Evaluation

Competency by Design

INTRODUCTION:
Competence by Design (CBD) is a Royal College of Physicians and Surgeons of Canada initiative to reform training of medical specialists in Canada. CBD is based on a global principle of Competency-Based Medical Education (CBME), which was developed by the medical education community to meet the demands of evolving health care systems. CBD is a multi-year initiative, focused on the learning continuum from the start of residency to retirement. It is based on the competency model of education and assessment and is specifically designed to address societal health needs and patient outcomes.
Through years of research, it has become apparent that although our system produces competent physicians, the methods of training and lifelong learning have remained stagnant over the past years, without any efforts to adapt to the ever-increasing demands on and expectations of physicians. Changes needed to be made to assist specialists who "graduate with knowledge gaps and feel unprepared for independent practice, who feel that current methods of feedback are ineffectual, who lack a clear understanding of the learning objectives of their program, who lose needed clinical practice time to exam preparation, and who find it challenging to determine which abilities and skills are needed in their practice". Changes also need to be made to help educators who "struggle with inefficient and ineffective in-training assessment models, who are unable to focus teaching activities in the absence of clear learning objectives, who feel unprepared to provide meaningful and targeted assessments and who find it challenging to determine when a learner is falling behind."

Major goals of CBD are to:
- Identify the competencies needed at all stages of training and practice
- Set up/follow a transparent learning plan to achieve these competencies
- Adjust learning to individual needs and abilities and consistently track progress
- Pinpoint areas where learners may be struggling and respond accordingly
- Provide/receive meaningful assessments against competencies
- Determine when and how new skills should be incorporated into practice
- Ensure a national baseline of competence across all specialties in Canada

Benefits of CBD:
- More frequent observation and documentation
- More frequent and targeted feedback resulting in earlier identification of issues
- Focused learning around deficiencies
- Enhanced clarity around curriculum and required competencies

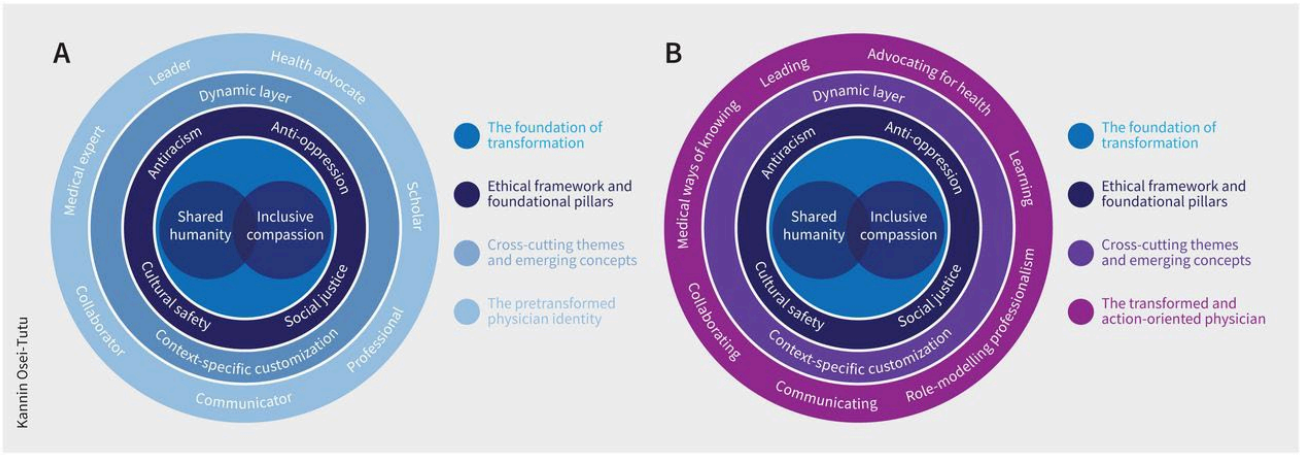
CBD CORE PRINCIPLES:

• As per CBD, each specialty residency training program is organized into FOUR distinct stages of training:
• Within each stage of training, residents are provided with a list of learning objectives which are called Entrustable Professional Activities (EPAs) and Milestones
• A residents must be observed completing each EPA throughout residency
• Observers record EPA observations and feedback on resident performance on an electronic platform known as ePortfolio
• At regular intervals, during each stage of training, a Competence Committee reviews the documented observations along with other assessment data available through the ePortfolio
• The Competence Committee provides recommendations with the Residency Training/Program Committee on each resident's progress to the next stage of training
• Any gaps in learning are identified and addressed prior to progression to next stage

STAGES OF TRAINING:

1. Entry into Residency
2. Transition to Discipline
3. Foundations of Discipline
4. Core of Discipline
5. Transition to Practice

2025 CanMEDS update



EPAs and MILESTONES:

Each stage of training includes EPAs and CanMEDS milestones. EPAs are specific tasks of a discipline. They are designed to be "developmental", going from smaller tasks to bigger tasks, as residents progress through the various stages of training. Each EPA integrates a number of CanMEDS milestones which are based on CanMEDS roles. A bigger task may include more or more complex CanMEDS milestones. Like with other programs, EPAs for

Diagnostic Radiology were built by specialty leaders working closely with the Royal College CBD Committees.
CanMEDS milestones are individual skills which are necessary to perform a specific task. A trainee and an observer may choose to focus on an EPA as a whole or focus on a specific milestone associated with that EPA.
EPAs are selected by trainees based on the clinical tasks performed during a specific rotation/workday. It is primarily the resident's responsibility to take ownership of their curriculum and to initiate observations. However, any attending work with the resident may choose to initiate an observation. Similarly, the program director may choose to initiate an observation. In a given rotation, multiple EPAs and Milestones can be initiated and completed by the resident.
*Please see **APPENDIX A** for Diagnostic Radiology EPAs and Milestones.*

ENTRUSTABILTY SCALE:
Royal College requires utilization of entrustability scores to provide an impression of overall competence for a specific observation. The Ottawa Surgical Competency Operating Room Evaluation (O-SCORE) tool is specifically encouraged, as it is currently the only entrustability scale which has supporting validity evidence.
Entrustability scales are used to provide a retrospective opinion on a task that was just observed. They are not speculative and are not meant to predictive of future performance. An observation does not indicate whether the resident has or has not achieved an EPA. The wording of entrustability scales is not meant to be interpreted literally. Each level of the scale indicated increasing level of independence with respect to a specific task. This scale applies to both procedural and non-procedural skills.

O-SCORE Entrustability Scale

Level	Descriptor
1	**"I had to do"** i.e., requires complete hands on guidance, did not do, or was not given the opportunity to do
2	**"I had to talk them through"** i.e., able to perform tasks but requires constant direction
3	**"I had to prompt them from time to time"** i.e., demonstrates some independence, but requires intermittent direction
4	**"I needed to be in the room just in case"** i.e., independence but unaware of risks and still requires supervision for safe practice
5	**"I did not need to be there"** i.e., complete independence, understands risks and performs safely, practice ready

Gofton WT, Dudek NL, Wood TJ, Balaa F, Hamstra SJ. The Ottawa surgical competency operating room evaluation (O-SCORE): a tool to assess surgical competence. Acad Med. 2012;87(10);1401-7.
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COMPETENCE COMMITTEE

Programs participating in CBD form a “Competence Committee”, which has a defined purpose which is separate from that of the Residency Training Committee. The main goal of the competence committee is to collect and synthesize qualitative and quantitative data from multiple documents (EPAs, Milestones, ITERs) to reveal a broad picture of a resident’s progress through various stages of training.

Competence Committee meetings are held quarterly. Additional meetings may be scheduled to accommodate a particular need for resident review. Members of a Competence Committee are assigned a cohort of residents for each meeting. Prior to the meeting, individual members of the Competence Committee prepare a summary of collected data for each assigned resident. This data is presented to the rest of the Competence Committee who review the data and make a recommendation on the resident’s progress to the program director. The program director then presents this data to the RPC sub-committee where final promotion decisions are made.

If a resident is progressing as expected, the RPC sub-committee will be informed and the resident will carry on to the next rotation/stage of training, as expected. If the Competence Committee identifies deficiencies, a curated remediation plan is proposed to the program director and subsequently to the RPC. The intent of this curated learning plan is to address specific deficiencies and to help the resident achieve specific goals. This curated plan avoids vague and non-directive recommendations such as “you need to read more” and “you need to do more volume”. For example, if a resident is consistently struggling with identifying acute strokes on a CTA Head and Neck, a plan will be created to increase resident exposure to this specific study, possibly with closer supervision and a specific didactic learning plan.

Royal College recommends two reviews per year for each resident. Competence Committee meetings are to be held close to the RPC meetings. A resident must be informed on his/her progress within approximately 1 week after RPC meeting. If a remediation/learning plan is proposed, the terms of this plan must be reviewed by the program director and the resident. The resident and the program director are to sign a document formalizing this remediation/modified learning plan.

Diagnostic Radiology Residency Competency Committee

Terms of Reference and Committee Composition

Drafted July 19, 2024

For Review – July 2026

The residency competency committee (CC) is responsible for the review of the competency by design medical education stream. This responsibility is delegated by the University Of Calgary Faculty Of Medicine through the office of the postgraduate Dean. This committee is responsible for the evaluation of residents EPA's and Milestones as evaluated through the mainport system, or future MedSIS system.

The committee strives to supervise and provide leadership in all aspects of postgraduate clinical education in the specialty of diagnostic radiology within the Faculty of Medicine, University of Calgary, and its affiliated teaching hospitals and sites.

Purpose:

- Address issues of objectives, implementation, and evaluation in the Diagnostic Radiology residency.
- Report to the Residency Program Committee

Objectives:

- Support and guide a reliable and valid evaluation of both residents and the residency program. Valuing open communication and creating space for transparent feedback for both the residents, program, and faculty.
- Review resident performance and determine recommendation for resident promotion. Ensuring timely delivery of feedback to residents with bi-annual formal program director meetings and other additional meetings as necessary for competent training.
- Maintain an appeal mechanism for residents.
- Maintain current and appropriate goals and objectives that are reflected in program planning in evaluation of residents.
- Ensure that Royal College standards relating to Diagnostic Radiology residency are met or exceeded, providing educational and clinical opportunity for meeting expectations.
- Respond to feedback received from residents and faculty to further improve the residency curriculum.

- Advocate for and balance both the needs of our residents and the needs of educators within the residency program.

Meeting:

The CC will meet at minimum four times per year. In person or virtual meeting options will be provided to ensure quorum. Additional meetings are subject to the needs of the program and are at the discretion of the program director.

Meeting agendas are pre-circulated, and minutes are recorded. All members are required to respect the confidentiality of the committee's deliberations.

Decision Process:

Action items and decisions will be made with a consensus of the membership of the committee. Quorum for the CC will include at least the CC chair and 2 faculty advisors. Should quorum not be met, the scheduled meeting will continue, however any items for voting will be tabled to the next meeting. Urgent matters will be confidentially emailed to CC members for voting. Should email voting not form consensus and urgent meeting will be called.

Promotion and resident progression is voted on by the RPC following a presentation from the CC chair.

Membership:

While many members of the CC are appointed as representatives of various groups and sites service the program, all members must act in a manner that placed the overall good of the educational program ahead of any subspecialty or geographical interest.

The committee consists of:

- Competency Committee Chair
- Academic Advisors