

The curriculum for the doctor of the future: Messages from the clinician's perspective

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Abstract

Background: Medical curricula should focus on the future of health care. Contemporary competency frameworks for curriculum design such as Canadian Medical Education Directions for Specialists (CanMEDS), ACGME and Tomorrow's Doctors share this vision by stressing generic competencies.

Aim: The objective of this study was to investigate how well a contemporary competency framework fits in with clinicians' perspectives on future health care.

Methods: Using a strategic planning approach, a semi-structured open-ended questionnaire on the future of their profession was sent to 102 Dutch gynecologists. Through inductive analysis, a future perspective and its needed competencies were identified and compared to the CanMEDS framework.

Results: The 62 responses showed content validity for the CanMEDS roles. Additionally, two roles were identified: advanced technology user and entrepreneur. Within the role Communicator, the focus will change through more active patient participation. The roles Collaborator and Manager are predicted to change in focus because of an increase of complex interdisciplinary teamwork and leadership roles.

Conclusion: By studying the Dutch gynecologists' perspective of the future in a strategic planning approach, two additional roles and focus areas within a contemporary competency framework were identified. The perspective of clinicians on future health care provides valuable messages on how to design future-proof curricula.

Introduction

There has been a shift in medical education from a process model toward a product model. The process model focused on the process of teaching and learning and the content of the training program, whereas the product model, known as competency-based education, focuses on outcomes of teaching and learning (Harden 2002, 2007). These learning outcomes “focus on competencies needed by graduates of medical education to meet the needs of those they serve, and effect the outcomes desired in health care” (Frank & Danoff 2007). By exploring societal needs and the roles of a doctor in the workplace, the necessary competencies to fulfill these roles can be identified (Bowden 1995). In 1990, an exploration on societal needs revealed that medical knowledge and skills are not enough for a doctor to function adequately in the workplace (Neufeld et al. 1998). Other competencies such as communication and teamwork also proved to be important (Teutsch 2003; Whitehead 2007).

These more generic competencies are now acknowledged worldwide in medical education and included in contemporary competency frameworks (ACGME 2007; Frank & Danoff 2007; GMC 2009). As a result, medical curricula worldwide are changed to meet the learning outcomes of these competency frameworks.

Practice points

- Strategic planning can be used to test how future-proof, a competency framework is.
- For the greater part, the CanMEDS framework is future-proof for postgraduate training within the specialty ObGyn.
- The roles “entrepreneur” and “advanced technology user” should be added to competency frameworks.
- “Role specialization” could be a way to master competencies as a group of clinicians.

But do these competency-based curricula really prepare residents for their future workplace? Research on the future workplace can help to gain insight into the competencies needed in the future. For example, research on the future of medical leadership revealed that competencies such as effective communication, time-management, meetings skills, systems thinking, and knowledge about information systems are predicted to become important competencies for future physician leaders (Williams 2001). Predicting desirable changes for the future workplace and the competencies

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needed might help in the development of future-proof competency frameworks.

Research into a future perspective and adapting current strategies to that perspective is known in business management as strategic planning. In strategic planning, strategies and goals are set for future businesses by considering internal (within the company) and external (outside the company) factors that will impact the future. In medical education, strategic planning seems to be focused on “providing for future workforce” (Bennett & Phillips 2010) and future “overall organization and structure” of medical education (Association of Faculties of Medicine of Canada 2009). To our knowledge, a strategic planning approach for future competencies has not previously been described in medical education literature.

One of the methods for strategic planning in business management includes a three-step approach, the draw-see-think method (Saxena 2009). First, a vision of what the desired or intended future state will be is identified (draw step). This involves an internal analysis of the firm to get a clear perspective on the desired or intended future state and includes all staff and board members. In medical education, this step could include several stakeholders of which health care providers and patients are the most obvious. This study involved practising medical specialists. They are confronted with changes in the workplace on a daily basis and might be able to provide us with a useful perspective on the future of their workplace and the competencies needed. In the second step (see step), the current situation is viewed and compared to the future perspective. In this study, the comparison of the competencies needed for the future workplace to a current competency framework might provide insight on how future-proof the framework is.

The final step (think step) identifies what specific actions should be taken to close the gap between today’s situation and the future perspective.

This study takes the draw and see steps in strategic planning for future medical education and considers both the internal and external factors of the medical field that are likely to impact the future. The more detailed think step was considered to be beyond the focus of this study and will be addressed in a future study.

The research objectives are:

Draw step:

- What is the vision of clinicians on the future workplace?

See step:

- Are contemporary competency frameworks future-proof when compared to the future perspective of clinicians?

In this qualitative study, the opinions of Dutch gynecologists were used to reveal a perspective on the future which was then compared to a contemporary competency framework using a strategic planning approach.

Method

This study was conducted in The Netherlands within the context of the postgraduate training program of the specialty of

Obstetrics and Gynecology (ObGyn). It involved the following steps: an exploration of the current literature, an expert meeting, and the development of a questionnaire. The questionnaire was distributed in order to gain the clinician’s perspective (draw step) on the future and to compare this perspective to a contemporary competency framework (see step).

Setting

In The Netherlands, virtually all gynecologists work in a hospital in a partnership of 5–25 gynecologists. The Dutch health care system combines public financing with privately owned hospitals in which medical specialists possess a considerable amount of self-regulatory authority, not only in clinical terms but in economical terms as well. General practitioners and midwives provide for the primary care in the community and refer patients to the doctor in the hospital. The midwives are concerned with the physiology of pregnancy and the care surrounding physiological labor. Almost all gynecologists are concerned with the pathology of obstetrics. The greater part of them are also concerned with gynecological care.

Procedure

Due to convenience, the setting of the Dutch ObGyn health care was chosen in this study. At the start of this study, a literature search on current and future ObGyn health care was conducted. The findings of the literature search served as input for the discussion in the following expert meeting. The expert group consisted of seven individuals who together had a complete overview of all the aspects of the specialty (from Obstetrics to Oncology) and its postgraduate training. The experts were two gynecologists working in a university teaching hospital, two gynecologists working in a general teaching hospital, one gynecologist working in a general hospital without resident teaching posts, one gynecologist who is also a professor in medical education, and one third-year resident. The literature findings were combined with the experience of the experts in order to identify current issues on which a perspective on the future was desired within the Dutch ObGyn society and its surrounding context.

The expert group identified 10 current issues: the doctor–patient relationship, preventive *versus* curative medicine, patient population, the workplace of gynecologists, the role of the generalist within the specialty, sub-specialization, technical developments, interdisciplinary collaboration, policy-making developments, and organizational structures within the hospital.

These issues were checked at a national symposium. Opinion leaders from the Dutch ObGyn society and representatives of the residents agreed on the choice of the 10 issues. Hereafter, these issues were converted into a questionnaire with 10 open ended questions asking the respondents to think about the clinical situation in 2025. The questionnaire was first sent to a pilot group of 10 respondents. After the pilot group, the research team decided to split up one question into two separate questions since the given answers

Box 1. Questions from the questionnaire.

What will your profession be like in 2025 regarding the following topics?

1. Doctor–patient relationship
2. Ratio between preventive and curative medicine
3. Demographic change in patient population and its influence on the prevalence of disease
4. The physical environment you will be working in, for example, hospital or private clinic
5. What is the role of an all round gynecologist
6. Sub-specialization within the profession
7. Have other specialties successfully taken over parts of your specialty specific activities
8. Technical developments both medical and logistic
9. Internal organizational structures, e.g. changes in task distribution within a group
10. What will interprofessional teams look like and how do they work
11. Making policy on local, regional, and nation levels

did not fully fit in with the intended perspective of the question. The resulting 11 questions are summarized in Box 1.

The questionnaire was sent by email to the participants in November 2009. They received a reminding phone call 2 weeks after the questionnaire was sent. Participation in this study was voluntary. The information accompanying the questionnaire explained the goal of the study and the anonymous processing of the data, and stated that the results would be used as input to revise the current postgraduate training program.

Participants

The expert group randomly selected 102 potential participants from a list of active members of the Dutch ObGyn Society. The sample represented 12% of the practising gynecologists. It was expected that gynecologists from different types of hospitals would have different future perspectives. Therefore, attention was paid to an equal distribution over all types of hospitals in The Netherlands (university teaching hospitals, general teaching hospitals, and general hospitals without resident teaching posts) and an equal geographical representation.

The study design was intended to gain saturation within each hospital group (Denzin & Lincoln 2005). From university teaching hospitals, general teaching hospitals, and general hospitals without resident teaching posts, respectively, 32, 31, and 33 members were selected. In addition, six residents were randomly selected from the membership list to see if their future perspectives were different from the gynecologists' perspectives. During their training, these residents work both in a university teaching hospital and a general teaching hospital.

Analysis

Draw step. The returned questionnaires were categorized into groups, depending on the type of hospital in which the respondent was located (university teaching hospital, general teaching hospital, general hospital, and resident) to be able to compare the perspectives between the respondents. Then, the

data were anonymized and imported into a qualitative data analysis software program (MaxQDA 2007).

In the analysis, the method described by Miles and Huberman (1994) was used, involving three streams of activity (data reduction, data display, and conclusion drawing and verification). Data reduction is meant to reduce data into manageable and interpretable pieces. In this study, an open coding strategy was used for data reduction in which a text fragment is represented by a code. A second researcher (MW) also coded two randomly chosen questionnaires from each of the groups. Differences in codes were discussed until consensus was reached.

In the stream of activity of data display, reduced data are organized to be able to draw conclusions from the data. Codes on related subjects were organized into categories. By organizing these categories, “change themes” were defined which were discussed by the research team until consensus was reached. A change theme represents a field in which changes for the future are predicted.

See step. The future perspective was then compared to a contemporary competency framework. The ObGyn postgraduate training program in the Netherlands uses the Canadian Medical Education Directions for Specialists (CanMEDS) framework from the Royal College of Physicians and Surgeons of Canada (RCPSC), implemented in 2005 (Scheele et al. 2008). Therefore, the research team decided to use this framework in the see step.

For each code within a change theme, relevant competencies were identified (list available on request). Subsequently, these predicted relevant competencies were, when possible, categorized into the seven CanMEDS roles (Medical Expert, Communicator, Collaborator, Health Advocate, Manager, Scholar, and Professional). Hereafter, the research team compared the current description of the CanMEDS framework (as published on the website of the RCPSC) to the list of predicted relevant competencies looking for focus areas and potential differences.

Results

In total, 62 (60%) participants returned the questionnaire. Twenty (62.5%) from university teaching hospitals, 18 (58%) from general teaching hospitals, 20 (60.6%) from general hospitals without resident teaching posts, and 4 (66.6%) residents responded.

From the telephone reminder, it appeared that the main reason for non-response was high clinical workload.

During analysis in the draw step saturation was reached within each group of respondents. Much resemblance was seen in the open codes of the four groups. Therefore, it was decided to combine the codes of the four groups and to consider them as one group. Despite gained saturation, analysis continued until all responses were analyzed.

The questionable future of home deliveries is a recurrent topic in the answers given. Because of the limited importance of this topic outside The Netherlands, it will be given limited attention.

Draw step and see step

In the analysis of the draw step of strategic planning, four themes on the future of the ObGyn profession became apparent. The four themes in the future perspectives of the respondents are presented below and described separately.

In the see step, the CanMEDS roles which are likely to need a change of focus for the future and their focus areas are summed up for each theme below. Predicted relevant competencies that could not be fitted into the CanMEDS framework are described separately.

The draw step in strategic planning differentiates between internal and external factors. In this study, we also found this distinction. Change themes 1 (patient), 2 (doctor), and 3 (working environment) include mainly internal factors which are situated within the medical field. Change theme 4 (outside the medical field) includes external factors which are situated outside the medical field but influence the way doctors work.

Theme 1 patient

Draw step. **Doctor patient relationship**

Although the doctor–patient relationship will still be very important in 2025, the gynecologists predict that the relationship will get a more business-like and equal character. The patient will behave more like a client in control and will consult the doctor as an expert advisor for his problem.

Care for the chronically ill and aged

Predictions on future diagnostic and therapeutic possibilities were numerous. In 2025, preventive medicine will be more important. However, it is predicted that the working area of a gynecologist will still be focused mainly on curative medicine. Increased knowledge of the origin and management of diseases results in more chronically ill and more aged patients, who consider their disease more as a way of life with restrictions and challenges than a burden. Older pregnant patients will bring their specific medical problems.

See step. All predicted relevant competencies from the future perspective of this theme could be categorized into the CanMEDS framework. However, within the roles Medical Expert, Communicator, Health Advocate, and Scholar for the future, an emphasis is put on certain competencies. Recommended focus areas within relevant roles are described next.

- Medical Expert: deliver patient care, with attention to preventive medicine and the complex care for chronically ill and aged patients.
- Communicator: deliver equal and customer directed care, primarily in an advisory role.
- Health Advocate: identify and advise patients or others on ethical discussions concerning diagnostic and therapeutic developments, especially in advanced age.
- Scholar: apply lifelong learning skills to stay up to date on new developments to guarantee the quality of provided health care.

Theme 2 doctor

Draw step. **Female and part-time working**

The gynecologists predict an increase in female and part-time working colleagues within the profession. Consequently, among other things, the number of moments of information transfer between team members is likely to increase.

Sub-specialization

More gynecologists will become sub-specialists, focusing on a small area within their profession. The non-sub-specialist (generalist) will not disappear, but will have another role: with his basic knowledge and skills, he will play a key role in directing and advising in the labyrinth of sub-specialists to prevent a confusing fragmentation within health care.

Another type of task differentiation is predicted: a differentiation between colleagues who will choose to focus on clinical tasks and others who will focus on research, education, and/or management.

See step. All predicted relevant competencies from the future perspective of this theme could be categorized into the CanMEDS framework. However, for the future, certain competencies within the roles Medical Expert, Collaborator, and Manager, need emphasis. Recommended focus areas within relevant roles are described next.

- Medical Expert: know the limits of your own (sub-specialized) knowledge and skills.
- Collaborator: refer patients to appropriate (sub-specialist) colleagues. Participate effectively in (sub-specialized) teams to provide optimal care.
- Manager: manage your career effectively with the ability to orientate, actively approach, and be decisive on the desired career path.

Theme 3 working environment of the doctor

Draw step

Centralization

The centralization of the diagnosis and treatment of certain conditions is predicted, e.g. oncological conditions and perinatal health care. Complex therapeutic care will be delivered in large centers and on a high level of expertise to meet increased quality demands. An increase in the number of private clinics is predicted as well. In such smaller clinics, diagnostics and treatment will focus on a selected number of conditions. Care will be organized in such a way that patients are enabled to see their different caregivers in a convenient schedule.

Interprofessional teams

An increase of multidisciplinary and interprofessional teams is predicted. In the interprofessional team, several activities will be transferred from the gynecologist to team members such as

nurses or midwives. The gynecologist is seen as the leader of such a team.

Participation in networks

It is predicted that a gynecologist will be less bound to one hospital or institution and instead will deliver his care in a larger network.

See step. Within the roles Communicator, Collaborator, Manager, and Professional, for the future, an emphasis is put on certain competencies. Recommended focus areas within relevant roles are described next.

- Communicator: communicate effectively with and within teams.
- Collaborator: work effectively in a team with differently educated team members and adequately delegate tasks within teams.
- Manager: lead interprofessional teams. Stimulate a patient-friendly organization.
- Professional: guard the quality of the performance of the team.

In this theme, some of the predicted relevant competencies could not be categorized into one of the roles of the CanMEDS framework. Summarizing, these competencies on business management skills, among others, were best represented by the supplementary role Entrepreneur. The following competencies were included in this role:

- Apply knowledge and skills on how to promote and sell your services within networks.
- Be conscious of your own strengths and weaknesses to be able to effectively market yourself and your organization.

Theme 4 world outside the medical field

Draw step. Gynecologists expressed the view that an awareness of the world outside the medical field will become crucial for future practice.

Technical developments

Outside the medical world, many technological developments are predicted by the gynecologists. Besides predictions on future medical techniques and materials focus is on predictions on information technology. The availability of digital information will expand rapidly and facilitate a patient to be better informed about his condition. Possibilities in digital communication with patients and colleagues will also expand. Electronic patient files will be widely used and owned by the patients themselves and, if necessary, available to every health care provider in the country. Gynecologists stress the importance of keeping up to date with these rapid technological developments and to have sufficient technological knowledge to understand and adequately use the developments.

Accountability

Health care will be increasingly delivered following strict, nationwide protocols in which the gynecologist will constantly have to show accountability for his actions. Information about the performance (good and bad) of a hospital health care team or an individual doctor will become publicly available (on the internet). Patients will be able to use this information to choose a hospital or doctor.

Policy-making

In 2025, government and insurers will be more intensively involved in the policy of health care. However, gynecologists express the wish to be more involved (as a profession) in policy-making.

See step. Within the roles Communicator, Collaborator, Manager, Scholar, and Professional, for the future, an emphasis is put on certain competencies. Recommended focus areas within relevant roles are described next.

- Communicator: communicate electronically with patients and colleagues in an efficient and appropriate way.
- Collaborator: collaborate with government and insurers in health policy.
- Manager: gain and apply knowledge and skills in policy-making.
- Scholar: apply lifelong learning skills to correctly advise the (*via* internet) better informed patient.
- Professional: demonstrate accountability for competence and performance.

In this theme, some of the predicted relevant competencies could not be categorized into one of the roles of the CanMEDS framework. Summarizing, these competencies were best represented by the supplementary role of Advanced technology user. In this role, a doctor with extensive technological knowledge and skills can not only handle techniques but can also advise on the appropriated technique or application in any situation. In the CanMEDS framework, the role of the doctor as an advanced technology user has a limited description in the role of Communicator. Our future perspective points to a far more advanced technology use than just for communication purposes. The role Advanced technology user includes the following competencies.

- Handle and advise in technological developments for efficient and appropriate communication with patients and colleagues.
- Handle and advise in advanced technology for accountability.
- Handle advanced technology for efficient lifelong learning.
- Handle advanced technology for entrepreneurship: present yourself and your services appropriately on the internet to attract patients.

Discussion

Using a strategic planning approach, the clinician's perspective on the future of their tasks and competencies was studied

within the specialty ObGyn. In the draw step, the clinician's perspective revealed internal factors (patient, doctor, and work environment of the doctor) and external factors (world outside the medical field) influencing the future practice of a gynecologist. Consequently, focus areas within a contemporary competency framework and potential new competency domains for the doctor of the future could be identified.

Comparing competencies needed for the future to a contemporary competency framework (CanMEDS) in the see step, it became apparent that the framework provides for most of the future competencies. Therefore, it was concluded that the content of the framework is for the greater part future-proof. However, the focus on competencies within some competency domains is likely to change and additional domains should be considered. Remarkably, new competency domains such as entrepreneurship and advanced technology use were ascertained, which have mainly been brought forward by the influence of external factors. Up until now, contemporary competency frameworks (ACGME 2007; Frank & Danoff 2007; GMC 2009) have paid little attention to entrepreneurship and advanced technology use as competencies for a doctor. However, support for the suggested competencies is found in other research fields. For example, Thomas Friedman describes in his visionary book on future economics "The world is flat", a global market in which information technology and the World Wide Web play an important role (Friedman 2005). The clinicians in this study acknowledge a similar importance of being prepared for handling technological developments. Therefore, the competency domains of "Entrepreneur" and "Advanced Technology User" should somehow be given attention in the postgraduate curriculum in order to deliver future-proof specialists.

The final step in strategic planning (think step) would be to concretize the results of this study, for example, using the results in designing learning outcomes for a new postgraduate training program. However, the implementation of these adjusted learning outcomes could be quite challenging. Previous implementations of competency frameworks like CanMEDS did not occur without resistance (Frank & Danoff 2007; Swing 2007). A possible explanation of this resistance might be the difference in focus between the practicing clinicians and program directors. Up until now, the work floor has been focused on medical expertise which comes from a paradigm of anatomical and (patho) physiological science and detailed knowledge and skills (Le Fanu 2000). This could interfere with the paradigm of program directors and educators which promotes the importance of sociological processes like communication, collaboration, and organizational skills (Shortell & Kaluzny 2006). Nevertheless, in the literature, the importance of sociological processes has been demonstrated, for instance, in the field of patient safety and team collaboration (Kohn 2000; Veltman & Larison 2010). The results of this study underpin the need for generic competencies. Persistence in the implementation of training in generic competencies and the call for a change of culture on the work floor are advised. The time has come for context and trend awareness.

When summed up, the proposed expansions for the CanMEDS competency framework seem to ask a lot of the future doctor. An advanced level in all competencies might be

too much for an individual to master. Based on this study's findings, it could be suggested that in the forthcoming decades, policy on competencies should be aimed at *role specialization*. Clinicians should be provided with the opportunity to specialize in more specific roles like "leadership in health care organization," "advanced technology use," and "interprofessional health care." All the competencies needed, both medical and generic, can be brought together in groups of professionals, in which each individual has mastered a different set of roles.

Limitations

This study has some limitations. It only shows the clinician's perspective on future practice and needed competencies. It is acknowledged that in the content validation of competency profiles, adding the perspectives of other stakeholders (nurses, midwives, and patients) might increase the generalizability of the clinician's perspective. The perspective is based on predictions and not facts. Therefore, a prudential approach is advised in the incorporation of the results into competency frameworks. Finally, transferability of the results to other specialties could be argued upon, since in this study, only the perspective of ObGyn specialists was investigated which serve a predominantly female patient population. However, for the greater part, the results are not specific for the specialty ObGyn. Therefore, the results might also be plausible for other specialties.

Future research

As mentioned above, future research should focus on other stakeholders in patient care. Insights from patients and their organizations, paramedical personnel, hospital managers, and general practitioners could help to accentuate the focus of a competency profile. To test how generalizable the gynecologists' predictions are, other medical specialties should be questioned about the future of their specialty as well. Another focus of future research should be the problem of the different paradigms (medical expertise and sociological) included in several competency frameworks. Can we ask a dedicated doctor with much attention to detailed medical knowledge to add more sociological and managerial knowledge and skills to this medical expert focus? Should higher training in sociological skills be indeed imperative? What can be learned from implementation problems?

Conclusions

Strategic planning is useful for bringing focus into the use of a competency framework.

The CanMEDS framework was found to be content valid for the future, but addition of competencies regarding entrepreneurship and advanced technology is advisable.

From the viewpoint that newly trained clinicians should be fit for future practice, strategic planning appears to be a useful step in curriculum design. Curriculum design could benefit from context (and trends) awareness, by including influences from outside the medical field.

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