

## Research Note

*Shelley Ross  
Cheryl Poth  
Michel Donoff  
Paul Humphries  
University of Alberta*

### Monitoring, Adapting, and Evaluating a Competency-Based Assessment Framework in Medical Education Through Participatory Action Research

In this research note we report an ongoing line of inquiry related to introducing a competency-based assessment framework into the Family Medicine Residency Program at the University of Alberta. The goal of the Progress to Practice project is to incorporate program development and research to ensure an evidence-based educational innovation.

#### *The Context and its Issues*

Our current project, Progress to Practice (PtP), builds on the innovative efforts of Mike Donoff in developing and implementing *Field Notes*, a tool that facilitates immediate feedback to residents in the clinical training setting. Field Notes provide scaffolding for residents and their advisors to identify strengths and areas for improvement and serve as a tool for formative assessment and guided self-assessment. Field Notes serve as the basis for a system of competency-based assessment currently under development at the University of Alberta. Our team consists of two clinical faculty members, a medical education researcher, and a program evaluator. We are combining research and program development to evaluate the implementation of this medical educa-

---

Shelley Ross (shelley.ross@ualberta.ca) is an assistant professor and medical education researcher, and Assistant Director of the Education Support Program. Her research interests include assessment for learning, motivation, and competency-based curriculum and assessment.

Cheryl Poth (cpoth@ualberta.ca) is an assistant professor in assessment, measurement, and evaluation. Her research interests include formative classroom assessment practices, developmental program evaluations, and mixed methods research.

Michel Donoff (mike.donoff@ualberta.ca) is a physician and professor in family medicine. His research interests include competency-based assessment and resident training, and he is a member of the Working Group on Certification at the College of Family Physicians of Canada (CFPC).

Paul Humphries (phumphries@ualberta.ca) is a physician and professor in family medicine. His research interests are in competency-based assessment, resident training, and rural education. Humphries and Donoff are Program Directors for the Education Support Program. The research team can be reached at (780) 248-1264; (fax: 780-492-8191) Department of Family Medicine, 205 College Plaza, Edmonton AB T6H 3T5.

tion innovation systematically. The PtP team possesses the skills for both further developing and adapting a competency assessment system that will be informed by data from both early adopters and those who have not yet adopted competency-based assessment.

This project is part of a global movement to address quality of care provided by physicians trained in traditional programs. Originally conceived in the 1970s, concerns about whether physicians were being trained in the essential skills needed in daily practice resulted in a back-to-basics movement in medical education (Carraccio, Wolfsthal, Englander, Ferentz, & Martin, 2002). The goal was to move from a time-based, structure-and-process system of medical education to a competency-based system (Heffron, Simpson, & Kochar, 2007; Marple, 2007). Although several specialties (e.g., psychiatry and pediatrics) developed curriculum guidelines in the 1970s around the ideas of the competencies required in those specialties, the emphasis on guidelines for curriculum development overlooked the essential need for the development of ways to assess competencies. Recent studies of the lifelong learning success of competency-based curricula and assessment in individual programs (Smith, Goldman, Dollase, & Taylor, 2007) support the concept of competency-based assessment. Lack of clear measures to evaluate competency prevented the implementation of the competency-based curricula of the 1970s into mainstream medical education (Leach, 2008). This project addresses both curriculum development and the essential role of assessment in competency-based medical education and incorporates research as a fundamental element of the program design.

In the current health care climate, public demand for quality of care is in synergy with policymakers' decisions about the development of training that emphasizes the reality of the skills and competencies required in the context of a practice setting. This environment is ideal for introducing competency-based curricula and assessment to medical schools in Canada. Physicians need to possess not only medical knowledge, but also "soft skills" such as effective communication, teamwork, and professionalism (van Tartwijk, Driessen, van der Vleuten, & Stokking, 2007). Our line of inquiry seeks to contribute in two ways: to provide evidence of the effectiveness of competency-based assessments, and to provide a tool that is both practical and feasible in the current medical system.

Making this project timely are the mandated changes that are anticipated in the education and assessment of family medicine residents in Canada. The College of Family Physicians of Canada (CFPC) has adopted a competency-based focus. The competencies to be taught to, and demonstrated by, family practice residents have been determined. These competencies come from a series of surveys conducted by the CFPC in which practicing family physicians indicated which competencies and skill domains they believed were most important for a family physician in practice (CFPC, 2008). The CFPC has struck working groups to develop guidelines for curriculum development and competency-based assessment of the preparedness of residents for family practice. Our work will inform the actual process for assessing competencies and how to

evaluate whether the new competency-based curriculum is working to produce better, more competent physicians.

#### *What Research Questions Drive Our Inquiry?*

The goal of the PtP research project is to monitor and adapt a competency-based assessment system (CBAS) through the use of a developmental evaluation approach (Patton, 2008). Data collected about the attitudes and experiences of the preceptors and residents in our program—both those already using CBAS and those who have not yet adopted it—provides us with evidence to guide decision-making about the effectiveness of CBAS. The PtP project is focused on three guiding research questions that are explored through a mixed-methods approach (Table 1). The research questions are:

To what extent:

- are the existing tools and methods effective for implementing competency assessment?
- does the implementation of a competency-based assessment system impact the self-efficacy of the community preceptors related to their teaching and evaluation of residents?
- does the competency-based assessment system support the self-assessment, motivation, and self-reflective practice of residents?

By documenting the implementation process using qualitative and quantitative data about what works and what does not in the University of Alberta context, we can empirically evaluate the development and refinement of CBAS.

#### *What Implications Can Our Project Have?*

The PtP research project is viewed not only as innovative educational initiative, but also as anticipating the College of Family Physicians of Canada's mandate to move toward competency-based assessment. The timing of the PtP research project offers an immense advantage for sustainability. By developing and concurrently researching and evaluating the competency-based assessment portfolio, we have a unique opportunity to create a portfolio assessment system that is valid, reliable, cost-effective, and highly usable. Our iterative developmental research process will allow the research team to create the

Table 1  
Selected Examples of Planned Studies Within  
the Progress to Practice Project

<i>Year</i>	<i>Implementation Phase</i>	<i>Data Sources</i>
2009	Adoption of pilot CBAS	Interviews with early adopters and non-adopters (and their residents)
2010	Refinement of CBAS; Roll-out to incoming 1st-year residents	Interviews and questionnaires to all 1st-year residents and their preceptors Ongoing data collection from early adopters
2011	Refinement of CBAS; Roll-out to incoming 1st-year residents (all residents now included)	Interviews and questionnaires to all residents and their preceptors Ongoing data collection from early adopters (particular focus on issues for rural locations)

gold-standard competency-based assessment system that would then be implemented by family medicine programs in other medical schools.

*References*

- Carraccio, C., Wolfsthal, S.D., Englander, R., Ferentz, K., & Martin, C. (2002). Shifting paradigms: From Flexner to competencies. *Academic Medicine, 77*, 361-367.
- Canadian College of Family Physicians (CFPC). (2008). *Defining competence for the purposes of certification by the College of Family Physicians of Canada: The new evaluation objectives in family medicine, Part I—what are they and how can they be used?* Unpublished report from the Working Group on Certification, CFPC.
- Heffron, M.G., Simpson, D., & Kochar, M.S. (2007). Competency-based physician education, recertification, and licensure. *Wisconsin Medical Journal, 106*, 215-218.
- Leach, D. (2008). Competencies: From deconstruction to reconstruction and back again, lessons learned. *American Journal of Public Health, 98*, 1562-1564.
- Marple, B.F. (2007). Competency-based resident education. *Otolaryngologic Clinics of North America, 40*, 1215-1225.
- Patton, M.Q. (2008). *Utilization-focused evaluation* (4th ed.). Thousand Oaks, CA: Sage.
- Smith, S., Goldman, R., Dollase, R., & Taylor, J.S. (2007). Assessing medical students for non-traditional competencies. *Medical Teacher, 29*, 711-716.
- van Tartwijk, J., Driessen, E., van der Vleuten, C., & Stokking, K. (2007). Factors influencing the introduction of portfolios. *Quality in Higher Education, 13*, 69-79.