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Chapter 2

THE CANMEDS FRAMEWORK: RELEVANT BUT NOT QUITE THE WHOLE STORY

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Abstract

Background Despite acknowledgement that the CanMEDS framework covers the relevant competencies of physicians, many educators and medical professionals struggle to translate the CanMEDS roles into comprehensive training programmes for specific specialties.

Aim To gain insight into the applicability of the CanMEDS framework to guide the design of educational programmes for specific specialties by exploring stakeholders' perceptions of specialty specific competencies and examining differences between those competencies and the CanMEDS framework.

Methods This case study is a sequel to a study among ObGyn specialists. It explores the perspectives of patients, midwives, nurses, general practitioners, and hospital boards on gynaecological competencies and compares these with the CanMEDS framework.

Results Clinical expertise, reflective practice, collaboration, a holistic view, and involvement in practice management were perceived to be important competencies for gynaecological practice. Although all the competencies were covered by the CanMEDS framework, there were some mismatches between stakeholders' perceptions of the importance of some competencies and their position in the framework.

Conclusion The CanMEDS framework appears to offer relevant building blocks for specialty specific postgraduate training, which should be combined with the results of an exploration of specialty specific competencies to arrive at a postgraduate curriculum that is in alignment with professional practice.

Introduction

Frameworks for competency-based medical education developed in different countries have been and are being used to guide the design of medical curricula all over the world. The frameworks share the general notion that for doctors to be able to provide excellent patient care they should have competencies that exceed the sole domain of medical expertise and reflect the results of a needs assessment among different stakeholders in health care (Frank & Danoff, 2007; GMC, 2009; Swing, 2007). A widely used competency framework is the Canadian Medical Educational Directives for Specialists (CanMEDS), consisting of seven roles for doctors irrespective of their medical specialty. Originally developed for Canadian undergraduate medical education (Neufeld et al., 1998), the framework is currently used worldwide to inform the designs of undergraduate and postgraduate medical education programmes.

Although medical students, residents, and medical specialists have confirmed that the CanMEDS roles are relevant to clinical practice (Rademakers et al., 2007; RANZCOG, 2010; Ringsted et al., 2006), there are also reports of educators and doctors struggling to implement the roles in the daily practice of specific specialties (ten Cate & Scheele, 2007). To some extent this may be attributable to the rather abstract and general descriptions of the roles complicating their translation into the realities of day-to-day practice and posing an enormous challenge to teachers having to use the roles in teaching and role modelling (Chou et al., 2008). Similar problems in relation to workplace-based assessment of role performance appear to be reflected in the huge variability among different specialties and contexts in the use of the available methods for assessing the CanMEDS competencies (Crossley et al., 2011). It has been argued that this variability might be resolved by aligning assessment tools with the context of a specific clinical practice (Crossley & Jolly, 2012). In a similar vein, the difficulties in implementing the CanMEDS competencies in medical education may be addressed by a more comprehensive alignment of the framework with the practice of specific specialties, thereby facilitating translation of the framework to competency descriptions that speak to the daily experiences of learners and teachers. Such alignment would require mapping of specialty-specific competencies and ascertaining their match with the CanMEDS framework.

In a previous study, we examined how Obstetrics and Gynaecology (ObGyn) specialists perceived the competencies required for their specialty (van der Lee et al., 2011). Although the CanMEDS competencies were shown to be relevant, the study also indicated a need for alterations and additions to ensure that the framework could fully meet the needs of ObGyn practice. As perceptions of doctors' competencies are known to differ between doctors, nurses, and patients (Green et al., 2009), we continued our exploration in a study among patients, nurses, midwives, general practitioners, and members of hospital boards using a questionnaire with open-ended questions. The competencies required were inferred from the answers and compared to the CanMEDS roles.

The study addressed the following research questions:

- What competencies do patients, nurses, midwives, general practitioners, and hospital boards perceive to be important for ObGyn specialists?
- To what extent are these competencies covered by the CanMEDS framework?

Methods

Setting

We conducted a single specialty case study among stakeholders in obstetrical and gynaecological practice in the Netherlands. In this country, ObGyn specialists are commonly referred to as gynaecologists, although most of them provide both obstetrical and gynaecological care. They usually work in hospital-based partnerships of five to 25 gynaecologists, which manage their own organisational and financial matters in consultation with the board of the hospital. Patients are referred to gynaecologists by general practitioners and community midwives working in primary care. Community midwives are concerned with the physiology of pregnancy and the care around physiological labour, referring patients to a gynaecologist if pathology is suspected during pregnancy or delivery. Specialised ObGyn nurses and clinical midwives collaborate with gynaecologists on labour and maternity wards in the hospital. At the time of the study (2009-2010), all certified gynaecologists practising in the Netherlands had attended a specialty training programme that was not competency based. In 2005, ObGyn was one of the first specialties in the Netherlands to introduce a national competency-based postgraduate training programme based on the CanMEDS framework (Scheele et al. 2008).

Procedure

We sought the perceptions of stakeholders whom we considered to be ‘consumers’ of the performance of gynaecologists, i.e. who witnessed the provision of gynaecological care from close by. We recruited patients and professionals working closely with gynaecologists: ObGyn nurses, community midwives, general practitioners, and members of hospital boards, assuming that their combined unique perspectives would complement each other to give a comprehensive picture of relevant gynaecological competencies.

Between November 2009 and February 2010, we sent an email with an invitational letter to the board members and administrators of the professional associations of ObGyn nurses, community midwives, general practitioners, seven patient organisations, and the chairs of all Dutch hospital boards, requesting them to distribute the email to their members (ObGyn nurses, community midwives, general practitioners, patients, members of Dutch hospital boards respectively). The invitational letter asked participants to answer two open-ended questions:

- Describe three aspects of the performance of gynaecologists that you consider to be positive (*strengths*).
- Describe three aspects of the performance of gynaecologists that you consider to require improvement (*weaknesses*).

These questions served not only to structure the responses by eliciting strengths and weaknesses but indirectly also required respondents to prioritise strengths and weaknesses which in turn afforded us a good impression of the main features of gynaecological practice. From these strengths and weaknesses competencies important for Dutch gynaecologists were inferred.

This approach is comparable to the one used in the Educating Future Physicians of Ontario project, which eventually resulted in the CanMEDS framework (Neufeld et al., 1998). We aimed to gain saturation in the strengths and weaknesses, i.e. when the inclusion of additional respondents does not yield new codes (strengths or weaknesses) (Denzin &

Lincoln, 2005; Kuper et al., 2008). Saturation was reached after including 8 patients, 10 nurses, 24 midwives, 13 general practitioners and 18 hospital boards.

Analysis

IDENTIFYING COMPETENCIES

In the analysis of the qualitative data, three streams of activity were involved (data reduction, data display, and conclusion drawing and verification) following the method of Miles and Huberman (Miles & Huberman, 1994). An open coding strategy was used to reduce the data into manageable and interpretable pieces (Miles & Huberman, 1994). Using the qualitative data analysis software Max QDA 2007A, the principal researcher allocated a representative code to each text fragment referring to a strength or weakness. The coding of the answers from four randomly selected respondents was cross-checked by a second researcher (MW). Differences in codes were discussed until consensus was reached. The coded data were colour coded by stakeholder group (patients, ObGyn nurses, midwives, general practitioners, and hospital boards) to enable the tracing of quotes to a specific stakeholder group.

In the data display stream, the strengths and weaknesses described by the respondents were interpreted as indicative of important gynaecological competencies. Codes that were similar in meaning were combined in overarching categories. In the stream of conclusion drawing and verification the overarching categories showed to represent specific gynaecological competencies.

We defined competencies in line with the definition given by Albanese as ‘knowledge, skills, attitudes and personal qualities essential to the practice of medicine’(Albanese et al., 2008).

For example, all codes related to knowledge, skills, attitudes, and personal qualities related to communication fell into the category ‘Communication’.

Next, we created descriptions of the competencies that reflected the content of the categorised codes. While the data analysis was in progress, the research team met several times to discuss the categorisation, labelling, and descriptions of ObGyn competencies until consensus was reached.

MATCHING THE COMPETENCIES WITH THE CANMEDS FRAMEWORK

We examined the compatibility of the CanMEDS framework with the competency needs (second research question) identified by the stakeholders by comparing the content and meaning of the descriptions of the ObGyn competencies with the content and meaning of the descriptions of the seven CanMEDS roles (version 2005): Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional (Frank & Danoff, 2007). The principal researcher did the initial matching of the ObGyn competencies to the CanMEDS roles after which this initial matching was discussed with the full research team. Their viewpoints generally coincided, and the discussions mainly focused on how to categorize the ObGyn competencies which seemed to fit multiple CanMEDS roles as different aspects of their content were described in different roles. If necessary, a different CanMEDS role was allocated to a competency to better represent the content and meaning of the competency.

Ethical considerations

The Dutch local ethical review board of the Sint Lucas Andreas hospital ruled that this type of research was exempt from ethical approval. In compliance with the Helsinki declaration, the invitational letter informed all participants of the purpose of the study, that participation was voluntary, and that anonymity was guaranteed. By emailing the answers to the questions to the principal researcher (NL) participants implied that they consented to participate in the study.

The original answers were stored on a separate location on a computer which was only accessible by the principal researcher. Before the analysis, the responses were imported into another database on the computer of the principal researcher and anonymised by the principal researcher by deleting all parts of the text that might identify a participant.

Results

Five gynaecological competencies were identified. For each competency we describe what patients, ObGyn nurses, midwives, general practitioners, and members of hospital boards perceived to be important aspects of gynaecological performance. The descriptions are illustrated with quotes from the responses. Finally, we discuss the match between the competencies and the CanMEDS roles.

CLINICAL EXPERTISE

All groups of stakeholders indicated that clinical expertise was a crucial competency and emphasised that it should be used to provide patient rather than doctor centred care. Gynaecologists should preferably have knowledge, awareness, and expertise relating to the physiology of pregnancy and delivery and the management of unexplainable health problems.

'I think gynaecologists should know more about the physiology of labour; this would prevent unnecessary medical interventions such as a vacuum extraction of the baby.' (Midwife)

REFLECTIVE PRACTICE

All stakeholder groups indicated that it was important for a gynaecologist to be a reflective practitioner. Reflection should extend to different domains. Firstly, gynaecologists should reflect on their own performance, clinical errors in particular, but also on the limits of their individual expertise and skills. Moreover, they should be receptive to the opinions of others about their performance. Secondly, gynaecologists should reflect on the performance of all team members, requiring active participation in team debriefings, for example after an incident (especially on the labour ward), and giving feedback on performance to colleagues and other health professionals. Thirdly, gynaecologists should reflect on the quality of care provided by their department, for example by monitoring complications and the levels of patient and staff satisfaction.

'A gynecologist should regularly ask for feedback. This occasionally happens on the initiative of the gynecologist but should be done regularly (e.g. once a year).' (ObGyn nurse)

'..... the acceptance of mistakes and willingness to learn from errors, which is unfortunately not that big and sometimes overruled by the fear of admitting a mistake.' (Member of hospital board)

'discuss individual performance among team members and bear responsibility as a group for the overall functioning.' (member of another hospital board)

'Advocate and join up in the culture of improving patient care, so report mistakes to secure patient safety'. (ObGyn nurse)

COLLABORATION

Gynaecologists engage in different types of work-related collaborations: collaboration with patients, with co-workers (inside and outside the hospital), and with the hospital board. According to all groups of stakeholders, gynaecologists should aim for working relationships that are characterised by collaborations with others based on equality and respect and aimed at shared decision making. To facilitate shared decision-making with patients, gynaecologists should show a non-paternalistic, respectful, and empathetic attitude towards patients and provide sufficient and appropriate patient education customised to patients' background. Equality, respect, and shared decision-making were also considered fundamental to collaboration with other health professionals in the hospital and in the community. ObGyn nurses, midwives, and general practitioners reported that collaboration was promoted when gynaecologists communicated clearly with the team about patient management and provided protocol-based patient care. According to the stakeholders, truly shared decision-making in the team could be achieved when gynaecologists were receptive to and capable of properly appraising the opinions and expertise of all team members. This depended on gynaecologists being familiar with the capabilities, responsibilities, and professional knowledge of the team members. Shared decision making should also be a goal in collaborating with community health professionals, such as referring GPs. This collaboration depended on clear, and especially timely, communication about management strategies for patients in the hospital and on knowledge about community care and the health professionals providing it. Another important aspect was agreement between gynaecologists and community care providers about their professional boundaries.

'Gynaecologists should see the advantages of shared guidance and treatment whenever this is an option' (General Practitioner)

Members of hospital boards emphasised that gynaecologists should have knowledge about the organisational structure of the hospital and organisational and financial aspects of the health care system. Combined with effective skills for collaboration and negotiation, this type of knowledge could give gynaecologists an influential and decisive voice in meetings with the hospital board.

'Gynaecologists are very much involved in the organisation of the hospital and participate in many committees' (Member of hospital board)

'But they lack insight and knowledge regarding financial matters and hospital organisation rendering them incapable of exerting an influence in these areas' (Member of another hospital board)

A HOLISTIC VIEW OF PATIENT CARE

All stakeholder groups stressed that gynaecologists should have a holistic view of patient care and community care. According to patients, ObGyn nurses, midwives, and general practitioners, such a view becomes manifest when a gynaecologist approaches patients as persons rather than 'cases'. In (shared) decision-making about management (treatment) strategies and also in patient education, gynaecologists should look beyond the medical, technical aspects of illness to the psychosocial, emotional, and sexual impact of an illness

or treatment on a patient's life, taking into consideration the patient's personal values and wishes.

'Many gynecologists do not know how to handle the emotions of patients and give them little or no attention. Also the impact and consequences of a particular condition or operation are sometimes barely elucidated.' (Patient)

According to midwives, general practitioners, and members of hospital boards, a holistic view includes awareness of health professionals providing community care and the provision of patient centred care also outside the hospital, for example by collaborating with community care professionals in meeting patients' needs after discharge from the hospital. In order to improve the quality of care and to align hospital and community care, gynaecologists should regularly meet with community care professionals to discuss and seek solutions to problems. Gynaecologists should be prepared to identify and develop opportunities for collaboration with community health care professionals in areas like shared professional development.

'Especially younger gynaecologists have little knowledge about the care provided in community care. This results in misunderstanding about the way we provide care.' (Midwife)

'Many young gynaecologists are mainly hospital centred and therefore let pass collaborative opportunities with community care workers.' (General practitioner)

INVOLVEMENT IN PRACTICE MANAGEMENT

Nurses, midwives, and members of hospital boards referred to the importance of gynaecologists being involved in practice management, in particular the coordination and organisation of care. Gynaecologists should take an active role in staff planning to promote the safety of staff and patients. Involvement in the preparation of work schedules, for example, enables gynaecologists to monitor the department's workload and ensure full time availability in the hospital of a certified gynaecologist for consultation, when needed, by team members, residents, and community care professionals. Also gynaecologists should ensure continuity of care for individual patients, for example by assigning the main responsibility for a patient's care to one attending physician. However, gynaecologists should also comply with management plans decided on by team members to avoid disagreements that might arise due to a change of attending doctor.

'Take care that all gynaecologists, at least all the members of the partnership, adhere to the same management strategy. This ensures more consistent collaboration within the partnership and also with other professions.' (ObGyn nurse)

Compatibility of the CanMEDS framework with the ObGyn competencies

The CanMEDS framework was largely consistent with the five competencies identified by the stakeholders, each of which matched the content of at least one of the CanMEDS roles (Table 1).

Table 1. Match between the ObGyn competencies and the CanMEDS roles.

ObGyn competencies	CanMEDS roles
<i>Clinical expertise</i>	Medical Expert
<i>Reflective practice</i> 1. own performance 2. performance of team members 3. quality of care	1. Medical Expert 2. Collaborator and Professional 3. Health Advocate
<i>Collaboration</i> 1. with patients 2. with co-workers 3. with hospital boards	1. Communicator 2. Collaborator 3. Manager
<i>A holistic view of patient care</i>	Health Advocate
<i>Involvement in practice management</i>	Manager Scholar

A more detailed look at the roles and competencies, however, revealed some noteworthy differences, which we grouped under four themes. The themes reflective practice and collaboration in partnerships and contextual awareness were emphasised more strongly by the stakeholders than by the CanMEDS framework, while the opposite applied for the theme scientific development and work life balance.

REFLECTIVE PRACTICE

All stakeholders emphasised that gynaecologists should engage in reflective practice from a broad perspective, i.e. reflection should concern not only their own performance but also the performance of co-workers and the department as a whole. Within the CanMEDS framework, areas of reflective practice are included in the roles of Medical Expert (own performance), Collaborator (co-workers), and Health Advocate (department). However, the stakeholders' views and the CanMEDS roles differed in the prominence given to reflection. In the CanMEDS roles, reflection is a subcompetency whereas the stakeholders placed particular importance on being a reflective practitioner.

COLLABORATION RATHER THAN TEAM LEADERSHIP

Stressing the need for a collaborative approach aimed at shared decision-making by team members based on equality, respect, and knowledge about the work and responsibilities of other stakeholders, the stakeholders positioned the gynaecologist within the professional context as a team member rather than as an individual collaborating with others. The competency 'Collaboration' focused on the role of the gynaecologist as a team *member* in contrast to the CanMEDS role Collaborator, which focuses on the doctor's interactions with patients and others and the doctor's role as team *leader*.

CONTEXTUAL AWARENESS

The stakeholders emphasised that it is important for gynaecologists to be aware of the context in which they are practising. The CanMEDS framework does the same by acknowledging that it is important for doctors to be aware of and familiarise themselves with the practice of other health care professionals and the health care system. However, while the framework focuses on doctors working within their own specialty, working environment, and patient population, the stakeholders focused on awareness and evaluation of the roles of doctors and other health professionals in solving issues relating to the overall health care system. Thus the stakeholders required gynaecologists to show contextual awareness reaching beyond their own specialty and working environment (for example by being receptive to opportunities for collaboration and education in the community).

SCIENTIFIC DEVELOPMENT AND WORK LIFE BALANCE

Aspects of the CanMEDS competencies that were not mentioned by the stakeholders pertained predominantly to the roles of Scholar and Professional. The Scholar role includes establishing and maintaining medical expertise. Although the stakeholders identified medical expertise as a key competency, they showed no interest in how it was established and maintained. Additionally, in contrast to the role of the Professional, which emphasises balancing personal and professional activities and sustaining personal health, no mention was made of these competency aspects by the stakeholders.

Discussion

Using ObGyn as a case to study, we explored the extent to which the CanMEDS framework matches the competencies considered to be important by groups of stakeholders in ObGyn care. The competencies they identified as important (research question 1) were broadly similar to those of the CanMEDS roles, but with some specific nuances (research question 2). Several competencies were considered essential for good practice by the stakeholders but received only minimal attention in the CanMEDS framework or were approached differently, whereas some aspects of CanMEDS roles were not mentioned at all by the stakeholders.

What are the implications of the results for the relevance of the CanMEDS framework as a directive for postgraduate medical education? We think we can conclude that while the framework provides building blocks that are essential for competency-based postgraduate medical curricula it does not provide an exhaustive, all-encompassing framework. The partial mismatch that we found between the competencies identified by the stakeholders and the CanMEDS framework seems to underline the need for additional careful investigation of specialty-specific competency requirements. Assessing the extent to which the CanMEDS framework meets those requirements can help to design a competency-based postgraduate curriculum that is tailored to a specific specialty. Improved specialty specificity of a programme enables translation of curriculum outcomes to a language that speaks to the specialists and other key stakeholders and improves the alignment of curriculum outcomes and clinical practice. Such an alignment, we know from the literature, is positively associated with successful implementation of competency-based education (Jippes et al., 2012). Consequently, specialty specific adjustments to the CanMEDS framework might ease the burden of doctors and educators struggling to fit a CanMEDS-based curriculum to the reality of the practice of a specific specialty (ten Cate & Scheele, 2007). We therefore recommend that before using a competency-based framework to design a specialty specific postgraduate curriculum, programme directors and educationalists should critically appraise the competency framework based on an analysis of specialty specific competency needs.

The stakeholders in the present study emphasised that gynaecologists should be aware of the world in which they work, placing gynaecologists within their professional sociocultural context and viewing them primarily as team members and health care workers functioning within the health care system as a whole. This is in line with Engeström's work on sociocultural activity theory in which he builds on earlier work of Vygotsky and adds the influences of the community, the rules of the game and the division of labour in the conceptualisation of what is going on (Engeström, 2007). It also reflects the ideas of Batalden in promoting the role of physicians in contributing to and enhancing the health systems in which they work (Batalden & Davidoff, 2007). Clearly, this type of contextual awareness features less prominently within the CanMEDS framework, which reflects a more traditional view of medicine with doctors as autonomous, self-reliant professionals and education as primarily unidisciplinary (Bleakley, 2009).

Our exploration suggests that the latter perspective on the medical professions and medical education is due for an update to meet the needs of modern, team-based, patient-centred health care and interprofessional education. In medical education, the importance of the educational context is generally recognised along with the value of sociocultural and workplace-based learning theories to complement individual learning

theories (Mann, 2011). It seems that the time has come to expand this perspective by designing curricula that meet the needs not only of learners but also of the context of their chosen profession, resulting in curricula that accommodate both learners' needs and societal interests. This is in line with the update of the CanMEDS framework by the Royal College of Physicians and Surgeons of Canada due in 2015, which will take into account modern practices in medicine and changes in societal needs (Royal College, 2011).

We think that the broad perspective of the present study offers a valuable addition to the views of gynaecologists we investigated in our earlier study (van der Lee et al., 2011). The gynaecologists predicted that it would become more important for them to keep up to date with innovations and knowledge developments and to show competence in entrepreneurship and use of advanced technologies. The stakeholder perspective, by contrast, emphasised a holistic perspective, reflective practice, and collaborations based on equality and mutual respect. Although gynaecologists and stakeholders both stressed the need for medical expertise, the stakeholders failed to identify establishing and maintaining professional expertise as an important competency for gynaecologists. This oversight may be explained by patients and co-workers failing to realise the importance of aspects of medical practice that are not immediately visible to them. Similarly, research on multi-source feedback showed a low response of co-workers to questionnaire items assessing activities that are hardly, if at all, observed by co-workers (Mackillop et al., 2011).

The method we used may be of interest to other specialties contemplating a similar exploration of 'their' stakeholders' perspectives on competency needs. Specialties like paediatrics and urology differ in medical expertise, patient population, and collaborating allied health professionals. Incorporating in the CanMEDS framework the results of an exploration of specialty specific competency needs might enhance the fit of the framework with the practice of a certain specialty.

Our approach to assessing specific ObGyn competency needs by asking stakeholders to describe strengths and weaknesses in gynaecologists' current performance has limitations. We cannot rule out that we have failed to consider some competencies with relevance to ObGyn practice simply because they were not mentioned by the participants. Moreover, we may have a participant bias due to the self-selecting procedure of the participants within each stakeholder group. This self-selected group of participants might have been the most critic and assertive members from a specific stakeholder group, and it is possible that their perceptions represent highly critical and idiosyncratic opinions. Although the data we collected may have resulted in overrepresentation of or excessive emphasis on some competencies, the results nevertheless provide an indication of which competencies are perceived as crucial to ObGyn care.

When reflecting on the identified ObGyn competencies, these competencies might not appear that specific for the specialty ObGyn. However, from our exploration, we now know that ObGyn stakeholders strongly value these competencies in the performance of gynaecologists. A similar exploration amongst stakeholders of another specialty could show those stakeholders to value similar competencies but could also reveal them to value a different set of competencies that is not perceived to be important in the performance of gynaecologists.

Future research should focus on the exploration of specialty specific competencies in other specialties to further investigate the value and necessity for specialty specificity in the CanMEDS framework.

The results of our present and previous study on competency needs have been used to redesign the national postgraduate curriculum of the specialty ObGyn in the Netherlands. Future research should focus on further improvement of the alignment of specialist training to practice and societal needs throughout all specialties.

In conclusion, the results appear to support the compatibility of the CanMEDS framework with specialty specific contexts and consequently support its use in designing competency-based curricula. Nevertheless the results of our exploration of specialty specific competency needs also suggest that some of those needs are not satisfactorily met by the CanMEDS framework, and that some specialty specific adjustments might be in order. Hopefully, this study will encourage further attempts to attain better alignment of education and medical practice by exploring competency requirements for other specialties to inform specialty specific competency-based curriculum designs.

Practice points

1. In defining curriculum outcomes, specialists should not be considered as individuals but as a part of their sociocultural context.
2. Socially accountable reflective practice exceeds the domain of individual performance.
3. Exploring stakeholders' competency needs is an important step in designing a competency-based curriculum for a specific specialty.
4. It is important to assess the compatibility of a competency framework with the context of the specialty for which it is to be used.
5. Introducing specialty specificity to a competency-based curriculum contributes to the alignment of the curriculum with the practice of a medical specialist.

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