

## Canadian medical student perspectives on ophthalmology education: a needs assessment

Exposure to ophthalmology is limited in most Canadian medical schools; 64% of first-year residents in any training program reported little to no ophthalmology exposure.<sup>1</sup> Similarly, 80% of first-year family medicine residents were somewhat or not at all comfortable managing ocular complaints.<sup>2</sup> These concerns also have been identified by Canadian ophthalmology educators.<sup>3</sup> To enact sustainable change to ophthalmology teaching, we developed a targeted needs assessment study to elicit the perspectives of Canadian medical students based on step 2 of Kern's 6-step method for curricular design.<sup>4</sup>

### Methods

A cross-sectional needs assessment survey (Appendix 1, available online) was developed using relevant literature on curriculum development and in collaboration with a national panel of 4 ophthalmology educators involved in undergraduate teaching and 2 medical students. From January to May 2021, medical students enrolled in any Canadian medical school were invited to complete the survey. Statistical analysis was done using SPSS version 27 (IBM, Armonk, NY), and participant responses were summarized in frequencies or means. This study was approved by the Dalhousie University Research Ethics Board.

### Results

The survey was completed by 155 participants with representation from 15 of 17 Canadian medical schools. Respondents came from the classes of 2021 (12.4%), 2022 (24.2%), 2023 (28.1%), and 2024 (33.3%). The adequacy

of the medical school curriculum in providing exposure to ophthalmology was rated on average as 42 of 100 points. Students reported that commonly taught topics in ophthalmology were anatomy (75%) and clinical skills (65%). Most students desired more procedural skills (74%), surgical skills (73%), clinical skills (56%), and clinical reasoning (52%) teaching (Fig. 1). Most students (90%) were interested in virtual teaching modalities (Fig. 2).

### Discussion

Kern's 6-step model for curriculum development is a systematic approach to developing an educational program.<sup>4</sup> The first step is problem identification and general needs assessment. It has already been well established by residents and educators that there is a need to improve undergraduate medical ophthalmology teaching in Canada.<sup>1,3</sup> The second step is a targeted needs assessment to better understand learner experiences, attitudes, and learning styles regarding the identified problem.<sup>4</sup> To our knowledge, this is the first comprehensive study looking at medical student perspectives on Canadian ophthalmology education. Our findings can be used to inform step 3, which is to define the goals and objectives of an undergraduate ophthalmology curriculum, and step 4, which is to determine the most effective educational strategies to deliver this content.

This study had balanced representation from different medical schools and class years. Overall, participants reported less than adequate ophthalmology training. These findings are comparable with previous studies on residents and in international settings.<sup>1,2,5</sup> Each medical school has varying amounts of ophthalmology exposure, and it can be challenging to increase time for ophthalmology in a crowded curriculum.<sup>6</sup> Considering novel ways to increase the accessibility of ophthalmology, such as through virtual, asynchronous means, may be an equitable and feasible

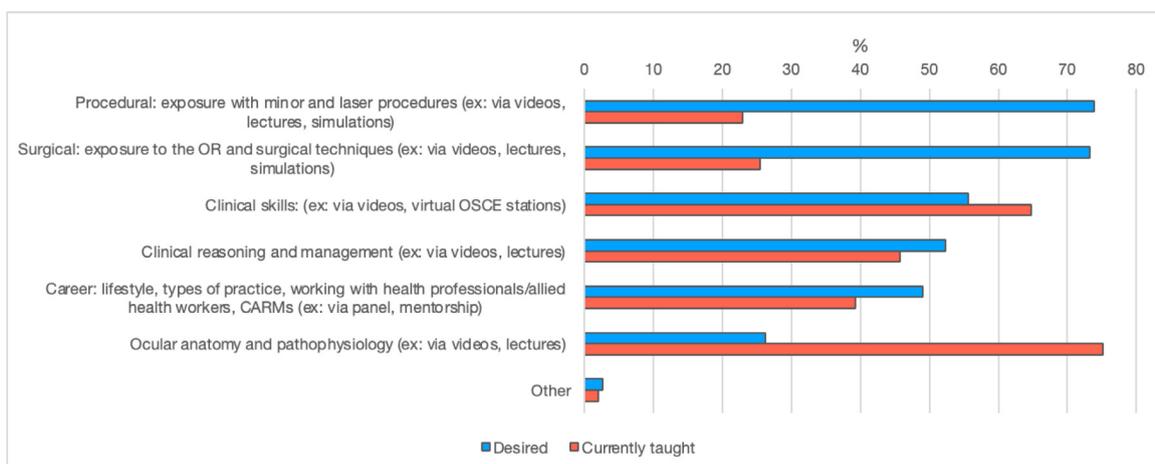


Fig. 1—Topics on which students desired more teaching compared with currently taught topics.

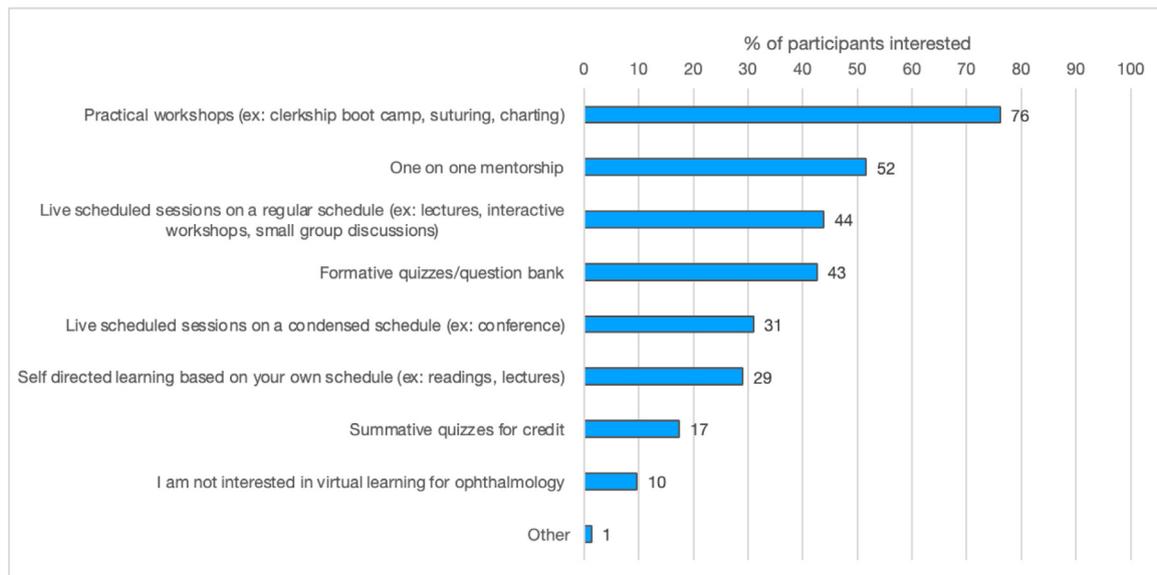


Fig. 2— Interest in different virtual formats to teach ophthalmology.

solution to close this knowledge gap. Virtual methods for teaching ophthalmology have previously been found to be effective.<sup>7</sup> Encouragingly, the majority of students in our survey were interested in virtual teaching. Specifically, more procedural skills, surgical skills, clinical skills, and clinical reasoning teaching were desired by students. It may be beneficial for educators to clarify what the knowledge expectations are for graduating medical students because it is possible that there is a disconnect.

Limitations of this study include the relatively small sample size. Most participants attended large, English-speaking institutions. Any national curricular initiatives should incorporate francophone perspectives. Additionally, this survey was implemented when many institutions were adjusting curricula to be delivered safely during the COVID-19 pandemic. The cancellation of preexisting programming may partially explain the dissatisfaction with ophthalmology education.

### Supplementary Materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.jcjo.2022.06.011](https://doi.org/10.1016/j.jcjo.2022.06.011).

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### Footnotes and Disclosure

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