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Title	Developing Canadian Oncology Goals and Objectives for Medical Students: A National Delphi Study
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Reviewer 1	Dr. Waseem Sharieff
Institution	Dalhousie University Faculty of Medicine, Radiation Oncology
General comments (author response in bold)	<p>The authors address an important deficiency in the Canadian medical school curriculum. They surveyed educators across Canada and used a modified delphi process to reach consensus on a set of objectives for oncology.</p> <p>The paper is generally well written.</p> <p>I have the following comments:</p> <p>It is not clear how the 37 educators were identified. Do they represent a random sample of the educator population?</p> <p>Done. See revised methods.</p> <p>It would be helpful for general medical readers to briefly describe Delphi process.</p> <p>Done. See revised methods.</p> <p>There is some information in the results section which is also presented in the Table 1. Consider removing redundant information.</p> <p>Done. Text deleted and table revised.</p> <p>Consider graphically presenting some of the demographic information as bar chart or pie chart.</p> <p>No, the authors felt it would require too many bar charts to show the demographic information that can be illustrated in just one table, Table 1.</p> <p>Discussion section could be further improved by:</p> <p>a) removing redundancy in study implications.</p> <p>Done.</p> <p>b) comparing study results with similar studies.</p> <p>We are not aware of any similar studies for undergraduate oncology education in Canada or other countries.</p> <p>c) consider comparison with american curriculum.</p> <p>There is no standard national American curriculum for medical oncology education.</p> <p>d) limitations section should address generalizability.</p> <p>There is already text addressing this issue: "Some limitations of our work may include the fact that curricula at medical schools across Canada are variable and our document does not address how these objectives should be taught. Medical schools will need to determine where and how best to integrate these objectives into their respective programs. "</p> <p>e) page 14: change 'our nationally validated set ..' to 'our nationally agreed set...'. Done.</p>
Reviewer 2	Dr. Biniam Kidane
Institution	Toronto Western Hospital
General comments (author response in bold)	<p>Tam et al report the development of Oncology objectives using a modified trans-Canadian Delphi process.</p> <p>This is explicitly reported for the most part and appears to have been a well-run study of an important topic.</p> <p>Following are some questions and comments.</p> <p>Methods:</p> <p>-when discussing agreement, please clarify whether this is raw agreement or chance-corrected agreement.</p> <p>We are discussing raw agreement.</p> <p>-in general, the methods could be more explicitly reported.</p> <p>Done, details added to methods section.</p> <p>Results:</p> <p>- suggest changing "not being able to" to "inability to" in the following sentence "The other 22 were not able to participate due to not being able to find a mutually agreeable time".</p> <p>Done.</p> <p>- "many experts were concerned that there were too many objectives": was this truly addressed adequately? Are there still too many objectives?</p> <p>We believe this was adequately addressed. In reviewing the existing oncology curricula at the University of Calgary medical school we determined that the vast majority of these goals and objectives are already being taught. There were a very small number of objectives that were not covered. This is now also explicitly stated in the Interpretation.</p>

	<p>Interpretation:</p> <p>- "The result of this process is an important resource that can be used to improve oncology education for future physicians across Canada. Despite cancer being the leading cause of death of Canadians, the rising incidence of cancer due to our aging population, and the increasing involvement of non-oncologist physicians in cancer survivorship care, a number of studies have shown that medical students were least adequately prepared to manage patients with cancer compared to all other medical subspecialties." : please consider rephrasing this run-on sentence to make it more comprehensible to a wider audience.</p> <p>Done. This sentence was re-worded.</p> <p>- only 1 of 34 experts were surgical oncologists. This may have resulted in some bias towards excluding objectives and goals that are considered important by surgical oncologists. This might be a potential limitation worth mentioning.</p> <p>Done. An additional limitation was added.</p>
Reviewer 3	Dr. Rory Tekanoff
Institution	Urban Care Health Group, Community Medical Programs
General comments (author response in bold)	<p>This is a well authored, with a methodically planned protocol, representing a key CME strategy in rigorous identification of learning objectives. The paper represents a very ambitious attempt at clarifying oncology learning goals for medical students.</p> <p>Recommendations for improving the quality and relevance of this study:</p> <p>1. In the abstract, please indicate how and why these objectives will directly affect essential attributes for physicians. It is important to illuminate the reasons that primarily will affect professional behaviour in that:</p> <p>Physicians must be altruistic Physicians must be knowledgeable Physicians must be skilful Physicians must be dutiful.</p> <p>The authors believe that this is already implied in the introduction. Currently many non-oncologist physicians are involved in screening, diagnosis and follow-up of cancer patients and yet our previous study showed that oncology is not well taught. The objectives we have created will help improve physician knowledge regarding cancer and will also help ensure they have the adequate skills to manage cancer patients.</p> <p>2. Please utilize the COREQ checklist to ensure that all aspects of the research meet CMAJ requirements. (attached)</p> <p>COREQ checklist has been created and uploaded.</p> <p>3. There are no analyses of gaps in medical students' knowledge of oncology. In developing objectives, the learners should/must be involved in identifying a level, lack or need for knowledge in this area. Please explain to readers why the learner was not surveyed and why only educators were contacted for input. Amongst Professional educators, the fact that this was not undertaken may be problematic in providing a credible set of objectives without learner feedback.</p> <p>The rationale for this statement is that Educators/trainers/consultants, without gap analyses from learners, may hold bias in terms of what they interpret to be learning needs. This is a common problem in post and undergraduate education.</p> <p>Our previous study addressed this issue and surveyed both learners and educators, asking how well oncology was taught as well as which oncology topics should be taught in medical school. A description of this study was in the Introduction.</p> <p>4. In medicine, CME provides outcomes for both learner and patient. The authors have elucidated clear goals for medical students as per their surveys with educators, however a gap exists in terms of relevance and outcomes for patients. Each goal should clarify an expected outcome for patients, based on the students/physicians' acquisition of new knowledge.</p> <p>The goal of this study was to create a standard set of oncology objectives for medical students to ensure that they have adequate oncology knowledge to prepare them for their post-graduate training in any specialty. The authors believe that all of the goals and objectives would contribute to the medical student being more knowledgeable about cancer and therefore they will be better able to care for cancer patients in the future resulting in better outcomes for these patients.</p> <p>5. Include tables with objectives from discussion Delphi rounds 2 and 3, for reader clarification which were identified.</p> <p>Done. See Table 3.</p> <p>6. It is concerning and a limitation that only 35% of respondents participated in the 2nd round web conference. It will be important to address in the paper why the authors proceeded and that the lack of input from 2/3 of the group would not affect the ongoing consensus, research and outcomes.</p> <p>Actually the experts that did not participate in the teleconference were e-mailed a written summary of the discussion and asked for additional comments via e-mail. No decisions were made to exclude any objectives until round 3, where all the participants from round 1 completed the survey. This is now more explicitly stated in the methods.</p>

	<p>7. Teaching methods are not part of this study, as this was not the purpose of doing this research. However, there is a significant number of goals and learning objectives. Based on the number and specific attributes, it would be recommended as to how educators may integrate these goals and objectives within the oncology curriculum in medical school, as it will be formidable to weave such ambitious recommendations into the overwhelming curricula in med school. It would serve the best interest of both students, educators and the good research that was doing in identifying these goals. We have indicated that our belief is that most medical schools in Canada already teach a vast majority of these objectives. There are likely a small number of these objectives that are not being met at each medical school and it would be a small adjustment to fit those objectives in. We have reviewed our medical school oncology curriculum at the University of Calgary and this is the case. In the limitations section we have indicated that the medical schools across Canada have a variable curriculum and therefore we cannot make specific recommendations as to how best to teach oncology at each institution. Our previous study did indicate that most medical schools teach oncology in didactic lectures, small groups and during clerkship clinical encounters.</p> <p>8. Provide structured tables for all goals and objectives, for readers' clarification and assessment of this research.</p> <p>These revisions should add a greater dimension of thought and credibility to the research. The goals and objectives that are included in the final document are shown in Appendix A. The objectives that were not included in the final document are now shown in Table 3.</p>
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