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Article abstract

Implication Statement

Podcasts are an increasingly popular medical education modality, especially in surgical fields. However, the cost of developing a high-quality medical education podcast presents a barrier to many content creators. The authors developed the podcast series 'The Lenspod,' designed to be a cost-efficient but high-quality education resource in ophthalmology. The REC financial framework has been previously used to estimate the financial costs of technology-based medical education. Using this framework, costs were competitive with other medical education podcasts. It is our hope that similar methodology may be used to create and disseminate future podcasts for medical education.

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# Creation and cost-evaluation of a student-run podcast in ophthalmology

## Création et évaluation des coûts d'un balado en ophtalmologie réalisé par les étudiants

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### Implication Statement

Podcasts are an increasingly popular medical education modality, especially in surgical fields. However, the cost of developing a high-quality medical education podcast presents a barrier to many content creators. The authors developed the podcast series 'The Lenspod,' designed to be a cost-efficient but high-quality education resource in ophthalmology. The REC financial framework has been previously used to estimate the financial costs of technology-based medical education. Using this framework, costs were competitive with other medical education podcasts. It is our hope that similar methodology may be used to create and disseminate future podcasts for medical education.

### Énoncé des implications de la recherche

Les balados sont une modalité d'enseignement médical de plus en plus populaire, en particulier dans les domaines chirurgicaux. Cependant, le coût de création d'un balado éducatif de qualité en médecine constitue un obstacle pour de nombreux créateurs de contenu. Les auteurs sont les créateurs de la série de balados *The Lenspod*, qui se veut une ressource éducative à la fois rentable et de qualité en ophtalmologie. Appliquant le cadre financier REC, déjà utilisé pour estimer les coûts financiers de modes d'enseignement médical basés sur la technologie, nous avons constaté que les coûts de notre balado sont compétitifs par rapport à d'autres en éducation médicale. Nous espérons qu'une méthode similaire sera utilisée pour créer et diffuser davantage de balados éducatifs en médecine.

### Introduction

The COVID-19 pandemic has seen a surge in virtual learning modalities prompting many learners to seek out new resources to supplement their education.<sup>1,2</sup> There are several benefits that podcasts offer as an educational resource. The on-demand nature of podcasting allows listeners to access resources from their computer or mobile device. Further, podcasts allow listeners to consume knowledge whilst performing other simple tasks such as physical activities, as they do not demand visual attention.

Although it is typically free for listeners to access content, previous analysis has quoted costs upwards of \$7000 for the creation of podcasts for medical education.<sup>3,4</sup> The costs

associated with such an initiative remains a major barrier to the production of new content. Further, the literature is sparse with regards to outlining steps for creating a medical student-run podcast. These initiatives often involve invitation of content experts and frequently operate on a limited financial budget. The present study sought to outline the creation of a student-run, cost-efficient educational podcast in ophthalmology. It is our hope that this study will help facilitate similar initiatives and further resources for medical learners.

### Description of the innovation

We created "The Lenspod" podcast as an educational tool for medical students and early trainees interested in ophthalmology. We designed episodes in an interview style

to satisfy one or more of the learning objectives listed by the American Academy of Ophthalmology (AAO).<sup>5</sup> For each episode, we emailed experts from major eyecare centers in North America to participate in the podcasts. Interviewees did not receive financial compensation for participation. We conducted interviews over Zoom and edited episode content using Garageband. We uploaded the episodes and made them available for free download and streaming on popular podcast platforms including Apple, Spotify, Radiopublic and Breaker. We also distributed episodes through various medical student interest groups.

To estimate the financial cost of production, we employed the REC financial framework which has been used previously in this context.<sup>3</sup> We defined three roles critical for podcast creation: 1) *Project managers* – responsible for script writing and expert recruitment. 2) *Subject matter experts* – invited for their expertise on the episode topic. 3) *Editors* – responsible for episode editing. We described time lost by podcast personnel due to production involvement in terms of hours spent (medical students) or in the equivalent hourly wage (ophthalmologists). We estimated hourly wages using an online employment platform (ZipRecruiter).<sup>6</sup>

## Outcomes

A total of 10 episodes were released during the 1-year study period (June 2021 - June 2022). Plays per episode ranged from 175 to 403. We noted that episodes with the most plays covered general ophthalmology.

Total cost of creating the 10-episode podcast series was \$2,175 and 9.5 hours/episode volunteered by medical students. The most substantial cost was time volunteered by the subject matter experts. Experts volunteered an average of one hour per episode, for which the equivalent financial value was approximately 72% of the total cost of creation. REC cost analysis and breakdown is summarized in Table 1.

Table 1. REC financial framework cost-analysis applied to a 10-episode podcast in ophthalmology.

Roles	\$ CAD
Project manager	0.00
Subject matter experts	1,566.10
Editors	0.00
Software	
Editing software	0.00
Recording studio	0.00
Equipment	
Microphones (x3)	540.00
Cables	20.00
Headphones	49.00
Laptop	0.00
Learning management system/platform	0.00
Consumables	
Simulation models	NA
Cadaveric models	NA
Procedural equipment	NA
Procedural instruments	NA
Total	\$2,175.10

## Suggestions for next steps

We describe a framework for creation of a medical-student run educational podcast with a production cost that is competitive with other education modalities.<sup>3,4</sup> In our experience, a team of four medical students allowed for appropriate delegation of tasks and provided scheduling flexibility for interviewing podcast guests. While equipment costs were budgeted in the described methodology, cost-conscious developers could minimize these by using equipment at-hand, such as built-in computer microphones. We suggest this model for future education pilots operating on a limited financial budget.

Although we were careful to ensure podcast quality by consultation of AAO learning objectives and subject matter experts, we conducted no formal evaluation of podcast content. This is a limitation of our study. Future initiatives may wish to conduct a more formal peer-review process to ensure quality is maintained. It is our hope that future initiatives refer to the described framework to facilitate creation of further resources in medical education.

**Conflicts of Interest:** No conflicting relationship exists for any author.

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