Web exclusive

Knowledge of CanMEDS–Family Medicine roles

Survey of Canadian family medicine residents

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Abstract

Objective This study evaluates the self-perceived awareness of the new CanMEDS–Family Medicine (CanMEDS-FM) roles by family medicine residents.

Design A 22-question online survey.

Setting Canadian family medicine residency programs.

Participants All residents enrolled in a Canadian family medicine residency as of September 2010 received the survey between May and June 2011. A total of 568 residents participated.

Main outcome measures Survey respondents indicated their awareness of, their exposure to, and the perceived importance of the CanMEDS-FM roles.

Results The survey response rate was 25.1%. In total, 88.9% (463 of 521) of family medicine residents were aware of the CanMEDS-FM roles; there was no statistically significant difference in awareness between first- and second-year residents. Family medicine expert and communicator were most frequently chosen as the most important CanMEDS-FM roles, while manager and scholar were selected the least often. Overall, 76.4% of family medicine residents thought that their core family medicine teaching was guided by CanMEDS-FM, while 41.8% thought the same about off-service rotations.

Conclusion It appears that most family medicine residents are aware of the CanMEDS-FM roles. While core family medicine training and evaluation seem to be grounded in CanMEDS-FM, residency program directors should endeavour to ensure that the same principles apply during off-service rotations.

EDITORS KEY POINTS

- The CanMEDS–Family Medicine (CanMEDS-FM) roles were developed in 2009 to form the basis of a new competency-based curriculum in family medicine. This study aimed to evaluate residents' awareness of the new CanMEDS-FM roles.
- By far most family medicine residents were aware of the CanMEDS-FM roles and believed they had the expected level of knowledge about those roles for their current level of training. There were no significant differences in awareness or understanding between first- and second-year residents.
- Respondents overwhelmingly indicated that the family medicine expert and communicator roles were the most important. Greater care might be needed to ensure that curriculums achieve an appropriate balance of competence in all of the roles, as they are all of intertwining importance in the development of competent future physicians.

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Exclusivement sur le web

Connaissance des rôles CanMEDS-Médecine familiale

Enquête auprès des résidents canadiens en médecine familiale

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Résumé

Objectif Déterminer ce que les résidents en médecine familiale pensent de leur connaissance des nouveaux rôles CanMEDS-Médecine familiale.

Type d'étude Enquête en ligne comportant 12 questions.

Contexte Les programmes canadiens de résidence en médecine familiale.

Participants Tous les résidents inscrits dans un programme canadien de résidence en médecine familiale en septembre 2010 ont reçu le questionnaire entre mai et juin 2011. Au total, 568 résidents ont participé.

Principaux paramètres à l'étude Les répondants ont indiqué leur degré de connaissance et d'exposition aux rôles CanMEDS-MF, et ce qu'ils pensent de leur importance.

Résultats Le taux de réponse à l'enquête était de 25,1%. Au total, 88,9% (463 sur 521) étaient au courant des rôles CanMEDS-MF, et il n'y avait pas de différence statistiquement significative entre les résidents 1 et les résidents 2 sur ce point. Les rôles CanMEDS-FM qui ont été le plus souvent désignés comme les plus importants étaient ceux d'expert en médecine familiale et de communicateur, tandis que ceux d'administrateur et d'érudit étaient les moins choisis. Dans l'ensemble, 76,4% des résidents en médecine familiale estimaient que leur enseignement de base en médecine familiale était fondé sur CanMeds-FM, tandis que 41,8% croyaient que c'était aussi le cas pour les stages en milieu externe.

Conclusion Il semble que la plupart des résidents en médecine familiale connaissent les rôles CanMEDS-FM. Si la formation de base en médecine familiale et son évaluation reposent sur CanMEDS-FM, Il serait opportun que les directeurs des programmes de résidence s'assurent que ces principes s'appliquent aussi aux stages en milieu externe.

POINTS DE REPÈRE DU RÉDACTEUR

- Les rôles CanMEDS-Médecine familiale (CanMEDS-MF) ont été créés en 2009 pour servir de base à un nouveau curriculum en médecine familiale, fondé sur la compétence. Cette étude voulait déterminer ce que les résidents connaissent des rôles CanMEDS-FM.
- La grande majorité des résidents en médecine familiale connaissaient les rôles CanMEDS-FM et croyaient que la connaissance qu'ils en avaient correspondait au niveau actuel de leur formation. Il n'y avait pas de différence significative entre les résidents 1 et les résidents 2 pour ce qui est de la connaissance et de la compréhension de ces rôles.
- Une forte majorité de répondants ont indiqué que le rôle d'expert en médecine familiale et celui de communicateur étaient les plus importants. Il pourrait être nécessaire de s'assurer que les curriculums développent un équilibre approprié entre les compétences dans tous les rôles, puisqu'elles sont toutes inextricablement liées pour assurer le développement de la compétence des futurs médecins.

Cet article a fait l'objet d'une révision par des pairs.
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Initially published in 2009, CanMEDS–Family Medicine (CanMEDS-FM) is a relatively new concept in family medicine education.[1] Based largely on the work of the Educating Future Physicians of Ontario[2,3] and the Canadian Medical Education Directives for Specialists (CanMEDS) projects,[4,5] CanMEDS-FM is intended to guide curriculum development and to serve as a common language between the Royal College of Physicians and Surgeons of Canada (RCPSC) and the College of Family Physicians of Canada for the purposes of medical education, evaluation of medical trainees, and accreditation of residency programs. The original CanMEDS roles as developed by the RCPSC included medical expert, communicator, manager, collaborator, professional, advocate, and scholar. Each CanMEDS role was further defined with learning objectives. The CanMEDS-FM roles are similar to the RCPSC's CanMEDS roles, with a notable difference being *family medicine expert* instead of *medical expert* to reflect the differences in skills and competencies pertaining to family medicine.[6]

The College of Family Physicians of Canada is currently implementing a new curriculum entitled the Triple C Competency-based curriculum, which will become the basis for family medicine training in Canada. While the traditional 4 principles of family medicine, detailed in **Box 1**,[7] will continue to be strong pillars of this new curriculum, the CanMEDS-FM roles will be an integral anchor for the development of key competencies and learning objectives. The evaluative process for the family medicine resident will also be largely based on CanMEDS-FM as a conceptual guide.

Box 1. The 4 principles of family medicine

- The family physician is a skilled clinician
- Family medicine is a community-based discipline
- The family physician is a resource to a defined practice population
- The patient-physician relationship is central to the role of the family physician

Data from the College of Family Physicians of Canada.[7]

Given that the CanMEDS framework has existed for longer in the RCPSC specialty programs, after a brief review of the literature we were able to identify studies investigating the understanding of CanMEDS roles among Royal College specialty residents and medical students.[8-10] In an examination of medical students, Rademakers et al found that students perceived communicator and professional to be the most important roles.[9] In addition, Stafford et al found that the role of advocate was important to medical trainees, but that they believed that it was difficult to teach and evaluate.[10] To our knowledge, there has not been a study to assess the knowledge and level of understanding of the CanMEDS-FM roles among Canadian family medicine residents. As the new curriculum is incorporated into family medicine residency programs, it will be essential for residents to understand the basis and philosophy behind what they are being taught and how they are evaluated. Our study examines awareness of the CanMEDS-FM roles among Canadian family medicine residents and their exposure to the use of the CanMEDS-FM framework in the residency curriculum.

METHODS

Every family medicine resident registered at any of the 17 Canadian medical schools as of September 2010 was eligible to complete the survey. Residency program participation was encouraged by offering programs their school-specific summarized data. Ethics approval for the study was given by the Western University Research Ethics Board.

Family medicine residents were asked to provide basic demographic information such as age, sex, ethnicity, and site of training. To our knowledge there is no validated tool for assessing knowledge of CanMEDS-FM roles for residents. Therefore, questions based on the available literature and expert opinion were developed to assess the knowledge and understanding family medicine residents had about these educational roles and competencies. A 22-question survey was developed to assess understanding of the CanMEDS-FM roles and residents' perceptions regarding the use of the CanMEDS-FM framework in the curriculum. The questionnaire was initially developed in English, and a translated French version was distributed to the primarily Francophone residency programs. Beyond basic demographic questions, survey questions were developed based on bipolar scaling methods. Questions about whether residents were aware of the existence of the CanMEDS-FM roles, for example, were given answer options of yes or no. For questions measuring residents' interest, perception, or level of understanding, a Likert scale was used. The surveys were identified by medical school and year of postgraduate training, and the actual names of respondents were not collected, assuring anonymity.

The survey was entered into SurveyMonkey (**www.SurveyMonkey.com**) and electronically mailed to the 17 Canadian family medicine programs. Program administrators and administrative residents were asked to distribute the surveys to family medicine residents. Subsequent reminder messages were sent to residents via the administrators and administrative residents to

maximize responses. The survey data were collected electronically by SurveyMonkey and were available only to the investigators.

Cross-tabulations with independent covariates were generated. Results are based on 2-sided tests (*Z* tests for proportions) with a significance level of $P<.05$ using SPSS for Windows, version 17.0.3. A Bonferroni correction was used to correct for multiple comparisons.

RESULTS

Of the 17 Canadian family medicine training programs, 16 participated in the survey, representing a 94.1% program participation rate. Schools that responded included representation from primarily rural and urban schools, with geographic diversity. Both Anglophone and Francophone schools participated. As of June 2011, 2266 first- and second-year residents were registered in those Canadian family medicine core training programs. A total of 568 residents responded to the survey, yielding a 25.1% response rate. **Table 1** outlines the demographic information of the survey respondents.

The results showed that most family medicine residents were aware of the CanMEDS-FM roles (**Table 2**). Most residents also considered themselves to be at the level of knowledge expected for their current year of training, with no statistically significant difference between first- and second-year residents (**Table 3**).

Both first- and second-year family medicine residents selected family medicine expert as the most important CanMEDS-FM role ($P<.05$ vs other roles) (**Table 4**). Family medicine core rotations and evaluations were perceived to be more consistent ($P<.05$) with CanMEDS-FM roles compared with off-service rotations and evaluations (**Table 5**). In all of the results discussed, there were no statistically significant differences between first- and second-year residents.

In addition, residents in block-type family medicine curriculums showed no statistically significant differences in their familiarity with the CanMEDS-FM roles compared with their counterparts in integrated or horizontal curriculums (ie, family medicine clinical training spread throughout the year rather than in monthly blocks).

Table 1. Demographic characteristics of Canadian family medicine residents respondents: *N = 568; not all respondents answered all questions.*

CHARACTERISTIC	N
Year of training	
• First	293
• Second	275
Sex	
• Male	170
• Female	397
Ethnicity	
• White	407
• Asian	94
• Hispanic	5
• African descent	15
• First Nations or Inuit	1
• Other	49
Age, y	
• 21-25	57
• 26-30	324
• 31-35	108
• 36-40	39
• 41-45	25
• >45	10
Location of intended practice*	
• Academic practice	119
• Urban community practice	324
• Rural community practice	249
• Northern or remote practice	69

*Respondents could indicate more than 1 future practice location.

Table 2. Awareness of CanMEDS-FM among Canadian family medicine residents

VARIABLE	FIRST-YEAR RESIDENTS	SECOND-YEAR RESIDENTS	ALL RESIDENTS
Aware of CanMEDS-FM			
• Yes, %	90.0	87.7	88.9
• No, %	10.0	12.3	11.1
• Total, n	261.0	260.0	521.0
Level of understanding of and comfort with the CanMEDS-FM roles			
• Very comfortable, %	25.8	28.8	27.3
• Somewhat comfortable, %	51.5	47.7	49.6
• Vaguely comfortable, %	18.5	19.2	18.8
• Uncomfortable, %	4.2	4.2	4.2
• Total, n	260.0	260.0	520.0

CanMEDS-FM—CanMEDS–Family Medicine.

Table 3. Level of understanding about the individual CanMEDS-FM roles

LEVEL OF UNDERSTANDING	FAMILY MEDICINE EXPERT, % (N = 517)	COMMUNICATOR, % (N = 517)	COLLABORATOR, % (N = 512)	MANAGER, % (N = 507)	HEALTH ADVOCATE, % (N = 513)	SCHOLAR, % (N = 510)	PROFESSIONAL, % (N = 514)
Beyond level of knowledge expected for current level of training	4.8	28.2	18.4	7.5	12.7	7.1	22.4
At level of knowledge expected for current level of training	83.4	66.0	72.9	69.8	74.1	74.7	70.4
Below level of knowledge expected for current level of training	8.7	3.1	5.5	17.8	10.3	14.5	3.5
Unfamiliar with this CanMEDS-FM role and learning objectives	3.1	2.7	3.3	4.9	2.9	3.7	3.7

CanMEDS-FM—CanMEDS–Family Medicine.

Table 4. Canadian family medicine residents' perceptions about the most important CanMEDS-FM role

ROLE	FIRST-YEAR RESIDENTS, % (N = 253)	SECOND-YEAR RESIDENTS, % (N = 253)	ALL RESIDENTS, % (N = 506)
Family medicine expert	45.1	41.1	43.1
Communicator	31.2	32.8	32.0
Health advocate	12.3	9.9	11.1
Professional	4.7	7.1	5.9
Collaboration	3.2	5.9	4.5
Manager	3.2	1.2	2.2
Scholar	0.4	2.0	1.2

CanMEDS-FM—CanMEDS–Family Medicine.

Table 5. Formal training and clinical education in family medicine residency training relating to CanMEDS-FM

VARIABLE	FIRST-YEAR RESIDENTS	SECOND-YEAR RESIDENTS	ALL RESIDENTS
CanMEDS-FM roles guide core family medicine training			
• Yes, %	77.8	75.1	76.4
• No, %	22.2	24.9	23.6
• Total, n	252	253	505
CanMEDS-FM roles guide off-service training			
• Yes, %	40.4	43.3	41.8
• No, %	59.6	56.7	58.2
• Total, n	255	252	507
CanMEDS-FM roles guide evaluations in core family medicine training			
• Yes, %	85.6	86.2	85.9
• No, %	14.4	13.8	14.1
• Total, n	250	254	504
CanMEDS-FM roles guide evaluations in off-service training			
• Yes, %	64.4	68.9	66.7
• No, %	35.6	31.1	33.3
• Total, n	250	251	501

CanMEDS-FM—CanMEDS–Family Medicine.

DISCUSSION

While CanMEDS has been an integral part of RCPSC residency training programs for more than a decade, its introduction into family medicine residency programs is quite recent. While there has yet to be a study to evaluate the degree of awareness of CanMEDS roles in specialty residents, one would suspect a strong level of understanding given the length of time CanMEDS has guided Royal College curriculum development and assessment. In our study, it appeared that nearly 90% of all responding residents were aware of the CanMEDS-FM roles. Initially, we had suspected that second-year residents might have had a stronger understanding of the roles compared with first-year residents, but our study results suggest that the level of awareness was similar. This high level of awareness is encouraging given that the new Triple C curriculum will be highly guided by the CanMEDS-FM roles. As active learners,

a strong understanding of the CanMEDS-FM roles will likely enable family medicine residents to quickly adapt to the new curriculum and new formats of evaluation.

Family medicine residents selected family medicine expert as the most important CanMEDS-FM role. This finding is similar to the findings of qualitative research examining RCPSC residents, in which medical expert was perceived to be the most important CanMEDS role.[2] Interestingly, family medicine residents selected communicator as a close second in terms of the most important role, which is similar to a study of Dutch medical trainees, in which professional and communicator were identified as the 2 most valued roles.[9] Given the interdisciplinary nature of clinical practice, the large number of family medicine residents who recognize the importance of strong communication skills is in keeping with the general trend of medical training. Perhaps even more crucial, communication is key to the ability to practise patient-centred care. Furthermore, there does not appear to be a difference between first- and second-year residents in the perceived importance of the family medicine expert and communicator roles.

On the other hand, the manager and scholar roles were selected by the fewest residents as being the most important or relevant. The scholar role, in particular, was selected as the most important or relevant by only 1.2% of all respondents. This is troubling, as scholarly work and research are a crucial part of moving family medicine forward and identifying best practices. In our survey, residents were asked to pick the perceived "most" important role, which did not allow multiple answer options. There is a possibility that residents might pick more than 1 CanMEDS-FM role as being "important" if given the option. In any case, educators should take note of these findings, and might wish to consider whether the importance of research is similarly downplayed in their curriculums, perhaps affecting the level of importance residents ascribe to the role of scholar.

When asked about the influence of CanMEDS-FM roles in core family medicine and off-service training, 76.4% of family medicine residents believed that their core family medicine training was guided by CanMEDS-FM values. However, only 41.8% of residents thought the same was true of their training while on off-service rotations. This is particularly interesting given that most of the CanMEDS roles and underlying objectives are similar between the Royal College and family medicine training programs. The key difference is the family medicine expert role. One possible criticism of off-service rotations might be the specialty focus of learning to develop as a *medical* expert as opposed to a *family medicine* expert. Similarly for rotation evaluations, 85.9% of family medicine residents believed that they were evaluated based on CanMEDS-FM roles compared with 66.7% on off-service rotations. Given that off-service rotations might evaluate residents based on the medical expert role, family medicine values and objectives might not be optimally evaluated. While there is definite value in off-service learning for residents, family medicine teachers might consider improving the clarity of learning or evaluation objectives with a focus on generalism during off-service rotations.

Limitations

One limitation of this study was the number of participants. While 16 of 17 family medicine programs participated in the study, we had a response rate of only 25.1%. Female respondents outnumbered male respondents at a ratio of approximately 2:1, which might be a source of potential bias. Also, residents who were more interested in medical education might have been more likely to participate in the study. In addition, fewer respondents answered the questions toward the end of the questionnaire, which might have had to do with survey fatigue. This might offer yet another bias in the results.

The CanMEDS roles have been used extensively in the undergraduate medical curriculum and also in Royal College training programs. Thus, the "awareness" residents have of the CanMEDS-FM roles might have been from their undergraduate teaching or off-service Royal College specialty rotations. The understanding of the roles might also be from the Royal College perspective and not specifically from the family medicine perspective. We did not ask respondents to further define the roles and "prove" that they understood CanMEDS-FM rather than CanMEDS. However, in the introduction page before the survey, we did specify that we were asking about CanMEDS-FM. Future studies might explore the degree to which family medicine residents understand the CanMEDS-FM roles.

Conclusion

It appears that most family medicine residents are aware of the CanMEDS-FM roles. While core family medicine training and evaluation seem to be grounded in CanMEDS-FM, residency program directors should endeavour to ensure that the same principles apply during off-service rotations. Furthermore, there might be an uneven distribution of perceived importance given to the different roles, with family medicine expertise and communication skills being placed at the highest level of importance far more than managerial or scholarly skills. This could indicate that greater care must be given to ensure that curriculums achieve an appropriate balance of competence in all of the roles, as they are all of intertwining importance in the development of competent future physicians.

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Contributors

All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

None declared

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