



## **An Epidemiological Look at Continuing Competence**

*This article is based on a presentation by Susan Glover Takahashi, University of Toronto, at the 2016 FSBPT Annual Meeting.*

This program described some of the research going on in Canada exploring the “risk based” approach to continuing competence. Several Colleges are coming up with some innovative ways to engage registrants and take more of a quality improvement approach based on this research. Participants were challenged to think about continuing competence differently and to explore new ways to be more effective in their public protection mandate.

### **Competence**

Competence is measured by working to the right standard. There are a variety of elements of competence, which can be broken down to the 4 Cs: capability, competencies, context, and continuum.

- *Capability* is related to health of the practitioner, his/her cognitive horsepower, and physical abilities. Oftentimes, when a practitioner’s competence rises or falls, it’s their capabilities- their raw ability to perform- that is rising or falling.
- The knowledge, skills, and abilities of practice are the *competencies*, and the healthcare profession has done a superb over the past decades understanding them.
- Increasingly, the profession understands the patients with whom practitioners work and the environments in which they work — the *context* — affects their competence.
- Where the practitioner is on his/her *continuum* also affects competence. The expectations of a practitioner’s early years vs middle years vs pre-retirement years are different.

### **The emphasis on context**

The literature has started to pay attention to the context of practice. It’s why international students get themselves into trouble. At home, the practitioners understand the context. They know the who, what, where, and how of practice, the types of clients they serve, the types of service they are allowed to provide, their practice settings, and professional roles. It’s different for a foreign-educated practitioner, whether s/he’s a Canadian coming to work in the U.S., or s/he’s a U.S.-educated PT looking to practice in Canada. Teams may function

differently in different nations as well. OBGYNs from Southeast Asia came to study at the University of Toronto. They were excellent at delivering babies, but lacking in their knowledge of fertility. The university therefore had to determine what was different in their context of practice so their skills could be enhanced.

### **The Epidemiology of Competence of 4 Health Professional Groups Study**

The Epidemiology of Competence of 4 Health Professional Groups Study was launched in 2013. It was done for British Columbia Colleges of PT. It builds on the metaphor of the healthy heart model of prevention, of epidemiology, and comes from the notion that we need to put “self” back into self-regulation. We need to engage employers and associations in the competence business. The protocol was published in 2014 (<http://bmjopen.bmj.com/content/4/12/e006129.full.pdf+html>) and is under review.

When researchers looked at epidemiology in PT, they joined seven merged datasets from Ontario to see how the model worked.

A general review of the literature has been undertaken and researchers have looked more specifically at PT. The purpose of the Epidemiology of Competence of 4 Health Professional Groups Study was to explore the existing literature for findings on the epidemiology of competence, to develop a thorough inventory of identified risks and supports to competence that are discussed in the literature, and to examine the risks and supports to provide recommendations for practice.

Once upon a time, the doctor said, “Do this.” And the patient either did it or didn’t. More recently, the health system, using an epidemiological model, points out what the patient’s risks are. Patients then understand their family’s risk for heart disease and cancer. Patients also come to understand how diet and exercise affect risks. Therefore, patients can moderate and mitigate within the epidemiological healthcare system. That’s what the study is built on.

Epidemiology of competence looks at patterns, causes, and effects to understanding risks to competence; how to modify, manage, or prevent risks; and what interventions actually moderate risks.

### **The process used**

- The researchers didn’t follow practitioners around, they looked at the literature. That made the study a meta-epidemiology of competence, an analytical study of others’ work about the risks to and supports for competence.
- The study reviewed 40 years of literature: 3,572 titles and abstracts and 1,678 full-text reviews. The researchers ended up including 943 articles for review and meta-analysis.
- They looked at four professions: occupational therapists, pharmacists, physicians, and physiotherapists. Researchers looked at the competence life cycle of field-based education and practice. They used the coding of the seven roles of the CanMEDS framework to understand what showed up in the literature.

### **Findings**

Two-thirds of the articles were published in the past 10 years. What that means is

competence is an increasingly frequent topic of education research for health professions. Seventy-eight percent of the articles were primary research studies. Eighty percent of the articles were by physicians and only 12.9 percent by the three health professional groups, making intergroup comparisons problematic.

About 60% of the articles focused on the practice part of the competence life cycle, with 30.4% focused on the resident physician, and 10.1% focused on field-based education in pharmacy, OT, and PT.

A scoping review tells us what is, not necessarily what's important. It's what people have written about and what they and the publishers are interested in. These are about the risks and supports to competence and about half relate to medical expertise. However, for residents in difficulty at the University of Toronto, professionalism and communication show up a lot more often than they show up in the literature. The literature shows only 10.3% for communication and 7.6% for professionalism. There is a disconnect between what people are researching and studying and what is happening in practice. Much of what regulators study doesn't show up in the literature because it hasn't been shared.

Of the articles studied, 45% discussed one or more risks, nearly 80% discussed one or more supports, and nearly 24% discussed both.

Because of previous studies, the university has an A-list of risks to competence already. But this literature review turned up four new risks to competence, which equaled 27% of the risks. They are:

- adequacy of practice or education,
- area of specialty,
- lack of experience, and
- a lack of resources.

In addition, five new supports were discovered, which equaled 21% of supports. They were:

- assessment and feedback through tools,
- clinical exposure and experience,
- reflection and self-assessment,
- support via structure or organization, and
- technology.

The risk factors demonstrated in the literature, in order of frequency, are:

- transitions,
- being an international graduate,
- a lack of experience,
- age,
- being a male,
- practice features such as size or isolation,
- wellness,
- lack of certification,
- resources,
- adequacy of training,
- specialty, and
- previous discipline.

There were only two articles on previous discipline, but a simulation with data from The College of Physical Therapists of Ontario showed it as a much more powerful risk. Previous discipline is a predictor of future risk. The sequences in which people are writing about these areas are important because they are all bona fide risks. What is not known until simulations are done with real data is the relative difference in different populations.

Supportive factors were, in order of frequency:

- continuing education,
- educational information,
- personal supports and feedback,
- QA participation,
- clinical experience,
- support through structure,
- professional organization participation,
- technology,
- reflection and self-assessment,
- performance review, and
- assessment and feedback with tools.

Continuing education and educational information show up overwhelmingly in the literature. Also of note is professional organization participation, which shows a need for boards to work well with their professional organizations. If licensees will join, that's part of not being isolated.

About 1,000 articles were reviewed and the researchers leaned on the epidemiology model of risks and supports. It's important to not just focus on the risks. Supports to competence show how to mitigate the risks. In addition to the important roles of setting standards and being the police officers of the offenders, regulators have a role in bringing those offenders who can be rehabilitated back into the fold.

Researchers looked at about 35 PT articles in great detail. Most of the PT articles are recent. Nearly 60% were published from 2010 through 2014. More than half were published in Europe. Nearly 70% focused on practice with more than 30% written about field-based education.

Seven of the PT-only articles focused on risk, with articles on lack of experience and resources leading the way. Nothing was published on international graduates, certification, area of specialty, or previous disciplinary actions.

The researchers performed a qualitative analysis of the literature. They found that the longitudinal education opportunities have enhanced effects for PT learners and, more importantly, their patients.

A wide variety of continuing professional development formats work to support PT learning and patient outcomes. Successful instructors deliver educational content in a manner that supports learning, a positive learning climate, and a learner/teacher relationship.

Researchers performed a simulation with the seven datasets for the registrants in Ontario.

They pulled the exam data from when it was put in place about 20 years ago and looked at all the complaint and discipline data. They also looked at those who had a notice for filing their registration late because it is predictive of poor governability behavior. In the United States, the biggest predictor of future regulatory complaints in physicians is not keeping up with immunization records. That governability behavior show up really early in residency education, and those who don't stay up-to-date with immunization records have an attitude of "those rules don't apply to me." It's the same with late registration filings.

Researchers looked at all the demographic data, how many times they were in trouble, and how they did on the exam, and found some real trends. International graduates are at greater risk. Males are more at risk. Those who have governability issues are more at risk. Those who do restricted acts — needling and manipulation — are more at risk. If you're doing riskier activities it's perhaps not a surprise there is a greater tendency to get in trouble.

A list of risks shows up with relative frequency in the literature. Now it's about simulation with real data to find out what the relative risks are for physicians and how do regulators help real people understand how to manage those risks. Using the healthy heart model as a metaphor, we know men are more at risk of heart attacks. We know that eating fatty foods increases risks. But they are not predictors. Many people live hard and lead long lives. But they are trend lines and the aim of the research is to find a way to start a conversation with real residents about what their risks are and help them figure out their risks, so they can manage them. Regulators might find it useful to know the risk factors in their registrant pool because perhaps they need a different strategy for those at risk.

For example, Ontario researchers took a comprehensive look at about 100 articles on the risk from aging, including some from the Ontario College of Physicians. They wrote an article on How Old is Old based on the data. It's clear, at age 50 there begins to be some effect on competence. At 70, there's a bit of a cliff. It doesn't mean at age 70 a registrant's license will be pulled. But it is reasonable and feasible that if you're in a medical specialty where your visual acuity is important, that you undergo a vision test every two years.



**Susan Glover Takahashi**, PT, MA(Ed), PhD, University of Toronto, began her journey into competency as a lifeguard. For a decade, she served at the executive director of the Canadian Alliance of Physical Therapy Regulators when the organization was implementing its licensing exam. At the University of Toronto, she is the director of Education, Innovation, and Research for Post-Graduate Medicine.