes that general practitioners require to be able to work anywhere in Australia and particularly in rural and remote settings. Like Triple C, the learning outcomes or competencies expected provide a platform for what programs must do to design their curricula and what learners must do to acquire and demonstrate competence. The curriculum highlights seven clinical domains outlined in the fourth edition of *ACRRM Primary Curriculum*:

- 1. Provide medical care in the ambulatory and community setting*
- 2. Provide care in the hospital setting*
- 3. Respond to medical emergencies*
- 4. Apply a population health approach*
- 5. Address the health care needs of culturally diverse and disadvantaged groups*
- 6. Practise medicine in an ethical, intellectual, and professional framework*
- 7. Practise medicine in the rural and remote context*

Source: acrrm.org.au/misc/curriculum/Default.htm

COMPETENCIES DEFINED IN CANADA

Although the Triple C is a new model for family medicine training, it remains grounded in the four principles of family medicine (see table on page 17) and is aligned with the CanMEDS/CanMEDS-FM roles. Like ACRRM's curriculum, clinical domains for family medicine are also used.⁸³ For the CFPC, the five domains (see page 15) are arranged for convenience as a reflection of the daily work in family medicine: life cycle of patients, clinical settings where care is provided, spectrum of clinical responsibilities, and procedural skills. An additional component, care of underserved patients, draws attention to our responsibility as family physicians to care

RELATIONSHIP BETWEEN THE 4 PRINCIPLES OF FAMILY MEDICINE AND CANMEDS–FAMILY MEDICINE ROLES	
Four Principles of Family Medicine (Foundational Concepts)	CanMEDS-FM Roles (Expected Competencies)
The doctor-patient relationship is central to the role of the physician	2. Communicator 3. Collaborator 7. Professional
The family physician is a skilled clinician	1. Family medicine expert 2. Communicator 6. Scholar
Family medicine is community based	3. Collaborator 4. Manager 5. Health advocate
The family physician is a resource to a defined practice population	3. Collaborator 4. Manager 5. Health advocate 6. Scholar
College of Family Physicians of Canada. Four principles of family medicine. College of Family Physicians of Canada website. 2003. www.cfpc.ca/principles/ . Accessed 2015 Jul 28.	

for those most vulnerable in Canadian society. Specific clinical problems encountered in family practice can be organized under one or more headings within comprehensive care. The family physician's work can be defined according to clinical domains and a key framework used by the Triple C. It is the role of family medicine residency programs to teach competencies associated with family medicine across these clinical domains of competence and the role of the CFPC to confer certification based upon demonstration of evidence of the achievement of competence across the domains. Although the domains may be structured differently, they are similar in scope with the exception that ACRRM specifically creates separate domains related to rural and remote contexts, whereas the CFPC includes this under a heading of clinical settings within which family physicians practise. The CFPC also recognizes that practising comprehensive family medicine in the rural and remote clinical setting, where specialized resources are limited, requires the development of rural contextual

competencies. It should be noted that a curriculum framework for undergraduate medical education on core competencies for First Nations, Inuit, and Metis health care has been developed.⁴¹

The CFPC has responded to the need for extended clinical practice competencies with the development of third-year Category 1 programs such as general practice anesthesia and family medicine emergency medicine. These were first developed to address the needs of physicians considering practising in rural communities to gain further experience and exposure. Residents have the option to access further training in general surgery in order to practise in rural communities. Category 2 programs have also been developed and implemented in areas such as Indigenous health. Residents are also able to develop their own enhanced learning programs to address specific interests or to gain more competence and confidence (eg, obstetrics, women's health, sports medicine). The number of family medicine trainees taking R-3 training increased considerably (from 85 in 1996/97 to 242 in 2010/11).⁴⁸ Interestingly, according to CAPER data, more urban versus rural residents have applied to third-year training programs of late, including emergency medicine.⁴⁸

In the extensive review conducted by Pong in 2012⁴⁸ that looked at family medicine over a 15-year period, the number of first-year family medicine trainees grew from 670 in 1996/97 to 1,145 in 2010/11, an increase of just over 70 per cent. The number of exit-year trainees in family medicine, which closely approximates the number of practice entry family physicians, increased from 730 in 1996 to 937 in 2010, an increase of 28.4 per cent in the 15-year period. Many of these increases have resulted from the expansion of residency training programs, which occurred

subsequent to the concerns raised about the lack of access to family physicians in rural communities. A study in 2002 identified 12 family medicine residency programs in Canada that offered dedicated rural streams, and rural positions represented 20 per cent of all family medicine residency positions available to medical school graduates.⁸⁶

E) Educating Family Physicians to Work in Rural and Remote Communities – The Rural Education Pipeline

The “rural education pipeline” has been identified as a model to help design medical education to promote working in rural communities to physicians.¹⁴ The model describes a way to select, support, educate, and produce physicians for rural practice.⁸⁷ It uses a longitudinal approach that begins even before an individual enters medical school and continues providing exposure to rural practice in medical school and during residency, followed by providing supports in practice.⁸⁸

Figure 1, **Pipeline Model of Rural Physician Production**, shows an adaptation of the pipeline illustrating elements embedded within the pipeline for consideration by medical educators. The approach is based on evidence that students from rural backgrounds are more likely than urban students to practise in a rural community and that greater exposure of students to rural settings during their medical education further enhances the likelihood of rural practice after graduation. For the “pipeline to practice” to be successful, all parts of the pipeline must work and work well together.⁵⁹

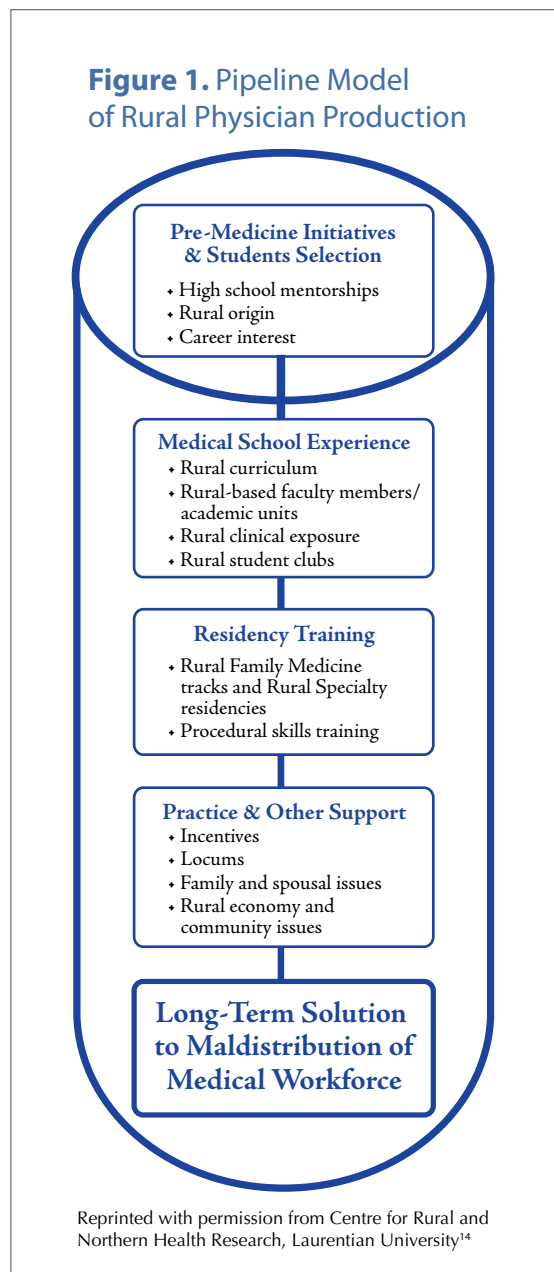
Based on his review, Pong identified four factors associated with physicians choosing to practise in rural and remote communities:

1. Rural upbringing
2. Positive undergraduate rural exposure
3. Targeted postgraduate exposure outside urban areas
4. Stated intent/preference for general or family practice primary care^{14,89}

These factors, coupled with a pipeline approach for the design of medical education to enhance physicians practising in rural and remote communities, can be considered as a starting point, before medical schools and after residency, when developing a comprehensive and coordinated strategy for rural education.

The recruitment and retention of rural family physicians is a multifactorial, complex issue, and understanding the role

Figure 1. Pipeline Model of Rural Physician Production



medical education has in supporting rural physician production is important to the success of health human resource planning in Canada.^{65,89}

The table below outlines the intended purposes for implementation of each criterion as the overall goal is to increase the number of family physicians practising in rural communities. The last column maps out the following sections that address each of the criteria in order to uncover the realities of what is taking place currently in Canada.

PONG CRITERIA	IMPLEMENTATION	REALITY CHECK
1. Rural upbringing	Administration of early rural programs for rural upbringing	Section One: Choosing a Career in Medicine
2. Positive undergraduate rural exposure	Integrated clerkships—for positive undergraduate rural exposure	Section Two: Rural Medical Exposure in Medical Schools
3. Targeted postgraduate exposure outside urban areas	Family medicine in rural clinical sites—targeted postgraduate exposure outside urban areas	Section Three: Postgraduate Rural Training
4. Stated intent/preference for general or family practice primary care in rural setting	Provision of support: <ul style="list-style-type: none"> • In rural practice • For faculty in rural areas • For administration/infrastructure in rural areas 	Section Four: Choice of Family Medicine Section Five: Supporting the Pipeline Approach to Graduate Rural Physicians Section Six: Policy Levers That Support FM Rural Education
Goal: Increase the number of family physicians working in rural and remote areas		

5.0 The Rural Education Pipeline

A) Section One: Choosing a Career in Medicine

RURAL UPBRINGING AND THE ROLE OF INCENTIVES

Students of rural origin with an interest in rural medicine or in family medicine are more likely than non-rural students to enter rural practice upon graduation from training.¹⁴ It is this association that has led many medical schools to consider enhancing criteria to support admission of medical students from rural backgrounds in the hopes of encouraging them to practise in rural communities. At NOSM, for example, 92 per cent of NOSM medical students have grown up in Northern Ontario (with the remaining 8 per cent coming from remote and rural parts of the rest of Canada), and over 70 per cent of NOSM residents stay in a rural community.⁹⁰ The passage of students from a point in their early schooling when they might express an interest in a medical career through to supporting them to enter medical school is a critical time for recruitment.⁶⁵ Activities including mentorship programs, rural observation experiences helping students to prepare for medical school exams, local high school encouragement, and financial bursary/scholarship programs are ways to attract potential rural physician recruits.

In 2002, through a federal government advisory council, a report was released with recommended actions to support the training and recruitment of rural students through the advancement of a longitudinal rural physician workforce plan. Of the actions suggested, improving postsecondary health education opportunities through increased rural community-based learning programs and the development of a rural health and Indigenous health curricula were included for consideration.⁵

B) Section Two: Rural Medical Exposure in Medical Schools

There has been a realization that rural practice is not only different from urban practice, but it is also increasingly divergent. It is clear that the traditional medical education model, where most students come from large cities and receive almost all of their training in large city community settings and tertiary care hospitals, does not provide the context to learn the knowledge and skills required for effective rural medical practice.³² Physicians raised in rural areas have greater interest in rural medicine before medical school than have physicians raised in urban areas. Interest in rural practice gradually increases as training progresses, especially among physicians from urban backgrounds with exposure to rural contexts.⁹¹ Medical school and postgraduate training offer important opportunities for enticing physicians raised in urban areas into rural practice. Although policies that give rural students preferential access to medical training have merit, training programs should also consider that students from urban backgrounds will be an important source of rural physicians.^{91,92}

The approach to medical education at the undergraduate level is a critical first opportunity in the pipeline approach, ***The Pipeline Model of Rural Physician Production***, to reinforce interest in rural practice. Based on comparative studies alone, it has proven difficult to assess the effectiveness of undergraduate versus residency programs in influencing the subsequent practice locations of their participants. Rural medical education in its length of exposure, its methodologies used, and its purposes for learning varies from program to program. Most of the literature is descriptive in nature with minimal comparative studies. There is evidence, based mainly on informed opinions and descriptive studies, that longer rural exposures at both the undergraduate and postgraduate levels contribute to encouraging more physicians to choose rural practice.^{14,65,91,92}

The review conducted for this paper did not gather curriculum descriptions across the 17 medical schools. In general, all medical schools have adopted rural learning as an important component, with most offering shorter core rural medicine learning opportunities for medical students, and encouraging opportunities for longer or multiple rural electives. The SRPC, on its website, identifies for medical students where learning opportunities exist in rural and remote Canada.⁹³ Innovations are happening across Canada among many medical schools. Some, such as University of Alberta and University of Calgary, provide more longitudinal approaches to training, with exposure to rural practice as early as the first year of medical school and continuing throughout medical school.⁶⁵ The level of dialogue occurring among the faculties of medicine, where associate deans or designated leadership positions meet to share learned experiences, is encouraging.⁹⁴

The longitudinal approach to exposing learners to rural practice is enabled due to the growing movement in undergraduate medical education toward distributed medical education (DME). DME is designed to provide more teaching and learning in work environments outside the traditional urban-based tertiary care hospitals.¹³ DME aims to help address issues related to the maldistribution and shortage of physicians in rural and remote areas¹³ by enhancing exposure of medical students to community-based authentic learning environments. DME campuses have been supported by universities across Canada, providing enhanced experiences for medical students and residents in all specialties. The University of British Columbia created the first fully distributed campus model in North America in early 2000.* A “current worldwide trend toward DME has emerged,” with programs such as WWAMI at the University of Washington¹³ and the Sherbrooke University medical school curriculum using DME as its primary design for how learning is to be provided to its medical students.⁹⁵

With the emergence of DME campuses, many medical schools have been able to provide more longitudinal integrated clerkships within rural communities with learners that spend more time gaining continuity of learning experiences from a specific community environment throughout their clerkship. Most, like those piloted at UBC,⁹⁶ are providing learners with the opportunity to situate themselves in smaller communities to experience and learn how to deliver care especially with family physician role models.⁹⁷ The most recent BEME (best evidence medical education) review on longitudinal community and hospital placements in medical education notes that most are being conducted in rural communities. Although variation exists, most point toward longitudinal experiences in relation to same location, same patient base, and/or same supervision. The effectiveness of longitudinal clerkships still needs to be ascertained related to optimum length of time and when, within the medical school curriculum, it should be instituted.⁹⁷ NOSM, with its use of DME and longitudinal integrated clerkship models, has revealed that their students consistently score higher marks on their licensing examinations compared to medical students across the country.⁵⁶ This bodes well for this type of learning model countering the belief that learning within urban and tertiary care hospitals is superior to learning in community-based rural practices.

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C) Section Three: Postgraduate Rural Training

Most postgraduate medical education in Canada remains situated within large academic health science centres and tertiary care hospitals.⁹⁸ The concept of diversified learning or contextual learning goes beyond the paradigm of DME as it speaks to the broader context and models of learning in addition to the physical location of training. Diversified learning encompasses the idea that training sites and educational models for all residency programs should be chosen based upon relevance for residents to acquire the competencies needed for future practice. Over the years, efforts have been made to facilitate increased exposure to rural settings within postgraduate residency training in family medicine. To the extent that there is a link between the place of training and future rural practice, the increase in opportunities for rural training contributes to the reduction of rural physician shortages.⁹⁹ Significant efforts are needed to increase and support rural residency training, including determining how best to provide rural education as part of the rural pipeline approach to medical education.

THE CFPC ROLE WITH RESIDENCY PROGRAMS

The university-based family medicine residency programs, each with clinical teaching sites situated in different communities in Canada, are accredited by the CFPC. These programs must demonstrate that the learning experiences they provide to residents will prepare them to practise comprehensive family medicine in any community in Canada.

Prior to 2013, the accreditation standards of the CFPC designated a minimum of eight weeks of clinical experience in a rural community practice. It was assumed that by immersing a learner within a specific context for a particular time, competence would be acquired. With the adoption of the Triple C Competency-based Curriculum, emphasis has been placed on curriculum planners to ensure they provide learning experiences that enable learners to both acquire and demonstrate competence without time specifications. The move away from minimum requirements of time in rural communities has been both liberating and concerning for program directors: liberating, in that program directors can be more innovative without being limited by a specific time requirement, but concerning, as others, such as funders, might misinterpret the lack of specific time spent in a rural community as an indication of lack of priority, which could negatively impact funding decisions to programs. Although early in its implementation, Triple C aims to be more suited to providing contextually relevant learning that enables residents to gain competence in the practice of comprehensive family medicine.

The CFPC has not developed national curriculum standards for rural training or for advanced skills training in rural family medicine, unlike ACRRM and the Royal Australian College of General Practitioners. For advanced skills training, the CFPC does accredit Category 1 programs in general practice anesthesia and emergency medicine, providing attestations of completion of training for learners who complete the enhanced skills program in general practice anesthesia and a certification to those who successfully complete and pass an emergency medicine examination. Where learners would like additional training to help prepare them for practice in rural communities after their two-year training program, opportunities to develop enhanced learning with variable periods of time in third year may be available at each residency program. The Family Practice Anesthesia program jointly supported by the CFPC Section of Communities of Practice in Family Medicine (CPFM), the SRPC, and the Canadian Anesthesiologists' Society

The CFPC provides guidance and creates standards for residency programs to develop family physicians ready to begin the practice of comprehensive family medicine in any community in Canada. It is also the certifying body that provides a statement of competence in family medicine for graduates in the discipline.

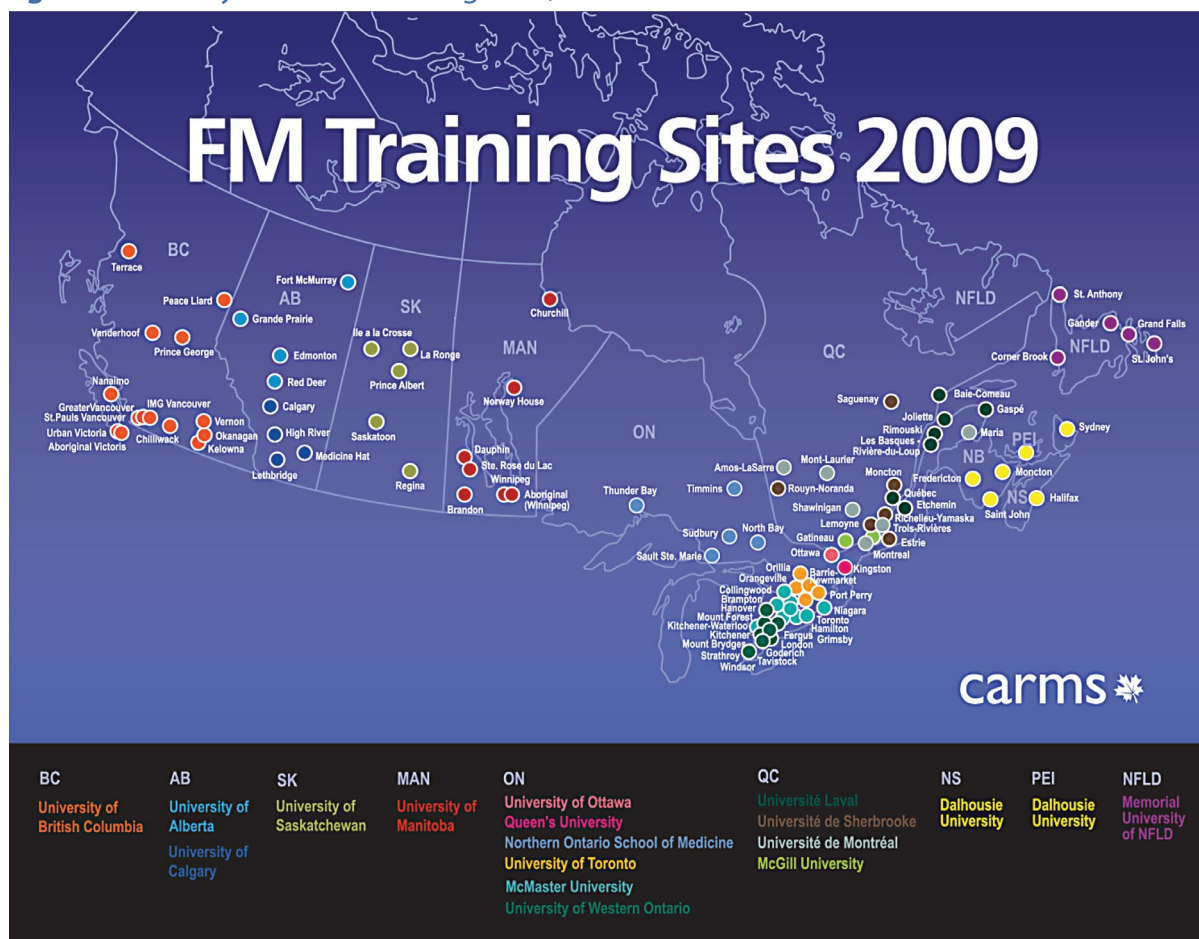
(CAS) is in the process of finalizing competencies to transform its program to become more competency based and focused on Triple C. General surgery for family physicians as an enhanced skill is currently being explored. Much interest related to maternity care and obstetrical skills required for physicians in rural and remote communities has also been shared.

NUMBER OF RURAL TRAINING POSITIONS AND SITES

All 17 universities now offer family medicine training programs based outside the major cities or academic teaching centres, only some of which are self-designated as rural. Since the late 1990s, Canada's capacity to offer rural medical education to its family physicians has expanded dramatically. As governments have been pressured to increase access to family physicians in rural and remote communities, increased funding was given to family medicine residency programs to increase their number of training positions in rural and remote training sites. For most, the expansion occurred outside the main university campus urban-based residency training sites with a large percentage situated in rural communities. The number of training sites in rural communities increased from 25 in 1998 to 86 in 2008 (see Figures 2a and 2b). The number of rural family medicine positions has quadrupled from 36 in 1989 to 144 in 2003. After 10 years, approximately 365 positions were identified upon a manual search looking at website program descriptions and using the definition of "rural" outlined on page 9.

Figure 2a. Change in Family Medicine Training Sites, 1998



Figure 2b. Family Medicine Training Sites, 2009

DME and its campuses have helped to enable family medicine training environments to provide training in more dispersed rural communities aimed at reducing the maldistribution of physicians, and increasing numbers in the rural parts of the country.¹⁰⁰ As family medicine rural programs have expanded to 17, according to CaRMS, the number of clinical teaching sites affiliated with faculties of medicine has increased to over 873 according to CAPER.¹⁰¹ With 1,395 first-year entry positions for family medicine in 2013, 32 per cent ($n = 446$, both IMG/CMG and military) of them appear to be rural focused. Eighty-five percent ($n = 381$) of these positions were filled on the first round of the match. Six per cent of these positions were IMG positions. Given the absence of a definition for “rural training” by university residency programs and the lack of consistent criteria included within the CaRMS descriptions for rural training streams, the ability to gain an accurate number of residents training in rural communities or the number of rural-focused residencies is challenging. What can be stated, however, is that the number of rural training sites has increased significantly over the years.

Rural Family Medicine Residency Stream:

- 1,395 first-year entry positions to family medicine
- 446 rural focus/stream FM residency positions—32% of FM positions are rural focused (approx.)
- 75 sites with primary-focused programs with direct match in CaRMS (self-defined)
- 160 rural clinical teaching sites

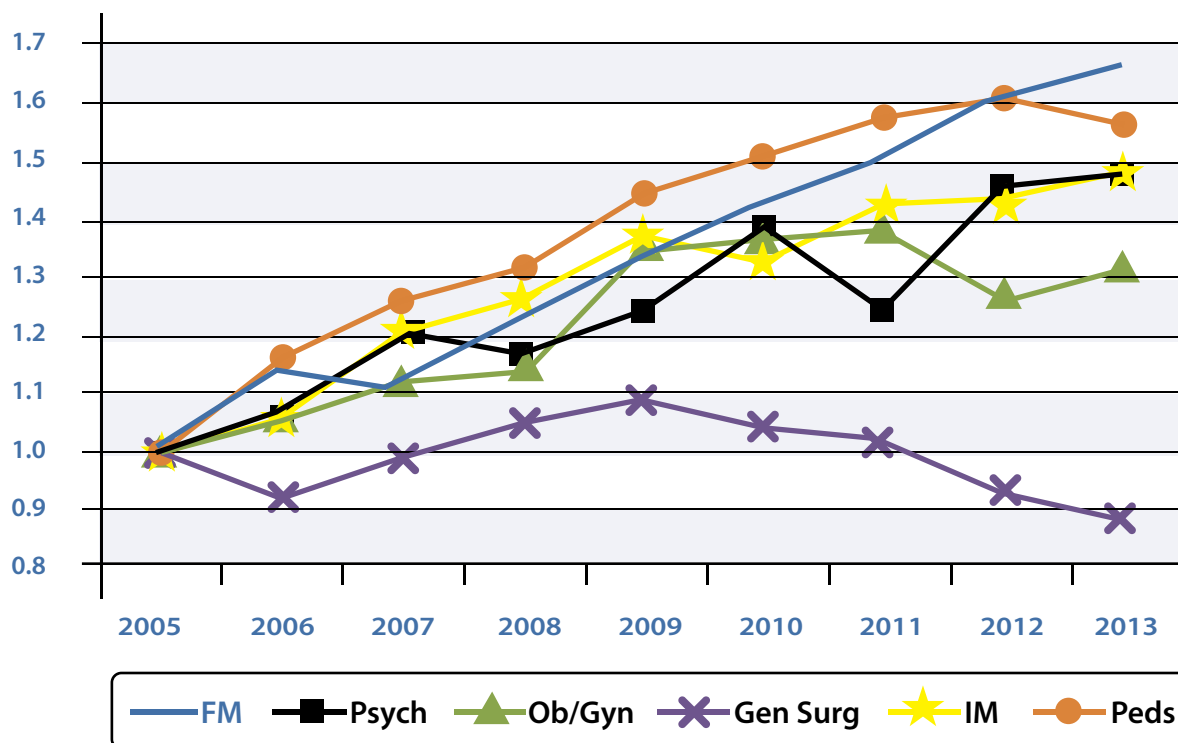
(Source: CaRMS, 2013)

In an internal review conducted in 2013 by the CFPC, in looking at the websites of individual clinical training sites and surveying family residency programs, 873 clinical training sites were identified. Of these 873 sites, approximately 160 rural sites were identified as offering extensive longitudinal rural exposure that may or may not be identified as a program requiring a direct application process through CaRMS. This means learners may match to university residency programs and then are placed in rural clinical teaching sites for a majority of their training. Further analysis indicated that 75 clinical teaching sites identified themselves as rural focused or mostly offered in a rural community with acceptance into these sites through the CaRMS process. Based on CAPER and CaRMS data, beyond the 75 residency programs, there are approximately 111 family medicine rural clinical teaching sites.

D) Section Four: Choice of Family Medicine

Since the 1990s, governments have created initiatives to maintain the proportion of residency positions for family medicine at 40 per cent and other specialties at 60 per cent.¹⁰⁰ According to CREPUQ,* in the last few years, family medicine represented 51.6 per cent of positions in Quebec residency training programs.† Interest in family medicine has been growing significantly over the past 20 years. According to CAPER, enrolment in postgraduate family medicine residency programs has increased from 820 graduates in 2005 to 1,600 in the 2013–2014 academic year (Figure 3). According to CaRMS,¹⁰² the interest in family medicine has caused a 1,000 times increase in applications to family medicine (Figure 4).

Figure 3.
Indexed Change in PGY-1 PGME Enrolment, Selected Specialties, 2005–2006 to 2013–2014



Source: CAPER Census. Note: includes P/T Ministry-funded trainees only. Excludes fellows.

* Conference of Rectors and Principals of Quebec Universities

† Communication with Rural Director, Department of Family Medicine, University of Montreal. April 26, 2015.

From 1994 to 2013, there has been a trend of increasing numbers of residents choosing family medicine as their first choice of specialty, with 37 per cent of applicants choosing family medicine as their first choice in 2013 (Figure 5). CaRMS reported that 92 per cent of all family medicine positions were filled in the first iteration of the 2013 match. One of the strategic goals of the CFPC is to have 40 per cent of all medical students consider family medicine as their first choice of residency by 2017.

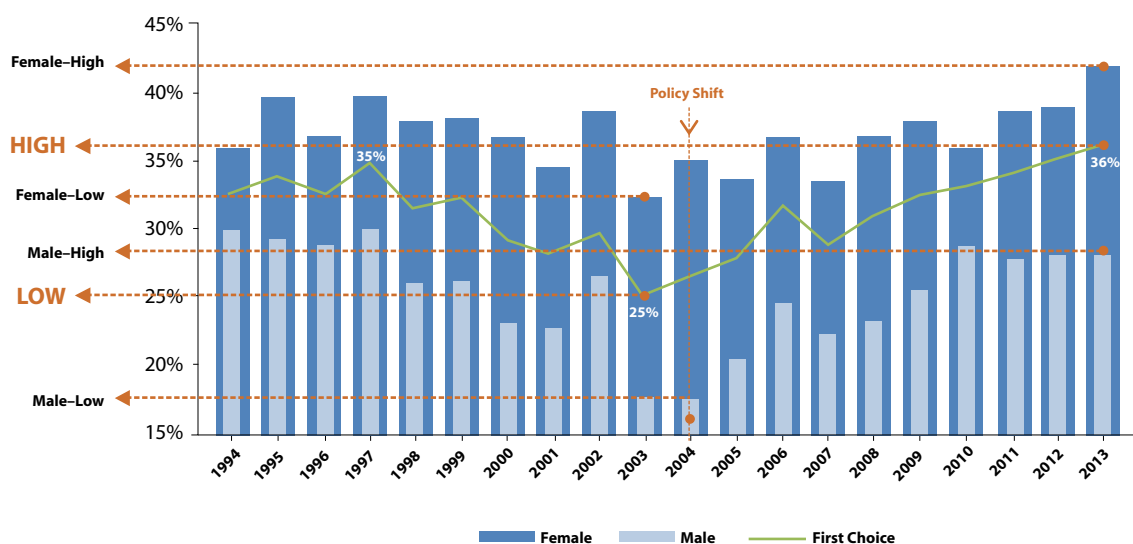
Looking at CAPER findings, family medicine, among a number of other specialties, has had a progressive

Figure 4.
Tracking Family Medicine Expansion: 2001–2013

	2001	2013	
Quota offered	469	1,424	➔ 303% Expansion!
Number of programs	29	87*	➔ 300% Expansion!
Number of applications	5,093	49,008	➔ 1,159% Expansion!
Percentage of positions filled	79%	92%†	

* Does not include 38 programs in the IMG stream or 33 programs in military streams
† After 2nd iteration, 97% positions filled in 2013

Figure 5.
Choice of Family Medicine, 1994–2013



increase in enrolment over the five-year period 2005 to 2010. As noted by Figure 4, the quota of family medicine residency seats and number of family medicine programs increased by 300 per cent from 2001 to 2013. A significant rise in applications to family medicine was noted as well. In trying to understand what may have influenced this increased interest in family medicine, Figure 5 shows that a policy shift occurred in 2004 whereby a number of initiatives were launched simultaneously by governments and educators across Canada to support family medicine education and training. These included increased family medicine mentoring roles, revamped family medicine curricula, and the creation of financial incentives for residents and faculty.¹⁰⁰ Although not causal, the relationship between increased interest and policy shift seems to have some positive correlation.

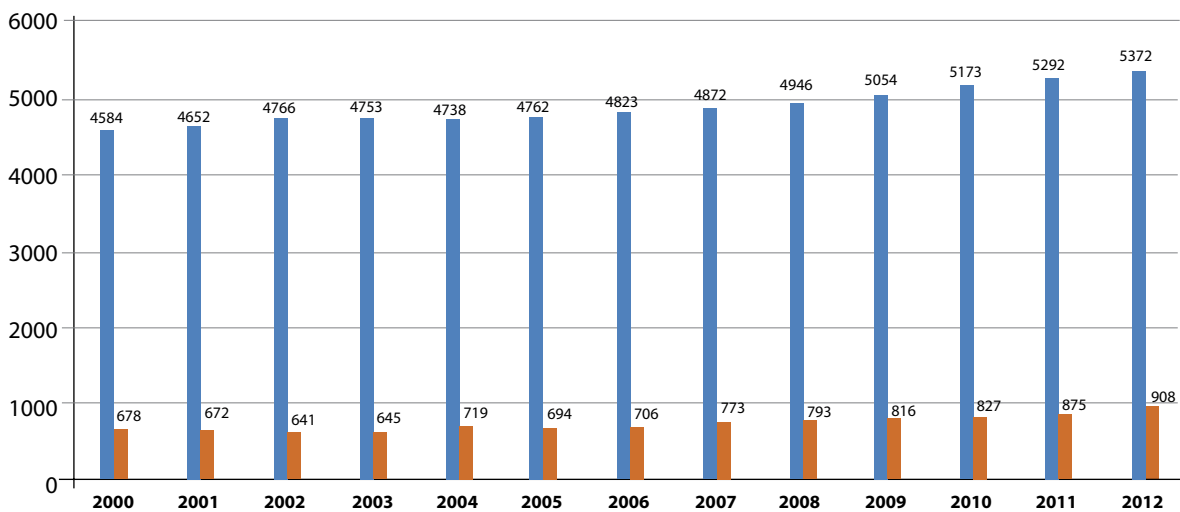
CANADIAN MEDICAL GRADUATES VS. INTERNATIONAL MEDICAL GRADUATES PRACTISING IN RURAL COMMUNITIES

Within the existing physician workforce, goals of increasing the number of trainees for family medicine must be considered in relation to a national pool of family medicine positions and the total number of family physicians available to provide care. IMGs have played a significant role in rural Canada to address the recruitment and retention challenges.¹⁰³ Some provinces, however, have placed restrictions on their practices, limiting the scope of what they can do for populations served.¹⁰⁴

In the last 10 years, a steady increase in the numbers of family medicine graduates practising in rural communities has been seen. According to CIHI and the *Scott's Medical Database*,* the graphs below illustrate the breakdown of the family physician workforce in urban and rural Canada as well as CMGs and IMGs over a 13-year period.¹²

As shown in Figure 6, from 2000 to 2012, the number of GPs practising in rural communities grew from 4,584 to 5,372 while specialists rose from 678 to 908 during the same period.

Figure 6.
Number of Rural Specialists and GPs: 2000–2012



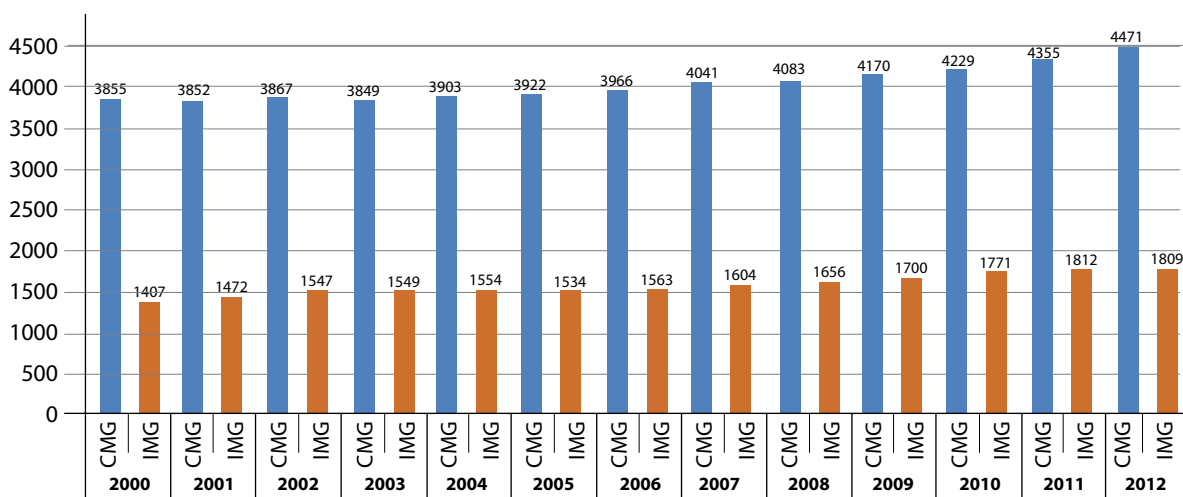
Source: *Scott's Medical Database*, 2013, Canadian Institute for Health Information.
Number of Family Physicians & Specialists, Canada, 2000 to 2012.

■ GPs ■ Specialists

* Upon CFPC request in November 2013, CIHI provided specific data (Figures 6–9) on the family physician workforce in urban and rural Canada as well as on CMGs and IMGs over a 13-year period, which have not been published.

Figure 7 depicts that the number of CMGs rose from 3,855 in 2000 to 4,471 in 2012. By comparison, IMGs rose from 1,407 to 1,809 during the same period.

Figure 7.
Number of CMGs and IMGs in Rural Practice: 2000–2012



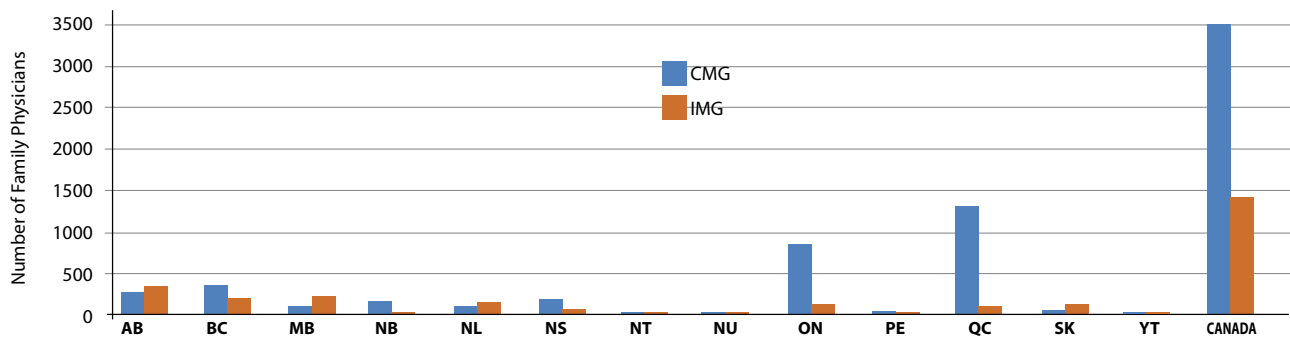
Source: *Scott's Medical Database*, 2013, Canadian Institute for Health Information.
Number of Canadian MD Grads and International MD Grads, Canada, 2000 to 2013.

Among the 14 per cent of family physicians practising in rural communities, the majority are either Canadian-trained medical graduates (CMGs) or international medical graduates (IMGs). Some rural areas have traditionally depended on the recruitment of IMGs to meet their populations' needs.¹⁰³ Between 2000 and 2011, a greater proportion of IMGs than of CMGs were practising in rural areas.¹⁰⁵ IMGs, however, were less likely to stay in practice in rural areas,¹⁰⁶ compared to CMGs who set up practice in rural and remote communities.¹⁰⁰ As of 2011, two-thirds of all family physicians practising rural medicine were graduates of Canadian medical schools.¹⁰⁵ Although the numbers seem to be rising with increasing numbers of CMGs, it is recognized still that most rural and remote areas of the country have proportionately more IMG vs CMG physicians providing care.¹⁰³

Figures 8 and 9 highlight where rural family physicians, who are either CMGs or IMGs, were practising, by province and territory, in 2008, compared to in 2012. A majority of these physicians were practising in Ontario and Quebec.

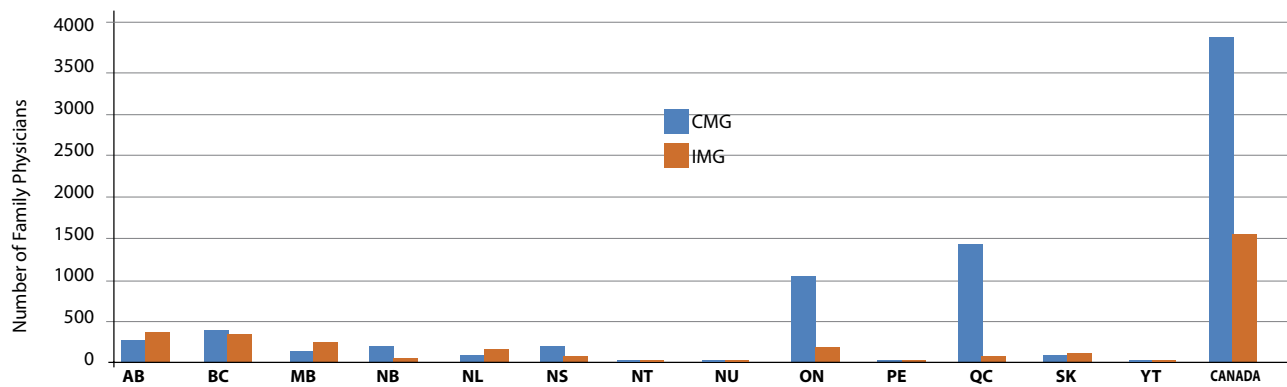
The number of residents from specific residency programs choosing to practise in rural communities post-residency can be measured through current databases such as CAPER, which allows for national comparisons. Universities such as Memorial and Laval consistently produce the highest proportion of rural physicians, while University of Toronto produces the lowest numbers.⁹⁷ With the development of medical schools with a specific mission to graduate physicians ready and willing to practise in rural and remote communities, the

Figure 8.
Rural Family Physicians by Province and Territory, CMGs and IMGs: 2008



Source: *Scott's Medical Database*, 2013, Canadian Institute for Health Information. Number of Canadian MD Grad and International MD Grad by Location of Practice, Canada, 2000 to 2013.

Figure 9.
Rural Family Physicians by Province and Territory, CMGs and IMGs: 2012



Source: *Scott's Medical Database*, 2013, Canadian Institute for Health Information. Number of Canadian MD Grad and International MD Grad by Location of Practice, Canada, 2000 to 2013.

findings are encouraging. In 2010 at Memorial University, 52 per cent of the residency graduates were in rural programs.⁵⁹

The following table highlights key statistics of successful models of rural education programs at NOSM and Memorial.

SUCCESSFUL MODELS	
NOSM ^{89,90}	MEMORIAL ⁵⁹
<ul style="list-style-type: none"> 92% of students from Northern Ontario and 40% are rural origin 62% in family medicine program, mostly rural Electronic communications to support “distributed community-engaged learning” 70% of NOSM graduates practice in Northern Ontario 	<ul style="list-style-type: none"> Success with rural “pipeline to practice” model 30% of students are rural origin 2008: 26% of graduates in rural family medicine training programs—highest in Canada (Canadian average was 8%) 2010: 52% of graduates in rural programs (rest of Canada averaged 20.9%)

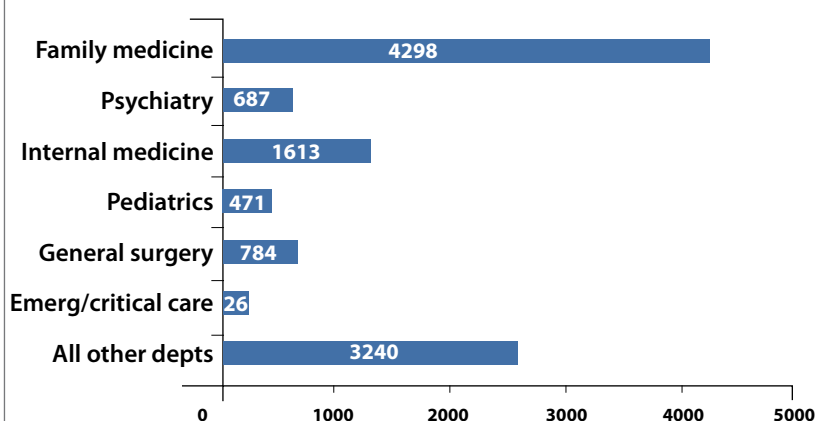
According to Bates,¹³ the expansion of rural-based postgraduate residency programs comes at a time when the undergraduate rural medical experiences are underdeveloped. Hence, the opportunity to test the pipeline approach to rural education is limited. It would be ideal to track students entering medical school, follow them into residency, and consider surveying them when out in practice. The reality is that often training sites have difficulty filling rural and remote positions for graduates, as they are not of primary interest to residents who are well along the path of their learning. Bates suggests that all parts of the pipeline need to be aligned for successful numbers of graduates to enter into the rural workforce.¹³

E) Section Five: Supporting the Pipeline Approach to Graduate Rural Physicians

The sustainability of rural education programs depends on the level of support that is provided to faculty and residents.⁹¹ Faculty and clinical teachers play a key role in the infrastructure and management of learning provided in rural medical education. Faculty growth has been strongest in those disciplines that are commonly taught in community clinics, small hospitals, and physician offices.¹⁰¹ For family medicine, this has meant a significant increase in part-time teachers available and willing to supervise medical students and family medicine residents. According to CAPER, from 2007 to 2012 the number of part-time faculty, many volunteering their time, increased by 4,298.*

As shown in Figure 10, among other individual disciplines, family medicine

Figure 10.
Growth in the Number of Part-Time Faculty Members, Canada, 2007–2012



Source: AFMC, ORIS, 2012, CAPER, 2013

Note: Part-time faculty includes paid and volunteer faculty members.

* Lynda Buske, Interim Director, CAPER, Association of Faculties of Medicine of Canada. May 2015.

showed evidence of the highest increase over the years. Faculty growth has been found to be the strongest in those disciplines that are commonly taught in community clinics, small hospitals, and physician offices.

Cook, in his study on clinical teachers, stated that since 1999 there has been a 63 per cent increase in undergraduate enrolment and a 69 per cent increase in postgraduate enrolment in Canadian faculties of medicine.¹⁰⁷ The study further states that the level of support provided to clinical teachers is often insufficient. Key issues identified by Cook are highlighted as follows¹⁰⁷:

CLINICAL TEACHERS – KEY ISSUES	
Infrastructure	<ul style="list-style-type: none"> • Call for structures to be created that enable multiple levels of collaboration relating to clinical teaching that will facilitate interaction among deans and associate deans, clinical instructors themselves, as well as educators and funders of medical education from across the country. These structures would provide a forum for ongoing discussions relating to clinical teaching in Canada. • Clinical curriculum at distributed sites should be developed with significant and regular input from clinical teachers at distributed sites.
Support	<ul style="list-style-type: none"> • Perception by clinicians at community and major distributed sites that teachers in remote campuses are less professional when, in fact, teachers in rural programs provide considerable benefit to teaching at distributed sites. • Distributed sites require more resources and administrative support to become full partners in clinical teaching. • Level of support is sporadic with disparity in income support and remuneration.
Teaching Facilities (DME)	<ul style="list-style-type: none"> • Learning sites in the community that would not usually be classified as part of the academic health centre play a major role in the training of residents and clerks. • Space is a concern. Clinical facilities, already at capacity, are often not able to accommodate residents. • As there are increasing demands for clinical teaching, services without any support pose potential disincentives for clinical teachers. • Increased demands for community-based learning sites as not all available patients are suitable for teaching purposes.
Students	<ul style="list-style-type: none"> • Students are not sufficiently primed or prepared for the clinical settings, adding time to teaching activities. • IMGs are more likely to require extra attention because of a lack of preparedness.
Evaluation	<ul style="list-style-type: none"> • Need for comprehensive and standardized process of evaluation of clinical teaching • Rewards and promotions are often intrinsically linked to research activities rather than teaching abilities • Need for accountability and assessment of clinical teaching

SUPPORT FOR RURAL PRACTICE – GAPS/ISSUES

According to the National Physician Survey,⁷⁹ funding was a key issue identified by the 74 per cent of respondents who indicated that teaching was part of their professional activities. Of these, 45 per cent were not compensated for teaching beyond payment for the clinical service that may have been provided at the time of teaching. The most common sources of compensation for teaching were the physician's department/faculty of medicine, followed by funding from the provincial ministry of health or through an alternative funding/payment arrangement. There has been little attention on the level of support for clinical teachers and the cost of operating clinical teaching sites.¹⁰⁸

Clinical teachers in rural and remote communities need the same level of support as those who are situated near main university-based campuses. Additional resources are needed for clinical teachers affiliated with distributed medical education campuses so that these sites are able to produce family physicians who graduate not only with nationally defined competencies but also with locally needed competencies specific to their communities. There is a need to nurture and recognize DME in preparing the physician workforce in varied settings¹⁰⁹ by the development of a distributed education framework. Existing DME programs appear to structure DME experiences differently across the country. To facilitate rural medical education, curricula within the DME need to be flexible, and the curriculum development process needs to include the integration of rural preceptors.⁹⁴ The sustainability of rural education programs depends on the level of support that is provided to faculty and residents.⁹¹

F) Section Six: Policy Levers That Support FM Rural Education

This section focuses on the policy levers that support rural education and describes the types of support needed from both ministries of advanced education and practice at all (federal, provincial, and territorial) government levels.

INTERNATIONAL EXPERIENCE

Policies that have influenced physician rural education and practice have mainly been embedded in government health workforce programs and initiatives.^{67,110} Many of these policies are targeted toward increasing the physician workforce in order to address physician shortages. Rural educational policy initiatives are designed to attract physicians to rural areas based on two characteristics: supporting medical students who come from a rural background and increasing the relevance of the content provided in medical education and training curriculum.¹¹¹⁻¹¹³

RETURN-FOR-SERVICE FUNDING

Internationally, one of the most prominent programs to motivate medical students to practise in rural communities has involved the provision of scholarships/loans in return for service. In the United States, a number of programs provide scholarships and loan repayment schemes to medical students in exchange for their providing services in specific rural areas. Most recently in Canada, the federal government introduced a program for Canada's health workforce by which family medicine residents can apply for loan forgiveness to cover any outstanding loans or debts while they practise in rural and remote communities.^{114,115} The following table¹¹⁰ highlights other countries' experiences with implementation of rural education policies.

Countries' Experiences With Policies Designed to Influence the Geographical Distribution of Physicians

TYPE OF POLICY	OECD COUNTRY THAT IMPLEMENTED POLICY	POLICY STRENGTHS	POLICY WEAKNESSES
EDUCATIONAL POLICIES			
Focused recruitment or admission of medical students who come from a rural background	Australia, Canada, Japan, Norway, Sweden, United States	A number of studies show that medical students who come from a rural background are more likely to locate and remain in those areas after graduation.	Preferential admission of students from a rural background might create tension in the face of high-quality and successful candidates from non-rural communities.
Rural practice component in medical curriculum	Australia, Canada, Greece, Norway, Sweden, United Kingdom, United States	A number of studies show that educational programs that emphasize rural education and training are more likely to attract students to those areas after they graduate.	Lack of medical schools, DME infrastructures, departments of rural health to support educational training, or mechanisms to coordinate student placements in rural areas.
EDUCATIONAL-RELATED FUNDING POLICIES			
Student loans in return for service	Australia, Canada, Japan, Mexico, Norway, United States	The USA National Health Service Corps has been successful in placing physicians in underserved areas after they graduate, through loan repayment programs.	Evidence from Canada and Mexico suggests that students have been able to buy their way out of their service commitments, and few students remain in the rural area after their required periods of service have expired.
Funding for continuing medical education	Australia, Canada	A number of studies show that funding of continuing medical education retains physicians in rural areas.	Little evidence of the optimal level of funding that maximizes recruitment and retention of physicians in rural areas.

As noted in the above table, the evidence on the success of policies such as return-for-service initiatives is mixed. In Canada, the initiatives show less success, given that a substantial number of students have been able to buy their way out of their service commitment, and few students remain in rural or deprived urban areas after their required periods of service have expired.

Incentives to Support Family Medicine Rural Practice

FINANCIAL INCENTIVES WHILE IN PRACTICE

A variety of financial incentives have been used by countries to attract and retain physicians in rural areas by increasing their income. Some countries have introduced programs of regionally differentiated remuneration, in which payments to physicians for patients from rural areas were increased relative to those for patients from other areas. In Canada, physicians in Quebec receive an increase in fee (105 to 145 per cent) if they practise in rural or remote areas of the province. The fee increases according to distance from major centres and the type of practice, office, or hospital.* As noted in the table below, some argue that the existing financial arrangements do not provide adequate compensation for the added workload and additional demands associated with practising in rural areas.¹¹⁶ Salaried schemes have been introduced to improve recruitment to rural areas in Canada and New Zealand. Additionally, Canada, New Zealand, and the United Kingdom have subsidized the income or guaranteed a minimum income to physicians who practise in areas where the sparse population base does not make it economically viable for a physician to practise.

TYPE OF POLICY	OECD COUNTRY THAT IMPLEMENTED POLICY	POLICY STRENGTHS	POLICY WEAKNESSES
FINANCIAL POLICIES			
Regionally differentiated	Canada, New Zealand, United States	A number of studies show that regionally differentiated payment increases number of physicians practising in rural areas.	Little evidence of the optimal level of remuneration that maximizes recruitment and retention of physicians in rural areas.
Alternate payment mechanisms	Canada, New Zealand, United Kingdom	This policy provides financial security to physicians in areas where it is not economically viable to practise.	Little evidence of impact of alternate payment mechanisms on recruitment and retention in rural areas.
Specific grants	Australia, Austria, Canada, United Kingdom, United States	A number of studies show that grants increase number of physicians practising in rural areas.	Little evidence of which type of grant is most effective in increasing physician supply in rural areas or their optimal level.

Other types of policy initiatives providing financial support for establishing practices in rural areas, the provision of special travel allowances and grants supporting relocation to rural and remote areas, locum programs to provide rural physicians with coverage, and targeted payments to support on-call duty in rural areas have all been tried. In sum, these types of practice level support programs have both strengths and weaknesses, yet formal evaluations on them are limited.

CANADIAN EXPERIENCE

Over the past 15 years, a number of Canadian government reports have profiled the need to address the recruitment and retention of the physician workforce in order to address the geographic distribution of physicians and the current challenges that Canadians face in accessing comprehensive, primary care.^{10,117,118} The following table outlines how Canadian rural policies compare with other countries', specifically the policies that are used to support the rural education pipeline: preferential admission to those with rural backgrounds, student loan/scholarship, and return-of-service initiatives and funding for continuing education.¹¹⁹

* Communication with Rural Director, Department of Family Medicine. University of Montreal. April 26, 2015.

POLICY APPROACHES	CANADA	US	AUSTRALIA	JAPAN	UK	MEXICO	NORWAY	SWEDEN	GERMANY	NEW ZEALAND
Focused recruitment or admission of medical students who come from a rural background	✓	✓	✓	✓			✓	✓		
Student loans with return of service	✓	✓	✓	✓		✓	✓			
Funding for continuing medical education	✓		✓							

The federal government supported two Health Care Accords,^{8,9} by providing funding estimated at \$800 million toward primary care reform initiatives^{120,121} and approximately \$12 million toward health human resource strategies.¹²²⁻¹²⁷ In 2000, the federal government provided funding of \$50 million¹²⁸ on rural initiatives that included developing a national rural strategy in order to identify the gaps. In 2013, the Health Council of Canada³¹ reported that funding associated with the health accords, together with increases in provincial, territorial, and private spending, contributed to an overall rise in total health expenditures (public and private) from \$124 billion in 2003 to an estimated \$207 billion in 2012.

From these reports (see Appendix A), the key health human resources strategies highlighted as they relate to rural education include:

- Increase educational opportunities and support for physician workforce in rural communities
- Increase residency positions in family medicine
- Integrate IMGs seamlessly
- Increase exposure and opportunities to practise in rural communities
- Structure medical education to support the development of rural practitioners
- Align medical education curricula with health system needs, including those of Indigenous communities^{5,129}
- Develop forecasting models that can assist in the planning of health workforce
- Develop long-term commitments and partnerships between rural communities, educational institutions, and government

According to government reports (see Appendix B), some provinces and territories have developed physician recruitment agencies and have implemented physician rural education programs and initiatives through these agencies. For the most part, these initiatives have focused on supporting advanced skills training for community physicians; increasing and identifying rural placement opportunities for students; and providing stipends for housing

and travel for students to gain exposure to rural practice, locum coverage, and bursaries to cover tuition for family medicine graduates establishing practices in rural communities.

The following tables highlight the specific rural programs and incentives provided by the provinces and territories since last reported in 2005.¹¹⁹ The 2015 updates are reflected here.*

Recruitment and Retention Policies

POLICY APPROACHES	BC	ALTA	SASK	MAN	ONT	QUE	NB	NS	PEI	NL	YUKON	NWT	NU
Grants/bonuses tied to return of service	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Special program/funding for locum support	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Assistance with practice establishment costs	✓		✓		✓	✓	✓	✓		✓	✓		
Financial support for vacation (paid time off)	✓				✓	✓	✓	✓		✓	✓		
Special on-call payments for specialists	✓	✓			✓	✓		✓		✓			
Special on-call payments for emergency coverage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

* In early 2015, all provincial and territorial governments were contacted to provide up-to-date information on their physician recruitment and retention programs for rural communities.

Direct Funding – Education-Related

POLICY APPROACHES	BC	ALTA	SASK	MAN	ONT	QUE	NB	NS	PEI	NL	YUKON	NWT	NU
Undergraduate/postgraduate student loans/grants/bursaries with return of service		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Special funding or loans for residency and specialty skills development	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
Special travel allowance for students to get to summer placements or residencies		✓	✓	✓	✓	✓		✓			✓		
Financial support for continuing medical education	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		

Education/Training

POLICY APPROACHES	BC	ALTA	SASK	MAN	ONT	QUE	NB	NS	PEI	NL	YUKON	NWT	NU
Rural training/exposure for undergraduates	✓	✓	✓	✓	✓	✓	✓		✓	✓			
Rural placements/teaching units in association with a rural practice residency or specialty	✓	✓	✓	✓	✓	✓	✓			✓			
Special (re-entry) access to residency and/or new specialty skills development		✓	✓	✓		✓	✓	✓		✓			

continued on next page

POLICY APPROACHES	BC	ALTA	SASK	MAN	ONT	QUE	NB	NS	PEI	NL	YUKON	NWT	NU
Special recruitment policies/criteria for new undergraduate medical students, eg, Indigenous students or students with rural background	✓	✓	✓	✓	✓	✓		✓		✓			
Special recruitment policies/criteria for graduate level residency training	✓					✓		✓					
Development of continuing education capacity using new communication technologies		✓	✓			✓		✓		✓			
Promotion of rural practice in medical schools		✓	✓	✓		✓	✓	✓	✓	✓			

As noted in the above tables, incentive programs have primarily been used to attract physicians to practise in rural and remote areas.^{130,131} Retention initiatives are usually focused on creating financial incentives, including bursaries and rewards, and paying expenses to help retain physicians in rural communities. Other initiatives include addressing work conditions, helping to direct and support physicians to establish practices, and recruiting foreign medical graduates to rural practice.¹¹⁶ Yet, with the amount of funding and effort expended in these initiatives, there is surprisingly little evaluation of impact made in Canada.¹⁵ In Australia, a recent review of their government initiatives found that scholarships, financial incentives, and the use of overseas-trained doctors have resulted in too little progress to enhance health care access and quality of care in rural and remote areas.¹⁶ Further, some studies note that physicians attracted to incentive programs tend to be less committed to rural practice and are less likely to settle down in underserved areas.¹³²

INNOVATIONS AND COMPARISONS

Despite the increased funding made available to open more training positions for family medicine, little evidence exists on what works to enhance physician resource planning to support the needs of rural and remote Canada. Dialogue is needed among the national and provincial levels to provide evidence-based direction and long-term stability to the medical education system.¹⁸ Many existing national education and policy interventions by F/P/T governments are designed to increase physician supply in rural areas but do not specifically address long-term recruitment or retention of physicians in rural areas.¹⁰⁸ Policy initiatives have been implemented but to date it has proven difficult to implement an evidence-informed multi-pronged approach that is effective.¹⁴ Physician resource planning providing direction to the medical education system is needed in Canada.¹⁸

CANADA AND AUSTRALIA COMPARISON

In looking at what can be learned from other countries, Australia's advances are of particular interest to Canada as its education and health system is most closely aligned. The following table illustrates the similarities and differences of rural education strategies and initiatives used by both countries.

PROGRAM/ INITIATIVE ¹³³	AUSTRALIA	CANADA
National Rural Health Strategy	<ul style="list-style-type: none"> Dedicated strategy, funding, and implemented framework—updated in 2013 with dedicated website, offices, and resources provided by federal government to support educational institutions Creation of Australian Rural Health Research Institute consortium of 5 universities with rural campuses 	<ul style="list-style-type: none"> Strategy in 2002 was developed No follow-up as to implementation of these strategies at the provincial level
Family Physician Rural Incentives Program	Provides grants for urban physicians who want to upgrade their skills and then practise in rural settings	Delegated to provinces/territories and funding varies by province/territory
Recruitment of Rural Students/Residents	Australian medical schools aggressively recruit students with rural backgrounds	<ul style="list-style-type: none"> Level of activities and support varies among medical schools Leaders include NOSM, Memorial, and Queen's
Curriculum to Support Rural Family Practice	<ul style="list-style-type: none"> Newly created graduate diploma in rural general practice through ACRRM Core curriculum in place for rural FM/generalist medical education, training, and practice 	<ul style="list-style-type: none"> CFPC provides direction to the 17 university-based residency programs. Triple C aims to promote the need to graduate family physicians ready to begin practice in rural and remote communities. Its accreditation standards help to drive action. No specific accreditation standards exist to focus on rural and remote curriculum.
Rural Health/Clinical Teaching Clinics	Sites are in place throughout Australia (eg, Flinders)	Multiplicity of teaching sites in rural communities—many designated in the CaRMS match as rural stream

A key difference between these countries is the infrastructure that is in place for the health care and education systems. Rural health care delivery is nationally based in Australia but provincially based in Canada. At the education level, while both countries have rural education streams in place, Canada maintains a strong medical school infrastructure through its university affiliations and accreditation and certification programs by the CFPC and the RCSPC.

A key similarity is the continued challenge of access to health care services. Even with a dedicated national rural educational strategy, there are still access barriers to primary care in many parts of rural Australia.³ While Australia has shown leadership, globally, in the development and implementation of a family medicine–specific rural education curriculum¹³⁴ with numerous rural-focused recruitment and retention initiatives, physician shortages in rural communities are still a challenge. From their experience, the level of intervention to produce physicians through education alone was not able to meet the demands in rural and remote Australia. The need to look for more interprofessional models and to support other health care professionals in providing care in rural and remote communities, including nurse practitioners and physician assistants, is recommended.¹⁶ This notion is also supported by the CMA,¹³⁵ which recommends advancing collaborative care models as part of the retention and recruitment initiatives to address the health human resource needs of rural Canada.¹³⁶

6.0 Successes and Challenges – Addressing the Gaps

A) Health and Education System Policy Issues

Based on what has been uncovered in this review, from 2005 to 2015, while there has been an increase in the number of programs offered to enhance the recruitment of family physicians in rural communities, it is recognized that the current medical education system is not geared to producing sufficient numbers of family physicians who are or may be interested in committing to rural practices.^{65,96,136} Provincial financial incentive programs used to attract and retain rural physicians have not had high success rates.¹¹⁸ Many existing policy interventions are designed to increase physician supply in rural areas, but do not specifically address long-term recruitment or retention of physicians in these areas.¹¹⁰

There is a critical need for appropriate planning and management of health human resources to ensure that Canadians have access to the health providers they need.⁸ Collaborative strategies are to be undertaken to strengthen the evidence base for national planning, to improve recruitment and retention, and to ensure the supply of needed health providers. Planning must be responsive and systems must be flexible. Alignment of both education and practice policies, cognizant of the relationship one has with the other, is needed. Using comparative data for evaluation can be helpful in building a flexible and strategic physician resource plan.

The absence of a common definition of rural and/or a centralized database presents challenges for physician workforce planners in determining appropriate strategies for recruitment and retention. National and provincial databases report different numbers of physicians and it would appear that none has been able to provide comprehensive, consistent information on physician demographics, services provided, or workload.^{81,137} This makes it difficult for policy makers and planners to effectively plan for the health resources that will be needed to adequately service a particular rural community and/or for the resources to facilitate physician rural education. The role that medical education can play to assist in workforce planning is often overlooked.

While rural medical education contributes to decisions to practise in rural areas, the strength of the relationship between education and practice is difficult to assess, as isolating the influences of rural medical education from other factors such as rural background and health care policies is challenging.¹⁴ There is consensus, however, that medical education does play an important role in enhancing the recruitment and retention process.^{59,138} A more coordinated effort to reduce duplication and build on evidence-based approaches to support health human resources planning is needed.

Most reports reviewed have outlined the priorities and measures needed but the evidence related to “how to” implement them is absent. From the review, the gaps, and the opportunities to capitalize upon them in creating a strategy forward, are identified as follows:

POLICY GAP	ISSUE
Rural Education	<ul style="list-style-type: none"> • While emphasis has been placed on advancing rural medical education initiatives in order to influence the recruitment and retention of physicians in rural communities, implementation of these initiatives is limited to certain medical schools. • Findings on best practices, based on evaluation methodologies used on local initiatives, are not widely known, but if disseminated might help to inform national approaches to enhancing the effectiveness of rural education and training. • Policy decision makers and medical education leaders may not recognize the importance of the rural education pipeline approach to medical education as an intervention showing mounting evidence of enhancing recruitment and retention strategies for rural and remote communities. • Policies to support rural education are not consistent across Canada.
Rural Education Infrastructure & Resources	<ul style="list-style-type: none"> • No national framework or infrastructure to facilitate family physician rural education approaches in Canada.^{139,140} • Some provinces and territories have dedicated resources, such as rural offices, in support of rural workforce issues. Others provide specific resources such as mentorship funding,¹⁴¹ while other government offices have a direct link with certain medical schools. • Educational institutions have advocated the need for increased level of resources and infrastructural support to facilitate rural education programs more specifically for rural and remote communities for clinical teaching, yet exact needs might not be known. • Acknowledgement of the need for educational leadership in medical education and training in order to further advocate for the needs of rural medical education. • Levels of support vary across the country for assisting in rural medical education initiatives. National leadership to guide best practices in the following would be helpful: <ul style="list-style-type: none"> ○ Admission criteria for rural student applicants¹¹⁶ ○ Access to career counseling and opportunities for training in advanced procedural skills, as in urban schools⁶⁵ ○ Rural exposures in both undergraduate and postgraduate levels¹¹⁶ ○ Mentorship programs such as exist in Alberta and Manitoba¹³⁹
Rural Physician Resource Strategy	<ul style="list-style-type: none"> • Current HHR strategies do not focus on long-term recruitment and retention of rural physicians, as most are compelled to find short-term solutions to provide immediate access to rural physicians. • Lack of national leadership in guiding physician resource strategy for rural and remote communities that builds upon evidence from successes across the country. • Need for flexibility as “urban” approaches are applied to rural communities.¹⁴²

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POLICY GAP	ISSUE
Evaluation	<ul style="list-style-type: none"> • Evaluation of funded programs that support rural medical education in order to determine what works and where enhancements are needed to address gaps. • There has been little available evaluation in the effectiveness of these interventions or incentives.¹⁶
Leadership	<ul style="list-style-type: none"> • Recognition of the role of governments as partners with medical schools/educational organizations (eg, CFPC)/advocacy groups (eg, SRPC) for long-term solutions. • National planning with key strategies and metrics to determine success has been lacking—need leadership to initiate. • Accountability for medical educators in their role in the recruitment and retention of physicians in rural and remote Canada is not clearly articulated, understood, or reviewed.

Health care decision makers are demanding more efficiency and accountability from health care providers in delivering integrated health care to meet population needs. Although the resources to improve the health system and the health of Canadians were made available, the success of the health accords in stimulating health system reform was limited. A recent audited report on HealthForceOntario¹⁴³ revealed that Ontario's health human resource strategy fell short in meeting its goal of having the right number, mix, and distribution of health care providers, despite the significant resources of \$3.5 billion invested over the last six years. Few, if any, formal evaluations have been conducted or coordinated to bring together what is known at a provincial and territorial level on best practices of rural physician resource strategies.¹⁸ Evaluation studies have shown that they can influence HHR policy strategies and they can provide useful insights for planners and educators in making decisions on effective strategies to enhance rural education training and rural physician recruitment and retention.¹⁴⁴

B) Aligning Rural Education With HHR Planning

The inclusion of rural education as a key strategy for the physician resource workforce planning is critical. Yet HHR programs adopted across the provinces and territories are sporadic, without a consistent evaluation process³¹ on how recruitment and retention strategies are performing to meet the needs of rural communities and enhance the long-term recruitment and retention of rural physicians. Alignment is necessary, including consideration for a decentralized medical education approach¹²⁶ in order to ensure rural health care needs are being met at all levels within government.

Health system planners are interested in ensuring that there is the right number of rural physicians with the right skills providing care at the right time in rural communities. To meet this need, medical education leaders and advocates of rural medical education must be able to articulate the role of rural education and dialogue with health system planners. The medical education community has work to do to define the “right competencies” and the “right approaches” to teaching, learning, and assessing the competencies required for rural practice, to address the needs of learners from medical school through to residency and into continuing professional development during the early years of their practice careers. Family medicine residency training in rural areas is limited, as these training programs are largely located in urban areas. To the extent that there is a link between the place of training and future rural practice, the lack of rural training contributes to the shortages of rural physicians. Unless significant efforts are

made to increase and support rural residency training, rural physician shortages are likely to persist.¹⁴⁵

The infrastructure to support medical schools to provide the curriculum must be considered with deans of medical schools, chairs of family medicine residency programs, and leaders from the CFPC, SRPC, and others defining the appropriate resources needed to ensure that there is capacity in the education system.

The following table outlines the core alignment issues that need to be addressed.

ISSUES	THE IMPORTANCE OF HAVING ALIGNMENT
1. Competence	<ul style="list-style-type: none">• Training family physicians with the right competencies to practise in rural areas
2. Curriculum	<ul style="list-style-type: none">• Having the right number of clinical training sites• Providing the “right” type of relevant learning experiences to enable family medicine residents to acquire the competencies required to practise rural family medicine• Ensuring that Indigenous health curriculum is taught in residency programs to residents and physicians who will work in Indigenous communities
3. Infrastructure	<ul style="list-style-type: none">• Implementing the “right infrastructure including personnel” to help medical schools and their residency programs build the rural physician workforce needed• Having the right infrastructure, support, and resources in the HHR planning for rural communities across Canada
4. Resources	<ul style="list-style-type: none">• Ensuring the “right resources in place” to enable clinical teaching sites and their affiliated university-based residency programs to provide the “right learning environments” to support faculty and residents• Ensuring the facilitation in development of an integrated framework (formalized partnership) to enable clinical teaching sites and universities to work with rural communities in supporting their efforts in recruitment and retention

Physician workforce planning requires various strategies and elements, such as access to physician and population health data. These strategies should be aligned with health human resources and education priorities. There needs to be collaboration and alignment of education strategies, physician HHR strategies, and policies, along with evidence-based evaluation measures and outcomes, in order to be effective.⁹⁹

C) Roles of the CFPC and the SRPC

The analysis on the realities of rural education and practice has shown that progress has been made in Canada. Innovative initiatives across multiple medical schools have influenced family medicine graduates in choosing to practise in rural and remote Canada. Much of this work has been done through advocacy efforts of medical education leaders, many of whom are family physicians working in rural and remote communities. Certain universities as noted have adopted mission statements aimed to graduate rural physicians.

For the CFPC, the national and accrediting body for family medicine, the 1999 Report authored by the CFPC Working Group on Postgraduate Education for Rural Family Practice, chaired by Dr James Rourke, shared 10 recommendations to advance rural training in family medicine, defining what needed to be done by educational bodies in Canada.¹ Now, 15 years later, a review, or report card, of the status of these recommendations may provide insight into what further can be done by those who have a role in providing the education to develop rural physicians. The following table highlights the recommendations adopted since 1999.

1999 CFPC Recommendations – A Report Card

1999 CFPC RECOMMENDATIONS A REPORT OF THE WORKING GROUP ON POSTGRADUATE EDUCATION FOR RURAL FAMILY PRACTICE	1	2	2014 3	4	5
	MINIMALLY ADOPTED		MODERATELY ADOPTED		FULLY ADOPTED
A. CORE UNDERGRADUATE EDUCATION					
1. Core undergraduate rural educational experiences are necessary for all medical students			✓		
B. CORE POSTGRADUATE EDUCATION					
1. Core postgraduate rural/regional community-based rotations are desirable within all programs along with sufficient rural elective opportunities for all residents				✓	
2. Rural family medicine training streams should be developed as appropriate postgraduate training for rural family practice					✓
3. Rural family medicine training streams should be community-based integrated programs with full academic support			✓		
4. The learner–teacher dyad should be based on the preceptorship model for both family medicine and specialty-based educational experiences/rotations					✓
5. Competency in the knowledge, skills, and attitudes for rural family practice should be the goal for rural family medicine residency training			✓		
6. Hospital experiences or rotations should be appropriate for the residents’ learning needs for future rural practice				✓	
7. Universities should support and develop rural physician teachers as integral faculty members					✓
8. University faculty and programs should nurture and develop present and future rural family medicine residents			✓		

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1999 CFPC RECOMMENDATIONS A REPORT OF THE WORKING GROUP ON POSTGRADUATE EDUCATION FOR RURAL FAMILY PRACTICE	2014				
	1 MINIMALLY ADOPTED	2	3 MODERATELY ADOPTED	4	5 FULLY ADOPTED
C. SPECIAL RURAL FAMILY MEDICINE SKILLS					
1. Additional third-year positions of flexible duration (3–6 months) to develop special skills			✓		
D. ADVANCED RURAL FAMILY MEDICINE SKILLS					
1. Access to essential health services, anesthesia, maternity care, general surgery, and other training programs of CFPC and medical schools			✓		
2. Curriculum guidelines for advanced rural family physicians' skills	✓				
3. Accreditation for advanced rural family medicine skills training program	✓				
4. Competency-based training (6–12 months)			✓		

Further to the CFPC 1999 report, extensive literature reviews were conducted, such as Pong^{14,48} and Curran.⁶⁵ Based on these reviews, there appears to be agreement that the four factors that seem to influence physicians to choose to practise in rural and remote communities should be added to any plan development.³²

The following table highlights key issues to be addressed, based upon the four criteria:

4 FACTORS INFLUENCING DECISION TO CHOOSE RURAL FAMILY PRACTICE	WHAT STILL NEEDS TO BE ADDRESSED?
1. Rural upbringing	<ul style="list-style-type: none"> Defining admission criteria and the pros and cons of national uptake across medical schools Identifying best practices in attracting rural youth for interest in a career in medicine
2. Positive undergraduate rural exposure	<ul style="list-style-type: none"> Defining what constitutes an adequate rural experience (length, time, location, clinical teacher role) Defining competencies supportive of rural practice to be gained in medical school Articulating best practices in teaching these competencies, including the use of integrated clerkships and other methodologies Defining accreditation standards helpful in advancing the implementation of rural medical education curriculum that supports interest in fostering rural practices
3. Targeted postgraduate exposure outside urban areas	<ul style="list-style-type: none"> Defining competencies necessary for rural practice—identifying gaps from what already exists in Triple C, CanMEDs-FM, and the CFPC's Evaluation Objectives in Family Medicine used for the purposes of certification in FM Ensuring best practices: <ul style="list-style-type: none"> in providing relevant learning experiences to enable acquisition of competencies for assessing acquisition of competency in the rural context Determining adequate faculty development and support for rural clinical teachers Defining infrastructure supports and best practices (resources including funding, personnel, leadership, and relationship with residency program administration) for clinical teaching sites within rural communities Determining need for enhanced skills programs for advanced rural practices (eg, general surgery) including defining/reviewing competencies (general anesthesia), curriculum, and infrastructure support necessary Establishing accreditation standards that are helpful in advancing rural medical education in the curriculum and its products (ie, physicians competent and willing to work in rural and remote communities)
4. Stated intent/preference for general or family practice primary care in rural environment	<ul style="list-style-type: none"> Defining adequate training positions for family medicine residency programs that support rural-focused training Identifying ways to influence the pipeline approach to medical education that ensures proper transitions and linkages from pre-medical school to medical school, to residency, and to practice Developing evaluation strategies to monitor pipeline approach to medical education and its influence in enhancing medical students' intentions to practise in rural communities and actual practice patterns Effective and long-term measures to increase number of family physicians working in rural environments

7.0 Policy Considerations – Building a Comprehensive Plan for Rural Education in Canada

Enhancing education and training programs for family physicians practising in rural communities is an important first step, but it will not be enough. Fundamental change in the academic education and training programs will be needed to produce an adequate future supply of properly educated practitioners for rural communities. A multifaceted approach to the recruitment and retention of family physicians in rural areas is needed, and interventions at every point along the rural education and physician workforce pipeline are recommended.

An integrated approach to identifying priorities and allocating resources should be considered. It will be necessary to cultivate a stronger physician leadership coalition capable of viewing clinical care within the broader context of population health and of building community-wide collaborative structures. Governments have a role to assist rural communities and physicians in acquiring the knowledge, competencies, skills, and tools needed to improve access to health care services. Steps should be taken to ensure that rural communities are not left behind. It will be important to remain vigilant in addressing recruitment and retention issues of physicians pursuing practice in rural settings, while at the same time taking steps to better prepare them to provide quality health care in rural regions.

This paper provides the CFPC and SRPC leadership with opportunities and key steps to address medical education strategies to assist in advancing the number of family physicians ready to practise in rural and remote communities in Canada. The paper concludes with summary tables that highlight a number of key issues, possible strategies/ actions, and critical questions for consideration.

1. Evaluation

STRATEGY	OBJECTIVES/ACTIVITIES	QUESTIONS TO CONSIDER
<ul style="list-style-type: none">• Evaluate Canada’s rural education models, including those implementing a pipeline approach, to identify innovative models• Create centralized opportunities for data sharing and dissemination with comparative indicators	<ul style="list-style-type: none">• Review rural pipeline (DME) programs to determine what methodologies or concepts should be considered through DME	<ul style="list-style-type: none">• <i>How can data be utilized in a more effective way to help with workforce planning allowing for comparisons and used by educators, practitioners, and policy makers?</i>• <i>Who has data that can be helpful? How might these players be brought to the table?</i>

2. Rural Education Programs

STRATEGY	OBJECTIVES/ACTIVITIES	QUESTIONS TO CONSIDER
<ul style="list-style-type: none"> • Develop or refine current competencies for readiness to practise comprehensive family medicine that would ensure family physicians/learners are able to begin practise in rural and remote contexts • Establish a process to determine enhanced competencies required, based upon community need and learning requirements. Develop methods of learning and assessing competency acquisition that can be attested to/certified by the CFPC. • Define the role of the CFPC as the national accrediting and certifying body related to the expanded numbers of rural family medicine practice settings in Canada 	<ul style="list-style-type: none"> • Broaden scope of practice to facilitate range of clinical services that can be provided by family physicians and allow for flexibility on changes among disciplines • Review competencies required for rural practice and develop recommendations regarding how the Triple C can enhance its curriculum and assessment methodologies to increase readiness to practise in rural communities • Develop rural training tracks and fellowships that (1) provide students with rotations in rural provider sites; (2) emphasize primary care practice; and (3) provide cross-training in key areas of shortage in rural communities, such as emergency and trauma care, mental health, and obstetrics • Identify future capacity required within education programs (including faculty/physical infrastructure) to train FM physicians to meet the health needs of Canadians • Inventory rural training opportunities that support career laddering • Develop tools to increase access to clinical training and placements (eg, simulation technology, longitudinal integrated clerkships, best practices in recruiting preceptors and providing clinical placements, guidelines for preceptors, mentorship programs, recognition programs for clinical instructors, clinical placements as a recruitment and retention tool) • Develop strategies and supports to increase the number of Indigenous students in health education programs, such as expanding bridging programs that help Indigenous students make the transition from high school to health professional training 	<ul style="list-style-type: none"> • <i>In considering the competencies required for rural and remote competence, how does a national certifying body define competence for readiness to begin practice?</i> • <i>What role does continuing professional development have in the continued competency development of a family physician, particularly when choices have been made related to the community served? When is CPD and mentorship critical in the development of a rural practitioner?</i> • <i>What does competence look like for a family physician beginning to practise? Is it proven by demonstrating knowledge and skills based upon predetermined lists? Is it based upon self-reflection of knowledge gaps and demonstrated abilities to gain competencies needed?</i> • <i>How might rural training programs assist in defining competencies needed for rural practice? What role do rural clinical teachers have in determining if residents are competent to practise?</i> • <i>What are the standards for rural and remote residency programs given the evidence that is emerging?</i>

3. Support for Rural Clinical Teachers

STRATEGY	OBJECTIVES/ACTIVITIES	QUESTIONS TO CONSIDER
<ul style="list-style-type: none"> Enhance support provided to the rural clinical teaching sites, including faculty development, administrative coordination for learners to assist with scheduling, and coordination of learning and assessments 	<ul style="list-style-type: none"> Identify what level of support can be provided to faculty teaching the rural curriculum Determine what resources are needed to address diverse learning contexts to facilitate rural physician education 	<ul style="list-style-type: none"> <i>What role does the national accrediting body have in looking at the abilities of clinical teachers to supervise residents? Given the move toward competency-based education, how might the national accrediting body review the abilities of clinical teachers to define competence to practise?</i>

4. Policy Changes for Support and Funding

STRATEGY	OBJECTIVES/ACTIVITIES	QUESTIONS TO CONSIDER
<ul style="list-style-type: none"> Align education curricula with health system needs for both urban- and rural-based programs and that reflect government health policy priorities Invest in rural education infrastructure especially in distributed medical education sites to support clinical teachers given increased roles in teaching and assessment of competence Review the production capacity of education programs including education curricula, and analyze the extent to which current curricula align with health system and policy needs (based on established indicators) 	<ul style="list-style-type: none"> Define the supports required for clinical teachers in rural/remote Canada Determine what elements in education and training can be enhanced within the existing resources that are available for education, training, and teaching to provide greater alignment with health system needs Provide financial incentives for residency training programs to provide rural tracks by linking a portion of the graduate medical education seats to align with recruitment and retention strategies 	<ul style="list-style-type: none"> <i>What role might accrediting bodies have in reviewing the use of evidence and considering outcomes of residency programs for developing family physicians who choose to work in rural/remote communities?</i> <i>What role might accrediting bodies have in reviewing the infrastructure support for DME? How might the universities leverage the reviews given?</i>

5. Pan-Canadian Approach for Family Physician Rural Education

STRATEGY	OBJECTIVES/ACTIVITIES	QUESTIONS TO CONSIDER
<ul style="list-style-type: none"> • Create opportunities for the role of (F/P/T) governments, physicians, other health practitioners, and academia to collaboratively impact and facilitate a pan-Canadian approach to rural education/practice • Undertake leadership roles in education and coordination between governments, medical schools, and physician groups 	<ul style="list-style-type: none"> • Allocate and secure funding specific to rural communities and align with education with defined outcomes. • Actively engage academia, medical groups, and governments to develop strategies to improve the accessibility of career development opportunities, re-entry programs, and continuing education, as well as comprehensive recruitment and retention strategies • For provincial governments— <ul style="list-style-type: none"> ○ mandate all educational programs to address community needs ○ share recruitment and retention strategies, including strategies that target career-cycle issues and help retain experienced practitioners • For academia— <ul style="list-style-type: none"> ○ create mentorship opportunities; promote rural placements, partnerships with hospitals and community advocate rural-based curricula in medical schools ○ provide distance learning opportunities, align programs that are representative of the population ○ increase on-site education experiences in rural communities, encourage teaching faculty to work in rural practices, and encourage practising rural physicians to take on formal faculty roles and academic career paths with sufficient support to be successful 	<ul style="list-style-type: none"> • <i>What role does a national college have in helping residency programs with rural/remote social mandates achieve their goals?</i> • <i>In considering the numbers of trainees within a national pool of positions for family medicine, what is an adequate number/percentage of trainees required to train in rural and remote Canada? How can these numbers be more accurately reflected, given the realities of an aging physician workforce and decreasing numbers of individuals living in rural and remote communities?</i> • <i>In considering the move toward decentralizing medical education, the use of incentives, and other strategies, what evidence is there these efforts have enhanced recruitment and retention of physicians in rural and remote communities?</i> • <i>Where are the innovative approaches to care happening that are impacting access and health care outcomes in rural and remote Canada? Are they physician based? Are they team based? What supports have been provided by F/P/T governments?</i> • <i>How can educators and practitioners collectively advocating for the needs of rural and remote Canada be mobilized to help advance the rural/remote care needs of Canadians?</i>

APPENDICES

APPENDIX A – SELECTED GREY LITERATURE – FEDERAL GOVERNMENT REPORTS

Year	Publication	Source/Link
1999	Barer ML, Stoddard GL. Improving access to needed medical services in rural and remote Canadian communities: recruitment and retention revisited. Discussion paper prepared for Federal/Provincial/Territorial Advisory Committee on Health Human Resources; June 1999 (Final Draft).	https://www.srpc.ca/PDF/BarSto99.pdf
1999/2000	Federal Budget – Health Canada. Minister of Health announces initiatives to benefit rural Canada [news release]; June 2000.	
2000	Chenier NM. The Federal role in rural health. Health Canada. Prepared by Nancy Miller Chenier, Political and Social Affairs Division; October 2000.	http://publications.gc.ca/Collection-R/LoPBdP/BP/prb0020-e.htm
2000	Primary Health Care and Health System Renewal – First Ministers agreed to PCR to renew Canada's health care system.	
2002	Romanow R. Report of the Commission on the Future of Health Care in Canada. Rural and remote communities. In: <i>Building on Values: The Future of Health Care in Canada</i> . Saskatoon, SK: Commission on the Future of Health Care in Canada; 2002: Chapter 7.	http://publications.gc.ca/collections/Collection/CP32-85-2002E.pdf
2002	Rural Canada: access to health care. Health Canada. Prepared by Stephen Laurent, Economic Division; December 2002.	http://publications.gc.ca/Collection-R/LoPBdP/BP/prb0245-e.htm
2002	Ministerial Advisory Council on Rural Health. Rural health in rural hands: strategic directions for rural, remote, northern and aboriginal communities; November 2002.	srpc.ca/PDF/rural_hands.pdf
2002	Kirby JL, LeBreton M. Rural health in the Interim Report of Standing Senate Committee on Social Affairs, Science and Technology. In: <i>The Health of Canadians: The Federal Role. Current Trends and Future Challenges</i> ; vol. 2. Ottawa, ON: The Standing Senate Committee on Social Affairs, Science and Technology, Parliament of Canada; January 2002.	www.parl.gc.ca/Content/SEN/Committee/371/soci/rep/repjan01vol2-e.htm
2003	First Ministers' Accord on Health Care Renewal	www.healthycanadians.gc.ca/health-system-systeme-sante/cards-cartes/collaboration/2003-accord-eng.php
2005	Health Canada. Internationally Educated Health Care Professionals (IEHCP).	http://hc-sc.gc.ca/hcs-sss/hhr-rhs/strateg/init-prof-educ/index-eng.php
2005	Primary Health Care Transition Fund – interim report. Published April 2005.	http://publications.gc.ca/collections/collection_2008/hc-sc/H21-245-2005E.pdf

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Year	Publication	Source/Link
2005 and updated in 2007	Federal/Provincial/Territorial Advisory Committee on Health Delivery and Human Resources. Framework for collaborative pan-Canadian health human resources planning. Published March 2007.	http://hc-sc.gc.ca/hcs-sss/alt_formats/hpb-dgps/pdf/pubs/hhr/2007-frame-cadre/2007-frame-cadre-eng.pdf
2006	Task Force Two on Physician Supply in Canada: Canadian Medical Forum Task Force. A physician human resources strategy for Canada. Final report. Published March 2006.	http://tools.hhr-rhs.ca/index.php?option=com_mtree&task=att_download&link_id=4673&cf_id=68&lang=en
2007	Primary Health Care Transition Fund. Summary of initiatives: final edition; March 2007.	http://www.hc-sc.gc.ca/hcs-sss/alt_formats/hpb-dgps/pdf/phctf-fassp-initiatives-eng.pdf
2007–2008	Health Canada. Pan-Canadian health human resource strategy. 2007–2008 report.	http://www.hc-sc.gc.ca/hcs-sss/pubs/hhrhs/2008-ar-ra/index-eng.php
2009–2010	Health Canada. Health human resource strategy and internationally educated health professionals initiative: annual reports.	http://www.hc-sc.gc.ca/hcs-sss/pubs/hhrhs/2010-ar-ra/index-eng.php
2010–2011	Health Canada. Health care policy contribution program. 2010–2011 annual report.	http://www.hc-sc.gc.ca/hcs-sss/pubs/hhrhs/2011-ar-ra/index-eng.php
2011	Canada's Economic Action Plan. Strengthening health care in rural and remote communities.	http://actionplan.gc.ca/en/initiative/strengthening-health-care-rural-and-remote

APPENDIX B – SELECTED GREY LITERATURE – PROVINCIAL GOVERNMENT REPORTS

British Columbia	
BC Health. Rural practice programs. http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/physician-compensation/rural-practice-programs	
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Enhancing health services in remote and rural communities of British Columbia: an update of former recommendations. Published November 1999. Updated April 2002. health.gov.bc.ca/library/publications/year/2002/rapupdate.pdf	
UNBC Northern Medical Program Community Action Group. Building for the future of health care in Northern BC. Published October 2003. http://www2.gov.bc.ca/assets/gov/health/practitioner-pro/nmp_report_final.pdf	
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Recruit the physician, retain the family. Proceedings report presented at 3 rd Annual Rural Alberta Community Physician Recruitment and Retention Conference; 2010. www.nadc.gov.ab.ca/Docs/RPAP-Workshop-10.pdf	
Alberta rural physician action plan. Proceedings presented at the Rural Alberta Community Physician Recruitment and Retention Workshop; 2009. http://www.nadc.gov.ab.ca/Docs/RPAP-Workshop-09.pdf	
Alberta Health & Wellness. Provincial health human resource planning & guide for health authorities. Published March 2008. www.health.alberta.ca/documents/Workforce-Health-HR-plan-2008.pdf	
Alberta Health & Wellness. Comprehensive Health Workforce Planning Committee. Provincial comprehensive health workforce plan: appendices. Published July 2003. www.health.alberta.ca/documents/Workforce-Plan-2003.pdf	
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Office of Rural & Northern Health. Rural Manitoba health mentorship program. Annual reports: 2010–2012. http://healthmentor.org/home/wp-content/uploads/2013/10/RMHMP-Annual-Report-2013.pdf http://healthmentor.org/home/wp-content/uploads/2013/10/rmhmp2012.pdf http://healthmentor.org/home/wp-content/uploads/2013/10/rmhmp2011.pdf
Manitoba Health. Manitoba's health human resource plan. A report on supply. Published April 2006. gov.mb.ca/health/documents/actionplan.pdf
Manitoba Health. Recruitment and retention framework for rural doctors. Published April 2004. gov.mb.ca/chc/press/top/2004/04/2004-04-16-04.html
Rural physician and health services review. Assiniboine region. Final report to Minister of Health. Published April 2004. http://gov.mb.ca/health/documents/arha.pdf
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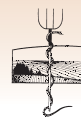
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