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Le Plan d'action pour la médecine rurale : une analyse de la formation médicale de premier cycle au Canada

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Article abstract

Background: There is currently a maldistribution of physicians across Canada, with rural areas facing a greater physician shortage. The taskforce between the College of Family Physicians and the Society of Rural Physicians created a report, "The Rural Road Map for Action" (RRMA) to improve rural Canadians' health by training and retaining an increased number of rural family physicians. Using the RRMA as a framework, this paper aims to examine the extent to which medical schools in Canada are following the RRMA.

Methods: Researchers used cross-sectional survey and collected data from 12 of 17 medical school undergraduate Deans from across Canada using both closed and open ended survey questions. Results were analyzed using quantitative (frequencies) and qualitative methods (content analysis).

Results: Medical schools use different policies and procedures to recruit rural and Indigenous students. Although longitudinal integrated clerkships offer many benefits, few students have access to them. Leadership representation on decision-making education committees differed across medical schools pointing to a variation in the value of rural physicians' perspectives.

Conclusion: This study illustrated that medical schools are making efforts that align with the RRMA. It is critical they continue to make strategic decisions embedded in educational policy and leadership to reinforce the importance of and influence of rural medical education to support workforce planning.

Canadian Medical Education Journal

Original Research

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Abstract

Background: There is currently a maldistribution of physicians across Canada, with rural areas facing a greater physician shortage. The taskforce between the College of Family Physicians and the Society of Rural Physicians created a report, "The Rural Road Map for Action" (RRMA) to improve rural Canadians' health by training and retaining an increased number of rural family physicians. Using the RRMA as a framework, this paper aims to examine the extent to which medical schools in Canada are following the RRMA.

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Conclusion: This study illustrated that medical schools are making efforts that align with the RRMA. It is critical they continue to make strategic decisions embedded in educational policy and leadership to reinforce the importance of and influence of rural medical education to support workforce planning.

Résumé

Contexte : À l'heure actuelle, la répartition des médecins sur le territoire canadien est inégale, les régions rurales étant confrontées à une plus forte pénurie de médecins. Le groupe de travail constitué par le Collège des médecins de famille du Canada (CMFC) et la Société de la médecine rurale du Canada (SMRC) a produit un rapport intitulé « Plan d'action pour la médecine rurale » (PAMR) qui vise à améliorer la santé des Canadiens vivant en milieu rural par la formation et la rétention d'un nombre accru de médecins de famille en milieu rural. Cet article évalue dans quelle mesure les facultés de médecine du Canada suivent les recommandations du PAMR

Méthodes : Les chercheurs ont eu recours à une enquête transversale, comportant des questions fermées et ouvertes, pour recueillir des données auprès de 12 des 17 doyens aux études de premier cycle des facultés de médecine canadiennes. Les résultats ont été analysés à l'aide de méthodes quantitatives (calcul des fréquences) et qualitatives (analyse de contenu).

Résultats : Les facultés de médecine appliquent des politiques et des procédures différentes pour recruter des étudiants d'origine rurale ou autochtone. Les externats longitudinaux intégrés offrent de nombreux avantages, mais peu d'étudiants y ont accès. La diversité au sein des comités pédagogiques décisionnels est si variable que l'on peut en déduire que le point de vue des médecins exerçant en milieu rural n'est pas toujours valorisé.

Conclusion : Cette étude montre que les facultés de médecine déploient des initiatives qui sont conformes au PAMR. Il est essentiel que leurs décisions stratégiques demeurent ancrées dans un leadership et une politique éducative visant à renforcer et à mettre en valeur l'exposition des étudiants à la médecine rurale pour soutenir la planification des effectifs.

Introduction

Canadians living in rural communities have challenges obtaining equitable access to health care services.[1,2] Medical education is a potential lever to increase the number of physicians practicing in rural communities. Exploring the strategies medical education use and the extent to which they are used can help assess the progress being made in recruitment and retention in rural medical practice.

In rural areas, medical services are often limited, with fewer physicians and other health care professionals living and working in rural communities.[1,2] In addition to these challenges, rural Canadians are older, have poor socio-economic status, and are in worse health than their urban counterparts.[3] These rural Canadians constitute 18% of the population but are served by only 8% of the physicians practicing in Canada.[4,5] The situation in rural communities is likely to worsen as COVID-19 has had devastating effects on rural health care workers.[6] To prevent these health inequities, people living in rural and remote areas in Canada must have better access to generalist family physicians in a timely manner. Access to quality primary care aligns with improved population health outcomes.[7,8] Yet, Canada continues to have a maldistribution of health care professionals, with rural and remote areas struggling to recruit permanent family physicians. Previous attempts to correct this disparity have included monetary incentives, marketing strategies, or the hiring of recruiters.[9] To date, these approaches have seen little success in making large scale improvements.[9] Rather than waiting to recruit individuals at the end of their medical training when they have likely already picked a place to live and practice, undergraduate medical education has an important role to play.[5]

In 2014, the College of Family Physicians of Canada (CFPC) and the Society of Rural Physicians of Canada (SRPC) formed a joint Task Force to "improve the health of rural Canadians by producing and sustaining an increased number of family physicians practicing comprehensive rural generalist medicine."[10] As part of this process Bosco and Oandasan completed a literature review (2016) on family medicine within rural and remote Canada and presented keys steps to address in medical education to increase the number of physicians practicing rural and remote medicine.[5] Additionally, an environmental scan was completed to further the taskforce's understanding of medical education in rural and remote communities.[11] One of the outcomes of this work was the "*The Rural Road Map for Action (RRMA).*" This framework was published in 2017 and is comprised of four overarching directions, with actions associated with each direction. Each action item helps meet the direction and is aimed at improving equitable access to health care in rural Canada. One specific area of interest from the RRMA is undergraduate medical education.[10,12]

In Canada, undergraduate medical schools select and train future medical doctors over a three- or four-year degree program. Using certain educational strategies discussed in the RRMA during undergraduate medical education can aid in recruiting and retaining physicians in rural communities.[13] For example, physicians who grew up in rural communities are more likely to practice in rural settings than their urban colleagues, and this suggestion is made in Action 1.[13] Another potential contributor to rural practice is providing students with positive undergraduate rural experiences, as described in Action 4.[14] Therefore, having medical schools align their social mission and educational practices with the RRMA could pay large dividends in the number of future rural physicians.

A previous case study by Rourke et al. (2020) described some of the progress made in rural medical education in Canada, and this study builds upon their work.[15] Using the RRMA as a framework, this paper aims to examine the current state of undergraduate medical education in Canada in relation to sustaining or increasing the number of physicians working in rural or remote communities. Specifically, this paper aims to use Actions 1-4, and 7, as an analytical lens to explore undergraduate medical education in Canada (Table 1). These actions generally focus on admission processes, meaningful rural education experiences, and faculty development. All of these actions have been linked to increased rural physician retention.[13] Findings will support governmental (e.g., increased provincial and federal spending on rural health care) and non-governmental organizations (e.g., universities and regulatory bodies including rurally focused criteria in guidelines) to further develop policies and programs in undergraduate medical education with a goal of increasing family physicians who choose to practice in rural and remote communities in Canada.

Table 1. Actions 1-4, and 7 from the Rural Road Map for Action

Direction 1: Reinforce the social accountability mandate of medical schools and residency programs to address health care needs of rural and Indigenous communities.
Action 1: Develop and include criteria that reflect affinity and suitability for rural practice in admission processes for medical school and family medicine residency programs.
Action 2: Establish and strengthen specific policies and programs to enable successful recruitment of Indigenous and rural students to medical school and family medicine residency training, with established targets and measures of effectiveness
Action 3: Support extended competency-based generalist training in rural communities to prepare medical students and residents to be capable of and confident in providing broad-based generalist care in these settings
Action 4: Provide high-quality rural clinical and educational experiences to all medical students and family medicine residents that support experiential learning, enabling medical learners to feel comfortable with uncertainty and gain clinical courage.
Direction 2: Implement policy interventions that align medical education with workforce planning
Action 7: Establish government and university partnerships with rural physicians, rural communities, and regional health authorities that include formal agreements to strengthen the delivery of medical education in rural communities by developing and implementing specific visible rural generalist education pathways led by rural academics and rural physicians. Provide substantial ongoing funding required to support rural faculty engagement, faculty development, research, administration, and community engagement.

Methods

We utilized a cross-sectional survey-based study to examine the current state of undergraduate medicine with respect to the RRMA. The RRMA Implementation Committee determined that surveys distributed through email would be the most effective method for data collection. From October 7, 2020, to November 13, 2020, the Deans of the 17 medical schools in Canada were sent a letter of information and a link to the survey. Periodical reminders were sent to Deans to increase the response rate. The Deans were selected as they are likely the individuals with the most comprehensive knowledge of their school's undergraduate medical program or could pass it along to the most relevant individuals within their programs.

A team of experts including rural physicians and rural health experts created a survey to understand progress made on Actions 1-4, and 7 in the RRMA. The survey questions were built upon a literature scan, a survey implemented at the start of the Advancing Rural Family Medicine Project[5] and the cultural alignment model developed by Evans 2009 (as cited in Parker & Oandasan, 2012).[16] The cultural alignment model highlights the idea that when a culture shift occurs, in the case of the adoption of rural education as a norm in a medical schools' curriculum, one can look for artefacts to indicate that the area of change has been embedded into the infrastructure, practices, policies, procedures and behaviors of those working in the context. As such, questions such as looking for leadership roles specifically for those in rural areas would be considered an artefact. Finally, questions were tested with a sample of rural Family Medicine site directors and refined based on their feedback. Both open ended and closed ended survey questions were used to gather information on admissions criteria for rural and Indigenous students, clinical and educational learning experiences in rural settings, characteristics of rural or remote educational offerings, and the school's engagement with rural physicians. Complete question details and response options can be found in Table 2. Ethics was not required as this study falls under article 2.5 of Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans and was waived by the Lakehead University Research Ethics Board.[17]

We calculated frequencies and percentages for yes/no questions and Likert style questions in SPSS 24 (IBM Corp. Armonk, NY, USA) and analyzed qualitative data using a content analysis. Two members of the research team independently reviewed and coded all qualitative responses. The two-person team focused on key words or ideas across texts. The two-person team then discussed the codes and negotiated a consensus. These results were then presented to the entire research team for additional discussion and results were finalized.[18] The research team consisted of physicians, curriculum and design specialists, and academic researchers. Most research team members have experience working within or living in rural settings, and their interpretations are based on these lived experiences.

Results

In total, 12 Deans (71%) agreed to participate in the study. The following results are organized into five separate sections to correspond with specific actions from the RRMA.

Action 1: *Develop and include criteria that reflect affinity and suitability for rural practice in admission processes for medical school and family medicine residency programs.*

Table 2. Questions and analysis strategy from the rural undergraduate medical survey

Question	Answer	Analysis
Does your medical school have a definition of "rural" that it uses for training purposes?	Yes/No	Frequency statistics
If yes, please describe it. Include a resource or link if available.	Open ended	Basic content analysis
Do your admission policies address equity and diversity in your prospective medical student cohort?	Yes/No	Frequency statistics
If so, do they reflect the students': a) Rural representation	Yes/No	Frequency statistics
Please describe the policies and include a reference link if available	Open ended	Basic content analysis
If so, do they reflect the students': b) Indigenous backgrounds	Yes/No	Frequency statistics
Please describe the policies and include a reference link if available.	Open ended	Basic content analysis
Do you have longitudinal integrated clerkships (LICs) that are based in rural community practices?	Yes/No	Frequency statistics
How many weeks are your rural LICs?	Open ended	Frequency statistics
What percentage of your medical students participated in rural LICs from 2018 to 2019?	Open ended	Frequency statistics
Do you have enough opportunities for rural LICs to meet medical student interest?	Yes/No	Frequency statistics
Is financial support available for undergraduate medical school clinical teachers who supervise learners or provide academic teaching in rural or remote communities?	Yes/No	Frequency statistics
If yes, please describe.	Open ended	Basic content analysis
Which of these incentives are available for rural clinical teachers? Select all that apply:	Salary/Stipend/Continuing PD/Awards/Other/None of the above	Frequency statistics
Please describe in-person faculty development opportunities available to teachers that take place within rural and remote clinical teaching sites.	Open ended	Basic content analysis
Please list the rural specific funded leadership positions in undergraduate medical education.	Open ended	Basic content analysis
In addition to the above, please list funded leadership positions that are currently held by rural physicians	Open ended	Basic content analysis
How many of the decision-making educational committees of your undergraduate medical program mandate having physician members who are based in rural communities?	None/Very few/Some/Most/All	Frequency statistics
Please describe the types of committees that rural physicians are specifically asked to sit on to provide a rural perspective on medical education.	Open ended	Basic content analysis
What are the major challenges or barriers affecting your medical school's ability to provide formal learning experiences in rural settings for your students?	Open ended	Basic content analysis
Over the past five years, what has been a source of pride in your medical school related to advancing rural medical education?	Open ended	Basic content analysis

PD=Professional Development

At the undergraduate level, 83% of schools reported using a formal definition of rural (Table 3). However, there was no consistent definition of "rural" amongst undergraduate medical programs. The definitions range from populations <1000, <4000, <50 000, or 50 km from the university centre or a combination of different criteria.

Action 2: *Establish and strengthen specific policies and programs to enable successful recruitment of Indigenous and rural students to medical school and family medicine residency training, with established targets and measures of effectiveness.*

All schools have admissions policies that address equity and diversity, with 58% of schools having specific criteria for rural applicants and 83% of schools having policies for Indigenous applicants (Table 3). Policies for rural applicants include specific seat allocation, flexibility in the Medical College Admission Test (MCAT) scores, and a specific section in the application for rural and remote residents. Similarly, schools have specific seat allocation and other assessment protocols for Indigenous students. The most notable difference is six schools have allocated seats for Indigenous students, and only two schools have allocated seats for rural students.

Action 3: *Support extended competency-based generalist training in rural communities to prepare medical students and residents to be capable of and confident in providing broad-based generalist care in these settings*

In the study, longitudinal integrated clerkships (LICs) are included in Action 3 because in Canada they are typically extended generalist training opportunities in rural communities. Only 50% of responding medical schools offer an LIC, and of the schools that identifying having a LIC, 0-30% of students choose or were able to participate in them (Table 3). The largest barriers in a medical school's ability to provide formal learning experiences in rural

settings include capacity, recruitment, placement availability, housing, and financial constraints.

Action 4: *Provide high-quality rural clinical and educational experiences to all medical students and family medicine residents that support experiential learning, enabling medical learners to feel comfortable with uncertainty and gain clinical courage.*

Of the six schools with LICs, four link the LICs high-quality experiential learning opportunities with growing student interest and positive rural practice outcomes. For example, one Dean said, "*Our LIC has grown…and we anticipate adding more sites, and student feedback has been very positive.*" Other rural educational experiences mentioned by schools are community learning opportunities and outreach. When asked about sources of pride, one school discussed their increased work in engagement with rural communities as one Dean listed the many ways their program is expanding rurally, "*Expansion of LICs to new rural areas and establishment of a [longer] Longitudinal clerkship; creation of clerkship rotation opportunity for Indigenous students; student volunteer involvement in community outreach activities; graduates of our LICs have established practices in communities where they were placed; expansion of faculty engagement in rural communities."*

Action 7: Establish government and university partnerships with rural physicians, rural communities, and regional health authorities that include formal agreements to strengthen the delivery of medical education in rural communities by developing and implementing specific visible rural generalist education pathways led by rural academics and rural physicians. Provide substantial ongoing funding required to support rural faculty engagement, faculty development, research, administration and community engagement.

Funded rural leadership positions were a common strategy for supporting rural programs. For example, four schools have Assistant or Associate Deans for their Rural or Distributed Medical Education programs, two schools identified having regional Deans in their distributed sites, six schools identified having Directors overseeing rural programs, and three schools indicated having site leads in each community. Some of the schools did mention they had multiple leadership positions. Although funded leadership positions were common, only 25% of schools mandate that all or most decision-making educational committees have physician members based in rural communities (Table 3). Another strategy that was mentioned by four schools were government programs or policies that support reimbursement of travel and accommodation or an increased teaching fee for rural physicians.

Table 3. Frequencies for selected questions from the Rural Road Map for Action

Question	Answer = n (%)
Does your medical school have a definition of "rural" that it uses for training purposes?	Yes = 10 (83)
	No = 2 (17)
Do your admission policies address equity and diversity in your prospective medical student cohort?	Yes = 12 (100)
	No = 0 (0)
If so, do they reflect the students' rural representation:	NA = 1 (8)
	Yes = 7 (58)
	No = 4 (33)
If so, do they reflect the students' Indigenous representation:	NA = 2 (17)
	Yes = 10 (83)
Do you have longitudinal integrated clerkships (LICs) that are based in rural community practices?	Yes = 6 (50)
	No = 6 (50)
How many weeks are your rural LICs?	24 and below = 2
	25 and above = 4
	NA = 6
What percentage of your medical students participated in rural LICs from 2018 to 2019?	0% = 1 school
	3% = 2 schools
	10% = 1 school
	30% = 2 schools
	NA = 6
Do you have enough opportunities for rural LICs to meet medical student interest?	NA = 6 (50)
	No = 2 (17)
	Yes = 4 (33)
Is financial support available for undergraduate medical school clinical teachers who supervise learners or provide academic teaching in rural or remote communities?	Yes = 12 (salary =2, Stipend = 10, PD =10, Awards =8, Other = 4, None = 1)
How many of the decision-making educational committees of your undergraduate medical program mandate having physician members who are based in rural communities?	All = 2 (17)
	Most = 1 (8)
	Some = 5 (42)
	Very Few = 3 (25)
	None = 1 (8)

Discussion

This paper aimed to use the RRMA as an analytical lens to examine the current state of undergraduate medical education in Canada in relation to sustaining or increasing the number physicians working in rural or remote communities. This study found that differences exist in policies and procedures used at Canadian medical schools to recruit rural and Indigenous students, that few schools offer LIC's, and that most schools have funded rural leadership positions, but few schools mandate that rural physicians are on decision-making educational committees. Based on the available evidence the RRMA has not been fully implemented. If the RRMA is fully

implemented, it may lead to increased physician recruitment in rural and remote communities and improve the health of Canadians living in these regions by enhancing access to care.

What we conclude from these data are most Canadian medical institutions have their own unique definition of what constitutes a rural community. While some schools use a designation of a population less than 1,000, other schools use a population of less than 50,000. Completing any sort of analysis using such different definitions would lead to completely different results and basing any sort of health care policies or programs off these results will be ineffective. For example, a study in the United States found a 17% difference in generalist physicians to population ratio based on different definitions of rural used by different institutions.[19] It will continue to be a challenge to determine what designation of rural to apply, especially with each province having their own definition of rural. Undergraduate medical institutions must come together with a common definition of rural to support ongoing rural recruitment and retention efforts from medical education interventions to advance evidence informed policy change.

This study found that all responding Canadian medical schools have specific policies focused on supporting Indigenous student selection or recruitment through such measures as allocated seats for Indigenous students, flexibility on the MCAT, and inclusion of specific interviewers. These are important policies as less than one percent of all medical specialist and general medical practitioners identify as Indigenous while Indigenous people make up 4.5 percent of the Canadian population.[20] The need for more Indigenous health care workers was highlighted by the Federal Government in the Truth and Reconciliation Commission final report.[21] Future research needs to examine the effectiveness of these policies for Indigenous Canadians, or if additional changes need to be made to medical education recruitment and retention practices to increase the number of Indigenous physicians in Canada. For example, the Northern Ontario School of Medicine admits a higher percentage of Indigenous students compared to other medical schools in Canada. Their success in this area has been attributed to multiple factors, including seat allocation, outreach programs for high school students, and Indigenous Admission Subcommittee involvement throughout all admissions processes.[22] In contrast to the six participating schools having allocated seats for Indigenous students, only two schools have allocated seats for students from rural communities. With research suggesting that rural background has a substantial impact on future practice location and geographic origin being a potential component of both social accountability and equity, diversity and inclusion targets there must be specific seats allocated for rural students in medical schools.[14,23] Creating these changes will help create a more equitable and diverse workforce in Canada.

A rural placement during undergraduate medical education was an exceptional way to learn medicine.[24,25] This excellence has been attributed to various factors, including relationships with clinicians, less competition for access to patients, and opportunities for students to extend their clinical skills and receive learning opportunities normally beyond their stage of training.[24] These placements help students better understand the value of rural generalists and family practitioners. LICs in a smaller rural community will help students become more socially accountable because they connect medical students with communities where they get a firsthand understanding of the diverse needs of the community. Rural LICs are also useful for ensuring that clinical faculty remain invested in teaching medical students in rural settings,[26] as teaching is likely to lead to greater job satisfaction and a sense of personal reward.[27,28] However, only 50% of medical schools offer such opportunities, with schools identifying barriers such as capacity, recruitment, placement availability, housing, and financial constraints. With LICs providing a myriad of benefits, it is important that all universities aim to offer these opportunities, and governmental supports are provided to schools to increase their LIC offerings.

This study found that most participating schools try to accommodate their rural faculty members in professional development sessions. However, it was unclear if the sessions were specific to rural practice or were general professional development sessions. There is strong evidence showing that the continuing medical education and continuing professional development needs of rural physicians are distinct.[29] This study identified that only 25% of participating schools mandate that all or most decision-making educational committees have physician members based in rural communities. Medical schools should create more equitable and diverse leadership groups and ensure that the rural voice is present, and students are able to see that rural physicians play a central role in the school's management and governance. With some of the other suggested changes requiring lengthy review processes

adding rural leadership is something that can be done immediately and can pay large dividends.

Limitations

This study is limited in the statistical analysis that can be completed because of the sample size and types of response options, i.e., free-text responses, which typically provide a more surface level understanding.[30] Future research can use similar tools or build upon the tools used in this study to determine if objective improvements have been made in the Canadian undergraduate medical education system. Another limitation of this research is that we are unable to determine if certain regions of Canada are under or overrepresented. Still, since three-quarters of all medical schools participated, results are likely valuable for all medical schools across Canada.

Conclusion

This study identifies how medical schools in Canada are addressing actions related to education from the RRMA. Medical schools should act on these findings to meet the unique healthcare challenges in northern, rural, and remote Canada.

Conflicts of Interest: The authors declare no conflict of interest.
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