

Representation in Medicine  
*Examining Socio-economic and rural backgrounds*

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## **Introduction**

Medical school programs are among the most competitive in Canada. Every year, each of Canada's 17 Medical Doctorate programs receives thousands of applications for a limited number of positions. Due to the high demand for the few spots that are available, school administrators and eager undergraduate students focus their attention on what type of student belongs in medical school, and “what it takes to get in.” Frequently the issue of the socio-economic and geographic backgrounds of the successful applicants is left out of these discussions.

One of the most concerning issues with regard to current medical education in Canada is the fact that our medical students reflect a very narrow segment of our population. In general, they come from higher-income backgrounds, are raised by well-educated parents, and live in densely populated urban areas. This is problematic for several reasons. For one, it demonstrates limited access to one of the most highly remunerated and highly regarded social-capital professions, maintaining a cycle of elitism within the medical community. Secondly, it means that our population of physicians will continue to represent a narrow segment of the population, which has implications for the distribution of medical practice in this country and the variable and inequitable access to health resources. And thirdly, it contributes to the systemic exclusion of marginalized people from higher education and high-income careers.

This paper is an attempt to bring greater attention to the issue of the accessibility of medical education in Canada. We explore some of the current barriers to medical education for students from low-income and rural backgrounds, and provide some recommendations to begin the process of developing a more equally accessible education system with students who more closely resemble the social and demographic distribution of all Canadians.

Entering medical school is the result of a life-long process of influences, social conditioning, and opportunities; the barriers are many and they are intertwined. There is a need for much more primary research and policy analysis on the social, economic, cultural, geographic, political, and other factors that influence an individual's path through the education system to a career in medicine. The effects of low-income status and rural upbringing on education intersect with ethnicity, language, immigration status, Aboriginal heritage, physical and mental barriers to participation, and other forms of marginalization in Canada; it is impossible to account for all of them in this paper. Similarly, the solutions will be complex, as they must address the roots of poverty and economic disparities that, ultimately, lead to the narrow representation of rural students and students of low socio-economic background in our medical schools. Therefore, this paper serves as an introduction to what we, and other sources, feel are some of the most immediate issues affecting the accessibility of medical education, and we intend for our

recommendations to be concrete steps that government and medical schools can take in the short term to begin the process of addressing this issue.

## **Principles**

*Principle One: All people in Canada should have equitable access to health care and to a healthy life.*

The overall health of a person or a population is complex, with a wide variety of determinants, including: income, geographic location, employment, gender, nutrition, etc. Access to health care should not be included in the list, yet for many Canadians, lack of access is a reality. The multiple layers of inequalities distributed among pockets of populations across Canada translate into a higher burden of illness and disease for marginalized people, including low-wage earners, rural inhabitants, recent immigrants, or Aboriginal people.<sup>i</sup>

While the ideal solution to this problem would be to address these inequalities and concomitant social and environmental determinants of health more directly, in the interim we must face the reality that such a health gradient exists, and instead ensure that we deliver health care in such a way that it reaches those who need it the most. Unfortunately this is not the case. Traditionally, health care is much more accessible in higher-income and urban areas, while rural parts of the country and Aboriginal communities face chronic shortages of health care personnel, including physicians.<sup>ii</sup> Any broad-based approach to improve the health of our communities and the operation of our health care system should strive to provide equitable access to health care resources, with recognition, response and reaction to prevalent inequalities of health.

*Principle Two: Our physician population, beginning with our medical students, should reflect our population.*

In order to provide equitable access to health care, and specifically to address the chronic shortages of physicians in particular geographic areas and among specific populations, we need to ensure that our physicians reflect the diversity of our nation. Specific attention must be given to the chronic shortage of physicians in particular geographic areas and among marginalized populations. The available research suggests that physicians are more likely to serve populations that reflect their personal background. For example, physicians from lower-income families or areas are more likely than their higher-income peers to establish a medical practice providing service to lower-income patients. Further, physicians from low-income or ethnic minority backgrounds are more likely to treat patients with chronic illnesses or complex, multiple diagnoses.<sup>iii</sup> Therefore, a physician population that includes a representative proportion from lower-income backgrounds will benefit Canadian society by promoting equitable access to health care.

Unfortunately, our current medical school cohort falls far short of reflecting the diverse population of our nation. Tradition still holds true today, that medical students come disproportionately from wealthier backgrounds. Serial surveys of medical school demographics over the past decade show similar trends: medical students are far more likely than the average Canadian to have parents with university degrees, especially with graduate or professional degrees; to have parents employed in professional or high-level management occupations; and to come from families with a high household income.<sup>iv</sup> For example, in 2007 nearly 30% of medical students self-reported as having a family income in the top quintile nationally, while less than 15% came from the bottom quintile.<sup>v</sup> This income disparity is most severe in Ontario, where tuition has more than tripled since it was deregulated in 1997.<sup>vi</sup> In that province, more than 40% of medical students represent the highest 20% of household incomes, while only 4% hail from the lowest quintile. Overall, the average annual parental household income of medical students in 2007 was more than \$115 000<sup>vii</sup>. Clearly, our medical schools are producing a generation of physicians who fail to reflect the diversity of our population.

*Principle Three: All Canadians should have equitable access to higher education.*

## **Concerns**

Given the lack of representation in our medical schools of students from lower-income backgrounds, we have the following concerns regarding the process through which students are accepted into medical schools in Canada:

*Concern One: People from lower-income backgrounds are less likely to consider medical school.*

Research from the UK demonstrates that socio-economic status affects individuals' perceptions of who goes to medical school and what type of people become doctors. Specifically, people from lower-income backgrounds are more likely to associate medical school with elitism and privilege, and accordingly consider medical school to be unattainable for someone in their position.<sup>viii</sup> A study of medical students' perceptions and experiences of their socio-economic backgrounds showed that students from higher-income backgrounds had far more family and social network support and encouragement to pursue a medical education when compared to medical students who self-identified as working class.<sup>ix</sup> Students from more affluent backgrounds also had more access to role models in medicine, and a more accurate perception of a medical career.<sup>x</sup> These socio-cultural factors play a role in considering medical school as a viable career option.

Concurrently, people from lower-income backgrounds are more likely to over-estimate the costs of post-secondary education while underestimating both the level of financial support available to students, as well as the financial benefits that post-secondary education can often confer through higher-paid careers.<sup>xi</sup> Due to this combination of economic, social, and cultural factors, many people from lower-income backgrounds self-select away from a medical education.

On the topic of medical school and elitism, it is worth noting that research at a Canadian medical school by Brenda Beagan indicated that perceptions of medical school as an elitist space may not be completely misguided; students who self-identified as working class experienced marginality, isolation, and a feeling of cultural difference from their peers and instructors.<sup>xii</sup>

*Concern Two: The expense and requirements of applying to medical school present a barrier to access for students from lower-income backgrounds and of rural origin.*

Medical school application fees add up quickly when applying to multiple schools. For example, applying to a single medical school in Ontario through OMSAS costs \$285; if applying to all six, the fees add up to \$660.<sup>xiii</sup> This is a substantial up-front cost that can pose a barrier to applicants in greater financial need. The costs of admission continue to rise through the interview process, which often entails travel between cities and may necessitate buying formal clothing for the interview itself. While there is little research available that directly studies the impact of these fees, any additional cost can act as a gate-keeping fee which privileges those applicants in higher socio-economic positions.

The Medical College Admissions Test (MCAT) also involves considerable expense. Aside from the fees of the test itself, for which financial consideration exists, preparation for the test can create considerable financial strain because many students spend part of their summers studying, or pay for expensive preparation courses. The MCAT, which some, but not all, Canadian medical schools require for admission, confers an advantage to those who can take time away from a summer job to study, or to those who can afford to pay for additional preparation. Writing the MCAT is also a major inconvenience for rural students, as these tests are often only written at large major centres. It should be noted that recent research indicates the MCAT is a less reliable indicator of medical school achievement than grade point average, and in the United States white students consistently score better than African-Americans even when controlling for grade point average.<sup>xiv</sup> These facts raise questions about the utility of the MCAT and its role in admissions to Canadian medical schools.

These financial concerns are a harsher reality still for students from rural areas. Students from rural areas often face more financial obstacles than their urban counterparts. Out of necessity, students from rural areas in Canada have to move away from their hometown in order to continue to pursue post-secondary education. Since students must move away to make avail of post-secondary opportunities, this means that they must incur costs related to moving, accommodations, lodging and visits home during down-time and the holidays. This is in contrast to most medical students, as the majority come from wealthy families<sup>15</sup>. Rural families are typically significantly poorer than their urban equivalents<sup>16</sup> and thus, the additional financial costs associated with post-secondary education, and then medical education, are of both real and serious concern.

*Concern Three: Admissions criteria may favour students from higher-income backgrounds.*

While each school differs in their evaluation of applications, in general the requirements are based on grade point average/academic achievement (with or without the MCAT), extracurricular activities, reference letters, and an interview. Each of these aspects is problematic from the point of view of creating an admissions process unbiased by socio-economic status.

A student's academic achievement is often linked to their socio-economic background. This is a complex issue but some key points used here will illustrate this relationship. Students who must work part or full time to finance their university education may have less time to focus on academics, to the detriment of their grade point average. Another barrier for some lower-income students is the requirement of many medical schools to take a full course load throughout an applicant's undergraduate education. While the rationale is to permit a fairer assessment and comparison with other students, it systematically discriminates against students who lack the financial resources to take a full course load and must work more hours and stretch a degree out beyond 4 years. Further it also works against students with dependants who cannot attend school full time (and who are in general are greatly under-represented in post-secondary education).<sup>17</sup>

Admissions requirements requesting that applicants spend time volunteering or being involved in other extracurricular activities also privilege those with the financial resources to spend their time in ways other than academics or employment. Further, medically-related volunteer activities in underprivileged countries may appear more impressive on an application, because they show both a commitment to and an interest in health care, yet these programs are often restricted to more affluent applicants. Being able to spend one's time volunteering is a luxury that access to greater financial resources permits, and yet it is a universal expectation of medical school applicants.

The medical school admissions interview also makes class-related assumptions. The interview assesses personal characteristics based on the interviewers' conceptions of what type of person makes a successful medical student and future physician. This includes assumptions of dress, language, relevant topics of conversation, and professional behaviour. Research in both Canada and the UK indicates these attributes, as a form of social capital, are less readily accessible to applicants from lower-income backgrounds.<sup>18</sup>

*Concern Four: The number of students from rural communities are currently underrepresented at medical schools across the country.*

In a 2001 Survey, it was found that only 10.8% of medical students at that time were originally from rural communities, which is a sharp contrast to the number of Canadians (22%) who live in rural areas<sup>19</sup>. This shows that from purely a population standpoint, medical schools should be admitting twice as many students from rural communities in order to be representative of the entire Canadian population.

*Concern Five: Canadian medical schools require that all applicants complete university level prerequisite courses. Fewer students from rural areas go on to attend post-secondary schools than students from urban areas.*

Finnie et al. showed that the number of students who attend post-secondary education from rural areas is drastically smaller than those from urban areas. While 41% of females and 34% of males from urban areas attend university, only 33% of females and 21% of males from rural areas go on to do so<sup>20</sup>. Further, Frenette showed that living more than 80km from a post-secondary institution reduced attendance from all socio-economic backgrounds, but especially among lower-income families<sup>21</sup>.

*Concern Six: Fewer students from rural areas apply to medical school. Further, of this smaller number of students, fewer seem to be accepted.*

While national data on medical school applicants do not exist, data from the province of Ontario suggest that fewer students from rural areas apply to attend medical school. While Ontario has a rural population of 13%, only 7.3% of the Ontario applicants were of rural origin and they made up only 6.2% of the successful applicants<sup>22</sup>. When using the same data from Ontario it can be seen that of those few rural students who apply, a lower proportion are accepted when compared to their urban counterparts. This holds true even with similar GPA's and MCAT scores. In 2002 & 2003, one in 5.6 rural applicants were admitted compared to one in 4.7 applicants of urban origin. On average, the GPA's of both rural and urban applicants were identical at 3.42<sup>23</sup>.

*Concern Seven: Individuals from rural areas in Canada have less access to family physicians than those in other areas. As the interest in family medicine residency positions declines, fewer medical school graduates will be graduating as family doctors and more rural Canadians will find it difficult to find a primary care physician.*

The family physician-population ratio in rural Canada in 2002 was 1:1201, as compared with 1:981 for Canada as a whole<sup>24</sup>. It has been well documented that the number of medical students who desire to practice family medicine as a career has been declining. In 1992, 44% of eligible medical school graduates chose family medicine as their career of choice compared to only 25% in 2003<sup>25</sup>.

*Concern Eight: Since medical students from rural areas are more likely to return to practice in rural areas, the family physician shortage in rural areas may continue to worsen as rural students continue to be underrepresented.*

Many studies have consistently shown that students who originally hail from rural areas are more likely than their urban equivalents to set up practice in rural areas at the end of their training. In a Canadian study, it was found that of 159 family practice residents at Queen's University, those of rural origin were 2.3 times more likely than those from urban areas to choose to practice in a rural setting after graduation<sup>26</sup>.

American studies have shown that medical students from rural areas are four times more likely to go on to practice in a rural setting, even when educated in a standard urban curriculum without rural placements. Interest in primary care medicine and rural origin accounted for 78% of the probability that a graduating student would choose rural

primary care<sup>27</sup>.

Further, Canadian students from rural areas are more likely to indicate a preference in family medicine than their urban equivalents when entering medical school<sup>28</sup>. This difference is also still significant at the end of medical school training<sup>29</sup>.

Wright et. al. reported that among first-year medical students in Alberta and British Columbia, it was the older students who were more concerned about medical lifestyle and who, once again, grew up in rural areas who were more interested in family medicine as a career. Desire to enter family medicine increased according to the size of a student's community of origin: those hailing from communities of less than 50 000 were 2.3 times more likely to have a desire to practice family medicine than those from larger communities<sup>30</sup>.

## **Recommendations**

*Recommendation One: Medical schools should initiate early outreach programs to encourage interest in a medical career for both rural students and students from low SES backgrounds.*

Efforts to increase the socio-economic diversity of our medical school attendees must begin early in a prospective student's life. As mentioned earlier, teenagers from lower-income backgrounds are less likely than their wealthier peers to have realistic perceptions of medicine, and much lower interest in pursuing medicine as a career. Early outreach programs, such as summer immersion camps, increase awareness and interest in medicine by exposing teenagers to medical practice and linking them with current medical students.<sup>31</sup> Some schools already have summer programs to reach out to under-represented groups, such as the MedQuest summer camp at the University of Western Ontario for rural students in South-West Ontario.<sup>32</sup> These programs, as well as one-on-one mentorship programs, are a pro-active solution to the problem by increasing interest in medical school at a time when teenagers are making decisions regarding their post-secondary future.

*Recommendation Two: Medical schools should recognize the inherent challenges that come with being from low-income and rural backgrounds, and adjust admissions criteria to address this lack of representation.*

Some Canadian medical schools currently make provisions for students from under-represented groups to promote admissions from these groups, such as students from rural areas in the geographical catchment area of the school, northern rural communities, and Aboriginal applicants (examples include UWO and NOSM).<sup>33</sup> Given that such precedents exist for targeted admissions procedures, medical schools should continue to implement these provisions for rural students, and expand them to include students from lower-income backgrounds. As many schools provide scholarships and bursaries based on demonstrated financial need, they may already have a method for determining low-income status. Admissions committees could also take part-time work experience during

the school term and summers as into consideration as an extra-curricular activity, given that work experience may come at the expense of volunteer activities.

It is often thought that making such allowances will lower the standards for medical school admissions; however, many studies have indicated that students from disadvantaged backgrounds go on to perform equally well as their more advantaged classmates.<sup>34</sup>

Also, given the high financial expense and questionable predictive value of the MCAT, we recommend that medical schools discontinue the use of the MCAT as an admissions requirement.

*Recommendation Three: Medical schools should waive application fees for students with financial need.*

The American Association of Medical Colleges has a fee assistance program for application and MCAT fees.<sup>35</sup> Canadian medical schools should adopt similar programs to ease this barrier to admissions.

*Recommendation Four: Provincial governments and medical schools should ensure that tuition fees are as low as possible.*

Medical tuition at Canadian schools correlates with both average household income and income distribution (relative to national quintiles) of students<sup>36</sup>. High tuition fees present an enormous barrier to participation. Therefore, provincial governments, which set regulation and provide public funding, and the schools that set individual tuition schedules, must strive to keep tuition as low as possible. We recognize that provincial governments and universities face financial pressures, but we believe they should bear in mind the relationship between tuition and accessibility when considering tuition fee increases.

*Recommendation Five: Medical Schools should make clear statements, through admissions websites, promotional materials, and outreach methods, that financial assistance is available to all accepted students.*

Given that, as previously noted, people from lower-income backgrounds tend to overestimate costs and underestimate the available financial supports, medical schools must take greater steps to promote awareness of these financial options. This will help the perception that medical school is financially unattainable.

## **Conclusions**

The accessibility of a medical education in Canada is a pressing issue in our health care system. If we hope to achieve and maintain an inclusive, universal health care system that can provide equitable access to health care resources, we must address the issue of under-represented groups in our medical school classrooms.

An example from Australia where they have also struggled with rural medicine due to their dispersed population and relatively large land mass illustrates how the number of disadvantaged students enrolled in medicine can be increased. After years of struggle, through the use of financial incentives, adjustments to admission criteria and other positive changes, Australia's medical school classes increased their proportion of rural students from a dismal 10% in 1989 to 25% in 2000<sup>37</sup>.

Outreach programs, fee assistance efforts, and comprehensive re-evaluations of admissions criteria are a strong first step towards rectifying this issue. However, achieving a truly accessible system of medical education will require a broad based effort to address the sources of educational inequality in Canada, from pre-school to post-graduate, and to ensure that our entire system of learning and training in this country is open, available, and inclusive to Canadians from all backgrounds.

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