Assessing Canadian Medical Students' Familiarity with and Interest in Pursuing a Career in Community Medicine

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ABSTRACT

Objectives: Following the SARS outbreak, large gaps in the public health workforce have been identified. This study sought to understand the perceptions and attitudes of Canadian medical students with regard to public health to determine how this impacted their choice towards a career in Community Medicine (CM).

Methods: Five focus groups of 11-12 medical students from all years were recruited at McMaster University, Université de Sherbrooke, University of Toronto, University of Manitoba and the University of British Columbia. A professional facilitator was hired to conduct the focus groups using a unique computer-based facilitation system. Questions in both the focus group and an accompanying survey sought to determine medical students' understanding and exposure to public health and how this impacted their attitude and choice towards a career in community medicine. The transcripts were independently reviewed and analyzed by each of the authors to identify themes.

Results: Four major themes related to choosing Community Medicine as a career were identified: 1) poor understanding of the role of Community Medicine specialists in public health practice, 2) perceived lack of clinical work and relevance of public health to clinical practice, 3) perceived lack of exclusivity of Community Medicine specialty, 4) incentives and disincentives to pursuing Community Medicine.

Conclusion: Better education of students on the role of CM specialists through increasing exposure to role models and demystifying inaccurate perceptions of CM through integration of public health with clinical medicine may potentially increase medical student entry into Community Medicine.

Key words: Community medicine; medical students; recruitment; public health; medical careers

La traduction du résumé se trouve à la fin de l'article.

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The challenge of teaching public health (PH) effectively to capture the interest of medical students is an international problem.^{1,2} One outcome of this inadequate PH teaching in medical schools is a lack of student interest in the public health medical specialty of Community Medicine (CM). CM specialists complete a five-year residency in a program that must include one year of clinical training,* one academic year, and one year of field-based placements.³ CM specialists certified by the Royal College of Physicians and Surgeons of Canada have the clinical experience and the population health training needed in areas of health promotion, disease prevention, chronic disease management and public health emergencies.

In 2006, only 0.9% or 17 of the 1,978 graduating Canadian medical students ranked CM as their first-choice residency discipline. In contrast, 31.9% or 631 students ranked Family Medicine as their first-choice discipline.⁴ Along with low interest in CM, it is predicted that in the next 10 years, 39% of all Medical Officers of Health will retire.⁵ It is currently estimated that there are 384 practicing CM specialists in Canada. Our study sought to understand the perceptions and attitudes of medical students with regard to public health to determine how this impacted their choice towards a career in CM.

* Residents can complete up to 24 months in clinical training during their CM residency to enable them to obtain certification by the College of Family Physicians of Canada (CFPC). A minimum of three and a half years of clinical training would be required to meet the requirements for Royal College of Physicians and Surgeons of Canada (RCPSC) certification in either general pediatrics or internal medicine.

METHODS

We conducted focus groups at 5 of 17 medical schools across Canada which had a CM residency-training program between February and April 2006. These schools were selected primarily based on location and included: University of British Columbia (West), University of Manitoba (Central), University of Toronto (Ontario), McMaster University (Ontario), and Université de Sherbrooke (Quebec). Factors such as type of curriculum (e.g., traditional vs. problem-based) were also considered.

We recruited medical students through posters and e-mails two weeks in advance of the focus groups with no inclusion or exclusion criteria. Groups were limited to 12 participants on a first-come, first-

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serve basis. A small sample size was chosen to facilitate discussion and enable all participants' views to be more easily represented.

We established a medical student liaison at each school to help with recruitment and technical arrangements. The liaison observed and took notes but did not participate in the study. As a token gift, student liaisons and participants received a public health textbook.* All students provided written consent and Research Ethics Board approval was obtained from each university.

A computer-based 15-item questionnaire was administered at the start of each session asking demographic information, participants' current consideration of CM as a career choice and influences on this decision. Of note, one student arrived late and was only able to complete the demographic information of the questionnaire before participating in the subsequent discussion. The focus groups themselves lasted 90 minutes and aimed at understanding medical students' perceptions of public health from their current education and their interest in CM.

All five focus groups engaged in "electronic brainstorming" using a professional facilitator and Group Decision Support System (GDSS) computer technology.⁶ GDSS allows groups to generate ideas anonymously, providing an alternative approach to conducting tape-recorded focus groups. The facilitator introduced the topic, and all participants had equal opportunity to anonymously enter answers into a network-connected laptop. Submitted comments were projected anonymously onto a large "public screen" after a time delay. An oral discussion then began with the sharing and prioritizing of the ideas projected on the "public screen." The facilitator asked probing questions to ensure clear understanding of all perspectives and that all students had an opportunity to participate. A typical session consisted of 40% computer entry and 60% discussion. During the discussion, notes were typed into the system by the facilitator as new themes or ideas emerged. The oral discussion was also recorded by a note-taker.[†] For the Sherbrooke site, the questionnaire was translated into French and the focus group was conducted in French. A final transcript for each session included all electronic comments, collated with notes taken.

Demographic and participant data were entered into spreadsheet software and counts completed. Accuracy was enhanced through double-entry. For analysis, McMaster's three-year program was divided into Year I as the pre-clerkship junior level and Years II and III as the clerkship senior level since at the time the study took place, Year II students had begun full-time clinical duties.

The final transcripts were independently reviewed and analyzed by the authors to identify themes and recurrent issues. Transcripts from each school were analyzed separately and then results consolidated. Several meetings were then held in which the authors collaboratively organized and consolidated the identified themes.

RESULTS

There were a total of 57 students, 35 female (61%) and 22 male (39%). Two schools had 12 students participate, while three schools had 11 students in each group. Thirty students (53%) were in their pre-clinical years of medical school. Participants' extent of interest

* The textbook was one of either: Shah C. *Public Health and Preventive Medicine in Canada*, 5th Ed., Elsevier, August 2003; or Last J, Ed. *Dictionnaire d'épidémiologie - Enrichi d'un lexique anglais - français*. Traduction et adaptation de Lise Talbot-Bélair et Michel C. Thuriau, Edisem - Maloigne, 2004.

† Discussions were not tape-recorded nor transcribed due to the extensive note-taking input by the participants themselves into the GDSS.

Table 1. Extent of Interest in Community Medicine

	*N=56	(%)
Interested	18	32%
Want to learn more	22	39%
Not interested	9	16%
MPH, not residency	7	13%

* Note that there are only 56 participants who completed the questionnaire because one participant showed up too late to complete it before the focus group discussion commenced.

in CM (Table 1) ranged from 32% being "interested" to 16% "not interested."

When asked if CM was a career choice for their peers, 88% responded "no." The analysis of these focus group transcripts resulted in four main themes related to interest in CM being identified. While these themes reflect the overall majority of students from the focus groups, varying opinions occurred, mainly represented in the tables and percentages provided. All quotes and numbers not explicitly referenced are directly from the student comments and survey completed at the focus groups.

Theme 1: There is poor understanding of the role of CM specialists in public health practice

Lack of Role Models

The majority of participants (70%) stated that they have had previous experience with public health and/or CM outside of medical school, including for example, work as an epidemiologist at a public health unit, public policy and international development. Within medical school, however, students stated that they do not observe or have sufficient opportunities to work with CM specialists.

"There are too few role models...in medical school to understand [what public health practice as a CM specialist entails]."

Students who had experiences with public health in the past were better informed.

"Working as a public health epidemiologist...helped me to develop an appreciation for the relevance of CM."

Incomplete Understanding of Public Health Practice

The majority of medical students (68%) rated their understanding of PH practice as poor. Most students could only describe a few aspects of PH, unable to place them into a coherent whole reflecting current PH practice. Responses included working with government on policies, resource allocation, and communicating with media and public leaders. Educating the public about chronic diseases and outbreaks was frequently cited. Looking at the "big picture" and long-term strategies to prevent disease rather than acute measures were included. Meanwhile, medical students frequently cited basic sciences like epidemiology and biostatistics that are not solely unique to public health and perceived as unattractive components of PH practice.

Medical students also cited 'administrative work' as a large feature of PH practice.

"Most doctors refer to "administration crap" of which CM is 90%."

More positively, the student survey indicated that 70% of participants were interested in learning about what CM specialists do.

Table 2. Summary of Themes and Quotes

Poor Understanding of the Role of Community Medicine Specialists in Public Health Practice “Don’t know a lot about what a CM specialist can do, therefore don’t really care about it.” “If they are the Public Health officer they carry a badge and do lots of press conferences. Otherwise looking at a lot of numbers and determining trends, coming up with new policy and whatever else they can think to do (attend conferences?).” “It is not popular as well since you obtain a family physician designate, and not that of a specialist.”
Perceived Lack of Clinical Work and Relevance of Public Health to Clinical Practice “A MD degree does not seem to be required to work in community health. There is a feeling that all the years spent studying medicine are not totally useful in that profession, so they are consequently wasted.” “It is anti-climactic to finally have reached medicine, and to end up looking at statistics and discussing mundane studies.”
Perceived Lack of Exclusivity of Community Medicine Specialty “I feel I don’t know about the real role of CM specialists and how the training specifically differs from those completing a post-grad medical specialty followed by a MPH or MSc in clinical epidemiology.” “I think that most people are interested in CM, but as a side project/job, rather than as a main career. Most people would rather complete their post-grad training and then complete a MPH or other master’s degree if they are interested.”
Incentives and Disincentives to Pursuing Community Medicine “Most international work now... takes place on a larger scale in terms of looking at populations and infrastructure, rather than at helping solve short-term, individual [patient] problems. I feel that the skills obtained in a CM training program...will allow one to contribute more effectively on an international scale.” “A job for those who prefer quality of life to interesting work.” “We don’t have any training for politics.”

Inaccurate Knowledge of Community Medicine Training Requirements
Most students had to guess when asked to describe the five-year RCSPC CM specialty-training program. Responses ranged from “*Family Medicine plus an additional year*”, to “*five-year program with option of CCFP designation, then a MPH and CM rotations*” to “*no idea*”. A minority of medical students understood CM to be a Royal College specialty program.

Theme 2: Perceived lack of clinical work and relevance of public health to clinical practice
Many students felt that CM was “*not real medicine*” and lacked credibility as a medical specialty. Most did not realize that CM specialists had clinical training and that some continue part-time clinical work. Certification in family medicine was rated as “definitely important” or “important” for the majority (75%) of students if they were to enter into CM.

Theme 3: Perceived lack of exclusivity of CM specialty
There was confusion about what domains in medicine were exclusive to PH practice. Many students felt they could easily pursue PH to complement their clinical careers without having to complete CM training. There was a common misconception that clinical epidemiology was essentially equivalent to “*practicing public health*.” Moreover, the general sentiment was that students should devote time to clinical medicine first and then do a Masters of Public Health (MPH). Indeed, 13% of students showed interest in doing a MPH, but not a residency program. Furthermore, the Family Medicine training offered in CM does not appeal to students who wish to pursue other types of clinical training:

“...choosing CM as a specialty might be somewhat limiting...if I went into pediatrics, I could always pursue CM type projects, but if I did a residency in CM, I would not be able to practice pediatrics.”

Theme 4: Incentives and disincentives to pursuing Community Medicine
Incentives
In the questionnaire, respondents were asked to select all areas in CM in which they were interested. The most popular area was inter-

Table 3. Factors Influencing Career Choice of Medical Students (Respondents were asked to select three factors)

	N=56	(%)
Type of work	54	96
Lifestyle/Hours of work	53	95
Amount of training	27	48
Societal importance	18	32
Income potential	10	18
Private service (out of pocket)	1	2

national health chosen by 20 (36%) of the 56 respondents, followed by community-oriented clinical care (18%), local public health (18%), academic (11%), institutional (e.g., Cancer Control Agencies) (2%), other (7%) and “don’t know” (13%).
When asked in general about factors influencing career choice (Table 3), the top two factors included type of work (96%) and lifestyle (95%). Most participants (82%) stated that career decisions were too important to be influenced by debt.

Participants saw working at the population level as fulfilling in its ability to “solve” the root causes of problems and make vital policy and funding decisions. Furthermore, the “*honour of working at the societal level*” and the potential to impact many people were seen as positive attributes of CM.

Disincentives
One third of student respondents rated influence of income-potential as moderately high to high when choosing a medical specialty. Despite their overall lack of knowledge about CM, 93% of students believed that this field’s income was lower than that of most other specialties. Some students explained that “...earnings [are] inversely proportionate to quality of life in medicine.”* Other turn-offs included the absence of training for the political nature of public health.

DISCUSSION
This study provides insights into the apparent lack of medical student interest in Community Medicine. Inadequate and inac-

* Note this is not necessarily the case when comparing Dermatology, a relatively well-paid, perceived good-lifestyle specialty with Pediatrics, a relatively poorly-paid specialty with a perceived hectic lifestyle.

curate knowledge of the specialty based on poorly-delivered curricula and shortage of role models leads to misconceptions of the field, namely that it is mostly focused on administration and clinical epidemiology. These skewed perceptions of public health practice appear to be, at least in part, derived from the delivery of “public health” undergraduate medical education content through courses that usually mix together evidence-based medicine, epidemiology, determinants of health, ethics, cultural competency, biostatistics, introduction to the health care system and professionalism. This may lead to confusion between the basic sciences necessary to practice PH and the practice of PH itself and may contribute to students’ lack of clarity around the role of the CM physician. Dissatisfaction of students was consistent at all the schools, despite the various teaching methods used including problem-based learning, didactic lectures and field experiences.⁷

Thus, medical students fail to appreciate the relevance of public health to clinical practice and are discouraged by the perceived lack of clinical work available in CM. The majority of medical curricula emphasize acute care issues with little integration of public health teaching with clinical medicine, leaving students confused about the role of public health in medicine. Furthermore, students feel overwhelmed by the breadth of material and struggle with learning an abstract specialty generally perceived by students to have neither tangible skills nor hard and fast interventions to be learned and applied. Those who did express interest did not appreciate the added value of specializing in CM. The perception that CM is a “project” area fails to recognize the value of specialized competencies for population-level analyses and interventions that are attained through CM residency training.

Incentives for entry into CM that could be utilized in recruitment strategies include fostering interests in international health. This area appears to be a potential indicator of students suited for and attracted to CM. Other draws include the perception of a good lifestyle and ability to make a large societal impact.

Possible disincentives include relatively poor income-earning potential, which deters some (33%) but not all students. Most agree that intrinsically rewarding work is more important than potential income in choosing a specialty. Interestingly, level of debt was less of a concern than income-potential, likely since this is viewed as a short-term problem. On remuneration, David Naylor’s report “Learning from SARS: Renewal of Public Health in Canada” states: “Compensation is frequently cited as a barrier to recruitment and retention of public health physicians. Whether compensation is related or not, interest in this specialty is limited.”⁸ Also, students were disinterested in the necessary engagement with bureaucratic and political processes. Naylor similarly notes “...potential disincentives are the challenges of working in a political and bureaucratic environment.”⁸

CM currently garners the interest of a very small percentage of Canadian medical students. Adequate exposure to CM through public health education is necessary to recruit enough high-quality applicants. Of course, providing additional medical student practical placements with CM specialists will require the availability of a sufficient number of such specialists, which may be challenging to achieve.

Limitations

This was not a randomly selected sample, therefore biases may occur. Those self-reporting an interest in CM represented 32% of students and were perhaps more likely to participate than the average student. Though all efforts were made to formulate independent opinions using the GDSS system, participants may have had the propensity to agree with other students during the discussion. There was no major discordance within and between schools on the themes presented. Differences in responses between pre-clinical and clinical students could not be distinguished because demographic data were not linked to anonymous comments. As well, the backgrounds of the authors, which included a then medical student (and now CM resident), a CM resident, three now former CM residency program directors and two physicians from the Office of Public Health Practice at the Public Health Agency of Canada may have influenced the identification, organization and consolidation of themes based on previous experiences in public health education and practice. There was substantial concordance in the themes identified independently by the authors. Further, the group of authors also readily achieved consensus on the key themes arising from the study results. Data analysis was done at an aggregate level to maintain confidentiality of the participating students and medical schools. Authors were not blinded to the identity of the schools in the analysis. Future study with a larger sample size and more in-depth demographic analysis (age, language and regional comparisons) to examine trends would be useful.

CONCLUSION

Poor entry into CM appears to be mainly related to medical students’ inadequate knowledge of public health and limited interactions with CM specialists. This study’s findings appear to suggest that better education of Canadian medical students about the role of CM specialists through increasing exposure to role models and demystifying inaccurate perceptions of CM through integration of public health with clinical medicine may potentially increase medical student familiarity with and entry into Community Medicine.

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RÉSUMÉ

Objectifs : D'énormes écarts de main-d'œuvre dans la santé publique ont été remarqués à la suite de l'éclosion du SRAS. Cette étude a cherché à comprendre les perceptions et les attitudes des étudiants canadiens en médecine à l'égard de la santé publique, et ce, pour déterminer comment elles ont influencé leur choix de carrière en médecine communautaire (MC).

Méthodes : Cinq groupes de discussion composés de 11 ou 12 étudiants en médecine, sans distinction quant au nombre d'années d'études, ont été formés à l'Université McMaster, à l'Université de Sherbrooke, à l'Université de Toronto, à l'Université du Manitoba et à l'Université de la Colombie-Britannique. Un professionnel a été embauché pour animer les groupes de discussion à l'aide d'un système unique d'animation informatisée. Les questions posées aux groupes de discussion et dans le questionnaire connexe visaient à déterminer le niveau de compréhension et d'exposition des étudiants en médecine relativement à la santé publique, et comment ce niveau a influencé leur choix de carrière en médecine communautaire. Les observations et les

questionnaires de chaque auteur ont été indépendamment examinés et analysés pour préciser les thèmes.

Résultats : Les quatre principaux thèmes suivants liés au choix de carrière en médecine communautaire ont été précisés : 1) mauvaise compréhension du rôle du spécialiste en médecine communautaire dans la pratique en santé publique; 2) perception d'un manque de travail clinique et de pertinence de la santé publique pour la pratique clinique; 3) perception d'un manque d'exclusivité de spécialité en médecine communautaire; 4) mesures d'incitation et de désincitation à poursuivre une carrière en médecine communautaire.

Conclusion : Une meilleure éducation des étudiants sur le rôle du spécialiste en MC, en les exposant davantage aux modèles de rôle et en démystifiant les perceptions erronées de MC par l'intégration de la santé publique dans la médecine clinique, pourrait éventuellement augmenter le nombre d'étudiants qui s'inscrivent en médecine communautaire.

Mots clés : médecine communautaire; étudiants en médecine; recrutement; santé publique; carrières dans le domaine médical

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