



Collaboration, Communication, Management, and Advocacy: Teaching Surgeons New Skills through the CanMEDS Project

Jason R. Frank, M.D., M.A.(Ed.), Bernard Langer, O.C., M.D.

Office of Education, Royal College of Physicians & Surgeons of Canada, 774 Echo Drive, Ottawa, Ontario, Canada K1S 5N8

Published Online: July 24, 2003

Abstract. The training of future surgeons must evolve in such a way that it ensures that surgical practice meets the needs of modern societies. Many surgical educators and organizations are considering which abilities are critical elements of the education of surgeons for the new millennium. We describe the approach employed by the Royal College of Physicians and Surgeons of Canada (RCPSC), called the Canadian Medical Education Directions for Specialists (CanMEDS) Project. Through this endeavor the RCPSC has adopted a framework of core competencies organized around seven physician “Roles”: Medical Expert, Communicator, Collaborator, Manager, Health Advocate, Scholar, and Professional. We present the development and rationale for this framework and the progress of its implementation in postgraduate surgical training programs across Canada.

CanMEDS Rationale and Development

There are currently several powerful forces driving the need to reform medical education and the standards of physician competence. They include consumerism, concern about patient safety and quality of care, technological changes, fiscal imperatives, and evolving government regulation. There are also concerns about current medical education and the maintenance of competencies once training is complete. The end of the twentieth century witnessed a dramatic rise in consumerism among patient populations in Western countries. A better educated public and changing roles for professions in society have led to greater demands for accountability and competition [4–6]. In the United States, for example, a consortium of large employers now uses measures of the quality of surgical care to encourage active competition for the services provided by health care institutions [7]. Medical error issues have emerged as a powerful concern in our societies, and consumer awareness has evoked calls for greater patient safety. This has led to new initiatives directed at systematically improving competence and patient care [8, 9]. Governments and regulators have responded by pushing for systems of more accountability and regulation for health professionals [8]. At the same time, technologic changes and medical science have proceeded at a breakneck pace, making it increasingly difficult for clinicians to stay current. Ambulatory surgical and medical management has replaced many former procedures, just as technology has enhanced and added to the costs of others [5]. Rising costs have coincided with a push by payers to restrain the growth of health care budgets. The resulting conflicts have so severely affected the nature of practice in recent years that collectively they have been labeled a “health care crisis” [10]. Finally, over the din of this crisis repeated calls have been heard to reform medical education to make it more effective and more humane [11–15].

The challenge facing medical educators has focused on the need to respond not only to the fiscal realities and the information explosion but also to the needs and expectations of society that go beyond physicians’ technical knowledge and skills. What are these additional competencies needed by our graduates to practice effectively in this environment? How should medical education institutions, as guardians of the public health care trust, meet their moral

“Competence is a foundational moral element in the surgeon-patient relationship” [1]. McKneally’s truism is also a fundamental challenge to institutions’ responsible for the education of surgeons. What is the best way to educate future surgeons to be competent to meet the needs of the society and patients they will serve? How should the skills of current surgeons be maintained or enhanced to provide the best care possible? How can this be done in the context of global trends toward greater demands for public accountability, rising patient consumerism, rapidly evolving medical science and technology, and fiscal restraints on health care spending? Surgical institutions and organizations have a moral imperative to define the competencies needed by surgeons to best meet the needs of their patients. Other surgical educators have proposed novel approaches [2, 3]. The Royal College of Physicians and Surgeons of Canada (RCPSC) has undertaken a systematic approach to answering these essential questions, a multiphase endeavor called the Canadian Medical Education Directions for Specialists (CanMEDS) Project. In this paper, we outline the powerful moral and policy rationales that inspired CanMEDS. We also describe the resulting socially responsive framework of competencies defined as the CanMEDS “Roles” and Canada’s progress in implementing them in educational programs nationwide.

Table 1. Framework of essential competencies for Canadian specialist physicians.

<p>The Royal College of Physicians and Surgeons of Canada CanMEDS 2000 A Framework of Essential Competencies for Canadian Specialist Physicians</p>
<p>Medical Expert / Clinical Decision Maker</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • demonstrate diagnostic and therapeutic skills for ethical and effective patient care • access and apply relevant information to clinical practice • demonstrate effective consultation services with respect to patient care, education and legal opinions
<p>Communicator</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • establish therapeutic relationship with patients/families • obtain and synthesize relevant history from patients/families/communities • listen effectively • discuss appropriate information with patients/families and the health care team
<p>Collaborator</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • consult effectively with other physicians and health care professionals • contribute effectively to other interdisciplinary team activities
<p>Manager</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • utilize resources effectively to balance patient care, learning needs, and outside activities • allocate finite health care resources wisely • work effectively and efficiently in a health care organization • utilize information technology to optimize patient care, life-long learning and other activities

(Continued)

obligations to ensure contemporary and future competence? These are the questions that the RCPSC’s CanMEDS Project set out to address.

As the national organization of specialists in Canada, the RCPSC moved deliberately to respond to these challenges. In keeping with the College’s mission of “ensuring the highest standards and quality of health care” [16], the Fellows of the RCPSC set the standards for all specialty programs and certifications across the country. Thus at the beginning of the 1990s the Fellows of the College initiated a process for reexamining the core competency frameworks of the RCPSC. This duty was delegated to a task force, which later became the CanMEDS Project. CanMEDS set out to define a set of key competencies, or essential abilities of practicing

specialists, derived from societal needs. The goal was an organizing framework for graduate medical education in Canada. The task force involved leaders in medical education, academics, community specialists, representatives of affiliated stakeholders, and the public. The work was built on many available sources, including a systematic literature review, a consultation process, and expert input. These sources, in turn, were informed by the focus group results and the work of another Canadian societal needs assessment project directed at undergraduate medical education called Educating Future Physicians for Ontario (EFPO) [17]. The resulting framework was grouped into seven clusters of competencies, or physician “Roles”: Medical Expert, Communicator, Collaborator, Health Advocate, Manager, Scholar, Professional. The CanMEDS

Table 1. (Continued)

<p>Health Advocate</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • identify the important determinants of health affecting patients • contribute effectively to improved health of patients and communities • recognize and respond to those issues where advocacy is appropriate
<p>Scholar</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • develop, implement and monitor a personal continuing education strategy • critically appraise sources of medical information • facilitate learning of patients, house staff/students and other health professionals • contribute to development of new knowledge
<p>Professional</p> <p>The specialist must be able to ...</p> <ul style="list-style-type: none"> • deliver highest quality care with integrity, honesty and compassion • exhibit appropriate personal and interpersonal professional behaviours • practise medicine ethically consistent with obligations of a physician

From Frank et al. [21], with permission. © 1996 Royal College of Physicians and Surgeons of Canada.

findings are listed in Table 1 and are described in more detail elsewhere [18, 19]. The selected competencies were then validated in surveys of Fellows and program directors. The CanMEDS roles have become the organizing structure on which the College’s educational mission has been renewed.

Implementation of the CanMEDS Framework

Having defined a set of key competencies, the RCPSC moved to adopt the Roles as a needs-based framework to fulfill its societal contract. In 1996 the Council of the College formally accepted CanMEDS as the foundational framework for its educational mission. Since that time, the College has changed its accreditation standards, objectives of training, evaluation methods, and certification standards to reflect the CanMEDS Roles. This has meant innovations in examination blueprints, core curricula, and accreditation survey methods. By the end of 2003, all of the specialties and subspecialties in Canada will have rewritten their core educational objectives in the CanMEDS format. Evaluations are also designed to reflect the core competencies for each specialty. Table 2 illustrates the implementation of CanMEDS educational objectives through their incorporation into the evaluation criteria for the final in-training evaluation report (FITER) for the specialty of pediatric general surgery [20]. The RCPSC has now put in place a system to develop medical and surgical specialists who have all the competencies necessary to delivery high quality care in our modern society. Excerpts from the final in-training evaluation report for the specialty of pediatric general surgery.

Validation of the Framework of Competencies

To accomplish our societal mission, the chosen competencies must truly reflect societal needs. To have relevance for surgeons in training, they must also be generalizable to the daily work of the practicing surgeon. CanMEDS answered these challenges in both its methodology and its implementation processes. The systematic needs assessment included input from multiple sources and stakeholders and was broadly consultative. The competencies and behaviors identified by each as critical were synthesized, giving a more complete, more valid reflection of reality. Surveys of recent graduates of RCPSC programs—including surgeons and surgical program directors—clearly supported the competencies chosen. Recognizing the differences in practice profiles between specialties, the implementation of CanMEDS was also flexible enough to allow each national specialty committee to place its own relative emphasis on the core competencies. Each specialty has its own constellation of activities and abilities, which was reflected in its implementation of the CanMEDS Roles in its training programs. For example, although every surgeon is a Manager and Communicator, the emphasis placed on these competencies may differ among training programs for surgeons, pathologists, or psychiatrists.

Shift in Medical Education Planning

The development of CanMEDS represents a fundamental paradigm shift in thinking about specialist education, namely, a move from “supply-side” to “demand-side,” or needs-based thinking

Table 2. Excerpts from the final in-training evaluation report for the specialty of pediatric general surgery.

A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	* Rarely meets	* Inconsistently meets	Generally meets	Sometimes exceeds	* Consistently exceeds
COMMUNICATOR					
a) Provides clear and thorough explanations of diagnosis, investigation and management.					
b) Establishes good relationships with peers and other health professionals. Effectively provides and receives information. Handles conflict situations well.					
c) Prepares documentation that is accurate, timely and organized.					
d) Demonstrates an appreciation of the unique psychological needs of pediatric patients.					
e) demonstrates an appreciation of the unique relationship between pediatric patients and their families.					
f) Deals effectively and compassionately with family members establishing therapeutic relationships					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings.					
COLLABORATOR					
a) Interacts effectively with health professionals by recognizing and acknowledging their roles and expertise.					
b) Consults and delegates effectively.					
c) Collaborates effectively and constructively with other members of the health care team.					

(Continued)

[12]. CanMEDS defines societal needs in the form of competencies, or abilities of physicians; it incorporates program and graduate outcomes standards and explicitly includes roles that support the central Medical Expert Role of the specialist physician. To implement a framework of this kind, surgical educators must accept the central importance of societal needs and the surgical abilities that answer these needs. The implications are not so much a deemphasis on the core knowledge and procedural skills of the surgeon but a reemphasis on the abilities of excellent surgeons in and out of the operating theater. Canadian programs are now being asked to ensure that residencies include visible training in the management of resources (financial, personal, health care), discussions of professionalism, and teaching of communication skills. These standards may not be new for some programs, but their unequivocal and comprehensive presence is innovative for many. The goal has always been to educate for excellence, but CanMEDS was designed to make explicit all of the abilities needed in our contemporary health care context [13].

Impact on the Continuum of Medicine

The power of CanMEDS lies in both its validity and its utility. For postgraduate medical education (PGME), this has meant innovation and restructuring of residency curricula and evaluations. Every specialty PGME program in Canada now reflects these changes. In the United States the Accreditation Council for Graduate Medical Education (ACGME) Outcomes Project has undertaken similar advances, and many Canadian medical schools are moving to adopt competency frameworks akin to those of CanMEDS. Undergraduate medical students' education is being altered to better reflect societal needs. If we accept the premise that the framework appropriately reflects societal needs, it follows that the continuing professional development of the surgeon in practice should ensure competence in all the CanMEDS Roles as well.

In 2001 the RCPSC initiated a mandatory program of continuing professional development called Maintenance of Certification and is in the process of developing tools for evaluating CanMEDS com-

Table 2. (Continued)

d) Demonstrates a willingness and effectiveness in the team approach in the management of critically and/or chronically ill children.					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings.					

A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	* Rarely meets	* Inconsistently meets	Generally meets	Sometimes exceeds	* Consistently exceeds
MANAGER					
a) Understands and makes effective use of information technology, such as methods for searching medical databases.					
b) Makes cost effective use of health care resources based on sound judgement.					
c) Sets realistic priorities and uses time effectively in order to optimize professional performance.					
d) Demonstrates an appreciation of the economic factors that influence decision-making and the impact of such factors on families.					
e) Applies the principles of quality assurance and improvement in the practice of pediatric general surgery.					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings.					
HEALTH ADVOCATE					
a) Understands the specialist role to intervene on behalf of patients and/or their families with respect to the social, economic and biologic factors that may impact on their health or their child's health.					

(Continued)

petencies in this program. The aim in Canada is ultimately to have CanMEDS-like competencies incorporated into the needs-based educational continuum from undergraduate education through postgraduate training programs into lifelong continuing professional development.

Conclusions

The Royal College of Physicians and Surgeons of Canada has undertaken a bold renewal of its specialist PGME training programs,

including those preparing future surgeons. The CanMEDS Roles represent an effort to identify, define, and implement a competency framework for medical training based on societal needs. The RCPSC has done this on a national scale in Canada in an effort to fulfill its mandate to ensure the highest quality care for the patients its Fellows serve. For surgical postgraduate education programs worldwide, CanMEDS represents the kind of organizing framework that can ensure that surgical education not only focuses on optimal clinical outcomes but recognizes and meets the expectations and needs of society.

Table 2. (Continued)

b) Understands the specialist role to intervene on behalf of the community with respect to the social, economic and biologic factors that may impact on community health.					
c) Recognizes and responds appropriately in advocacy situations.					
d) Advocates injury-prevention policies for children.					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings.					
A rationale must be provided to support ratings with asterisks.	EXPECTATIONS				
	* Rarely meets	*Inconsistently meets	Generally meets	Sometimes exceeds	*Consistently exceeds
SCHOLAR					
a) Demonstrate an understanding and a commitment to the need for continuous learning. Develops and implements an ongoing and effective personal learning strategy.					
b) Critically appraises medical information. Successfully integrates information from a variety of sources.					
c) Understands the principles of adult learning and helps others learn by providing guidance, teaching and by giving constructive feedback.					
d) Participates in scholarly work that fosters the development of new knowledge in the specialty of Pediatric General Surgery.					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings.					
PROFESSIONAL					
a) Demonstrates integrity, honesty and compassion.					
b) Respects diversity in dealing with patients, families and colleagues.					
c) Meets deadlines, is punctual, monitors patients and provides follow up.					
d) Understands and can articulate the principles of ethics and can apply these in clinical situations, especially as they pertain to the complex issues of children and their submission to tests and/or treatments.					
e) Demonstrate an awareness of own limitations, seeking advice when necessary. Accepts advice graciously.					
f) Recognizes the importance of maintenance of competence and evaluation of outcomes.					
g) Understands the legal issues related to consent, confidentiality and refusal of treatment.					

Résumé. L'apprentissage des chirurgiens de demain doit évoluer pour que l'exercice de la chirurgie assure les besoins des sociétés modernes. Beaucoup d'enseignants et d'organisations en chirurgie réfléchissent sur les éléments que constituent l'éducation des chirurgiens du nouveau millénium. Nous décrivons ici l'approche employée par le Royal College of Physicians and Surgeons of Canada, le projet CanMEDS. A travers cette démarche, le RCPSC a adopté un cadre de compétences de base basé sur sept «rôles» que doit jouer le praticien: expert médical, professionnel, communicateur, collaborateur, directeur, conseiller en santé, et scientifique. Nous présentons le développement et la reationalité de ce cadre de travail et relatons les progrès accomplis dans son implémentation dans les programmes d'enseignement post-universitaire au Canada.

Resumen. El entrenamiento de los futuros cirujanos debe evolucionar a fin de garantizar que el ejercicio de la cirugía responda a las necesidades de las sociedades modernas. Muchos educadores quirúrgicos y organizaciones están estudiando cuales son las habilidades que revisten de importancia crítica para la educación de los cirujanos en el nuevo milenio. En este artículo se describe el enfoque adoptado por el Royal College of Physicians and Surgeons del Canadá, el proyecto CanMEDS. El College ha adoptado un marco de referencia de las competencias fundamentales, organizadas alrededor de 7 dominios del médico: Experto en Medicina, Profesional, Comunicador, Colaborador, Gerente, Promotor de Salud y Académico ("scholar"). En este artículo se presentan el desarrollo y la justificación de tal marco de referencia y el progreso en su implementación en los programas de educación quirúrgica de postgrado en Canadá.

References

1. McKneally MF. Ethical problems in surgery: innovation leading to unforeseen complications. *World J. Surg.* 1999;23:786-788
2. Peracchia A. Surgical education in the third millennium. *Ann. Surg.* 2001;234:709-712
3. Harness JK, Van Heerden JA, Lennquist S, et al. Future of thyroid surgery and training surgeons to meet the expectations of 2000 and beyond. *World J. Surg.* 2000;24:976-982
4. Zelenock GB, Zambricki CS. The health care crisis: impact on surgery in the community hospital setting. *Arch. Surg.* 2001;135:585-591
5. Lewis FR. Costs, competence, and consumerism: challenges to medicine in the new millennium. *J. Trauma* 2001;50:185-194
6. Curry L, Wergin JF. *Educating Professionals: Responding to New Expectations for Competence and Accountability*, San Francisco, Jossey-Bass, 1993
7. Galvin R, Milstein A. Large employers' new strategies in health care. *N. Engl. J. Med.* 2002;347:939-942
8. Kohn, LT, Corrigan, JM, editors. *To Err Is Human*, National Academy Press, Washington, DC, 1999
9. Leape LL. Errors in medicine. *J.A.M.A.* 1994;272:1851-1857
10. Russell TH. The college viewpoint. *Arch. Surg.* 2001;136:151-153
11. Christakis NA. The similarity and frequency of proposals to reform US medical education: constant concerns. *J.A.M.A.* 1995;274:706-711
12. Halpern R, Lee MY, Boulter PR, et al. A synthesis of nine major reports on physicians' competencies for the emerging practice environment. *Acad. Med.* 2001;76:606-615
13. Collins C. Surgical training, supervision, and service. *B.M.J.* 1999;318:682-683
14. Craven JE. The generation gap in modern surgery. *Arch. Surg.* 2002;137:257-258
15. Richardson JD. Workforce and lifestyle issues in general surgery training and practice. *Arch. Surg.* 2002;137:515-520
16. <http://www.rcpsc.medical.org> (accessed August 5, 2002)
17. Neufeld VR, Maudsley RF, Pickering RJ, et al. Educating future physicians for Ontario. *Acad. Med.* 1998;73:1133-1148
18. Frank JR, Jabbour M, Tugwell P, et al. Skills for the new millennium: report of the societal needs working group, CanMEDS 2000 Project. *Ann. R. Coll. Physicians Surg. Can.* 1996;29:206-216
19. Frank JR, Jabbour M, Tugwell P, et al. CanMEDS 2000: extract from the CanMEDS 2000 societal needs working group report. *Med. Teach.* 2000;22:549-554
20. Blair G, Laberge J-M, Mikhael N, et al. *Final In-training Evaluation Report for Pediatric General Surgery*, Ottawa, Royal College of Physicians and Surgeons of Canada, 2002
21. Frank J, Jabour M, Tugwell P, et al. *Skills for the New Millenium: Report of the Societal Needs Working Group*, Ottawa, Royal College of Physicians and Surgeons of Canada, 1996