

# Translational education: tools for implementing the CanMEDS competencies in Canadian urology residency training

J.J. Mickelson, MD, FRCSC;\* A.E. MacNeily, MD, FRCSC†

See related article on page 405

## Abstract

It has been more than a decade since the Royal College of Physicians and Surgeons of Canada implemented the Canadian Medical Education Directives for Specialists (CanMEDS) project. Despite frequent and widespread correspondence to Canadian practitioners and educators, the adoption of the 7 core competencies espoused by CanMEDS has been slow. Barriers to the teaching and acquisition of these skills include a lack of understanding of what they actually represent, a paucity of tools to teach them and an inability to quantify performance. It is essential to translate the goals of the CanMEDS project into clinically relevant concepts. We define the current status of the CanMEDS competencies with respect to urological training and provide some context to what has been, until now, a poorly defined and abstract educational construct.

CUAJ 2008;2(4):395-404

## Introduction

Canadian postgraduate medical education has been in a state of transition since the introduction of the Canadian Medical Education Directives for Specialists (CanMEDS) competencies to residency training programs.<sup>1</sup> Urology training programs have struggled to incorporate these new ideas into existing curricula. Although the Royal College of Physicians of Canada (RCPSC) offers workshops on the CanMEDS competencies, there are currently no guidelines to assist program directors and clinical faculty with program-specific implementation of these roles.<sup>1,2</sup> In addition to the uncertainty regarding how to incorporate the 7 competencies into teaching activities, urology faculty are not sure how to assess performance in these new roles. For example, how does one determine whether we are graduating urology residents who are adequately trained in collaboration? These more nebulous aspects of the CanMEDS competencies have left trainees and faculty confused and, at times, frustrated.

Translational medicine is a term typically associated with the “translation” of basic scientific research into real therapies for real patients. In this way, barriers separating basic research from clinical practice are overcome.<sup>3,4</sup> There is a similar need to translate the abstract concepts of the CanMEDS framework into measurable educational tools for real educators and real resident trainees. Our review seeks to address this challenge by outlining the CanMEDS competencies and proposing strategies for their implementation and assessment in Canadian urology training programs.

## What are the CanMEDS competencies?

In 1996 the RCPSC created the CanMEDS competencies.<sup>1</sup> This endeavour was spawned by a perceived need to reform medical education in Canada. Shifts in societal expectations in regard to physicians needed to be reflected in their training programs. The driving forces of this reform were questions generated about patient consumerism, patient safety, quality of care, technological advances, fiscal constraint, government regulation, physician competence and maintenance of training.<sup>5</sup> As a result, the RCPSC created 7 physician roles outlined by CanMEDS, which are detailed in Box 1. In 1999, this initiative was paralleled in the United States when the Accreditation Council of Graduate Medical Education (ACGME) Outcomes Project created 6 similar competencies, also outlined in Box 1. The general goal of both projects was to foster a formal education, beyond medical expert, in the broader roles required of physicians. The competency approach expands the notion of what is required of postgraduate trainees in

### Box 1. CanMEDS and ACGME core competencies

CanMEDS	ACGME
<ul style="list-style-type: none"> <li>• Medical Expert</li> <li>• Communicator</li> <li>• Collaborator</li> <li>• Manager</li> <li>• Health Advocate</li> <li>• Scholar</li> <li>• Professionalism</li> </ul>	<ul style="list-style-type: none"> <li>• Medical knowledge</li> <li>• Communication and interpersonal skills</li> <li>• Patient care</li> <li>• System-based practice</li> <li>• Practice-based learning and improvement</li> <li>• Professionalism</li> </ul>

Adapted from Canadian Medical Education Directives for Specialists (CanMEDS) framework<sup>1</sup> and Accreditation Council for Graduate Medical Education (ACGME) Outcomes Project.<sup>2</sup>

qualitative terms.<sup>7</sup> As learners discover their strengths and weaknesses, they are more likely to acquire virtues that ensure their career success over the long term.<sup>8</sup> With the adoption of the CanMEDS competencies, the RCPSC mandated a change in our training objectives, evaluation methods and accreditation and certification standards to reflect these new roles.<sup>5</sup> With the creation of new objectives and standards, urology training programs have had to transform existing curricula or develop entirely new ones. Unfortunately, a “user’s manual” did not accompany the CanMEDS competencies, and as a result, urology program directors have not been certain how to proceed.

In contrast, the ACGME Outcomes Project was accompanied by a “toolbox” of possible instruction and assessment methods.<sup>8</sup> This toolbox was designed to assist program directors and other faculty to evaluate the new ACGME competencies. There is a need in Canada to address the CanMEDS competencies in a similar, formalized manner to guide program directors and faculty.

The remainder of this review will outline the CanMEDS competencies. Specifically, the goal of each competency, a proposed method for teaching and a means for assessment of each competency will be outlined.

### Medical Expert / Clinical Decision Maker

Medical expert is the competency that program directors and faculty are most likely to be familiar and comfortable with. The goal of this competency is to

demonstrate diagnostic and therapeutic skills for ethical and effective patient care, access and apply relevant information to clinical practice and demonstrate effective consultation services with respect to patient care, education and legal opinions.<sup>5</sup>

The gestalt is for the resident to become “savvy” with their knowledge and skills in urology concomitant with appropriate application. The ACGME equivalent of this role is “medical knowledge.”<sup>6</sup> Currently used techniques for assessing medical knowledge in urology include formative and summative faculty evaluation of resident performance, in-service examinations, a certification preparation course<sup>9</sup> and the final Royal College certification examinations.<sup>10</sup>

The American Urological Association (AUA) provides Canadian urology programs with the

opportunity for their residents to sit the AUA in-service examination (AUA ISE). This multiple-choice test provides a yearly review of a resident’s performance compared with North American residents at a similar level. Performance can be tracked throughout residency training and is used as a benchmark of knowledge for both residents and program directors. Results on the AUA ISE have been shown to be a good predictor of performance on both the Canadian and American certifying examinations.<sup>11</sup> As residents near the end of training, the Queen’s Urology Examination Skills Training (QUEST) program acts as a venue for knowledge assessment and practice with a short-answer and objective structured clinical examination (OSCE) format for candidates.<sup>9</sup> QUEST performance has previously been shown to correlate well with the results on the Royal College certifying examinations. The final evaluation of the medical expert competency is at the Royal College final certification examination at the end of residency training.<sup>10</sup>

### Instructional methods

Training for medical experts already exists in urology training programs. Academic half days, rounds, case presentations and seminars are several ways in which urology residents are currently instructed to become medical experts. We will not address the nuances and styles of instruction in this review; however, the importance of the continuation and quality of these activities is paramount to the effectiveness of the training program (Table 1).

In addition to acquisition of knowledge, achieving technical competence is an essential aspect of the medical expert domain. Traditionally, technical skills were imparted by modelling and evaluated by direct intraoperative observation. More recently, many North American institutions have developed surgical skills centres, largely led by the example of the Department of Surgery at the University of Toronto.<sup>12</sup> Teaching sessions at these facilities have been incorporated into the core curricula of the early years of surgical residency to teach fundamental skills such as knot tying, suturing and basic laparoscopy. However, the goal of surgical simulation — proof that there is transference — remains elusive (i.e., Does the skillful execution of a task on a simulator equate to technical expertise in a real live patient?).<sup>13</sup>

### Assessment strategies

Current tools used by programs to assess a resident's competence as a urological medical expert are sound and well established. The ACGME toolbox suggests that written examinations (multiple choice and open-ended questions) are one of the most effective means for evaluating medical knowledge.<sup>8</sup> Other suggested methods include standardized oral examinations, OSCEs, standardized patient encounters and chart-stimulated recall oral examinations.<sup>8</sup> The latter are oral examinations with questioning based on care

provided in the course of a case.<sup>8</sup> Miller and colleagues<sup>14</sup> suggested a novel approach for evaluation that would involve a formal written assessment of the quality of resident lectures and clinical case presentations. A standardized evaluation form could be used to assess residents' ability to highlight important aspects of clinical cases, their communication skills and their therapeutic decision-making. This technique was proposed largely for daily case presentations; however, it could also be applied to residents giving larger grand rounds presentations. With a standardized form, multiple evaluators can

**Table 1. Summary of potential instruction methods and assessment strategies for urology residents, based on CanMEDS competencies**

Competency	Instruction method	Assessment strategy
Medical Expert	<ul style="list-style-type: none"> <li>Academic half-day teaching</li> <li>Grand rounds</li> <li>Case presentations</li> <li>Seminars</li> <li>Review courses</li> <li>Surgical simulators</li> </ul>	<ul style="list-style-type: none"> <li>Written examinations (multiple choice and open-ending)</li> <li>AUA ISE</li> <li>QUEST</li> <li>Standardized oral examinations</li> <li>Standardized patient examinations</li> <li>Chart-stimulated recall oral examinations</li> <li>OSATS</li> </ul>
Communicator	<ul style="list-style-type: none"> <li>Transdisciplinary workshops</li> <li>Small-group role-play activities</li> </ul>	<ul style="list-style-type: none"> <li>Faculty evaluation</li> <li>OSCE</li> <li>Standardized patient examinations</li> <li>360-degree evaluations</li> <li>Patient surveys</li> </ul>
Collaborator	<ul style="list-style-type: none"> <li>Interdisciplinary collaboration and empathy workshops</li> </ul>	<ul style="list-style-type: none"> <li>Faculty evaluation</li> <li>360-degree evaluations</li> <li>Patient surveys</li> </ul>
Manager	<ul style="list-style-type: none"> <li>Interactive seminars with health care administrators</li> <li>Money management seminars (with accountants or financial planners)</li> </ul>	<ul style="list-style-type: none"> <li>Faculty evaluation</li> <li>360-degree evaluations</li> </ul>
Health Advocate	<ul style="list-style-type: none"> <li>Faculty modelling</li> <li>Faculty and resident seminars on health advocacy</li> </ul>	<ul style="list-style-type: none"> <li>Faculty evaluation</li> <li>Portfolios</li> </ul>
Scholar	<ul style="list-style-type: none"> <li>Faculty mentorship</li> <li>Journal clubs</li> <li>Local and national urology meetings</li> <li>Seminars on scholarship</li> </ul>	<ul style="list-style-type: none"> <li>Faculty evaluations</li> <li>Evaluation of grand rounds, journal club and meeting presentations</li> </ul>
Professionalism	<ul style="list-style-type: none"> <li>Faculty mentorship</li> <li>Professionalism seminars (residents and faculty)</li> </ul>	<ul style="list-style-type: none"> <li>Global Resident Competency Rating Form</li> </ul>

AUA ISE = American Urological Association in-service examination; CanMEDS = Canadian Medical Education Directives for Specialists; OSATS = Objective Structured Assessment of Technical Skill; OSCE = Objective Structured Clinical Examinations; QUEST = Queen's Urology Examination Skills Training.

assess the resident's breadth and distillation of knowledge, along with his or her presentation skills. Appendix 1<sup>14</sup> demonstrates an example of an assessment form that has been adapted for CanMEDS.

Assessment of technical competence is also an important component of resident evaluation. An Objective Structured Assessment of Technical Skills (OSATS) is a performance-based examination designed to assess the technical skills of surgical trainees; it uses operation-specific checklists, detailed global ratings forms and pass/fail judgments.<sup>15,16</sup> Martin and colleagues<sup>16</sup> studied this assessment method and concluding that an OSATS is a reliable and valid means for evaluating technical skills of surgeon trainees. As bench model simulation continues to evolve in urology, assessing of technical skills will occur both inside and outside the operating room.

### Communicator

---

The goal of the communicator competency is for residents

to be able to establish therapeutic relationships with patients/families, obtain and synthesize a relevant history from patients/families/communities, listen effectively and discuss appropriate information with patients/families and the health care team.<sup>5</sup>

The essence of this competency is to develop residents who can communicate well with patients and colleagues. The ACGME describes this competency as "interpersonal skills and communication."<sup>6</sup> Currently, residents' communication skills are assessed by urology faculty and are summarized at mid- and end-of-rotation evaluations. Informal feedback from other health professionals is given throughout resident rotations and is based on daily interactions.

### Instructional methods

Communication skills are generally poorly taught in specialty training.<sup>17</sup> The ability to communicate effectively incorporates various virtues that include empathy, compassion, tact, discretion, honesty, tolerance and sincerity.<sup>7</sup> Medicine has largely relied on modelling to facilitate teaching these virtues.<sup>18</sup> Although a powerful determinant of behaviour, modelling is variable, often unreliable and unstandardized, making assessment difficult.<sup>19</sup> There is a paucity of literature on strategies for teaching

communication skills during urology residency training. Studies in other fields have examined the positive impact of transdisciplinary workshops and small-group role-play activities on the development of communication skills, as well as a faculty development workshop of similar design that allowed faculty to act as small-group facilitators.<sup>18</sup> Retrospective analysis of this experience showed that residents did perceive a significant change in their communication skills.<sup>18</sup> A shared-training initiative across various specialties could be a venue for urologists to augment their training in communication, perhaps as part of the core surgical curriculum during the first 2 years of residency.

### Assessment strategies

Faculty evaluations and verbal communication from paraprofessional colleagues are currently used. The informal nature of these makes standardization difficult. The RCPSC certification examination evaluates communication skills according to the OSCE format.<sup>10</sup> Other methods that are recommended in the ACGME toolbox include use of 360-degree evaluations and patient surveys.<sup>8</sup> 360-degree evaluations use measurement tools completed by multiple people in a person's sphere of influence (e.g., physicians from other specialties, nurses and other allied health care workers). Most consist of surveys or questionnaires with rating scales that assess an person's performance on teamwork, communication, decision-making and management. Patient surveys can be used to assess a physician's ability to explain case details, listen effectively and describe treatment steps and complications. Because reliability estimates for these types of assessment are questionable, it would be reasonable to use this method as a formative, as opposed to summative, method of assessment.<sup>8</sup> Another way to assess communication skills is to use a standardized assessment form (Appendix 1) to gauge a resident's ability to communicate with colleagues in a more formal venue such as a grand rounds forum.

### Collaborator

---

The goal of this competency is stated as follows:

the physician must consult effectively with other physicians and health care professionals and contribute effectively to other interdisciplinary activities.<sup>5</sup>

In essence, a good collaborator is someone who is able to work with other people (physicians, patients, colleagues and allied health personnel). The ACGME-equivalent competency is “interpersonal skills and communication” along with the “patient care.”<sup>6</sup> CanMEDS separated out the ability to communicate with people from the ability to work effectively with people. Collaboration, similar to communication, is assessed by end-of-rotation evaluations by faculty physicians. The Final In-training Evaluation Report evaluates a resident’s ability to collaborate throughout his or her time in residency.<sup>10</sup>

### Instructional methods

Teaching people to work together is often a challenging task. Personalities, logistics and stress often hinder being able to work effectively together. One aspect of being able to collaborate is the ability to feel empathy for one’s colleagues. Being able to “see from the eyes” of one’s colleagues creates a shift from a self-focused reference frame, which may allow residents to recognize the challenges their colleagues face. A study from The Netherlands by Pedersen and colleagues<sup>20</sup> reviewed the impact of a 1-day course on interprofessional communication taught to medical and nursing students. The students participated in exercises on communication and collaboration in a simulated clinical ward environment. Standardized evaluations and focus-group reviews of feedback revealed that the course was highly rated by both groups, who considered it relevant and efficient.<sup>20</sup> Urologists need to look for more opportunities for interdisciplinary venues for training in competencies such as collaboration.

### Assessment strategies

Currently, faculty urologists assess the collaboration skills of a resident. Given that the goal of this competency is to work with people both inside and outside the urologic sphere, it may be helpful to seek the opinion of other professionals beyond urology faculty. The ACGME toolbox suggests the possibility of using 360-degree evaluations and patient surveys as assessment tools for collaboration and communication.<sup>8</sup> For a description of these techniques as assessment strategies, see the section above that discusses the communicator competency.

## Manager

The role of physician as manager is expanding as we are increasingly required to wear many hats in our professional activities. As managers, specialist physicians must be able to

*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 and utilize information technology to optimize patient care, life-long learning and other activities.*<sup>5</sup>

This competency demands that physicians not only maintain a healthy balance in work and professional life but also understand the resources and constraints of the health care organization they work within. The ACGME-related competency is “systems-based practice.”<sup>6</sup> Currently, urology residents daily learn to become managers in the operating room, on the ward and in clinic by direct observation and mentoring. Faculty evaluation is used to assess this competency.

### Instructional methods

The CanMEDS definition of “manager” is a broad one that includes aspects of balance, delegation, understanding of technology and resource allocation. This multidimensional definition requires that different strategies be used for teaching. Interactive seminars with health care administrators in the hospital or health region could be included to help urology residents understand health care structures and resource allocation. Although the experience was not formally studied, this technique was used at the University of British Columbia. The residents had an interactive meeting with an administrator from one of the provincial health regions to discuss funding and personnel issues, which was followed by a faculty grand rounds presentation. Anecdotally, the method proved effective for exploring some of these issues. Another important component to personal and professional management competency is an understanding of the financial aspects of medicine. Using outside consultants for seminars on money management for residents would also meet part of the mandate of this competency. Mentoring by fellow urologists will also have an immediate impact on how residents manage themselves and their work. What will be of principal importance is modelling behaviour of continuing medical and professional education.

### Assessment strategies

Because many of the managerial activities of residents occur behind the scenes, faculty evaluation of managerial skills may be somewhat limited. Again, 360-degree evaluations are a reasonable approach to evaluating a resident's ability to manage on the ward and in the operating room,<sup>8</sup> in that they give a broader view of the resident at work and as part of a health care team.

### Health advocate

Health advocacy is often viewed as the most nebulous competency. In a recent study by Verma and colleagues<sup>19</sup> from Queen's University, both residents and faculty reported their struggle with defining the health advocate role and how best to teach and assess this competency. In a separate study of Canadian urology resident perceptions and attitudes toward health advocacy, 21% of respondents said that they were not aware of this role, and 46% felt that they did not have a mentor to emulate with respect to health advocacy in urology.<sup>21</sup> According to the RCPSC definition, as a health advocate, a physician must be able to

identify the important determinants of health affecting patients, contribute effectively to improved health of patients and communities and recognize and respond to those issues where advocacy is appropriate.<sup>5</sup>

There is no obvious ACGME-listed competency equivalent to this. Although residents feel that health advocacy is important and relevant, they feel sub-optimally trained in this sphere.<sup>21</sup> This competency is currently assessed as a part of faculty evaluation of residents; however, given how few residents understand or appreciate this competency, it is questionable whether faculty know how to evaluate it.

### Instructional methods

There is little health advocacy training in urology.<sup>21</sup> Between 7% and 14% of residents were aware of formal training in health advocacy in their programs. As Leveridge and colleagues state, the reasons of this failing are most likely multifactorial: time constraints, advocacy being perceived as "charity work" and lack of mentorship producing a laissez-faire attitude have all been implicated.<sup>19,21</sup> In Verma and colleagues' study, although

faculty believed that advocacy was an important aspect of their daily work, residents lacked awareness of this behaviour in their preceptors. Their findings supported the notion that modelling, the most relied-on method for teaching health advocacy, was not sufficient.<sup>19</sup> It is clear that, for adequate mentorship to occur, health advocacy currently needs to be taught at both the faculty and resident level. Principles of social responsibility and graduated advocacy beginning at the individual level and progressing through the community to global health advocacy could be taught as an interdisciplinary lecture series. Clear RCPSC objectives and dialogue between faculty and residents could help in developing a clearer understanding of the dimension of health advocacy.

### Assessment strategies

How to assess adequacy in health advocacy is even more indistinct than how to teach it. Faculty evaluation is a currently used technique. Another potential tool is portfolio evaluation.<sup>8</sup> A portfolio is a collection of products (generally written material) that provides evidence of learning and achievement based on a learning plan. A portfolio may include a log of clinical procedures, research projects, a quality-improvement project or ethical dilemmas faced during residency. Portfolios can be used for both formative and summative assessment; they may also include reflections on what has been learned, its application and remaining learning needs and how they can be met. T-Res (Resilience Software, Inc.), the web-based activity tracking tool, has been used variably by all Canadian urology residencies for several years now. Fields have been incorporated that allow trainees to develop a portfolio under the CanMEDS rubrics. However, participation to date in this facet of T-Res has been only modest. Nonetheless, because of the flexibility and reflection associated with portfolios, they should be a natural method to assess health advocacy.

### Scholar

To have competency in this domain, residents must be able to

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 and contribute to the development of new knowledge.<sup>5</sup>

This competency seeks to promote a standard of knowledge and habits of inquiry and education that endure throughout one's professional life. The ACGME describes this competency as "practice-based learning and improvement."<sup>6</sup> Residents often model themselves after scholar mentors. Built into urology residency curricula is an expectation that residents will participate in research during their residency. In some programs, this expectation is more formal than in others.

### Instructional methods

Teaching an individual to become a scholar and to value scholarship is a complex task. The individual desire to pursue these endeavours and the background education of each resident leads to postgraduate trainees with variable levels of scholarly expertise. There is no question that scholarship needs to be modelled within a department if academic pursuits and continuing education are to be valued among colleagues. Scholarship needs to be part of a program's vision. The sharing and critique of scholarship frequently occurs in the setting of journal clubs and urology conferences. The essentials of how to become a scholar can be broken down; for example, seminars can be held on how to develop a research project, on use of appropriate statistics or on how to critique a publication. Sometimes expertise may not be available from within the urology faculty, and it may be necessary to recruit experts for teaching. The goal is to create comfort with the habit of continued inquiry and a lifelong learning process.

### Assessment strategies

Currently, faculty assess a resident's scholarship during residency. Invariably, some residents are more scholarly, writing more papers or presenting more projects than others, depending on their career interests. Residents should not be assessed strictly by how many papers they write. Assessment of scholarship can occur at multiple levels and can include participation in journal clubs and quality of grand rounds presentations. Because residents often spend significant time preparing for these academic activities, it is reasonable to provide them with feedback on how they performed. Miller and colleagues<sup>14</sup> developed a competency evaluation for oral presentations that has been adapted to reflect the Canadian competencies and could be used within institutions to provide residents

with feedback (Appendix 1). This could be both a formative and summative assessment because residents would be evaluated throughout their 5 or 6 years of training.

### Professionalism

Professionalism is described by CanMEDS as the ability to

deliver the highest quality of care with integrity, honesty and compassion, exhibit appropriate personal and interpersonal professional behaviors and practise medicine ethically consistent with obligations of a physician.<sup>5</sup>

The ACGME also recognizes professionalism as a competency.<sup>6</sup>

### Instructional methods

Historically, this competency has been considered an implicit part of the fabric of medical training.<sup>22</sup> Within urology, the medical community is working on making training in professionalism more explicit.<sup>22</sup> One study showed that a seminar that defined professionalism, discussed guidelines for evaluating professional behaviour and provided examples of professional behaviour, coupled with a professionalism review at an annual departmental retreat, improved residents' scores on professional behaviour.<sup>22</sup> It was postulated that this was due to residents' more consistent professional behaviours and/or more focused faculty observation. What is paramount about this study is that both faculty and residents require training in professionalism to facilitate the understanding of this competency.

### Assessment strategies

Professionalism is part of the medical cultural milieu — termed "the hidden curriculum"<sup>22</sup> — embedded within the formal curriculum. Consequently, faculty mentors have rated this competency without an evaluative framework. As professionalism training becomes more explicit, the ability to evaluate the competency is facilitated. The Global Resident Competency Rating Form (available on the ACGME website) evaluates multiple competencies, including professionalism. The 3 professionalism questions included on this form are as follows: 1) demonstrates respect, compassion,

integrity and reliability; 2) shows commitment to ethical principles; and 3) is sensitive to patient culture, age and gender disabilities.<sup>6,22</sup> We have adapted this form to evaluate professionalism in Canadian urology residents while making a presentation (Appendix 1). Professionalism in daily life can also be assessed. Increasingly, reflective ability has been identified as a key component of professionalism,<sup>23</sup> and portfolios incorporate a process of individual reflection that echoes professional development.<sup>23</sup> Because of this attribute, portfolios are an appropriate means for evaluating professionalism. Other possible assessment techniques include 360-degree evaluation and patient evaluations of resident care.<sup>8</sup>

## Conclusions

The CanMEDS project sought to address perceived gaps in medical education that lead to deficiencies in the delivery of health care. Societal pressure, technological advances, financial constraints and shifts to a multidisciplinary care model are a few examples of the impetus for change in residency curricula.<sup>5</sup> Although urology faculty are aware of these changes, they are unsure of how to translate existing curricula into a CanMEDS format. Table 1 summarizes various teaching methods and assessment strategies that can be employed. Potential avenues to explore are the use of transdisciplinary seminars and workshops for teaching communication, collaboration, health advocacy and professionalism.<sup>17,18</sup> Using resources outside of urology, such as medical administrators and financial planners, may help urology residents understand the manager competency. Looking beyond the expertise of those within the discipline of urology may allow some of these competencies to be better explored.

A vital portion of instituting and evaluating the CanMEDS competencies is continuing education among the faculty. Faculty need to be included in these activities to understand the nuances of each competency and how best to evaluate them. Paramount to the success of such programs is cooperation between learner and instructor, as well as resident and faculty commitment.<sup>24</sup>

Finally, assessment strategies for evaluating residents trained within the CanMEDS milieu need to incorporate both new and more established techniques. Multiple-choice and open-ended examinations are currently used in conjunction

with OSCEs and standardized patient examinations and are effective in evaluating several competencies.<sup>8</sup> 360-degree evaluations, patient surveys and portfolios may be useful for assessing more nebulous competencies such as professionalism and health advocacy.<sup>8</sup> Considerations should be given to the use of a presentation assessment form (Appendix 1) to evaluate various competencies when residents present at grand rounds, local or national meetings.<sup>6,14</sup>

This review is not an exhaustive list of all the potential instructional methods or assessment strategies that could be used by urological educators in the context of CanMEDS. However, it should begin a dialogue regarding the competencies and use of existing fora and may be an effective starting point to institute change. These curricular changes will require ongoing review to ensure that Canada continues to produce well-trained urologists.

From the \*Department of Pediatric Urology — Northwestern University, Chicago, Ill., and the †Department of Pediatric Urology — University of British Columbia, Vancouver, BC

This article has been peer reviewed.

Competing interests: None declared.

## References

1. Royal College of Physicians and Surgeons of Canada. CanMEDS Framework. Available: [http://rcpsc.medical.org/canmeds/about\\_e.php](http://rcpsc.medical.org/canmeds/about_e.php) (accessed 2008 June 11).
2. MacNeily AE. CanMEDS: time to teach the teachers. *Can Urol Assoc J* 2007;1:370.
3. Mankoff SP, Brander C, Ferrone S, et al. Lost in translation: obstacles to translational medicine. *J Transl Med* 2004;2:14.
4. Wikipedia. [http://en.wikipedia.org/wiki/Translational\\_research](http://en.wikipedia.org/wiki/Translational_research) (accessed 2008 Jul 2).
5. Frank JR, Langer B. Collaboration, communication, management and advocacy: teaching surgeons new skills through the CanMEDS project. *World J Surg* 2003;27:972-8.
6. Accreditation Council of Graduate Medical Education. Outcomes project. Available: [www.acgme.org/outcome/comp/compCPRL.asp](http://www.acgme.org/outcome/comp/compCPRL.asp) (accessed 2008 Jan 31).
7. Larkin GL, McKay MP, Angelos P. Six core competencies and seven deadly sins: a virtues-based approach to the new guideline for graduate medical education. *Surgery* 2005;138:490-7.
8. Accreditation Council for Graduate Medical Education (ACGME) and American Board of Medical Specialties (ABMS). *Toolbox of Assessment Methods*. Version 1.1. Chicago: The Council and the Board; 2000. Available: [www.acgme.org/Outcome/assess/Toolbox.pdf](http://www.acgme.org/Outcome/assess/Toolbox.pdf) (accessed 2008 June 11).
9. MacNeily AE, Baverstock RJ, Cole G, et al. Quantitative assessment of a new preparatory tool for board certification in urology. *BJU Int* 2004;93:558-61.
10. Royal College of Physicians and Surgeons of Canada. Examinations and credentials for urology. Available: <http://rcpsc.medical.org/residency/certification/index.php?specialty=360&submit=Select> (accessed 2008 Jan 31).
11. Baverstock, RJ, MacNeily AE, Cole G. The American Urological Association In-Service Examination: performance correlates with Canadian and American specialty examinations. *J Urol* 2003;170:527-529.

12. Macrae HM, Satterthwaite L, Reznick RK. Setting up a surgical skills center. *World J Surg* 2008;32:189-95.

13. Park J, MacRae H, Musselman LJ, et al. Randomized controlled trial of virtual reality simulator training: transfer to live patients. *Am J Surg* 2007;194:205-11.

14. Miller DC, Montie JE, Faerber GJ. Evaluating the Accreditation Council on Graduate Medical Education core clinical competencies: techniques and feasibility in a urology training program. *J Urol* 2003;170;1312-1317.

15. MacRae H, Regehr G, Leadbetter W., et al. A comprehensive examination for senior surgical residents. *Am J Surg* 2000;179:190-3.

16. Martin JA, Regehr G, Reznick R, et al. Objective structured assessment of technical skill (OSATS) for surgical residents. *Br J Surg* 1997;84:273-8.

17. DesCoteaux JG, Wallis MV. Applying theory to design of communication skills teaching at postgraduate medical level. *Annals RCPSC* 1998;31:270-4.

18. Razack S, Meterissian S, Morin L, et al. Coming of age as communicators: differences in the implementation of common communications skills training in four residency programmes. *Med Educ* 2007;41:441-9.

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

20. Pedersen BD, Paulsen IK, Ringsted CV, et al. [Interprofessional communication and cooperation training in ward rounds for medical students and nursing students: a pilot project.] [Article in Danish.] *Ugeskr Laeger* 2006;168:2449-51.

21. Leveridge M, Beiko D, Wilson JW, et al. Health advocacy training in urology: a Canadian survey on attitude and experience in residency. *Can Urol Assoc J* 2007;1:363-9.

22. Joyner BD, Vemulakonsa VM. Improving professionalism: making the implicit more explicit. *J Urol* 2007;177:2287-90.

23. Davis MH, Friedman Ben-David M, Harden RM, et al. AMEE Medical Education Guide # 24: portfolios as a method of student assessment. *Med Teach* 2001;23:535-51.

24. Graffam B. Active learning in medical education: strategies for beginning implementation. *Med Teach* 2007;29:38-42.

**Correspondence:** Dr. Jennie Mickelson, Department of Pediatric Urology, Children's Memorial Hospital, 2300 Children's Plaza, #24, Chicago IL 60614; jenniemickelson@gmail.com

**Appendix 1. Resident Presentation Assessment form\***

Resident name: \_\_\_\_\_ Year of training: \_\_\_\_\_ Date: \_\_\_\_\_  
 Presentation type: grand rounds \_\_\_\_\_ journal club \_\_\_\_\_ meeting \_\_\_\_\_

**Medical Expert:** "demonstrate diagnostic and therapeutic skills for ethical and effective patient care, access and apply relevant information to clinical practice and demonstrate effective consultation services with respect to patient care, education and legal opinions"

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
• Demonstrates basic science and up-to-date clinical knowledge					
• Uses knowledge & analytical thinking to address clinical questions					
Feedback:					

**Communication:** "obtain and synthesize relevant history from patients/families/communities, listen effectively and discuss appropriate information with patients/families and the health care team"

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
• Spoke clearly					
• Presented the topic in a comprehensive fashion					
• Created effective visuals that were easy to read and understand					
• Completed the talk within the time frame allotted					
• Responded appropriately to questions					
Feedback:					

**Collaborator:** "the physician must consult effectively with other physicians and health care professionals and contribute effectively to other interdisciplinary activities."

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
• Collaborated effectively with colleagues					
• Referred to other experts for clarification of issues outside the realm of urology					

**Manager:** "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 and utilize information technology to optimize patient care, life-long learning and other activities."

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
• Used appropriate technology for the presentation					

Continued on next page

**Appendix 1 continued**

**Advocate:** “identify the important determinants of health affecting patients, contribute effectively to improved health of patients and communities and recognize and respond to those issues where advocacy is appropriate.”

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
<ul style="list-style-type: none"> <li>Identified any cultural and societal aspects associated with the topic</li> <li>Identified any issues associated with patient safety</li> </ul>					

**Scholar:** “develop, implement and monitor and personal continuing education strategy, critically appraise sources of medical information, facilitate learning of patients, house staff/students and other health professionals and contribute to the development of new knowledge”

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
<ul style="list-style-type: none"> <li>Did a critical review of the literature on the topic</li> <li>Provided a structured and understandable presentation</li> <li>Presented directions for future research on the topic</li> <li>Contributed to resident and faculty education</li> </ul>					

**Professionalism:** “deliver the highest quality of care with integrity, honesty and compassion, exhibit appropriate personal and interpersonal professional behaviors and practise medicine ethically consistent with obligations of a physician.”

The resident:	Not done	Done — needs improvement	Done adequately	Done well	Not applicable
<ul style="list-style-type: none"> <li>Dressed appropriately for the presentation</li> <li>Interacted appropriately with the audience</li> </ul>					
Feedback:					

\*Adapted from the Toolbox of Assessment Methods,<sup>8</sup> the 1996 CanMEDS competencies<sup>1</sup> and the “Competency Evaluation Template.”<sup>14</sup>