

# Primary health care models

## Medical students' knowledge and perceptions

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### Abstract

**Objective** To explore the knowledge and perceptions of fourth-year medical students regarding the new models of primary health care (PHC) and to ascertain whether that knowledge influenced their decisions to pursue careers in family medicine.

**Design** Qualitative study using semistructured interviews.

**Setting** The Schulich School of Medicine and Dentistry at The University of Western Ontario in London.

**Participants** Fourth-year medical students graduating in 2009 who indicated family medicine as a possible career choice on their Canadian Residency Matching Service applications.

**Methods** Eleven semistructured interviews were conducted between January and April of 2009. Data were analyzed using an iterative and interpretive approach. The analysis strategy of immersion and crystallization assisted in synthesizing the data to provide a comprehensive view of key themes and overarching concepts.

**Main findings** Four key themes were identified: the level of students' knowledge regarding PHC models varied; the knowledge was generally obtained from practical experiences rather than classroom learning; students could identify both advantages and disadvantages of working within the new PHC models; and although students regarded the new PHC models positively, these models did not influence their decisions to pursue careers in family medicine.

**Conclusion** Knowledge of the new PHC models varies among fourth-year students, indicating a need for improved education strategies in the years before clinical training. Being able to identify advantages and disadvantages of the PHC models was not enough to influence participants' choice of specialty. Educators and health care policy makers need to determine the best methods to promote and facilitate knowledge transfer about these PHC models.

### EDITOR'S KEY POINTS

- Primary health care (PHC) reform is well under way in Canada, but the benefits of new models of care will only be realized if there are sufficient family physicians to implement them. Although there is a growing body of research on medical students' career choices, no research has been conducted to assess whether these new models of PHC influence students' decisions to pursue careers in family medicine.
- The authors interviewed fourth-year medical students and found that participants' knowledge of PHC models was generally attained in unstructured ways and to varying degrees. Although the models were generally viewed as favourable, they were not considered a key influence in the decision to pursue a career in family medicine.
- Students did list some of the factors that are known to affect career choice (eg, exposure to positive role models, practice variety, patient-physician relationships, and lifestyle) as advantages of PHC models. This might explain participants' generally favourable views of PHC models, even though they could not directly attribute their interest in family medicine to the new models.

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# Les modèles de soins de santé primaires

## Connaissances et perceptions des étudiants en médecine

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### Résumé

**Objectif** Faire le point sur les connaissances et perceptions des étudiants en médecine de 4<sup>e</sup> année concernant les nouveaux modèles de soins de santé primaires (SSP) et déterminer si ces connaissances influencent leur décision de poursuivre une carrière en médecine familiale.

**Type d'étude** Étude quantitative à l'aide d'entrevues semi-structurées.

**Contexte** La faculté de médecine et de dentisterie Schulich de l'Université Western Ontario à London.

**Participants** Étudiants en médecine de 4<sup>e</sup> année gradués en 2009 ayant indiqué la médecine familiale comme éventuel choix de carrière dans leur demande auprès du Canadian Residency Matching Service.

**Méthodes** On a effectué 11 entrevues semi-structurées entre janvier et avril 2009. Les données ont été analysées par approche itérative et interprétative. La stratégie d'immersion et de cristallisation utilisée pour l'analyse a favorisé la synthèse des données et l'obtention d'une vue d'ensemble des thèmes clés et des concepts principaux.

**Principales observations** Quatre thèmes clés ont été identifiés: le niveau de connaissance des étudiants concernant les modèles des SSP variait; leurs connaissances provenaient généralement d'expériences pratiques plutôt que de cours théoriques; les étudiants pouvaient identifier les avantages et les inconvénients de travailler avec les nouveaux modèles de SSP; et même si les étudiants avaient une opinion favorable des nouveaux modèles, cela n'avait pas influencé leur décision de poursuivre une carrière en médecine familiale.

**Conclusion** Le niveau de connaissance des nouveaux modèles de SSP variait chez les étudiants en médecine de 4<sup>e</sup> année, ce qui indique qu'il faudrait améliorer les stratégies de formation au cours des années précliniques. Le fait de connaître les avantages et inconvénients des différents modèles de SSP n'était pas suffisant pour influencer le choix d'une spécialité par les participants. Il faudra que les enseignants et les responsables des politiques concernant les soins de santé choisissent les meilleures méthodes susceptibles de promouvoir et de faciliter le transfert des connaissances touchant ces modèles de SSP.

### POINTS DE REPÈRE DU RÉDACTEUR

• Au Canada, la réforme des soins de santé primaires (SSP) est déjà bien engagée, mais les avantages des nouveaux modèles de soins ne pourront être obtenus que si un nombre suffisant de médecins de famille les mettent en pratique. Malgré le nombre croissant d'études sur le choix de carrière des étudiants en médecine, aucune n'a tenté de déterminer si ces nouveaux modèles de SSP influençaient la décision des étudiants de poursuivre une carrière en médecine familiale.

• À la suite d'interviews auprès d'étudiants en médecine de 4<sup>e</sup> année, les auteurs ont observé que les participants avaient acquis leurs connaissances des modèles de SSP de façon non structurée et à des niveaux variables. Même s'ils avaient une opinion plutôt favorable de ces modèles, les étudiants ne croyaient pas que ces modèles avaient une influence importante sur la décision de poursuivre une carrière en médecine familiale.

• Les étudiants ont énuméré certains des facteurs capables d'affecter le choix de carrière (p. ex. l'exposition à des modèles de rôle positifs, la pratique diversifiée, la relation médecin-patient et le mode de vie) qui constituaient des avantages des modèles de SSP. Cela pourrait expliquer l'opinion généralement favorable des participants à l'égard des modèles de SSP, même s'ils ne pouvaient pas attribuer directement leur intérêt pour la médecine familiale aux nouveaux modèles.

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Primary health care (PHC) reform is well under way in Canada. The 2002 Romanow report discussed the need for an overhauled approach to PHC, calling for comprehensive 24 hours a day, 7 days a week on-call care, interprofessional health care teams, and more emphasis on health promotion.<sup>1</sup> Romanow suggested that basic guidelines for improvement in the delivery of PHC would allow provinces to each develop a unique approach.<sup>1</sup>

Since the report was published, provinces from coast to coast have implemented changes in PHC. For example, in British Columbia, interprofessional care networks were developed for patients with chronic health conditions. As well, the Divisions of Family Practice ([www.divisionsbc.ca](http://www.divisionsbc.ca)) were created, through which groups of family physicians could address gaps in patient care and promote family medicine.<sup>2</sup> On the other side of the country, Newfoundland and Labrador divided the province into 30 team areas to serve the entire population.<sup>3</sup> The Ontario government has also developed new approaches to PHC, such as the family health team.<sup>4</sup> A unique feature of family health teams is their emphasis on interprofessional care. Many PHC models promote collaborative care 24 hours a day, 7 days a week, with a focus on prevention, health promotion, and chronic disease management.<sup>5</sup> Each of these key areas has been identified as imperative to improving PHC in Canada.<sup>1</sup>

The benefits of these PHC models will only be realized if there are sufficient family physicians to implement the changes. Factors influencing medical students' choice of family medicine include the broad scope of practice, diversity in clinical content, and the perception of a superior lifestyle.<sup>6-8</sup> Studies indicate that positive role models can affect choice of specialty, and lack of a mentor or a negative role model can be detrimental.<sup>6,8</sup> Although there is a growing body of research on medical students' career choices, no research has been conducted to assess whether these new models of PHC influence students' decisions to pursue careers in family medicine. Of note, the increase in fourth-year medical students entering family medicine in Ontario between 2004 and 2009 (from 25% to 39%) paralleled Ontario's development of new PHC models during that same time.<sup>9,10</sup>

The purpose of this study was to explore fourth-year medical students' knowledge and perceptions of these new models of PHC. Further, we wanted to determine whether the new PHC models influenced students' decisions to pursue careers in family medicine.

## METHODS

To best capture the knowledge and perceptions of fourth-year medical students entering postgraduate training, qualitative methods were chosen in order to

allow participants to describe ideas, experiences, and perceptions that might be difficult to capture using quantitative methodology. Ethics approval was received from The University of Western Ontario Health Sciences Research Ethics Board (review no. 15644E).

### Participant recruitment

The target study population was fourth-year medical students at The University of Western Ontario's Schulich School of Medicine and Dentistry who were graduating in 2009 and who had listed family medicine as one of their specialty choices on their Canadian Residency Matching Service applications. An e-mail was sent to all 133 eligible students asking for voluntary participation in the study. Participants continued to be recruited until saturation was reached, for a total of 11 students.

### Data collection

Data were collected using a semistructured interview guide. Participants were asked what they knew about the new models of PHC, from where or whom they learned this information, the perceived advantages and disadvantages of these models of care, and whether their knowledge about these models influenced their decisions to pursue careers in family medicine. The interview guide was revised to cover themes that emerged during the initial data collection. The interviews were conducted by the researchers at The University of Western Ontario in London, Ont, between January and April of 2009. The interviews continued until theme saturation was achieved, in that no new ideas or concepts surfaced in the final interviews. The interviews were approximately 30 minutes long. The interviews were audiotaped and transcribed verbatim, and each transcript was reviewed against the audiotape by the interviewer to verify accuracy.

### Data analysis

The data were analyzed using an iterative, interpretive approach. The analysis occurred over the course of data collection and at completion of all the interviews. The process involved each of the researchers independently reading the verbatim transcripts, noting key words and emerging themes. The researchers then met to combine and compare their independent analyses. A coding template evolved as the analysis proceeded, allowing for the expansion of key themes. The analysis strategy of immersion and crystallization assisted in synthesizing the data in order to provide a comprehensive description of the key themes and overarching concepts.<sup>11</sup>

Trustworthiness and credibility were ensured by the following means: verbatim transcripts of the interviews, independent and team analyses, and reflection on and

discussion of the biases and beliefs that might have influenced the researchers' interpretations of the data.

## FINDINGS

This study identified 4 key themes: the levels of students' knowledge regarding PHC models varied; the knowledge was generally obtained from practical experiences rather than classroom learning; students identified both advantages and disadvantages of working within the new PHC models; and the existence of these new PHC models did not influence participants' decisions to pursue careers in family medicine.

### Knowledge about primary care models

Participants' levels of knowledge regarding the different PHC models in Ontario varied. For example, one participant expressed limited knowledge: "I don't know too much; I know they exist." Other participants were more knowledgeable about the structures of the various PHC models, including funding, how patients were rostered, and how practice responsibilities differed among the models:

The newer [PHC] models are based more on capitation reimbursement ... where [physicians] have a roster of patients and get paid a certain amount per patient. There are differences [among the various PHC models] in what they cover under their main basket and the main services provided.

Another participant described the overarching funding model, including how allied health professionals were incorporated into some PHC models: "[You are] basically providing a certain level of coverage, then you get a capitation paid on top of fee-for-service ... and attached to [the models] are allied health professionals."

### How knowledge was attained

Participants mostly gained knowledge of PHC models through self-directed learning, discussions with preceptors, and clinical experiences.

[I learned about PHC models] hearing different practitioners argue about which models they should adopt .... I've actually talked to a few policy makers about how the models influence practice ... but mostly [I learned] just [from] working.

Minimal knowledge was attained via didactic lectures during students' preclinical years; information was mostly gathered through clinical interactions: "I don't remember it ever being brought up in class .... I think everything I learned about it was from

my preceptor in clerkship." In addition, some participants gained information from student-lead initiatives, such as the family medicine interest group (FMIG): "I think [I learned about PHC models] exclusively from presentations ... [by] the FMIG, where they brought in family physicians .... It didn't come from the curriculum."

### Advantages and disadvantages of PHC models

Participants described both advantages and disadvantages of the new PHC models. Overall they believed these models ultimately improved patient care, but for different reasons. For example, prevention was identified as a main advantage: "I'm all for primary health care and preventive medicine, and I think that these models promote that." Another participant noted the benefit of adding allied health professionals: "Everyone brings a different perspective to the table ... [they] all see it through a different lens." New methods of compensation were noted as an advantage to patient care. "I think the potential is there to spend more time with patients and be compensated appropriately, as opposed to what you would have to do as a fee-for-service family doctor." Funding for electronic medical records (EMRs) was also believed to improve patient care: "When you're using an EMR it can pop up and give you reminders to make sure you do a colon cancer screen this visit, or do a mammogram."

In addition, participants believed that the new PHC models offered an improved lifestyle: "Within a group practice there are lifestyle benefits ... it's much easier to get coverage for your practice .... You don't need to worry about finding a locum or leaving your patients out in the cold."

Participants also identified disadvantages, such as concerns about a changing scope of practice and challenges associated with team dynamics. The loss of practice diversity when working with an interprofessional team was noted:

I think you'll lose a lot of the acuity in what you see day to day, which to me is a major drawback .... The idea that I won't actually counsel the patient on diet and exercise anymore really is a bummer. I'll send them to a dietitian.

Some participants expressed concern about the potential for team conflict: "You get more people involved and then you get committees and hierarchies .... I think that could be a big challenge." Interprofessional settings were sometimes perceived as having diminished efficiency:

I think it is a challenge because it makes patient care more complicated .... You're dealing with several health care professionals working with a single

patient, which means that your communication has to be very good.

### Influence of PHC models on career choice

In general, participants did not perceive the new models of PHC to be the impetus for their decisions to pursue careers in family medicine: "I don't think [PHC models] were a deal-breaking reason." However, some participants thought that the new models reinforced their decisions owing to the camaraderie and support provided by group practice: "I think [the new models] reinforced my decision to do family medicine .... There are supports around you, which is something I like. There's someone I can bounce a question off if I'm not sure."

## DISCUSSION

Findings from this study provide an initial understanding of how medical students perceive and learn about the new PHC models. Participants' knowledge of PHC models was generally attained in unstructured ways and to varying degrees. Although the models were generally viewed as favourable, they were not considered a key influence in the decision to pursue a career in family medicine.

### Knowledge acquisition

Participants' levels of knowledge about different PHC models ranged from merely acknowledging that the models existed to discussing differences in physician compensation. Findings suggested that there were no standardized syllabi regarding PHC models, and information was gathered in an unstructured manner (primarily during clinical training) in various ways, such as self-directed learning, discussions with preceptors, and through the FMIG. Studies indicate that medical students often deviate from family medicine and move toward other specialties during their preclinical years; therefore, it is important to target this population early in order to sustain interest in family medicine.<sup>10,12</sup>

Many family physicians are now practising in new PHC models, which might improve the nature of their practices and their lifestyles. Given that lifestyle and type of practice are influential factors for career choice,<sup>6-8</sup> information regarding new PHC models might be central to each student's decision-making process.

One main source of information for our participants was their family medicine preceptors, who have been found to be important role models for medical students in terms of decision making.<sup>6,8</sup> Therefore, the better informed preceptors are about PHC models, the more influence they will have on medical students.

The FMIG also provided students information about the new PHC models. A recent study found that FMIGs

have a positive role in encouraging a career in family medicine<sup>13</sup>; however, not all students attend FMIG meetings. Another means of disseminating information is the Internet, through student-targeted websites similar to those for practising physicians.

### Advantages and disadvantages of PHC models

Participants identified both advantages and disadvantages of the new PHC models. Preventive medicine, interprofessional teams, alternate funding plans, EMRs, and lifestyle were identified as advantages of the new models, which are congruent with the advantages reported in literature.<sup>14-16</sup> Physician salaries have also improved with some of the new PHC models, despite the fact that physician workload has likely remained unchanged or in fact decreased.<sup>9,17</sup>

Participants also identified disadvantages relating to teamwork; for example, diminished scope of practice, challenges to maintaining effective communication, and the potential for inefficiency in a group setting. Similar hurdles have been identified in the literature, along with strategies to address these challenges. These include education on scope of practice, open and consistent communication, and a flexible attitude toward team members.<sup>10,18</sup>

### Influence of the PHC models on career choice

Knowledge and perceptions about the new PHC models ultimately did not influence participants' decisions to pursue careers in family medicine. It has been speculated that the increase in fourth-year medical students entering family medicine in Ontario was a result of the creation of the new PHC models; however, our research does not support this.<sup>9,10</sup> Factors reported to influence medical students' choice of specialty include exposure to positive role models, practice variety, patient-physician relationships, and lifestyle.<sup>6,19-23</sup> Students listed some of these factors as advantages of PHC models, which might explain participants' attraction to PHC models, even though they could not directly attribute their interest in family medicine to the new models. Alternatively, the limited amount of time these models have been in existence might have prevented adequate exposure, reducing awareness and any subsequent influence. Another interpretation is that PHC models simply do not influence medical students' career choice.

### Limitations

This study was conducted at a single medical school in one province, which might limit the transferability of results to other medical schools and provinces. Because all students who included family medicine as a career choice on their Canadian Residency Matching Service applications were invited to participate in the study, there might have been varying levels of knowledge, depending on whether family medicine was the

primary interest of the applicant or a secondary choice. Future research should examine how interprofessional education during medical school, in conjunction with extended exposure to PHC models, has influenced medical students in their decision to pursue careers in family medicine.

## Conclusion

The varying levels of students' knowledge about PHC models, attained mostly in unstructured settings during the clinical years, indicate that improved education on the new PHC models during the preclinical years is needed. Information could be provided through various channels, including the formal curriculum, influential role models, social media, and FMIGs. Educators and health care policy makers need to determine the best methods to promote these models of care and facilitate knowledge transfer. Simply being able to identify advantages and disadvantages of PHC models did not appear to directly influence participants' choice of family medicine in our study.

**Dr Brown** is Professor in the Centre for Studies in Family Medicine at the Schulich School of Medicine and Dentistry and in the School of Social Work at King's University College, both at The University of Western Ontario in London. **Drs French, McCulloch, and Clendinning** were medical students at the Schulich School of Medicine and Dentistry at The University of Western Ontario at the time of the study.

### Contributors

**Dr Brown** developed the methodology for the study, participated in data analysis, reviewed drafts of the manuscript, and edited the final manuscript. **Drs French, McCulloch, and Clendinning** helped in the development of the study, conducted and transcribed the interviews, participated in data analysis, and wrote the final manuscript.

### Competing interests

None declared

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