

Residency research requirements and the CanMEDS-FM scholar role

Perspectives of residents and recent graduates

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Abstract

Objective To explore the perspectives of family medicine residents and recent family medicine graduates on the research requirements and other CanMEDS scholar competencies in family practice residency training.

Design Semistructured focus groups and individual interviews.

Setting Family practice residency program at the University of British Columbia in Vancouver.

Participants Convenience sample of 6 second-year family medicine residents and 6 family physicians who had graduated from the University of British Columbia family practice residency program within the previous 5 years.

Methods Two focus groups with residents and individual interviews with each of the 6 recently graduated physicians. All interviews were audiotaped, transcribed, and analyzed for thematic content.

Main findings Three themes emerged that captured key issues around research requirements in family practice training: 1) relating the scholar role to family practice, 2) realizing that scholarship is more than simply the creation or discovery of new knowledge, and 3) addressing barriers to integrating research into a clinical career.

Conclusion Creation of new medical knowledge is just one aspect of the CanMEDS scholar role, and more attention should be paid to the other competencies, including teaching, enhancing professional activities through ongoing learning, critical appraisal of information, and learning how to better contribute to the dissemination, application, and translation of knowledge. Research is valued as important, but opinions still vary as to whether a formal research study should be required in residency. Completion of residency research projects is viewed as somewhat rewarding, but with an equivocal effect on future research intentions.

EDITOR'S KEY POINTS

- Resident involvement in scholarly activity is an accreditation requirement of family medicine residency training programs in Canada. The scholar role can include ongoing self-directed learning based on reflective practice; critically evaluating medical information; facilitating the education of patients, families, trainees, other health professional colleagues, and the public; and contributing to the creation, dissemination, application, and translation of new knowledge and practices.
- The key competencies that address broader conceptions of scholarship appear to be unevenly addressed during residency training, with too great an emphasis on the creation and dissemination of new knowledge. Most of the participants saw the requirement to undertake a research project as an ineffective approach to learning about the value of scholarship in family medicine.
- The study participants' opinions mirror and even anticipate changes that will be necessary to embrace a Triple C Competency-based Curriculum.

Exigences de recherche pour les résidents et rôle scientifique de CanMEDS-FM

Ce qu'en pensent les résidents et les récemment diplômés

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Résumé

Objectif Étudier les points de vue des résidents en médecine familiale et des médecins de famille récemment diplômés sur les exigences en matière de recherche et d'autres compétences de recherche CanMEDS au cours de la formation de résidence en médecine familiale.

Type d'étude Groupes de discussion semi-structurés et entrevues individuelles.

Contexte Le programme de résidence en médecine familiale de l'université de Colombie-Britannique à Vancouver.

Participants Un échantillon raisonné de 6 résidents en deuxième année de médecine familiale et de 6 médecins récemment diplômés du programme de résidence en pratique de la médecine familiale de l'Université de la Colombie-Britannique au cours des 5 années précédentes.

Méthodes Deux groupes de discussion avec les résidents et des entrevues individuelles avec chacun des 6 médecins récemment diplômés. Les entrevues ont toutes été enregistrées, transcrites et analysées afin d'en étudier les thèmes.

Principales observations Trois thèmes ont été retenus qui concernent des questions clés touchant les exigences de recherche durant la formation en pratique familiale : 1) comprendre la relation entre le rôle d'érudit et la pratique familiale, 2) constater que l'érudition n'est pas simplement la création ou la découverte de connaissances nouvelles et 3) discuter des obstacles à l'intégration de la recherche dans une carrière clinique.

Conclusions La création de nouvelles connaissances n'est qu'un aspect du rôle en matière de recherche de CanMEDS, et on devrait accorder plus d'attention aux autres compétences, y compris l'enseignement, la promotion d'activités professionnelles par la formation continue, l'évaluation critique de l'information, et une meilleure contribution à la diffusion, à l'application et au transfert des connaissances. La recherche est jugée importante, mais les opinions varient quant à la nécessité d'exiger une étude de recherche formelle durant la résidence. La réussite d'un projet de recherche durant la résidence est considérée comme enrichissante, mais son effet sur l'intention de faire d'autres recherches dans le futur n'est pas évident.

POINTS DE REPÈRE DU RÉDACTEUR

- La participation à des activités de recherche est une exigence pour l'accréditation dans les programmes de résidence en médecine familiale au Canada. Le rôle de recherche peut inclure un auto-apprentissage fondé sur une pratique réfléchie; une évaluation critique de l'information médicale; une meilleure éducation des patients, des familles, des stagiaires, des collègues professionnels de la santé et du public; et une contribution à la création, à la diffusion, à l'application et au transfert de connaissances et de modes de pratique nouveaux.
- Les compétences clés qui relèvent d'une conception plus large du savoir semblent être inégalement considérées durant la résidence, avec une trop forte insistance sur la création et la diffusion de nouvelles connaissances. La plupart des participants considéraient que l'exigence d'entreprendre un projet de recherche n'était pas un moyen efficace pour comprendre la valeur de l'érudition en médecine familiale.
- L'opinion des participants à cette étude reflète et même anticipe les changements qui seront nécessaires pour en arriver à un cursus triple C axé sur le développement des compétences.

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Family medicine residents' involvement in scholarly activity is an accreditation requirement of residency training programs in Canada. Many family medicine residency programs also require their residents to undertake a research project. However, there is a perception that research is not a priority activity for family physicians,¹⁻⁵ and that future physicians with particular interests in research might choose careers other than family medicine.⁶ Much has been written about the future of research in family medicine,⁷ with general acknowledgment that the self-image of family practitioners as researchers, and family medicine as a research-intensive enterprise, is not a normative one.^{8,9} Studies on research participation and productivity among faculty in family medicine departments suggest modest research and publication output compared with other medical specialties.¹⁰⁻¹² Yet, there is little published on the perspectives of family physicians and trainees regarding what it is about research that appears discouraging to family physicians, or what it is about family medicine that discourages research.

At the time this study was conducted, University of British Columbia (UBC) family medicine residents completed 2 projects as part of their scholarly activities: a clinical practice audit in their first year and a research project (usually of the type requiring review by a research ethics board) in their second year. The purpose of this exploratory study was to gain insight into residents' and recently graduated or Certified family physicians' perspectives on research as a requirement in residency training programs within the context of the CanMEDS scholar role.

CanMEDS-Family Medicine scholar role

More than a decade ago, the Royal College of Physicians and Surgeons of Canada, the certifying and accrediting body for medical specialties (excluding family medicine), introduced a national competency framework called the CanMEDS initiative.¹³ The framework is organized around CanMEDS roles that define the characteristics of a competent physician. These roles include medical expert, communicator, collaborator, health advocate, manager, scholar, and professional. In 2009, the College of Family Physicians of Canada Working Group on Curriculum Review "concluded that CanMEDS provided the most relevant and useful framework for categorizing competencies in family medicine in Canada."¹⁴ The CanMEDS-Family Medicine (CanMEDS-FM) roles are an adaptation of the original Royal College framework.¹⁵ The scholar role, as adapted for the family medicine context, is outlined in **Box 1**.¹⁴

The perspectives of trainees and practising physicians concerning issues related to resident research in family medicine are not well understood within a

Canadian context.¹⁶ This exploratory study is an appropriate beginning for studying a phenomenon about which little is known.¹⁷ Informed by ethnographic principles,¹⁸ this localized qualitative study explores residents' and recent family medicine graduates' opinions of the research requirement in the UBC family medicine program, and how it relates to the CanMEDS-FM scholar role.

METHODS

Twenty-eight second-year family medicine residents from Vancouver-based training sites and 150 family physicians who had graduated from the UBC family practice postgraduate program within the previous 5 years were invited to participate. Six family medicine residents (2 men and 4 women) and 6 family physicians (4 men and 2 women) agreed to be interviewed, forming a convenience sample of 12 participants.

Data collection

All of the interviews were conducted by 2 family medicine residents (J.K. and J.B.) as part of their own residency research requirements. The other authors (M.B.C.

Box 1. CanMEDS-Family Medicine scholar role

Definition

As scholars, family physicians demonstrate a lifelong commitment to reflective learning, as well as to the creation, dissemination, application, and translation of knowledge.

Description

Family physicians engage daily in the search for answers to patient care questions and strive to adapt and increase their knowledge and skills to meet the needs of their patients and community. As reflective learners, they recognize the need to be continually learning and to model this for others. Through their scholarly activities, they contribute to the creation, dissemination, application, and translation of knowledge. As teachers, they facilitate the education of their students, patients, colleagues, and others. Family physicians adopt a critical and evidence-informed approach to practice and maintain this approach through continued learning and quality improvement.

Key competencies

1. Maintain and enhance professional activities through ongoing self-directed learning based on reflective practice
2. Critically evaluate medical information, its sources, and its relevance to their practice, and apply this information to practice decisions
3. Facilitate the education of patients, families, trainees, other health professional colleagues, and the public, as appropriate
4. Contribute to the creation, dissemination, application, and translation of new knowledge and practices

Reproduced from Tannenbaum et al.¹⁴

and S.D.) provided training in conducting qualitative research, and supervised data collection and analysis. Each of the 6 resident participants attended 2 focus group sessions, the first taking place early in the time they were conducting their own research projects, and the second closer to the completion of their research projects. In this way we hoped to obtain a more informed opinion of their entire research experience during residency. Given the logistic challenges of scheduling a focus group that a sufficient number of practising family physicians could attend together, the recent graduate participants were interviewed individually, each on one occasion. All interviews took place between January and April 2010, lasted between 60 and 90 minutes, and were audiotaped and transcribed verbatim for analysis.

Focus groups and individual interviews were conducted using the same semistructured guide. Each participant was provided with a description of the CanMEDS-FM scholar role, and asked to read the definition and related competencies. The interview guide (Box 2) served as a prompt to initiate discussion. Probing questions were used to encourage participants to describe their understanding of the scholar role, to explore how they interpreted related competencies, and to describe their experiences with and perspectives on research requirements during residency training.

Box 2. Interview guide

We have provided you with a copy of the CanMEDS–Family Medicine scholar role. We would like you to take a moment to read the definition and related competencies.

CanMEDS–Family Medicine scholar role:

- What is your opinion of the CanMEDS framework generally and the scholar role in particular?
- What is the relevance of the scholar role to family medicine?
- Are there any specific elements of this role that you would like to discuss?

Research in residency:

- Which components of postgraduate training promote(d) the scholar role?
- Please comment on the degree of faculty and program support available for research and scholarly activity.
- Can you comment on the usefulness of research during your training?
- Are you or do you plan to be involved in research in the future? Why or why not?
- How well did residency prepare you for research?
- What effect did your training have on your desire to pursue research as a staff physician?

Future implications for postgraduate training:

- What aspects related to research as part of postgraduate training need to be improved?
- How best can training develop research capacity and skills?
- How can scholarship in family medicine be encouraged?

Data analysis

Content analysis of the interview transcripts first entailed systematic reduction in order to identify core consistencies and meanings. This process was guided by Braun and Clarke's work on thematic analysis—organizing, interpreting, and consolidating interview data in relation to the research questions that were asked.¹⁹ Three of the researchers (J.K., J.B., and S.D.) independently reviewed the transcripts, coded key ideas, and organized these into categories of meaning. Individually organized categories were then discussed among the research team, followed by a collective and negotiated effort to achieve thematic construction.¹⁷ Analysis focused on how the individual and focus group participants perceived the CanMEDS-FM scholar role and its application to family practice, their perspectives on the importance of research as a requirement in family medicine training, and their sense of how to better integrate related competencies into postgraduate training. Hence, the analysis identified patterns of responses to the questions in the interview guide that were designed to elicit opinions on these overarching inquiries. The UBC Behavioural Research Ethics Board approved the study.

RESULTS

Our analysis is organized into 3 key themes that reflect the study participants' viewpoints: 1) relating the scholar role to family practice, 2) realizing that scholarship is more than simply the creation or discovery of new knowledge, and 3) addressing barriers to integrating research into a clinical career. We present our findings here in narrative form, supported by quotations that best highlight the essence of each theme. Quotes from residents are identified as *R* and quotes from recently graduated family physicians are identified as *GFP*.

Relating the scholar role to family practice

Participants thought that greater effort was required to relate the CanMEDS scholar role to family medicine. A need to better integrate practice-based experience was seen as a key component of research in family medicine:

The focus is on evidence-based practice, but we constantly acquire knowledge both directly and indirectly through practical experience. (GFP)

Scholar should mean that you remain well informed, and keep your patients well informed, based on the latest evidence but also on your practice experience ... we have to remember that medicine is very much an art as well as a science. (GFP)

The recently graduated family physicians stressed the importance of the “art of medicine,” which they identified as matters dealing with the “patient-doctor relationship, and the humanistic aspects of health and illness.” (GFP) Within this context, a broader conception of the physician as scholar was seen as necessary, and competencies 1 to 3 (**Box 1**)¹⁴ were seen as enabling a scholarly approach to postgraduate training and clinical practice in a discipline that was regarded as best taught through “apprenticeship [and] good role models as a valid way to learn.” (GFP)

CanMEDS puts the emphasis on continued learning and critical learning. They stop short, however, in describing how to do it. I don't know that you can really make it so rigid when so much of residency is just soaking in what you're doing every day. In a sense, we critically evaluate things all the time, but it wouldn't be formally recognized as such. (R)

Reflections on postgraduate training and the promotion of research revealed that most of the participants, both practising physicians and residents, felt strongly about “practice-based evidence” (GFP)—that is, evidence that is developed and implemented based on real-world medical practices. When research and scholarship were purposefully linked to practice, the participants could see their immediate value. For example, when learning about research was linked to clinical practice audits it was seen as fruitful: “The clinical practice audit was really useful in that you learned a guideline and the research for or against it really well.” (R)

Yet, the requirement to complete a research project outside of the context of family practice was seen as an ineffective approach to learning about the value of scholarship in family medicine.

The research project seemed contrived. There are a lot of other ways I could learn to be a scholar and/or researcher that would be more practical and useful in the future. You definitely get an appreciation for the whole process and what it takes, but you don't necessarily need to do a whole project start to finish to get this. You end up just choosing any topic you think you can finish in a year to satisfy the requirement. Research for the sake of research is not high-quality content. (R)

Scholarship is more than the creation or discovery of new knowledge

Completing a research project from conception to conclusion was seen as worthwhile to the extent that the experience provided insight into the intense effort required of researchers.

[In] retrospect, any work you've done is always useful. The time that I spent, however, maybe, could have been used elsewhere. It [time] was not enough to do it well. I've learned how hard research is, and all the different things that need to fall into place in order for research to be carried out ... it has given me a greater appreciation for people who do enjoy doing research and for some of the stumbling blocks they may encounter. (R)

However, the research requirement during postgraduate training was seen as consuming considerable amounts of time. The amount of curriculum time dedicated to developing and completing a research project was seen as limiting other opportunities for learning about the broader set of competencies associated with the scholar role.

I think we lacked guidance in becoming effective teachers. Instructing patients and teaching trainees is so important in family medicine. I think we had 1, 2-hour lecture on “Resident as Teachers” in 2 years. We were not given the tools to do this. (R)

Sometimes we don't have enough emphasis on teaching residents the tools for lifelong learning. How am I going to keep learning the right information? We need a way to improve upon that [in] the educational component ... to develop tools, Internet-based, electronic-based, where to look up right answers, how to access good CME [continuing medical education] programs. (R)

There was common sentiment that residents' teaching skills were neither fully developed nor well evaluated during training. Hence, trainees began to view the research requirement as something that prevented the learning of other critical aspects of family medicine scholarship. Moreover, conducting research in itself was not seen as an essential requirement for good doctoring or for experiencing a fulfilling career in family practice:

Research is important but I don't see it as most fulfilling. I see the value in it but I don't want to take away from the clinical work I enjoy. (GFP)

I don't see the creation of new knowledge as a very important part of [the doctor's] role. I haven't closed the door on it; maybe in future practice if something inspires me. (R)

Both the residents and the family physicians interviewed expressed concern that normative conceptions of the scholar role are focused largely on the creation of new knowledge (key competency 4¹⁴). Participants were in agreement that there is far less emphasis in residency training on the other key competencies (1 to 3¹⁴), and

that they regarded these as particularly important to family medicine.

Barriers to integrating research into a clinical career

The recently graduated physician participants identified barriers to integrating research into a family medicine career that included lack of time, lack of funding, isolation, and lack of specific focus:

It's hard to pin down funding for it, and ultimately hard to find the time to make it happen. (GFP)

If you're working in a clinic, you're fairly isolated, versus working in a hospital on a team where it's easier to get other health care professionals involved in your research too. (GFP)

Obviously every physician has a duty to stay on top of things. It's already hard enough to balance clinical work and family time. I couldn't possibly squeeze in time to research without cutting out other things. But I certainly try to stay up to date on the latest relevant publications. (GFP)

Moreover, the completion of residency research projects was seen as having an equivocal effect on future research intentions. Only 1 of the 12 participants considered the possibility of pursuing research while in practice.

All of the participants agreed that the CanMEDS framework offered a comprehensive set of guidelines for standardizing training programs nationwide, and for providing a basis for evaluation of postgraduate trainees. There was also agreement that the CanMEDS roles were on the whole applicable to both family medicine as a specialty, and to the role and identity characterizing the family physician. With respect to the scholar role, recently graduated family physicians were in agreement with the CanMEDS description in that it was seen to "resonate with what [family physicians] are expected to know." (GFP)

CanMEDS is nice in theory ... it really does describe most of what makes a good doc. (GFP)

DISCUSSION

There is a growing literature on the opportunities and challenges related to research as an integral part of family practice and postgraduate training.²⁰⁻²⁵ There appears to be a prevailing sense in academic family medicine that the research requirement during training will help family physicians become better research consumers, develop research capacity, and generate new knowledge in primary care. The participants in our

study questioned whether requiring research as part of postgraduate training was the best way to achieve these aims. Our study adds an in-depth perspective on the results of previous quantitative surveys,²⁶ particularly the study by Leahy et al²⁷ on family physician's attitudes toward education in research skills during residency, which to our knowledge is the only large-scale Canadian contribution to the literature in this area. Our findings provide explanations from the lived experience of residents and recently graduated family physicians as to why family physicians might believe that they do not need strong research skills and why the residency research projects are not regarded as highly influential learning experiences.

If the goal is to produce family practice researchers, our study participants suggest there might be better ways to achieve this, particularly when time is such a limiting factor within a 2-year residency training program. The research requirement during training was regarded as an ineffective approach for producing new knowledge and for learning about the value of research in family medicine. Participants suggested that for research to be meaningful to them it needed to be better integrated into all aspects of family practice training and within the broader context of the notion of scholarship. Boyer²⁸ and others²⁹ provide useful conceptions of scholarship that are helpful for shaping scholarly development in family medicine. Boyer states that scholarship in its broader sense extends beyond discovery of new knowledge to include the integration and application of knowledge, and educational scholarship.²⁸ Boyer's framework befits the inherently interdisciplinary elements that define family practice—looking for connections across disciplines; enabling better connections among theory, evidence, and practice; examining how best to apply knowledge to important problems; and translating and extending knowledge for developing capacity and skill. If the intent of including research as a requirement during training is to ensure that residents will practice evidence-based medicine, this study's participants indicate that having to conduct an empirical study does not necessarily serve to develop capacity or skills for evidence-based practice.

Our study found that residents and practising family physicians agreed that critical appraisal skills and evidence-based medicine were essential to the practice of modern family medicine. However, there was a clear statement of the need to purposefully link research training to clinical practice, and to place research in better balance within the broader view of scholarship and the physician's role as a scholar, as presented in CanMEDS-FM. The amount of curriculum time dedicated to carrying out a research project was seen to limit time for the development of other important skills, such as patient education, evaluating research for

evidence-based practice, and continuing professional development. Hence, few of the participants considered their resident research projects to have been influential learning experiences, although the projects were not considered unimportant. For these reasons, most of the study participants believed that traditional research projects should not necessarily be required as part of postgraduate training.

Limitations

A noteworthy limitation of this study is the small convenience or volunteer sample of 6 of 28 residents and 6 of 150 practitioners—only 12 study participants in total. Participants might have self-selected based on a biased view of research. Ideally, participant recruitment would have continued until interviews yielded no new variation or exceptions in information on the topic of study.

For logistic reasons we conducted a focus group with the residents and individual interviews with practising physicians. We acknowledge that the focus group is influenced by group dynamics and intergroup bias, and there is less opportunity to obtain detailed, in-depth perspectives, beliefs, and attitudes compared with individual interviews. On the other hand, the main advantage of a focus group is the opportunity to capture a range of general perspectives of the many possible issues related to the phenomenon under study.

Conclusion

Although research as a training requirement is now an established prerequisite during family practice residency training in Canada, the actual benefits to residents and its value for future practice need to be better understood and articulated. The key competencies that address broader conceptions of scholarship appear to be unevenly addressed during residency training, with too great an emphasis on the creation and dissemination of new knowledge. This exploratory study provides insights into some of the issues pertaining to research within the broader context of scholarship in family medicine, from the perspectives of trainees and recent graduates. It appears that our study participants' opinions mirror and even anticipate changes that will be necessary to embrace a Triple C Competency-based Curriculum with an approach to the scholar curriculum in residency training that is more "comprehensive, focused on continuity of education and patient care, and centred in family medicine."³⁰

Drs Koo and Bains were second-year family medicine residents in the Department of Family Practice at the University of British Columbia (UBC) in Vancouver at the time of the study, and are now family physicians practising in Thunder Bay, Ont, and Surrey, BC, respectively. **Dr Collins** is Clinical Assistant Professor in the Department of Family Practice and the Vancouver Fraser Site Faculty for Research Postgraduate Program at UBC. **Dr Dharamsi** is Assistant Professor in the Department of Family Practice, Faculty Lead for the Global Health Network at the Liu Institute for Global Issues, and Faculty Co-Lead for the Social Accountability and Community Engagement Initiative with the Faculty of Medicine at UBC.

Contributors

All authors contributed to concept and design of the study; analysis and interpretation; and preparing the manuscript for submission. **Drs Koo and Bains** were involved in data gathering.

Competing interests

None declared

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