

## Essay

## Strategies to increase the enrolment of students of rural origin in medical school: recommendations from the Society of Rural Physicians of Canada

James Rourke, for the Task Force of the Society of Rural Physicians of Canada

The Society of Rural Physicians of Canada (SRPC) recognizes the importance of educating physicians for rural practice. Because students with a rural background are the most likely to ultimately choose rural practice as a career, achieving an adequate supply of rural physicians depends in part on ensuring the admission of an adequate number of students of rural origin to medical school. National data published in 2002<sup>1</sup> revealed that students of rural origin are seriously underrepresented in Canadian medical schools. This finding prompted the formation of a national task force to address the issue. A large number of physicians volunteered to become involved, enabling the formation of a core national committee and a larger interest group. In addition, 3 focus group sessions were held, and over 100 submissions were received from individuals and groups. A survey of Canadian medical school associate deans was also conducted to determine the current status of rural admission initiatives and strategies. In presenting these recommendations, the SRPC task force hopes that policies, strategies, initiatives and funding can be implemented to increase the number of medical students of rural origin to a fair and equitable level, and that this will ultimately lead to increased numbers of medical school graduates who choose a career in rural practice.

Canada, with 10 million square kilometres, is the second largest country in the world but has a population of only 30 million people. Depending on the definition of “rural” that is used, between 21% and 38% of Canadians live in rural areas.<sup>2</sup> The geographic realities of time and distance combined with limited or distant specialist and high-tech resources makes the provision of health care services in rural areas a difficult challenge. An adequate supply of well-trained rural physicians is essential to the provision of accessible, high-quality rural health care.

Canada is facing a shortage of family physicians and specialists in rural practice. Using the Statistics Canada definition of “rural” and “small town,” currently 22% of the pop-

ulation of Canada is rural, as are 17.1% of family physicians and 2.8% of specialists. The family physician–population ratio in rural Canada in 2002 was 1:1201, as compared with 1:981 for Canada as a whole; to put it another way, 1175 additional family physicians are needed in rural areas to bring the family physician–population ratio to the same level as the Canadian average. This does not include the needs of rural communities within the commuting zone of urban centres. As of 2002, only 75 of the 711 physicians who had graduated from family medicine training programs in 2000 had entered rural practice. (Calculations based on the CMA physician database information from Lynda Buske, Associate Director, Research, CMA: personal communication, 2003). The developing shortage of family physicians in all practice settings in Canada will only make the situation worse.<sup>3,4</sup>

Studies in Canada and elsewhere indicate that rural physicians are up to 5 times more likely than their urban counterparts to come from a rural background.<sup>5–17</sup> A recent study in Ontario found that one-third of rural physicians came from a rural background.<sup>6</sup> Woloschuk and Tarrant<sup>18</sup> reported that Canadian clerkship students of rural origin were significantly more likely than their peers raised in urban areas to indicate that they planned to do rural locums and to practise in rural communities. This student cohort was followed into practice; of those who completed family medicine residency training, those with a rural background were 2.5 times more likely to be engaged in rural practice than their urban peers.<sup>19</sup> On entry into medical school, Canadian students from smaller communities are also more likely than their counterparts from large urban communities to indicate a preference for family practice as a career choice.<sup>20</sup> This is important in the context of the dramatic decline in the number of graduating medical students who chose family medicine residencies from 44% in 1992 to 25% in 2003.<sup>21</sup>

Although having a rural background clearly influences the eventual choice of a rural area as the setting of practice, the fact remains that most medical students come from urban areas; hence, a significant portion of rural

physicians do and will need to come from urban backgrounds. Longer rural learning experiences in medical school and postgraduate family medicine training are associated with a significantly higher likelihood of choosing rural practice, regardless of whether the graduate's background is urban or rural.<sup>6</sup> More detailed discussions of Canadian medical education for rural practice can be found in a report by the College of Family Physicians of Canada Working Group on Postgraduate Education for Rural Family Practice.<sup>22</sup>

The present article focuses on admission and preadmission initiatives related to medical students of rural origin. A 2001 survey found that only 10.8% of Canadian medical students lived in rural areas at high school graduation, as compared with 22.4% of the population.<sup>1</sup> In a survey of medical school associate deans responsible for admissions conducted in 2003 by the SRPC task force, none reported a percentage of medical students of rural origin in their school that matched the percentage of rural residents in their province overall. National data on applicants, including grade point averages and offers of admission, are not available, but Ontario data suggest that fewer rural students than urban students apply to medical school and that, even of those who do apply, fewer are accepted even when their grade point averages and MCAT scores are similar to those of their urban counterparts.<sup>23</sup>

Dhalla and colleagues<sup>1</sup> found that medical students were more likely than the general Canadian population to have parents who were highly educated professionals. On average, people living in rural communities have a lower educational status than their urban counterparts;<sup>24</sup> as a result, young people growing up in rural communities may have fewer role models, less encouragement and experience less acceptance than their urban peers with respect to pursuing higher education, including medical school. Even rural students with a parent with a degree are much less likely to attend university than their urban counterparts (25.8% v. 43.2%).<sup>25</sup>

Many rural high schools can provide neither the breadth nor the depth of academic programs and enrichment activities that are available to urban high school students. In particular, opportunities to participate in provincial or national level activities are often significantly fewer for rural students than for their urban peers. This is not only a direct educational disadvantage, but it can also be a disadvantage when rural students' *curricula vitae* are assessed against those of their urban counterparts. Rurality also presents a disadvantage with respect to access to technology. For example, "[r]ural individuals ... within each age class within each income class ... within each educational attainment class, are less likely to own a computer or to be connected to the Internet."<sup>26</sup>

Rural students by necessity have to travel away from home to attend university — another factor that contributes to the smaller number of students from rural areas who attend university.<sup>25</sup> This geographic barrier is extreme

for Canada's most isolated rural people — those in Nunavut, the Northwest Territories, the Yukon and remote parts of many provinces — and includes many Aboriginal Canadians, who face additional linguistic and cultural barriers.

The fact that rural students do not have the option of getting an undergraduate degree in their home town results in costs for accommodation and other living expenses that many urban students do not have to bear. Medical students typically come from families with high incomes.<sup>1</sup> Rural families are significantly poorer than their urban counterparts,<sup>24</sup> and the high cost of medical education is a higher perceived and real barrier for rural students than for urban students. Rural students in medical school have a higher debt load and increased financial anxiety compared with their urban counterparts.

The medical school admission process may be unintentionally biased and difficult for rural medical students. Only 3 respondents to the SRPC task force survey of Canadian medical school associate deans indicated that they had a rural physician on their school's admission committee. It is difficult to develop policies that take rural issues into account if there is no rural representation on the admission committee. Similarly, the preponderance of urban interviewers at most medical schools may result in an unintentional urban selection bias; it may be that "medical school admission committee members tend to give high ratings to those students whose backgrounds, values and orientation are similar to their own."<sup>27</sup> Again, in the task force survey, only 3 respondents indicated that their schools had a specific policy or strategy for admitting students of rural origin. Given Canada's continuing and worsening shortage of rural physicians, this reflects an unfortunate lack of attention to the low numbers of rural students being admitted to medical schools, as well as a lack of attention to issues that can have a direct impact on the capacity of the physician workforce to meet the needs of the Canadian population. Moreover, the trend to higher and higher grade point averages and MCAT scores, together with rapidly rising tuition fees, may put admission to medical school beyond the reach of all but a very few Canadian students with rural backgrounds.

Positive change is possible. In Australia, the number of medical students from rural areas increased from 10% in 1989 to 25% in 2000. This change came about through a series of initiatives, including bursaries, scholarships and policy changes, such as creating new spots for students of rural origin.<sup>28</sup> In the United States, surveys of the Association of American Medical Colleges found that "more than 60% of responding medical schools offered extra consideration at some point in the admissions process to candidates likely to enter primary care and rural applicants were frequently listed as one of these groups."<sup>29</sup> Moreover, one representative medical school calculated that there would have been a "marked reduction [to less than half] in the proportion of rural applicants offered admis-

### Box 1: Strategies to increase the enrolment of students of rural origin in medical school

#### Educational initiatives

##### Objectives

- To increase the number of rural high school graduates who go on to university programs with an interest in medicine as a possible career
- To increase the number of university students of rural origin who are interested in a medical career and are able to meet the entrance requirements for medical school

##### Recommended strategies

##### High school

- Establish university–high school outreach programs for rural students and guidance counsellors that involve medical students and local physicians
- Provide university–high school educational opportunities for rural students to attend science and health-related summer programs

##### University

- Introduce rural components into health sciences courses and programs
- Establish pre-med clubs and mentoring systems for rural students
- Establish counselling and support systems for rural students
- Provide pre-med summer school programs for rural students
- Provide information on and assistance with preparing medical school applications

#### Funding support

##### Objective

- To reduce financial barriers to enrolment in and completion of medical school

##### Recommended strategies

- Provide funding for rural education initiatives
- Establish major scholarships
- Offer medical school tuition relief
- Award financial need-based bursaries

#### Changes to admissions process

##### Objective

- To admit a fair and equitable number of students of rural origin to medical school

##### Recommended strategies

- Include rural physicians and rural community members on admissions policy and process committees
- Include rural physicians and rural community members as interviewers
- Ensure that students of rural origin are not disadvantaged by the admissions process
- Apply a rural adjustment factor to grade point averages and MCAT scores
- Set targets for rural enrolment

sion interviews if additional consideration and score adjustment were not applied.”<sup>29</sup>

The SRPC hopes that the recommendations presented here (see Box 1 and the online appendix [[www.cmaj.ca/cgi/content/full/172/1/62/DC1](http://www.cmaj.ca/cgi/content/full/172/1/62/DC1)]) will lead to the implementation of policies, initiatives and funding to increase the number of students from rural backgrounds admitted to medical school and ultimately produce more graduates who choose a career in rural practice. Outcomes research should be a critical component of these strategies. Medical schools will need to take the lead and work with universities, governments and other stakeholders to develop, coordinate and support programs to achieve the goal of admitting a fair and equitable number of rural origin students to Canadian medical schools.

The full report as approved by the SRPC is available at [www.srpc.ca](http://www.srpc.ca).

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**Correspondence to:** Dr. James Rourke, Dean of Medicine, Health Sciences Centre, Memorial University of Newfoundland, 300 Prince Philip Dr., St. John's NL A1B 3V6; dean.medicine@mun.ca

**Members of the Task Force for the Society of Rural Physicians of Canada: Chair:** Dr. James Rourke, Dean of Medicine, Memorial University of Newfoundland, St. John's, Nfld. **Members:** Drs. Dale Dewar, University of Saskatchewan; Kent Harris, University of British Columbia; Peter Hutten-Czapski, University of Ottawa and the Northern Ontario School of Medicine; Mary Johnston, University of British Columbia; Don Klassen, University of Manitoba; Jill Konkin, Northern Ontario School of Medicine; Chris Morwood, Thunder Bay Regional Health Sciences Centre; Carol Rowntree, University of Calgary; Karl Stobbe, McMaster University; and Mr. Todd Young, Medical Student.

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