

Improving formative assessments in Canadian medical oncology residency training

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Medical oncology is a subspecialty of internal medicine that involves the treatment of cancer with a variety of complex systemic therapies. Before becoming a medical oncologist in Canada, physicians must complete training in both medical oncology and internal medicine residency programs. The medical oncology component of residency training is challenging for a multitude of reasons: oncology patients often have complex care needs, cancer treatments are associated with potentially severe and sometimes life-threatening side effects, and the treatment of each cancer type tends to be nuanced and to change frequently with new advances in treatment. Thus, to be deemed a competent practitioner in the field, medical oncology trainees must acquire a wealth of knowledge and skills throughout their medical oncology residency training. In Canada, the determination of competence and grant of licensure to independently practice medical oncology occurs only after trainees have passed the board certification examination of the Royal College of Physicians and Surgeons of Canada and have successfully completed their entrustable professional activities as part of their competency-based medical education training.

The Canadian medical oncology licensing examination is currently written by residents shortly after they have completed 2 years of medical oncology residency training. It is a 4-hour examination composed entirely of short-answer questions (SAQs) and very short-answer questions (VSAQs). The Royal College of Physicians and Surgeons of Canada provides a list of formal objectives for medical oncology residency training upon which the examination is constructed, and those objectives span all areas of solid-tumour oncology, with a small proportion of the examination being dedicated to questions concerning very select hematologic malignancies. In addition, relevant topics such as cancer genetics and the basic science of oncology are tested.

At the present time, one of the primary formal tools within Canadian medical oncology residency training programs to help trainees prepare for their medical oncology licensing examination is the American Society of Clinical Oncology (ASCO) In-Training Examination (ITE). The ASCO ITE is an online examination used widely by American medical oncology residency training programs as a means of

preparing trainees for their American board certification examination¹. The ASCO ITE is a multiple-choice-question examination, with questions covering a broad array of solid tumour and hematologic oncology topics, because those clinical areas are the ones in which oncologists practicing in the United States must be proficient¹.

The ASCO ITE was initially developed as a tool for assessing trainee knowledge, establishing teaching standards across training programs, and identifying strengths and weaknesses of oncology residency training programs¹. The ASCO ITE has been adopted by most medical oncology residency training programs in Canada as a means of providing a formative assessment of trainee knowledge so as to prepare trainees for their Canadian licensing examination.

A number of issues become apparent with the primary use of the ASCO ITE for the purpose of assessing Canadian medical oncology trainee knowledge and preparedness for their Royal College licensing examination². First, medical oncologists in Canada tend to predominantly practice solid tumour oncology; patients with hematologic malignancies are treated mostly by hematologists, although there are some practice variations between provinces. The Canadian Royal College examination therefore reflects the Canadian practice and tests knowledge of a select few hematologic malignancies. Questions in the ASCO ITE tend to over-represent knowledge pertaining to hematologic malignancies, which subsequently results in construct underrepresentation of questions relating to solid tumours³. Additionally, significant construct-irrelevant variance is associated with the ASCO ITE for Canadian medical oncology trainees because measurement units provided for laboratory values with the ASCO ITE questions are all stated in American units³. The unfamiliarity of Canadian trainees with those values makes the examination questions unnecessarily challenging. Finally, the multiple-choice format of the ASCO ITE is very different from the SAQs and VSAQs found exclusively in the Canadian medical oncology examinations from the Royal College of Physicians and Surgeons of Canada. That difference is important, because trainees tend to score higher on multiple-choice-question examinations than on SAQ examinations, even when the same knowledge is tested⁴.

It is apparent that a more appropriate tool is needed for the formative assessment of Canadian medical oncology

trainees so as to better prepare them for their Royal College licensing examination. Aside from the ASCO ITE, there are currently no other standard formative assessment tools available within medical oncology residency training programs to help prepare trainees for their Canadian licensing examination. One potential solution to that assessment gap would be to develop a national SAQ formative examination that could be used by all medical oncology residency training programs. Such an examination, developed by Canadian medical oncologists with content and a structure that more closely mimics the actual Canadian Royal College licensing examination, could provide Canadian trainees with a more realistic formative assessment of their knowledge and preparedness. Although the ASCO ITE certainly has many strengths that deserve recognition, we believe that an annual national SAQ formative examination that is standardized across all medical oncology residency training programs in Canada would be an important advance in preparing trainees for their Canadian Royal College licensing examinations.

CONFLICT OF INTEREST DISCLOSURES

We have read and understood *Current Oncology's* policy on disclosing conflicts of interest, and we declare that we have none.

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