As prospective residents in Anesthesiology, you could be among the first residents to be taught and assessed under a new competency-based medical education system, called Competence by Design (CBD). This document is designed to introduce you to CBD and to help you begin to understand the changes ahead.

Benefits for learners
The systems, milestones and resources created for CBD will provide learners with
• more frequent assessment and meaningful feedback from expert faculty,
• well-defined learning paths and clarity around the competencies needed to progress to next stages of training,
• a flexible environment that focuses on personal development,
• the chance to hone skills and work more independently during the final stage of residency in preparation for independent practice, and

Why is Canada changing to a competency-based system?
Canada has an excellent medical education system, but over the last century, patient expectations, medical technology, medical knowledge and the health care system have changed dramatically. We’re changing the education model to keep up.

Medical education curricula will now be organized around achieving specific outcomes during training.

Canada is not alone in making this change; many countries around the world are implementing Competency-Based Medical Education (CBME) in their jurisdictions.

What is “Competence by Design”?
Competence by Design is the Royal College’s model of (CBME). The Royal College and its partners have worked collaboratively over the better part of a decade researching competency-based medical education and bringing the best of this learning model to the development of CBD.

The goal of CBD is to enhance patient care by improving learning and assessment. This will help physicians demonstrate the skills and behaviours required to continuously meet evolving patient needs. The Competence by Design title is meant to convey the idea that responsible medical education involves systematically thinking about (i.e. designing) a learner’s journey through their entire career in medicine.
Key things you need to know about Competence by Design

1. Well-defined learning path
In Canada residency training is based on the CanMEDS Framework. When CanMEDS was updated in 2015 we introduced a concept called the CBD Competence Continuum. The Competence Continuum divides postgraduate training into four stages: a transition to the discipline period, a foundation period, a core period of training and, finally, a transition to practice period.

Your discipline has defined a number of outcomes at each stage of training. These are written as Entrustable Professional Activities (EPAs) and milestones. Residents must demonstrate achievement of these outcomes in order to be promoted to the next stage of training.

Competence Continuum

2. What are EPAs and milestones?
As part of CBD, your program will teach and assess you based on a set of standards that include milestones and EPAs.

A milestone is an observable marker of someone’s ability along a developmental continuum; in CBD we use the four stages of the Competence Continuum to write residency milestones.

An EPA is a task in the clinical setting that a supervisor can delegate to a resident who has demonstrated sufficient competence. Typically, an EPA integrates multiple milestones. EPAs are the tasks that must be accomplished, whereas milestones refer to the individual’s abilities at different stages of learning or competence. For example, driving to the store is an EPA, safely making a left hand turn is a milestone.

Defining a series of EPAs and milestones at each stage of training provides residents like you with clear expectations regarding the skills and abilities you need to acquire at each stage of training. It will make it easier for supervisors to pinpoint your strengths and areas for improvement.

3. Frequent observations in real life situations and settings
CBD places a focus on work-based assessment where learners will be observed in an authentic environment; you can expect to be assessed frequently in real life situations and settings, either directly or indirectly.

Your observers (clinical supervisors) will engage you in meaningful discussions about your performance and they’ll document how you carried out a specific task on a specific day. These frequent interactions will help you adjust your learning plan to meet your individual needs and abilities and consistently track your progress. It is the collection of multiple observations, on multiple days, by multiple observers over time that will provide a clear picture of your progress.
4. Meaningful feedback discussions
Meaningful feedback is beneficial for anyone who is pursuing optimal performance. Through the provision of feedback, clinical supervisors will guide you through a process that leads to performance enhancement. Applications can vary; helping an individual to do a task better, developing a skill they don’t yet possess, or providing guidance to achieve a specific project.

In residency education, regular, direct observation and providing meaningful feedback to trainees is already an effective tool. In CBD, there will be an increased emphasis on direct and indirect work-based observation to facilitate resident learning.

5. Flexible environment that focuses on personal development
As residents in CBD you will ‘own’ your learning. You will play a big role in planning your learning experiences and tracking your progress against the EPAs and milestones within your stage of training.

The current PGME system in Canada is based on the assumption that the more time a learner spends on an activity, the more the learner absorbs and excels. Evidence suggests however that not all learners achieve mastery at the same rate. For this reason, in the CBD model, learners may progress through their residency education program at different rates. With regular feedback and reflection each resident will achieve the EPAs and related milestones within their current stage of training, within a predictable training timeframe.

In the CBD environment, residents will be proactive and share the responsibility of ensuring that they are receiving an adequate number of assessments in addition to meaningful feedback, in a variety of environments, in order to have their EPAs properly assessed by the Competence Committee. (see #7)

6. Sufficient time and resources to learn new skills
Generally speaking, we don’t anticipate the length of residency to change. The intention behind CBD is not to shorten or lengthen residency training but to create competent trainees who are ready for practice.

Based on their experience, programs will ensure that you have sufficient time to learn and practice new skills (measured by milestones/EPAs) in a variety of contexts. By providing you with targeted learning outcomes and providing more frequent clinically-based feedback we will ensure that you will acquire all of the abilities that you need for your stage of training.

7. Promotion decisions are made by a Competence Committee
All CBD Programs have something called a Competence Committee. The role of a competence committee is to review and make decisions on a learner’s achievement of EPAs and their progression through the stages of training toward the national standards as set by your discipline. The competence committee provides guidance for training activities to help you to progress.

The collection of many observations of your performance over time, will allow the competence committee to assess how well you are progressing and when you are ready to move on to the next stage of training. As a resident, this is great news; you’ll have a group of people focused on helping you develop efficiently and effectively.

Competence committees will also identify those residents who are not meeting their milestones, and will help to arrange support and find creative ways to coach them to progress (e.g. assigning special mentors, extra readings, or modified rotations). The ultimate goal of a competence committee is to identify the strengths and areas of improvement for every resident, towards successful completion of each stage of training.
8. **Exams**
Evidence shows that regular work-based authentic assessments are more valid than one summative certification exam. As a result, the College is deemphasizing the Royal College exams in favour of regular work-based assessments. The Royal College examinations will be maintained, but the timing and emphasis will be different. The aim is to promote more clinical training during transition to practice to promote a smoother preparation for practice.

9. **Resources, resources, resources**
The Royal College has a lot of resources to help you better understand CBD. If you have questions, contact the Royal College at cbd@royalcollege.ca and check out our website at www.royalcollege.ca/cbd.

We wish you the best of luck in the CaRMS interviews. A full orientation to Competence by Design will take place at the beginning of your residency.

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**Sample EPAs for Anesthesiology**

- Using the anesthetic assessment to generate the anesthetic considerations and the management plan, including postoperative disposition, for ASA 1, 2 or 3 patients.
- Diagnosing and managing common (non-life-threatening) complications in the post-anesthesia care unit (PACU), or the surgical ward
- Providing perioperative anesthetic management for ASA 1 or 2 adult patients undergoing scheduled, uncomplicated surgery
- Assessing and providing labour analgesia for healthy parturients with an uncomplicated pregnancy
- Managing uncomplicated patients with acute pain, either postoperative or traumatic, and managing common complications of acute pain management modalities in the post anesthetic care unit or in the surgical ward

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www.royalcollege.ca/cbd