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15 Integration of CanMEDS Expectations and Outcomes

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Executive Summary

The goal of postgraduate medical education (PGME) is to create the best possible physician to meet the health care needs of society. Medical educators, trainees, patients and society recognize that being well trained in the scientific aspects of medicine is necessary but insufficient for effective medical practice; the good doctor must draw upon a wide array of knowledge and skills. The CanMEDS framework offers a model of physician competence that emphasizes not only biomedical expertise but also multiple additional non-medical expert (NME) roles that aim to better serve societal needs.

A review of the literature, focus groups with program directors at two medical faculties and a resident survey at these same two faculties highlight strong support for the CanMEDS roles definitions as ably capturing essential qualities required to be a competent practitioner. There have, however, been challenges to the effective implementation of NME roles teaching and assessment in PGME training. Implementation has been hindered by a sense amongst some educators and trainees that the NME roles are somehow peripheral or fragmented aspects of physician competence, leading to artificial separations of these roles from that of medical expert. To date, role modelling and direct observation are seen as more relevant by both residents and faculty than a variety of other tools that are currently being used. However, not all faculty are good role models, and direct observation occurs infrequently in many programs. Some teaching and assessment tools and strategies are perceived to lack rigour and relevance, and may be viewed as artificial when removed from clinically relevant contexts. Integrated, clinically relevant approaches to teaching and assessment of NME Roles are essential.

Based on the literature and key stakeholder interviews, we have identified the following three key messages:

1. There is strong support for the CanMEDS construct of a 'good doctor' as requiring qualities beyond biomedical expertise. The CanMEDS definitions of these NME roles are highly endorsed by both residents and faculty members as appropriately capturing the essential elements of a competent and socially responsible physician.

2. While NME roles are highly valued, there are challenges in terms of current strategies for teaching and assessment of these roles. Objective standardized measures of NME competencies are lacking, and some teaching and assessment tools are perceived as artificial. Conceptually, there is concern that standardized measures may never be able to capture important aspects of these NME roles.

3. It is important to find ways to help educators and trainees appreciate the intricate associations between the expert role and all other roles in a clinically relevant way. Role integration highlights the fact that the competent physician draws upon various roles simultaneously. Integration of roles teaching and assessment into clinical contexts gives practical relevance to the roles. Role modelling and direct observation are perceived as highly effective and relevant educational strategies for effective integrated teaching and assessment of NME roles.

Background

The goal of postgraduate medical education (PGME) is to create the best possible doctors to meet the health care needs of society. CanMEDS [1] and CanMEDS-FM [2], are currently the competency frameworks for Canadian PGME training. They aim to define essential competencies that must be achieved in order to function well as a socially accountable physician (Appendix 3). These competencies are expressed as a series of seven distinct, yet intertwined roles: Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional. For more than 15 years, the CanMEDS framework has been the standard of training for the Royal College of Physicians and Surgeons of Canada (RCPSC) and, more recently, the framework has been adapted for and adopted by the College of Family Physicians of Canada (CFPC).

The CanMEDS framework is designed to capture and describe generic physician competencies necessary to meet the needs of patients in the 21st century.[1] The CanMEDS framework explicitly outlines important areas of physician expertise that go beyond the traditional biomedical aspects of patient care. (Appendix 4)

Historical background

Over the past 100 years, biomedical science has provided physicians with an increasing array of scientific knowledge and tools with which to take care of patients. Over this same time, medical educators, trainees, patients and society have also recognized that being well trained in the scientific aspects of medicine is insufficient for effective medical practice; instead, the good doctor must draw upon a wide array of non-biomedical knowledge and skills. CanMEDS and CanMEDS-FM are designed to link biomedical and other important forms of knowledge in an outcomes-based framework, which describes how physicians should perform within the health care system. Like any such framework, CanMEDS is the product of both historical and cultural circumstances. CanMEDS drew upon the Educating Future Physicians of Ontario (EFPO) project [3,4,] in which broad public consultations and negotiation of differing viewpoints led to a definition of roles physicians ought to play to best serve societal needs. For example, some early roles considered included the health and illness expert, the health care resource consultant, the patient educator and enabler, the humanist, the scientist and the person. The RCPSC revised and expanded the final EFPO domains into seven CanMEDS Roles: Medical Expert, Communicator, Collaborator, Manager, Scholar, Professional and Health Advocate. While many elements of the roles are not new, the CanMEDS framework highlights areas that may have previously been less explicitly emphasized in PGME teaching and assessment. As with any taxonomy, overlap between domains is expected, and, in different situations, aspects of the roles will intersect in different ways.

Definition of terms

'Non-medical expert' (NME) is a term that has become common in describing the six roles (Communicator, Collaborator, Manager, Scholar, Professional and Health Advocate) that are visually depicted on the CanMEDS image as surrounding the centrally placed role of Medical Expert. Since NME is common parlance and well understood amongst teachers, program directors and program reviewers, the commissioned paper team deemed it reasonable nomenclature to use. The nomenclature is, however, inherently problematic in that it suggests that Medical Expert is exclusively biomedical and is the core and central aspect of physician competence. Collectively naming the other six roles as non-Medical Expert further sets them apart from medical expertise, which stands on its own. However, it is a fact that the six other roles are commonly referred to together, and challenges of teaching and assessing them are

frequently discussed together. It is perceived that many residency programs find it relatively easy to teach and assess the Medical Expert role, but more challenging to teach and assess the remaining areas of physician competence. Hence, a term that refers to the remaining roles as a group is useful for discussions of residency teaching and assessment and residency program evaluation. The commissioned paper team considered other potential terms, such as 'beyond Medical Expert' but decided that it was preferable for the purposes of this paper to conform to common usage.

Learners are assessed, and programs are evaluated[5, 6]. However, we found that Canadian program directors (PDs), residents and literature used the terms 'assess' and 'evaluate' interchangeably to describe their viewpoints and present results. Although we tried to stay true to the correct meaning of the words where possible, results reported from the literature were not corrected, PDs' voices were not changed and the resident survey we administered used the term evaluation to reflect the language commonly used by residents.

Theoretical Background

Roles-based competency frameworks are socially negotiated and historically constructed. As such, any framework is a tool that can assist in the teaching and evaluation of important aspects of physician functioning rather than a definitive prescription of competence. The competency literature highlights important limitations to competency frameworks. These limitations include the question of whether "anatomizing" of competencies can properly capture the complexity of competence [7]. Competency models also need to be considered in terms of their effect on professional interactions. Competency statements have been described as having the potential to be "regarded as an effort by professions to define activities that 'belong' to them" [8]. It has been suggested that role-type definitions "in and of themselves may actually serve as a way for a profession to safeguard its power in relation to the state…and to defend its authority in relation to other professions" (p 832) [9]. Medical educators will need to find a way to incorporate the political and social elements of roles into their teaching and assessment of these roles.

Methodology

This paper is one of 24 papers commissioned for the Future of Medical Education in Canada Postgraduate (FMEC PG) Project. The purpose of this paper is to explore current issues related to the expectations and outcome of NME CanMEDS roles, which was accomplished by undertaking a literature review, focus groups with PDs and a survey asking for resident views.

Literature Review

MEDLINE, PubMED (1966 to present) and the worldwide web were used to search the terms CanMEDS, CanMEDS roles, CanMEDS and teaching, CanMEDS and innovation, and CanMEDS and assessment or evaluation. As well, each of the six NME Roles were independently searched (i.e., CanMEDS and Scholar, CanMEDS and Manager). After screening article titles and abstracts, only articles that specifically focused on CanMEDS in the Canadian health care setting were selected for review. The bibliographies of the selected articles were also screened for additional articles. A total of 24 papers were reviewed. The term CanMEDS roles captured almost all articles that were located using the other terms. The RCPSC website and an unpublished report were also included in the literature review.

Focus Groups

Focus groups were held with residency PDs at two separate faculties of medicine, one in Quebec (Université de Montréal) and one in Ontario (University of Toronto). All residency PDs

at these two schools were invited to participate in the focus groups. An online survey was sent concurrently to all postgraduate medical trainees at these same two faculties of medicine.

A total of nine focus groups were held (six in Ontario and three in Quebec). The average number of participants at each group was seven, and all specialties were well represented. Participants were invited to share their experiences (both challenges and successes) on the teaching and assessment of the NME roles in their programs. Focus groups lasted from 60 to 90 minutes and were facilitated by two members of our team. Transcribed data and field notes were used to develop themes, help articulate more focused areas for exploration and later triangulate information with other data. Transcribed data were analyzed for six of the focus groups (Ontario); field note data were analyzed from the other three groups (Quebec). Three members of the team independently coded the data using the sensitizing categories of teaching, assessment and innovations. Results were then compared to verify inter-observer agreement. The coded data were analyzed for prominent themes.

Survey

An online survey was sent to all residents at Université de Montréal (UdeM) and University of Toronto (UofT). A total of 797 residents (464 in Toronto, a 20.7% response rate; and 333 in Montreal, a 34% response rate) completed the online survey. The survey contained 10 questions, which primarily focused on how important residents felt the CanMEDS Roles were to their clinical work, ability to perform, learning and assessment. All responses were measured using a five-point Likert scale. Medical Expert was purposefully included to act as a comparison. Respondents were also provided with the opportunity to respond to an open-ended question inviting them to comment on the relevance of the NME roles to their development as a good doctor. The means and the modes for all quantitative answers were used to describe the survey results; when not otherwise specified, numbers cited in the discussion refer to modes. Qualitative data from the comments section were compiled and coded by two independent readers. Their results were contrasted and differences resolved subsequently, yielding a series of underlying themes.

Limitations

The focus group and survey results are limited in that they were conducted at only two faculties of medicine. Although there was consistency of findings between these two faculties, generalizability across all Canadian medical faculties cannot be assumed.

Results

Literature Review

Postgraduate training programs must incorporate the teaching and evaluation of the CanMEDS roles in a way that is academically robust, clinically relevant and socially responsible. For many postgraduate programs, this has meant both innovation and restructuring of curriculum and evaluations, especially in relation to the NME roles. The RCPSC has made extensive efforts to support programs nationally in their efforts to implement the CanMEDS framework (Appendix 5).[10] A review of the literature was undertaken to identify salient issues and challenges to incorporating the NME Roles and to identify innovative approaches to teaching and assessing the NME Roles in the postgraduate training environment.

Teaching

Articles providing strategies for teaching and integrating the NME roles into programs are sparse. Most articles focus on one role and provide a method or content for teaching the role [11-14]. One author asserted that the lack of validated tools to facilitate the development of resident teaching skills poses a significant problem [15].

Only three articles explored ways to integrate all NME roles into programs with varying perspectives on the challenges. While two programs felt the CanMEDS competencies helped provide guidance and structure to transform the roles into goals and objectives, [15,16] the third program [17] reported that it was difficult to translate existing curricula into clinically relevant concepts that meaningfully reflected the NME roles.

Health Advocate, Manager, Scholar and Professional were most frequently described as more challenging to teach [12, 13, 18-21]. Rationales such as lack of curriculum, lack of means for assessing competence, lack of interest, and lack of time, in addition to a belief that experience and personality rather than teaching were inherently responsible for the acquisition of some elements of the NME roles, were cited as barriers. It was interesting to note that different programs sometimes highlighted different NME roles as being more challenging and related it to the focus of their program.

The RCPSC "CanMEDS Best Practices" online program was created to capture and disseminate the many unpublished innovations that occur at the different medical schools nationally.[22] Listings by role show many more innovations related to Communicator (29), Professional (23) and Collaborator (19) than Manager (14), Health Advocate (8), or Scholar (10). It appears that there has not been equal emphasis on the development of initiatives for all roles. It is also interesting to note on the RCPSC website that many of the papers, posters and innovations that have been presented at different venues have never been published, subsequently limiting their exposure.

Words such as "frustrating", "nebulous", "poorly defined" and "difficult" were used to describe efforts to translate the NME competencies into curriculum. [12, 17, 20] It has been suggested that the perceived challenges of integrating NME roles are a result of two fundamental misunderstandings: 1) many of these competencies have always been taught and assessed but need to be made explicit; and 2) this competency-based approach requires each specialty to clearly define what the CanMEDS roles mean for their practice. The CanMEDS framework is purposefully generic so each discipline can adapt the competencies to their program.[28] The literature highlights a possible disconnect between the intentions of the RCPSC and the perceptions of the PDs and faculty implementing the NME roles.

No articles were found devoted to the discussion of the advantages or disadvantages of formal or informal teaching methods. Only two articles could be found linking specific teaching strategies to specific roles.[12,17] Although role modelling was felt to be invaluable as a teaching method, it was deemed insufficient .[11] A graduated curriculum and sharing of resources across schools were suggested ways to optimize the acquisition of skills and knowledge in postgraduate training.[24]

Assessment

While the RPCSC has published a guide "The CanMEDS Assessment Tools Handbook"[25] focused on providing quick, practical answers to educators on how to begin to assess specific CanMEDS roles, only two articles were found devoted specifically to the presentation of

adapting assessment tools to a specific program or role. One study reported on the ability of an Objective Structured Clinical Exam (OSCE) to evaluate multiple roles at the same time, while the other study matched sample behaviors representative of core competencies commonly assessed in emergency medicine training to appropriate assessment tools.[26, 27] Assessment tools were often linked to the development or appraisal of teaching material. [12, 14, 28-30]

Studies comment on the variable assessment of different roles, limited understanding of role competencies and challenges with the design of meaningful assessment tools. Medical Expert and Communicator roles were perceived as more effectively assessed than those of Health Advocate and Professional.[31] One author postulated that the visual structure of in-training assessment reports (ITARs/ITERs) contributes to residents' perceptions that Medical Expert is valued over the NME roles.[32]

One of the most comprehensive studies found looked at PDs' perceptions of how well they evaluate performance of the CanMEDS roles and the assessment tools they used in Canadian postgraduate training programs.[33] The authors conducted a web-based survey of PDs of RCPSC-accredited training programs, and found that PDs were satisfied with their evaluation of the Medical Expert role, but less so with assessment of the other CanMEDS competencies. Overall, PDs reported a strong need for evaluation tool development, systemic integration and collaboration and specific guidelines from the RCPSC to help PDs coordinate with their specialties to improve the current evaluation processes.

Perhaps most importantly, concerns were raised that residents do not appreciate the importance of the NME roles, and current teaching and assessment strategies do not ensure competence in the roles.[34]

Program Director Views

PDs highlighted the need for practical tools to teach and evaluate the NME roles and their desire for supported faculty development [17,24, 34] Both the Ruedy study[31] and the 2006 PD workshop at the RCPSC annual meeting[34] echoed similar sentiments and called for guidance in how to structure and implement an integrated resident in-training evaluation process. Some PDs advocated for collaboration in development and implementation strategies of resident in-training evaluation processes between programs both within and across specialties. Faculty development and proper documentation of poor evaluations were considered critical elements in restructuring in-training evaluation processes.

The RCPSC is aware that challenges exist to implementing CanMEDS. Resistance to change seems to revolve around five themes: 'Late adopters' or those with little interest in medical education, 'Do no harm' or those who would like to see more evidence to justify a need for change, 'faculty overload' or those who already feel too overwhelmed with current expectations, 'Resources' or those who feel the financial focus should remain on Medical Expert and 'Service' or those who worry that a CanMEDS based education will negatively impact on trainees patient and work experience.[36]

Trainee Views

Most studies found that the Medical Expert role remains the central focus for both faculty and trainees, although faculties and residents' views sometimes differ in what they think these roles entail. Residents' familiarity with the set of competencies appeared to be quite limited with narrow definitions of the roles.[13, 32] Residents questioned the framework's relevance and some appeared confused about the overlapping nature of the roles.[32] Although residents viewed

Medical Expert as the most relevant and important competency, they incorrectly perceived it as only involving the acquisition of medical and scientific knowledge.[32] One study reports only 48% of the residents were familiar with the CanMEDS competencies[13.] , while another study found that surgical residents do not appreciate the importance of all the roles required of a competent surgeon, and current training does not ensure competence in all roles.[34] Finally, it's been reported that residents have voiced a strong preference for Medical Expert topics, while Professional, Health Advocate, Collaborator and Communicator topics are not a perceived priority for professional development.[27]

Academic Challenges related to NME roles teaching and assessment:

A recent study concluded that there are major gaps between the ideal socio-culturally based goals and objectives of competency frameworks such as CanMEDS and bioscientific knowledge.[37] This creates a challenge for many medical educators because they have received much of their training in biomedical paradigms, and are less comfortable and confident utilizing knowledge from other spheres. While the literature suggests the important role of these other areas of expertise[38, 39], there has been limited use of social science and humanities approaches in PGME training to date. Finding ways to ensure an academically rigorous approach to incorporating these important non-biomedical forms of knowledge remains a challenge for PGME training.

What does the literature tell us about efforts to integrate and evaluate and assess the NME CanMEDS roles across Canada currently?

An internal report from one of the medical schools looked at how different schools representing over 100 postgraduate residency programs taught and assessed the NME CanMEDS roles in their respective programs by retrospectively looking at how they completed their Pre Survey Questionnaire (PSQ) in preparation for their Program Internal Review. The study found that roles were not integrated into core teaching activities, and that a narrow range of assessment approaches were used.

While the study looked at each of the roles separately, the findings were similar across roles. For example, selective aspects of each role were taught and evaluated most of the time, while other aspects of the role were rarely or never reported. For some roles, there was a high degree of contracting out of the teaching to such groups as the PGME offices, professional associations and MD Management. This may suggest that some programs may feel uncomfortable or ill equipped to teach some aspects of the roles, but this is only speculative. There was often a disconnect between what was taught and what was evaluated, but this finding might be more reflective of the wording in the PSQ than a reflection of what was happening in programs. For example, there seems to be a high reliance on In-Training Evaluation Reports (ITERS) rather than less structured or informal approaches to evaluation (i.e., feedback, observation of trainee). Assessment tools such as OSCE's and written examinations were infrequently used.

Limitations

The literature review revealed that there are both practical and conceptual challenges to teaching and assessing the NME roles, and that integration of roles teaching and assessment into clinical settings remains limited. That said, the literature is limited in what it can tell us.

For example, very few articles specifically exploring the implementation of the CanMEDS roles in Canada at the postgraduate level have been published. The few articles that exist often

focused on one program or on one role. Bias is inherent in the most rigorous of studies. Faculty development and efforts to assist programs have been ongoing and may not be reflected in early literature. Each year, programs experience turnover. PDs change, faculty is hired while others retire, new residents begin and cohorts of residents graduate. No article addresses the inherent generational influences and cultural changes that occur with the passage of time.

Despite standardization of training expectations, different programs and different schools approach the challenge of implementing the NME roles differently. Undergraduate training is also struggling with how best to support the CanMEDS competencies, which influences the newly graduated physicians' understanding and experience of the NME roles as they begin postgraduate training. All of these factors, which contribute to the complexity of fully understanding the current state of CanMEDS implementation, were absent in the literature.

Timely perspectives on the issues are important if the goal is to elucidate the current challenges for moving forward. To further explore the implementation of teaching and assessment of NME CanMEDS roles in training, input was sought from both faculty and residents through faculty focus groups and a resident survey.

Focus Group and Survey

Importance of CanMEDS as a Framework

PDs strongly supported the importance of the CanMEDS roles, and considered them a valid and useful conceptual framework to describe important aspects of the 'good doctor' that PGME is trying to create. Collectively, the roles were felt to capture well the key aspects of a competent physician. The NME roles provide explicit names for aspects of the physician that go beyond biomedical knowledge and, as such, were deemed helpful and important in terms of valuing, identifying and inculcating these qualities or competencies in trainees.

Residents also viewed the NME roles as very important. When asked to rank the importance of the roles to their clinical work, residents at both universities ranked all NME roles as 5/5 in importance, with the exception of the Manager role at UdeM (4/5) and the Scholar role at UofT (bimodal: 4 and 5). There was also a trend at UofT for the Health Advocate role to be viewed as slightly less important than the other roles. Overall, the highest mean ratings of importance were seen for the roles of Medical Expert, Professional and Communicator at both sites.

PDs reported that the articulation of the NME roles have provided them with criteria for labeling and assessing trainees when there are concerns and, just as importantly, language to provide trainees with specific feedback about what they are doing right beyond the Medical Expert role. As well, the NME roles provide a method for rewarding skills or attitudes that in the past have often been ignored. Although most PDs stated they would be reluctant to fail a trainee for poor performance in a NME role (other than a lapse in professionalism), they felt more confident acknowledging and addressing a problem when it did exist.

Resident Comfort with CanMEDS Roles

Prior to starting residency, residents from both schools felt most confident to perform the roles of Communicator, Collaborator and Professional, and least confident with the Medical Expert and Manager roles.

Interestingly, the roles that residents felt most confident with prior to beginning residency were also the roles they felt most confident with currently. These roles also showed the smallest

changes in mean confidence levels from pre-residency to the present. Confidence in performing the other roles grew during training, with the highest overall increases seen in the Medical Expert role at both schools, followed by the Scholar role at UdeM and the Manager and Advocate roles at UofT. Presently, the lowest confidence levels were seen for the Manager role at UdeM, and the Scholar role at UofT.

Challenges of CanMEDS Framework: Integration of NME Roles at Postgraduate Level.

While PDs strongly supported the conceptual framework, they identified challenges in finding the most effective and meaningful ways to teach and measure the NME competencies in trainees. Many of the frustrations voiced by the PDs were similar to those found in the literature: limited time and resources, issues of faculty buy-in and comfort with NME expertise, perceived subjectivity of some of the NME roles (i.e., Health Advocate, Professional), and applicability of some roles in their current format to their specific specialty. The challenges identified were organized around four themes: program directors, faculty, teaching and assessment.

Program Director Challenges

PDs felt the job description and associated responsibilities of PDs had changed dramatically from that of their predecessors. PDs reported struggling to keep up with the administrative and leadership expectations related to integrating the NME CanMEDS roles. Most PDs felt they lacked the necessary expertise to teach and assess all the different elements of the NME roles themselves, yet they were responsible for decision making around how best to integrate the roles into their programs. The biggest challenge for PDs to integrating the NME roles was trying to reconcile what they felt was a disconnect between perceived accreditation expectations and meaningful and authentic integration of the roles.

Faculty Challenges

PDs noted that faculty attitudes and expectations also created challenges for the successful integration of NME roles into their programs. For example, some faculty felt that teaching NME roles took up valuable curricular time needed for Medical Expert and clinical experience. Other faculty viewed the NME roles as basic competencies that should have been acquired during earlier stages of training. Still others were openly skeptical and wanted evidence that time and effort spent on NME roles training made a difference to the end-product physician created. PDs felt faculty were at different stages of acceptance and possessed different skill levels, which made reliability of teaching and assessing uneven within and across departments.

Teaching Challenges

PDs felt some elements of some NME roles, such as Professional, Health Advocate and Manager, were more difficult to teach and assess than others, while Communicator was consistently identified as the easiest. Some PDs questioned whether it was even possible to teach certain abstract concepts such as altruism and duty to care. Residents echoed these concerns, with some (albeit a small number) from both schools adding remarks in the comments section that the roles cannot be taught. Such concerns raise the issue of selecting students prior to medical school who already possess these skills.

PDs expressed concern that they were often artificially creating ways to incorporate the teaching of the NME Roles into the curriculum to provide evidence of teaching NME roles to meet accreditation standards. Subsequently, when faculty or residents could not see the relevance to practice of these formal teaching sessions, the NME roles were devalued. As

well, PDs also felt they were often working in isolation to "reinvent the wheel" as they struggled to create the NME tools they perceived to be necessary to meet accreditation requirements. In several of the focus groups, PDs informally shared examples of innovative curricular strategies that they had incorporated into their programs. It was interesting to note that PDs were not aware of the efforts of others.

Role modelling was repeatedly described by PDs as one of the most effective ways to teach the more abstract elements of what it means to be a good physician. PDs perceive that role modelling is not a sufficient form of teaching according to accreditation requirements; accordingly, they feel role-modelling is devalued. According to PDs, this frustration is echoed by faculty. PDs acknowledged that the varying skill levels across faculty created barriers to ensuring that reliable role modelling and sufficient observation take place.

These same views on teaching were echoed by residents in both the quantitative and qualitative results of the survey. Of the three teaching methods surveyed (formal, informal (e.g., bedside, hallway) and role modelling), role modelling received the highest ratings in terms of importance for residents' ability to perform all roles, with the exception of the Medical Expert role at UofT. Many residents specifically commented that they felt NME roles are learnt through role modelling, and not through formal teaching. However, the same problems identified by PDs were also raised by a number of residents at UofT, who commented on a lack of suitable role models for some of the roles, and perceived discord between what supervisors teach and what they demonstrate in terms of behaviors, consistent with the literature on the hidden curriculum.[40, 41]

Formal teaching was not viewed by residents as being very important in terms of impacting on residents' abilities to perform the roles, with the exception of the Medical Expert and, to some degree, Scholar roles. Depending on site, formal teaching of the Manager, Collaborator and Professional roles was viewed as particularly unhelpful (means ≤ 2.7). Ratings for the impact of informal teaching were generally in between those of role modelling and formal teaching. Overall, there was a strong message from residents that PGME needs to revisit the current use of formal teaching for these NME roles.

Assessment Challenges

Similar to teaching, PDs felt that they were tasked with creating measurable ways to assess the NME roles to meet what they perceived to be accreditation expectations. Subsequently, the assessment tools often felt contrived and artificial. The PDs struggled with their own ambivalence to measure behaviors and attitudes that rely on personal judgment, values and opinion. Feedback about the validity of measuring some of the NME roles was a common theme PDs heard from faculty and residents. PDs were not confident in their ability to create standardized, objective, meaningful and relevant tools.

Residents agreed that the roles are difficult to evaluate. Many residents commented on the subjectivity of the roles (with several residents commenting directly on the possible inappropriateness of using a Likert scale to evaluate subjective skills), the inapplicability of roles in certain situations and the inability of supervisors to comment on residents' abilities in certain roles. The issue of more explicitly adjusting evaluations to reflect level of training was raised (e.g., whether it is fair to expect supervisors to be able to comment on a postgraduate year one's (PGY1's) Manager and Advocate abilities, when they have not been given sufficient opportunities to demonstrate these roles). Residents also commented on a perceived trend in residents receiving generic good evaluations for roles their supervisors may not have observed or be able to comment on, and on the roles only being remarked upon in their notable absence

(e.g., gross professional lapse) as well as a lack of perceived consequences for residents who do not perform well on non-Medical Expert roles.

Many PDs felt that ITERs should be considered sufficient, as they represent multiple voices and perspectives. While PDs acknowledged that assessing the individual roles forced faculty to pay attention to behavior and attitudes beyond Medical Expert, they echoed residents' comments in saying that they were again not confident that faculty reliably completed assessment tools.

PDs also felt that by artificially separating the roles, equally weighting them and framing the questions in a similar format, the purpose and value of the roles was undermined. The fact that NME roles are not being tested on final exams or after graduation compounded the message that the NME roles were less important than being a good Medical Expert. Subsequently, PDs felt they lost any evaluative leverage to reinforce the critical importance of the NME roles to being a competent physician.

One of the resident survey questions attempted to address how residents perceive their supervisors' and programs' valuations of the roles by asking residents how their performance of each role impacted on their overall evaluation in rotations. Perhaps not surprisingly, the role of Medical Expert received the highest ratings at both schools. At both schools, the roles of Manager and Health Advocate were perceived as least important. At UdeM, there was a large gap between the two lowest ranked roles and the others, which all had means almost one point higher. This was somewhat less evident in the UofT data, where most roles clustered in the middle, with Medical Expert and Health Advocate roles acting as outliers on either end.

Future Opportunities

PDs felt there was a need for multiple teaching and assessment tools that were "validated", "reliable", "short", "practical", "accessible" and "adaptable" for true integration to be "meaningful" and "relevant". Suggestions included: electronic toolkits with a menu of options that could be adapted to specialty and stage of training, central websites where resources are inventoried and best practices shared, case- or problem-based scenarios that integrated all roles, downloadable video clips demonstrating good and bad performances, bank of role plays for simulation, web-based reporting, increased utilization of electronic technology, increased awareness of local university resources and development and access to role specific experts. While resident suggestions were limited to those voluntarily provided in the comments section of the survey, it should be noted that many residents specifically commented that they didn't find online modules, as currently used, helpful in learning NME roles.

PDs also felt residents needed to have more responsibility and ownership for providing evidence of their competence. Strategies included the development of national, standardized, specialty-based portfolios that residents under supervision would be responsible for completing and adapting to their personal learning needs as they moved through their program of training. Residents would be responsible for ensuring a set number of performances were observed using validated tools such as the mini clinical evaluation exercise (Mini CEX).[42] Very few residents commented spontaneously on learning portfolios (two positive, one negative comment). A few residents commented on the need for more health equity and systems teaching, making reference to the Manager role and a perceived need and desire for better understanding of the structural (financial, manpower) limitations of the system, as well as how various system components (e.g., community caregivers, long-term care, hospitals) interact.

Summary

The CanMEDS competency framework is highly endorsed by PDs, faculty and residents as providing a good description of the attributes required of a competent and socially accountable physician. Knowing that those involved in PGME training strongly support the concept of a competent physician as embodying all the CanMEDS roles is important because no study was found asking the fundamental question, "Are the roles important in the training of competent physicians?" If the primary stakeholders themselves do not feel the roles are important to the development of a competent physician, future efforts to integrate them into the postgraduate training curriculum will fail or be poor at best. While PDs did not feel the roles represented anything ideologically new from their own (pre-CanMEDS) training experience, they appreciated that the clear articulation of these roles broadened the conceptualization of what it means to be a competent physician beyond that of Medical Expert. It empowers them as PDs with the means to be more deliberate in their valuing of these roles in the socialization of future physicians. Residents also consider the NME roles important. However, it appears that residents view the roles of Manager and Health Advocate as less well integrated and less well modeled in programs, and they perceive their programs and supervisors as placing less value on these roles.

Despite current educational efforts and support from the RCPSC, there is still a perception amongst PDs that they are alone. It is clear from the literature, the RCPSC website and PDs comments that a lot of 'good stuff' exists, but it is unnoticed and underused. More attention needs to be paid to how communication and collaboration is occurring both across and within universities themselves, but also with the RCPSC and other health care professions. If medical educators are going to successfully move from a paradigm traditionally dominated by the biomedical sciences to a paradigm that recognizes and values multiple domains, then the expertise of educators in non biomedical forms of knowledge need to be recognized and engaged.

The message is only as strong as the weakest link. In 2009, of the 2,500 '*reported'* complaints received at one provincial college, 73% of the complaints related to standards of care (the majority of complaints included or focused on Communication) and 19% were linked to conduct or behavior. In other words, the preponderance of complaints coming from the public and colleagues do not relate solely to medical expertise.[43] There needs to be continuity of standards, accountability and expectations across a physicians' career span, from undergraduate training to postgraduate training and on into independent practice. Training the physician of the future who competently integrates all of the CanMEDS roles in practice begins with an integrated effort.

PDs are acutely aware that they need the support of faculty to teach, observe and assess the NME roles if they are to successfully integrate them in a meaningful way. Continued, intensive faculty development is necessary. Current resident perceptions of formal teaching in terms of learning to perform and perhaps, more importantly, value these NME roles provides pause, particularly when combined with PDs' perceptions that they are 'forced' to develop such formal sessions in order to comply with accreditation checklists. This perception is compounded when faculty are seen as reluctant to attach poor evaluations to poor performance of NME roles.

Much of the important learning of the NME roles takes place in the workplace through role modelling, being observed and receiving feedback. These key learning and assessment strategies should continue to play a valued and central role in how the physician of tomorrow is trained, but ways need to be found to ensure that role modelling supports the vision of the integrated physician, that observation occurs and, when it does, focuses on more than just

Medical Expert. Assessment drives teaching and learning. An unintended consequence of current accreditation standards is that the teaching and assessment of NME roles is being artificially separated, leading to frustration, resistance and most importantly, a fragmented view of the physician. Teaching and assessment need to move the focus beyond the sometimes narrow and unnatural portrayal of the individual competencies to the development of tools that reflect the integration of all of the CanMEDS roles in practice. Thought should also be given as to whether the roles need to be better defined for assessment purposes, and whether they need to be modified to account for level of training or residency program. There is risk of unintentionally de-valuing the NME roles by making their teaching artificial and divorced from what trainees perceive as relevant to practice. This involves linking them to biomedical expertise and clinical contexts. Additionally, if the formal sessions are seen as diverging from what happens in clinical settings, the forces so well described in the literature on the hidden curriculum may further undermine full adoption of these roles by trainees. NME roles risk being marginalized and trivialized if trainees see gaps between formal sessions on these roles and the culture and practice of clinical medicine.

Three Key Messages

1. There is strong support for the CanMEDS construct of a ‘good doctor’ as requiring qualities beyond biomedical expertise. The CanMEDS definitions of these NME roles are highly endorsed by both residents and faculty members as appropriately capturing the essential elements of a competent and socially responsible physician.

2. While NME roles are valued, there are challenges in terms of current strategies for teaching and assessment of these roles. Objective standardized measures of NME competencies are lacking. Some teaching and assessment tools are perceived to lack rigour and relevance, and are frequently viewed as artificial when removed from clinically relevant contexts. This has the unintended consequence of de-valuing the NME roles in comparison to Medical Expert. Conceptually, there is concern that standardized measures may never be able to capture important aspects of these NME roles.

3. It is important to find ways to help educators and trainees appreciate the intricate associations between the expert role and all other roles. Integration of other roles with that of Medical Expert helps to highlights the fact that the competent physician draws upon various roles simultaneously. Integration of roles teaching and assessment into clinical contexts gives practical relevance to the roles. Role modelling and direct observation are perceived as highly effective and relevant educational tools.

References

1. Frank JR. (Ed). 2005. The CanMEDS 2005 physician competency framework. Better standards. Better physicians. Better care. Ottawa: The Royal College of Physicians and Surgeons of Canada.

2. CanMEDS-Family Medicine; A Framework of Competencies in Family Medicine; Document of the CFPC, 2009. http://www.cfpc.ca/uploadedFiles/Education/CanMEDS%20FM%20Eng.pdf Referenced Feb 2010.

3. Neufeld VR, Maudsley RF, Pickering RJ, Turnbull, JM, Weston WW, Brown MG, Simpson JC. 1998; 73 (11): 1133-48. Educating future physicians for physicians for Ontario. *Acad Med* 1998; 73.

4. Maudsley RF, Wilson DR, Neufeld VR, Hennen BK, DeVillaer MR, Wakefield J, MacFadyen J, Turnbull, Jeffrey M, Weston WW, Brown MG, Frank JR, Richardson D. Educating Future Physicians for Ontario: Phase II. *Acad Med* 2000; 75(2): 113-26.

5. Wilkes M, Bligh J. Evaluating educational interventions. *BMJ* 1999; 318:1269-1272.

6. Cook DA. Twelve tips for evaluating educational programs. *Med Teach* 2010; 32:296-301.

7. Huddle TS, Heudebert GR. Viewpoint: Taking apart the art: The risk of anatomizing clinical competence. *Acad Med* 2007; 82:536–541.

8. Reeves S. Fox A, Hodges B. The competency movement in the health professions: ensuring consistent standards or reproducing conventional domains of practice? *Adv in Health Sci Educ* 2009; 14:451–453.

9. Martimianakis T, Hodges B, Wasylenki D. Understanding the Challenges of Integrating Scientists and Clinical Teachers in Psychiatry Education: Findings from an Innovative Faculty Development Program. *Acad Psychiatry* 2009; 33:241-247.

10. Frank JR., Danoff D. The CanMEDS initiative: implementing an outcomes-based framework of physician competencies. *Med Teach* 2007; 29 (7): 642-7.

11. Flynn L, Verma S. Fundamental components of a curriculum for residents in health advocacy. *Medical Teach* 2008; 30:e178-183.

12. Leveridge M, Beiko D, Wilson JWL, Siemens DR. Health advocacy training in urology: a Canadian survey on attitudes and experience in residency. *CUAJ* 2007; 1:363-9.

13. Freiman A, Natsheh A, Barankin B, Sheara NH. Dermatology postgraduate training in Canada: CanMEDS competencies. *Dermatol Online J.* 2006; 27:6

14. Swainson J, Marsh M, Tibbo PG. Psychiatric residents as teachers: development and evaluation of a teaching manual. *Acad Psychiatry* 2010; 34(4):305-9.

15. Rourke J, Frank JR. Implementing the CanMEDS physician roles in rural specialist education: the multi-specialty community training network. *Educ Health* 2005; 18(3):368-78.

16. Frank JR, Langer B. Collaboration, communication, management, and advocacy: teaching surgeons new skills through the CanMEDS Project. *World J. Surg* 2003; 27(8):972-8.

17. Mickelson JJ, Mac Neily AE. Translational education: tools for implementing the CanMEDS competencies in Canadian urology residency training. *Can Urol Assoc J.* 2008; 2(40): 395-404.

18. Verma S, Flynn L, Seguin R. Faculty's and residents' perceptions of teaching and evaluating the role of health advocate: a study at one Canadian university. *Acad Med* 2005; 80(1):103-8

19. Bryden P, Ginsburg S, Kurabi B, Ahmed N. Professing professionalism: are we our own worst enemy? Faculty members experiences of teaching and evaluating professionalism in medical education at one school. 2010 *Acad Med*; 85(6): 125-34.

20. Bigio MRD. Please slow down the CanMEDS express. *CMAJ* 2007; 176(6): 812.

21. Stafford S, Sedlak T, Fok MC, Wong RY. Evaluation of Resident Attitudes and Self – Reported Competencies in Health Advocacy. *BMC Med Educ* 2010; 10(1):82.

22. http://rcpsc.medical.org/CanMEDS/resources/index.php

23. Frank JR. Canadian urology programs can be learners in competency-based education. *CUAJ* 2008; 2: 405.

24. MacNeily AE. CanMEDS: time to teach the teachers. *CUAJ* 2007; 4:370.

25. Bandiera G, Sherbino J, Frank JR. *The CanMEDS assessment tools handbook. An introductory guide to assessment methods for the CanMEDS competencies*. Ottawa: The Royal College of Physicians and Surgeons of Canada; 2006.

26. Jeffries A, Simmons B, Tabak D, Herold McIlroy J, Lee K-S, Roukema H, Martin S. Using an objective structured clinical examination (OSCE) to assess multiple physician competencies in postgraduate training. Med Teach 2007; 29(3):183-91.

27. Sherbino J, Bandiera G, Frank J. Assessing competence in emergency medicine trainees: an overview of effective methodologies. *CJEM* 2008;10(4):365-371

28. Humphrey-Murto S, Khalidi N, Smith C, Kaminskia E, Touchiec, Keely E, Wood TJ. Resident evaluations: the use of daily evaluation forms in rheumatology ambulatory care. *J Rheumatol* 2009; 36:1298-303.

29. Overeem K, Wollersheim HC, Driessen E, Lombarts K, Van de Ven G, Grol R, Arah OA. Doctors' perceptions of why 360-degree feedback does (not) work: a qualitative study. *Med Educ* 2009; 43:874–82.

30. Tuhan I., Mastering CanMEDS Roles in Psychiatric Residency: A Resident's Perspective *Can J Psychiatry* 2003; 48: 222–224.

31. Ruedy J. *Report on the processes used to Evaluate Residents in Postgraduate Programs of a Canadian Medical School with Particular Reference to CanMEDS Roles*. Ottawa: Royal College of Physicians and Surgeons of Canada. 2006.

32. Zibrowski Em, Singh SI, Goldszmidt MA, Watling CJ, Kenyon CF, Schulz V, Maddocks HL, Lingard L. The sum of the parts detracts from the intended whole: competencies and in-training assessments. *Med Educ* 2009; 43(8): 741-8.

33. Chou S. CanMEDS evaluation in Canadian postgraduate training programmes: tools used and programme director satisfaction. *Med Educ* 2008; 42(9): 879-86.

34. Arora S, Sevdalis N, Suliman I, Athanasiou T, Kneebone R, Darzi, A. What makes a competent surgeon? Experts' and trainees' perceptions of the roles of a surgeon *The American Journal of Surgery* (2009) 198, 726–732.

35. Cole G. Effective in-training evaluation of residents. Paper presented at: The Royal College of Physicians and Surgeons of Canada Annual Conference, 2006; Ottawa, Canada.

36. McLeod PJ, Steinert Y. The Evolution of faculty development in Canada since the 1980's: Coming of age or time for a change? *Med Teach* 2010; 32(1)e31-35.

37. Kuper A, D'Eon M. Rethinking the basics of medical knowledge *Med Educ* 2011;45:36-43

38. Whitcomb ME. The general professional education of the physician. *Acad Med* 2006; 81 (12):1015–6.

39. Curry RH, Montgomery K. Toward a liberal education in medicine. *Acad Med* 2010; 85(2):283-7.

40. Hafferty FW, Castellani B. The Increasing Complexities of Professionalism. *Acad Med* 2010; 85(2): 288-301.

41. Hafferty FW, Levinson D. Moving Beyond Nostalgia and Motives: Towards a Complexity Science View of Medical Professionalism. *Perspectives in Biology and Medicine* 2008; 51(4):599-615.

42. Norcini J, Blank L, Duffy DF. Fortna GS. The Mini-CEX: A Method for Assessing Clinical Skills. *Ann Intern Med.* 2003; 138:476-481.

43. Report provided by College of Physicians and Surgeons of Ontario, 2010

Appendix 1: About the Authors

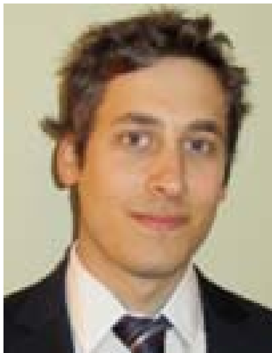
Dr. Cynthia Whitehead MD, CCFP, FCFP, MScCH is the Vice Chair Education, Department of Family and Community Medicine, University of Toronto. A former residency programme director, she is a member of the PGME Internal Review Committee and has been involved in the development of the CanMEDS-FM competency-based curriculum at the University of Toronto. She is currently completing her doctoral dissertation entitled, The *good doctor* in medical education 1910-2010: a critical discourse analysis. Dr. Whitehead is the co-lead for this paper.

Dr. Dawn Martin (MSW RSW MEd PhD) is an Assistant Professor Department of Family Medicine with a cross appointment to Public Health Sciences. Dawn is a PhD Educator with Postgraduate Medical Education, University of Toronto where she provides assistance to Program Directors regarding appropriate instructional and evaluation methods for trainees on remediation, as well as, assisting Program Directors in developing teaching and assessment tools to meet accreditation and pedagogical standards. Dr. Martin is a Communication Specialist who coaches' residents across the specialties, an Educational Consultant with the Department of Family and Community Medicine, and a Communication referral source for the College of Physicians and Surgeons of Ontario. Dr. Martin's doctoral thesis explored physicians' experiences during the transition from undergraduate to post-graduate training and the implications for medical educators. Dr. Martin is a contributor in this commissioned paper and she was responsible for the literature review, co-contributor to the methodology, facilitated and analyzed focus groups and co-contributor to the write-up of the paper.

Dr. Nicolas Fernandez (M.A., PhD) is a pedagogical consultant for the Centre de pédagogie appliquée aux sciences de la santé (CPASS) at the Université de Montréal. He has pursued a two-track career of educational research and organizational development consulting over the last fifteen years. He has published in the field of Higher Education and Cognitive Science as well as in the field of Team Development and Collaboration. He is interested in motivational aspects at play in the teacher – learner relationship and the importance of authentic teaching and learning contexts. Dr. Fernandez contributed to the paper by assisting in the literature review, conducting focus group data analysis as well as statistical analysis of the survey results.

Dr. Marika A Younker (MD, MPH) is a resident in Psychiatry at the University of Toronto in the Clinician Scientist Program and she sits as the resident representative on several Steering Committees within the Department of Psychiatry. She recently completed a Master of Public Health at l'Ecole des Hautes Études en Santé Publique (EHESP) in Paris, France with her graduate thesis entitled "What's Driving Globalization in Medical Education: International Admission Processes in Poland and Romania". She continues to pursue research related to

globalization in medical education under the direction of her supervisor, Dr. Brian Hodges. Dr. Younker worked on the resident component of this paper, including survey development, analysis and writing.



Dr. Rémi Kouz (MDCM) is president of the *Association des Médecins Résidents de Montréal* (AMRM). As such, he was happy to contribute to this commissioned paper as resident's training has always been a priority for him. He is a second year internal medicine resident at *université de Montréal* and he is also completing a Masters in biomedical sciences at *université de Montréal*. In this project, he was happy to allow residents to express their views on CanMEDS by being mainly involved in the construction, distribution and analysis of the trainee's survey.

Dr. Jason R. Frank is the Associate Director of the Office of Education, the Royal College of Physicians and Surgeons of Canada, and the Director of Education in the Department of Emergency Medicine, University of Ottawa. He is also an Associate Member of the Department of Graduate Studies, Ontario Institute for Studies in Education. He obtained his MD from the University of Ottawa Faculty of Medicine, and his FRCPC in Emergency Medicine at the University of Toronto. He has a Masters of Education from the Ontario Institute for Studies in Education. He has published and presented widely in medical education, where his research interests include: faculty development, program evaluation, competency-based education, and curriculum development. He is known for his work with the Royal College on the CanMEDS Project since 1994, and as an award-winning teacher. He was the 2005 EM Teacher of the Year in Canada, an honour awarded by the Canadian Association for Emergency Physicians (CAEP), and the 2007 Meredith Marks new educator award winner from the Canadian Association for Medical Education (CAME).

Dr. Andrée Boucher MD FRCPC, is associate professor in the *Université de Montréal*'s Department of Medicine where she serves as Vice-Dean of Medical Education and Continuing Professional Development. Endocrinologist specialized in thyroid cancer and clinical researcher, she is the current Medical Director of the Thyroid Cancer Unit, at the *Université de Montréal* Health Centre (university hospital). Her team was recently awarded a supra-regional designation by the province's Ministry of Health and Social Services based on the highest quality standards. Her experience in medical education includes all levels of training—undergraduate, graduate, post-graduate, and physicians' continuing professional development. She developed and was a major contributor in many innovative projects including implementing ambulatory care personnel rotation, horizontal collaborative training program, and a community of practice in medical education. She is a sought out speaker and has received various awards from different organizations including the *Université de Montréal*, National Specialties Associations, and Students associations. Dr. Boucher is the co-lead for this paper.

Appendix 2: Annotated Bibliography

Chou S, Cole G, McLaughlin K, Lockyer J. CanMEDS evaluation in Canadian postgraduate training programmes: tools used and programme director satisfaction. Medical Education 2008; 42: 879-886.

Chou et al. conducted a web-based survey of 149 program directors asking: 1) what assessment tools were used to assess each CanMEDS role and 2) program directors' perceived satisfaction with role evaluation in their programs. Overall, most (>92%) programs use in-training evaluation reports (ITERs) to evaluate all roles. More tools are used to evaluate the Medical Expert and Communicator roles than the Manager or Collaborator roles. There was a statistically significant association between satisfaction and the number of assessment tools used for most roles. Overall, program directors were satisfied with their evaluation of the Medical Expert role, neutral for many of the roles, and dissatisfied with their evaluations of the roles of Health Advocate and Manager.

Frank JR, Danoff D. The CanMEDS initiative: implementing an outcomes-based framework of physician competencies. Medical Teacher 2007; 29: 642-647.

Frank and Danoff describe the lessons learned from the implementation of the CanMEDS initiative, a national, needs-based, outcome-oriented, competency framework. The systematic implementation plan involved the development of standards for curriculum and assessment, faculty development, educational research and resources, and outreach. The authors found that 1) most Canadian faculty have accepted the ideas fundamental to CanMEDS and 2) resistance to change for CanMEDS could be grouped into five themes: a) "late adopters" (lack of interest in changing); b) "do no harm" (skepticism calling for evidence that change is necessary); c) faculty overload d) concerns about limited financial resources and e) service concerns (fears that increased education requirements may detract from trainees work).

Frank JR. (Ed.) CanMEDS 2005 Framework. Ottawa: The Royal College of Physicians and Surgeons of Canada.

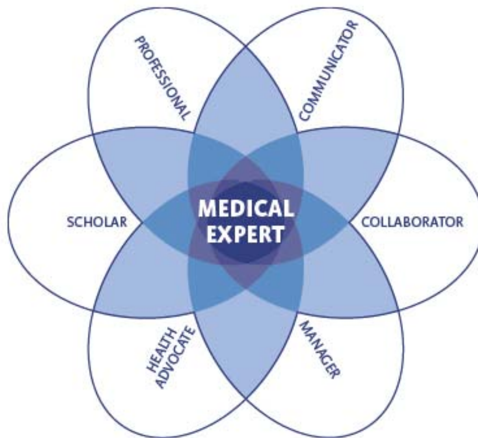
This document summarizes the seven roles included in the CanMEDS framework: Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar and Professional. For each role, a definition, description, and list of key competencies is given. The key competencies are then expanded upon for each role in a longer list of enabling competencies.

Zibrowski EM, Singh SI, Goldszmidt MA, Watling CJ, Kenyon CF, Schulz V, Maddocks HL, Lingard L. The sum of the parts detracts from the intended whole: competencies and in-training assessments. Medical Education 2009; 43: 741-748.

This paper explores how the process of in-training assessments (ITA) shapes trainees' perceptions of the CanMEDS construct. Using a grounded theory approach, interviews with a purposive group of 25 residents from one Canadian institution were conducted. Residents indicated that ITA reports (ITARs) served as their primary source of information on the roles, and they had both limited familiarity with, as well as limited definitions of the roles. Trainees also viewed the individual competencies as mutually exclusive, and only relevant to some contexts. The authors suggest that ITARs may inadvertently misrepresent the centrality of the Medical Expert and distort the CanMEDS construct. Authors' suggestions include revising the definition of Medical Expert in ITARs to directly reflect resident's abilities to integrate all the roles, and encouraging faculty to be more overt in labeling roles being modeled in practice.

Appendix 3: CanMEDS Competencies

Better **standards,** better physicians, better *care.*



As **Medical Experts**, physicians integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centred care. *Medical Expert* is the central physician Role in the CanMEDS framework.

As Communicators, physicians effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

As Collaborators, physicians effectively work within a health care team to achieve optimal patient care.

As Managers, physicians are integral participants in health care organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the health care system.

As Health Advocates, physicians responsibly use their expertise and influence to advance the health and well-being of individual patients, communities and populations.

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

As Professionals, physicians are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behaviours.

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Appendix 4: CanMEDS Framework

CanMEDS 2005 Physician Competency Framework **Essential Roles and Key Competencies of Physicians**	
CanMEDS Roles	**CanMEDS Key Competencies** The specialist must be able to ...
Medical Expert	• function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical and patient-centered medical care • establish and maintain clinical knowledge, skills and attitudes appropriate to their practice • perform a complete and appropriate assessment of a patient • use preventive and therapeutic interventions effectively • demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic • seek appropriate consultation from other health professionals, recognizing the limits of their expertise
Communicator	• develop rapport, trust and ethical therapeutic relationships with patients and families • accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues and other professionals • accurately convey relevant information and explanations to patients and families, colleagues and other professionals • develop a common understanding on issues, problems and plans with patients and families, colleagues and other professionals to develop a shared plan of care • convey effective oral and written information about a medical encounter
Collaborator	• participate effectively and appropriately in an interprofessional healthcare team • effectively work with other health professionals to prevent, negotiate, and resolve interprofessional conflict
Manager	• participate in activities that contribute to the effectiveness of their healthcare organizations and systems • manage their practice and career effectively • allocate finite healthcare resources appropriately • serve in administration and leadership roles, as appropriate
Health Advocate	• respond to individual patient health needs and issues as part of patient care • respond to the health needs of the communities that they serve • identify the determinants of health of the populations that they serve • promote the health of individual patients, communities and populations
Scholar	• maintain and enhance professional activities through ongoing learning • critically evaluate information and its sources, and apply this appropriately to practice decisions • facilitate the learning of patients, families, students, residents, other health professionals, the public, and others, as appropriate • contribute to the creation, dissemination, application, and translation of new medical knowledge and practices
Professional	• demonstrate a commitment to their patients, profession, and society through ethical practice • demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation • demonstrate a commitment to physician health and sustainable practice

Appendix 5: Overview of CanMEDS Implementation Strategies

Overview of CanMEDS Implementation Strategies (Frank, J.R. & Danoff, D. 2007)
A. Standards for Curriculum, Teaching, and Assessment: 1. CanMEDS standards: objectives of training for all specialties 2. CanMEDS standards: accreditation standards for all programs recognized by the RCPSC, including curriculum content and assessment approaches 3. CanMEDS blueprints for certification examinations 4. Incorporation of CanMEDS into the RCPSC Maintenance of Competence program
B. Faculty Development for CanMEDS 5. Faculty development: traveling CanMEDS workshops-on-demand 6. Faculty development: development of a national ‘‘CanMEDS Train-the-trainer’’ workshop series 7. Recruitment of CanMEDS clinician-educators at the College and at Universities
C. Research and Development Resources 8. Publication of CanMEDS resources (e.g. CanMEDS Framework, CanMEDS Assessment Tools Handbook) 9. CanMEDS Best Practices 10. CanMEDS website 11. Presentation of CanMEDS scholarship 12. CanMEDS-oriented research and faculty development grants
D. Outreach and Communications
13. Support and development of CanMEDS ‘‘champions’’
14. Provision of CanMEDS spokespersons
15. CanMEDS communications strategy