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Writing, reading, and critiquing reviews Écrire, lire et revue critique

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Why reviews matter

What do all authors of the CMEJ have in common? For that matter what do all health professions education scholars have in common? We all engage with literature. When you have an idea or question the first thing you do is find out what has been published on the topic of interest. Literature reviews are foundational to any study. They describe what is known about given topic and lead us to identify a knowledge gap to study. All reviews require authors to be able accurately summarize, synthesize, interpret and even critique the research literature.^{1,2} In fact, for this editorial we have had to review the literature on *reviews*. Knowledge and evidence are expanding in our field of health professions education at an ever increasing rate and so to help keep pace, well written reviews are essential. Though reviews may be difficult to write, they will always be read. In this editorial we survey the various forms review articles can take. As well we want to provide authors and reviewers at CMEJ with some guidance and resources to be able write and/or review a review article.

What are the types of reviews conducted in Health Professions Education?

Health professions education attracts scholars from across disciplines and professions. For this reason, there are numerous ways to conduct reviews and it is important to familiarize oneself with these different forms to be able to effectively situate your work and write a compelling rationale for choosing your review methodology.^{1,2} To do this, authors must contend with an ever-increasing lexicon of review type articles. In 2009 Grant and colleagues

conducted a typology of reviews to aid readers makes sense of the different review types, listing fourteen different ways of conducting reviews, not all of which are mutually exclusive.³ Interestingly, in their typology they did not include narrative reviews which are often used by authors in health professions education. In Table 1, we offer a short description of three common types of review articles submitted to CMEJ.

More recently, authors such as Greenhalgh⁴ have drawn attention to the perceived hierarchy of systematic reviews over scoping and narrative reviews. Like Greenhalgh,⁴ we argue that systematic reviews are not to be seen as the gold standard of all reviews. Instead, it is important to align the method of review to what the authors hope to achieve, and pursue the review rigorously, according to the tenets of the chosen review type. Sometimes it is helpful to read part of the literature on your topic before deciding on a methodology for organizing and assessing its usefulness. Importantly, whether you are conducting a review or reading reviews, appreciating the differences between different types of reviews can also help you weigh the author's interpretation of their findings.

Table 1. Three common types of review articles submitted to CMEJ

Type of Review	Description	Examples of published HPE articles using review methodology
Systematic Review	Often associated with Cochrane Reviews, this type of review aims to answer a narrowly focused question and uses a predetermined structured method to search, screen, select, appraise and summarize findings.	Tang KS, Cheng DL, Mi E, Greenberg PB. Augmented reality in medical education: a systematic review. <i>Can Med Ed J.</i> 2020;11(1):e81. ⁵ And in this issue: of the CMEJ: Bahji A, Smith J, Danilewitz M, Crockford D, el-Guebaly N, Stuart H. Towards competency-based medical education in addictions psychiatry: a systematic review. <i>Can. Med. Ed. J.</i> 2021; 12(3) https://doi.org/10.36834/cmej.69739 ⁶
Scoping Review	Aims to quickly map a research area, documenting key concepts, sources of evidence, methodologies used. Typically, scoping reviews do not judge the quality of the papers included in the review. They tend to produce descriptive accounts of a topic area.	Kalun P, Dunn K, Wagner N, Pulakunta T, Sonnadara R. Recent evidence on visual-spatial ability in surgical education: A scoping review. <i>Can Med Ed J.</i> 2020 Dec;11(6):e111. ⁷ Refer to Cacchione ⁸ and Arksey and O'Malley ⁹ and for more details.
(Critical) Narrative Review	Narrative reviews are expert interpretations and critiques of previously published studies. They are not intended to be exhaustive in their review of evidence, but rather synthetic and generative. Research questions can be narrow or broad and are often theoretically derived. They may constitute a synthesis of existing models or schools of thoughts or generate a new interpretation or way of thinking.	Examples of authors applying (Critical) Narrative reviews: Ng, S. L., Kinsella, E. A., Friesen, F., & Hodges, B. (2015). Reclaiming a theoretical orientation to reflection in medical education research: a critical narrative review. <i>Medical Education</i> , 49(5), 461–475. https://doi.org/10.1111/medu.12680 ¹⁰ For more information: Greenhalgh, T., Thorne, S., & Malterud, K. (2018). Time to challenge the spurious hierarchy of systematic over narrative reviews? <i>European Journal of Clinical Investigation</i> , 48(6), e12931–n/a. https://doi.org/10.1111/eci.12931 ¹¹ Ferrari, R. Writing narrative style literature reviews. <i>Medical Writing</i> . 2015;24(4):230-235. doi:10.1179/2047480615Z.000000000329 ¹²

In the next section we summarize some general tips for conducting successful reviews.

How to write and review a review article

In 2016 David Cook wrote an editorial for *Medical Education* on tips for a great review article.¹³ These tips are excellent suggestions for all types of articles you are considering to submit to the CMEJ. First, start with a clear question: focused or more general depending on the type of review you are conducting. Systematic reviews tend to address very focused questions often summarizing the evidence of your topic. Other types of reviews tend to have broader questions and are more exploratory in nature.

Following your question, choose an approach and plan your methods to match your question...just like you would for a research study. Fortunately, there are guidelines for many types of reviews. As Cook points out the most important consideration is to be sure that the methods you follow lead to a defensible answer to your review question. To help you prepare for a defensible answer there are many guides available. For systematic reviews consult [PRISMA guidelines](#),¹³ for scoping reviews [PRISMA-Scr](#),¹⁴ and [SANRA](#)¹⁵ for narrative reviews. It is also important to explain to readers why you have chosen to conduct a

review. You may be introducing a new way for addressing an old problem, drawing links across literatures, filling in gaps in our knowledge about a phenomenon or educational practice. Cook refers to this as setting the stage. Linking back to the literature is important. In systematic reviews for example, you must be clear in explaining how your review builds on existing literature and previous reviews. This is your opportunity to be critical. What are the gaps and limitations of previous reviews? So, how will your systematic review resolve the shortcomings of previous work? In other types of reviews, such as narrative reviews, its less about filling a specific knowledge gap, and more about generating new research topic areas, exposing blind spots in our thinking, or making creative new links across issues. Whatever, type of review paper you are working on, the next steps are ones that can be applied to any scholarly writing. Be clear and offer insight. What is your main message? A review is more than just listing studies or referencing literature on your topic. Lead your readers to a convincing message. Provide commentary and interpretation for the studies in your review that will help you to inform your conclusions. For systematic reviews, Cook's final tip is most likely the most important— report completely. You need to explain all your

methods and report enough detail that readers can verify the main findings of each study you review. The most common reasons CMEJ reviewers recommend to decline a review article is because authors do not follow these last tips. In these instances authors do not provide the readers with enough detail to substantiate their interpretations or the message is not clear. Our recommendation for writing a great review is to ensure you have followed the previous tips and to have colleagues read over your paper to ensure you have provided a clear, detailed description and interpretation.

Finally, we leave you with some resources to guide your review writing.^{3,7,8,10,11,16,17} We look forward to seeing your future work. One thing is certain, a better appreciation of what different reviews provide to the field will contribute to more purposeful exploration of the literature and better manuscript writing in general.

In this issue we present many interesting and worthwhile papers, two of which are, in fact, reviews.

Major Contributions

[A chance for reform: the environmental impact of travel for general surgery residency interviews](#) by Fung et al.¹⁸ estimated the CO₂ emissions associated with traveling for residency position interviews. Due to the high emissions levels (mean 1.82 tonnes per applicant), they called for the consideration of alternative options such as videoconference interviews.

[Understanding community family medicine preceptors' involvement in educational scholarship: perceptions, influencing factors and promising areas for action](#) by Ward and team¹⁹ identified barriers, enablers, and opportunities to grow educational scholarship at community-based teaching sites. They discovered a growing interest in educational scholarship among community-based family medicine preceptors and hope the identification of successful processes will be beneficial for other community-based Family Medicine preceptors.

[Exploring the global impact of the COVID-19 pandemic on medical education: an international cross-sectional study of medical learners](#) by Allison Brown and team²⁰ studied the impact of COVID-19 on medical learners around the world. There were different concerns depending on the levels of training, such as residents' concerns with career timeline compared to trainees' concerns with the quality of learning. Overall, the learners negatively perceived the disruption at all levels and geographic regions.

[The impact of local health professions education grants: is it worth the investment?](#) by Susan Humphrey-Murto and co-authors²¹ considered factors that lead to the publication of studies supported by local medical education grants. They identified several factors associated with publication success, including previous oral or poster presentations. They hope their results will be valuable for Canadian centres with local grant programs.

[Exploring the impact of the COVID-19 pandemic on medical learner wellness: a needs assessment for the development of learner wellness interventions](#) by Stephana Cherak and team²² studied learner-wellness in various training environments disrupted by the pandemic. They reported a negative impact on learner wellness at all stages of training. Their results can benefit the development of future wellness interventions.

[Program directors' reflections on national policy change in medical education: insights on decision-making, accreditation, and the CanMEDS framework](#) by Dore, Bogie, et al.²³ invited program directors to reflect on the introduction of the CanMEDS framework into Canadian postgraduate medical education programs. Their survey revealed that while program directors (PDs) recognized the necessity of the accreditation process, they did not feel they had a voice when the change occurred. The authors concluded that collaborations with PDs would lead to more successful outcomes.

[Experiential learning, collaboration and reflection: key ingredients in longitudinal faculty development](#) by Laura Farrell and team²⁴ stressed several elements for effective longitudinal faculty development (LFD) initiatives. They found that participants benefited from a supportive and collaborative environment while trying to learn a new skill or concept.

Brief Reports

[The effect of COVID-19 on medical students' education and wellbeing: a cross-sectional survey](#) by Stephanie Thibaudeau and team²⁵ assessed the impact of COVID-19 on medical students. They reported an overall perceived negative impact, including increased depressive symptoms, increased anxiety, and reduced quality of education.

In [Do PGY-1 residents in Emergency Medicine have enough experiences in resuscitations and other clinical procedures to meet the requirements of a Competence by Design curriculum?](#) Meshkat and co-authors²⁶ recorded the number of adult medical resuscitations and clinical

procedures completed by PGY1 Fellow of the Royal College of Physicians in Emergency Medicine residents to compare them to the Competence by Design requirements. Their study underscored the importance of monitoring collection against pre-set targets. They concluded that residency program curricula should be regularly reviewed to allow for adequate clinical experiences.

[Rehearsal simulation for antenatal consults](#) by Anita Cheng and team²⁷ studied whether rehearsal simulation for antenatal consults helped residents prepare for difficult conversations with parents expecting complications with their baby before birth. They found that while rehearsal simulation improved residents' confidence and communication techniques, it did not prepare them for unexpected parent responses.

Review Papers and Meta-Analyses

[Peer support programs in the fields of medicine and nursing: a systematic search and narrative review](#) by Haykal and co-authors²⁸ described and evaluated peer support programs in the medical field published in the literature. They found numerous diverse programs and concluded that including a variety of delivery methods to meet the needs of all participants is a key aspect for future peer-support initiatives.

[Towards competency-based medical education in addictions psychiatry: a systematic review](#) by Bahji et al.⁶ identified addiction interventions to build competency for psychiatry residents and fellows. They found that current psychiatry entrustable professional activities need to be better identified and evaluated to ensure sustained competence in addictions.

Black Ice

[Six ways to get a grip on leveraging the expertise of Instructional Design and Technology professionals](#) by Chen and Kleinheksel²⁹ provided ways to improve technology implementation by clarifying the role that Instructional Design and Technology professionals can play in technology initiatives and technology-enhanced learning. They concluded that a strong collaboration is to the benefit of both the learners and their future patients.

In his article, [Seven ways to get a grip on running a successful promotions process](#),³⁰ Simon Field provided guidelines for maximizing opportunities for successful promotion experiences. His seven tips included creating a rubric for both self-assessment of likeliness of success and adjudication by the committee.

[Six ways to get a grip on your first health education leadership role](#) by Stasiuk and Scott³¹ provided tips for considering a health education leadership position. They advised readers to be intentional and methodical in accepting or rejecting positions.

Canadiana

[Re-examining the value proposition for Competency-Based Medical Education](#) by Dagnone and team³² described the excitement and controversy surrounding the implementation of competency-based medical education (CBME) by Canadian postgraduate training programs. They proposed observing which elements of CBME had a positive impact on various outcomes.

You Should Try This

In their work, [Interprofessional culinary education workshops at the University of Saskatchewan](#), Lieffers et al.³³ described the implementation of interprofessional culinary education workshops that were designed to provide health professions students with an experiential and cooperative learning experience while learning about important topics in nutrition. They reported an enthusiastic response and cooperation among students from different health professional programs.

In their article, [Physiotherapist-led musculoskeletal education: an innovative approach to teach medical students musculoskeletal assessment techniques](#), Boulila and team³⁴ described the implementation of physiotherapist-led workshops, whether the workshops increased medical students' musculoskeletal knowledge, and if they increased confidence in assessment techniques.

[Instagram as a virtual art display for medical students](#) by Karly Pippitt and team³⁵ used social media as a platform for showcasing artwork done by first-year medical students. They described this shift to online learning due to COVID-19. Using Instagram was cost-saving and widely accessible. They intend to continue with both online and in-person displays in the future.

[Adapting clinical skills volunteer patient recruitment and retention during COVID-19](#) by Nazerali-Maitland et al.³⁶ proposed a SLIM-COVID framework as a solution to the problem of dwindling volunteer patients due to COVID-19. Their framework is intended to provide actionable solutions to recruit and engage volunteers in a challenging environment.

In [Quick Response codes for virtual learner evaluation of teaching and attendance monitoring](#), Roxana Mo and co-

authors³⁷ used Quick Response (QR) codes to monitor attendance and obtain evaluations for virtual teaching sessions. They found QR codes valuable for quick and simple feedback that could be used for many educational applications.

In [Creation and implementation of the Ottawa Handbook of Emergency Medicine](#) Kaitlin Endres and team³⁸ described the creation of a handbook they made as an academic resource for medical students as they shift to clerkship. It includes relevant content encountered in Emergency Medicine. While they intended it for medical students, they also see its value for nurses, paramedics, and other medical professionals.

Commentary and Opinions

[The alarming situation of medical student mental health](#) by D'Eon and team³⁹ appealed to medical education leaders to respond to the high numbers of mental health concerns among medical students. They urged leaders to address the underlying problems, such as the excessive demands of the curriculum.

In [the shadows: medical student clinical observerships and career exploration in the face of COVID-19](#) by Law and co-authors⁴⁰ offered potential solutions to replace in-person shadowing that has been disrupted due to the COVID-19 pandemic. They hope the alternatives such as virtual shadowing will close the gap in learning caused by the pandemic.

Letters to the Editor

[Canadian Federation of Medical Students' response to "The alarming situation of medical student mental health"](#) King et al.⁴¹ on behalf of the Canadian Federation of Medical Students (CFMS) responded to the commentary by D'Eon and team³⁹ on medical students' mental health. King called upon the medical education community to join the CFMS in its commitment to improving medical student wellbeing.

[Re: "Development of a medical education podcast in obstetrics and gynecology"](#)⁴² was written by Kirubarajan in response to the article by [Development of a medical education podcast in obstetrics and gynecology](#) by Black and team.⁴³ Kirubarajan applauded the development of the podcast to meet a need in medical education, and suggested potential future topics such as interventions to prevent learner burnout.

[Response to "First year medical student experiences with a clinical skills seminar emphasizing sexual and gender minority population complexity"](#) by Kumar and Hassan⁴⁴

acknowledged the previously published article by Biro et al.⁴⁵ that explored limitations in medical training for the LGBTQ2S community. However, Kumar and Hassen advocated for further progress and reform for medical training to address the health requirements for sexual and gender minorities.

In her letter, [Journey to the unknown: road closed!](#),⁴⁶ Rosemary Pawliuk responded to the article, [Journey into the unknown: considering the international medical graduate perspective on the road to Canadian residency during the COVID-19 pandemic](#), by Gutman et al.⁴⁷ Pawliuk agreed that international medical students (IMGs) do not have adequate formal representation when it comes to residency training decisions. Therefore, Pawliuk challenged health organizations to make changes to give a voice in decision-making to the organizations representing IMGs.

Images

In [Connections](#),⁴⁸ Sara Guzman created a digital painting to portray her approach to learning. Her image of a hand touching a neuron showed her desire to physically see and touch an active neuron in order to further understand the brain and its connections.

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