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COMMENTARY - UNSOLICITED

Virtual grand rounds in COVID-19: A financial analysis

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Grand rounds (GR) lectures are formal educational initiatives that are at the core of most academic clinical departments.[1,2] GR have evolved over its commemorative beginnings, shifting away from real-time clinical skills demonstration to the now familiar, lecture-based format.[2] Today, GR represent prestigious academic speaking opportunities for thought leaders to discuss topics intended to broaden the medical knowledge at an institution. Despite being considered a cornerstone of education in most training programs, GR have recently come under scrutiny for their dwindling educational efficacy, poor attendance, logistic challenges, and overhead cost.[1,3] There is even concern that GR may be at risk of complete extinction altogether.[4]

Despite mounting criticism, GR continues to provide educational benefits, including educating all levels of trainees; providing updates in diagnosis, treatment, and research; and promoting networking and collegiality across specialties and institutions.[2,3,5,6] GR remain an opportunity for clinicians to absorb new knowledge from a new perspective that they otherwise would not have had. Rather than abandon this unique method of education altogether, academic departments should adapt GR to maintain their relevance and efficacy in the 21st century.

In the age of digital communication, there exists a precedence to provide a widely accessible platform for experts to disseminate knowledge to a large cohort of audiences.[7] Unfortunately, the process of organizing GR is an expensive and challenging endeavor, with often-limited attendance. In the recent pandemic of the novel 2019 coronavirus (COVID-19), numerous institutions have adapted the traditional paradigm of clinical medical education to distance learning, employing new educational platforms such as video conferencing and virtual simulation.[7,8] This may very well be the impetus needed to migrate future GR sessions to the virtual academic space, easing the financial and timely burdens of travel, lodging, and/or scheduling constraints for invited speakers. Our contribution details the cost–benefit analysis of in-person GR versus virtual GR series in the Department of Emergency Medicine at Thomas Jefferson University.

We reviewed the financial costs for GR at our tertiary care hospital, an urban academic medical center located in Philadelphia, from July 2019 to March 2020. GR generally take place either during or directly after a half-day emergency medicine (EM) resident–based conference. All speaker events were scheduled at least 6 months in advance by the vice chair of education and the executive assistant to the department chair. Departmental staff (i.e., faculty, residents, nurses, midlevel providers) were encouraged to participate with email reminders. Lunch and snacks were served, and continuing medical education (CME) credits for faculty members were offered.

We tabulated the breakdown of the expenses related to six GR speakers we hosted at our institution over the past 8 months as well as their associated average and total costs. The theoretical cost of a virtual GR event was then calculated and compared to the average monthly cost of the in-person GR sessions.

During the preceding 8-month period, there were six in-person GR speaker events for a total cost of $5,410.54 inclusive of honoraria, travel and related expenses, dinners with faculty, and lunch. The average cost per speaker was $901.76 with a range of $0 to $2338.91. During this period, our institution also purchased a monthly institutional subscription for the online videoconference software, Zoom Video Communications (www.zoom.us), for all intradepartmental meetings and conferences, charging $50 per month with unlimited Zoom licenses and a one-time expense for video

TABLE 1 Comparison of the monthly average cost for in-person GR and theoretical cost of virtual GR over 8 months in 2019 to 2020

Expenses	In-person GR (average cost per month)	Virtual GR (average cost per month)
Honorarium	$125 ($0–$500)	$125
Travel expenses	$350.66 ($0–$1,688.91)	—
Hosted meal	$159.13 ($0–$650)	—
Lunch	$41.53 ($0–$196.22)	—
Equipment[a]	—	$162.5[a]
Total average monthly cost	$676.32 ($0–$2,338.91)	$287.5

Abbreviations: GR, grand rounds.

[a]Equipment cost: The listed equipment cost is a one-time video equipment fee ($900) divided over an 8-month period plus the $50 monthly fee for the virtual meeting platform Zoom (www.zoom.us).

conference equipment ($900), totaling $1,300 for an 8-month period or $162.50 per month.

The theoretical cost of virtual GR would include the honorarium and equipment-related expenses, because the other items would not be necessary in this setting. The average honorarium over 8 months was $125; therefore, the potential new cost would be approximately $287.5 ($125 + $162.5). In comparison to the average monthly cost of in-person GR ($676.32), virtual GR could potentially lead to net savings of $388.82 per month or $3,110.56 over an 8-month period (Table 1).

Given the increasing popularity of distance learning with meaningful and positive learner feedback, in the setting of increasing financial pressures, the authors propose a transition to a virtual GR series.[9] The authors propose the added benefit of reinvesting GR cost savings into other educational initiatives. While speaker fees would likely be unchanged for virtual invitations ($1,000 during the 8-month period), the remaining expenses would expectedly be eliminated. Video conferencing allows both presenters and the host institution to mitigate two of the largest burdens plaguing this long-standing educational tradition: planning and cost.[7] Furthermore, institutions can leverage advanced recording functionality, if applicable, to transform the GR into an asynchronous learning modality. GR attendance would not be restricted by the physical constraints of the built environment (i.e., auditorium), but the near-unlimited server potential of the video conferencing software.[10] Advanced software options, such as real-time chat boxes, provide an excellent opportunity for the presenter and GR facilitators to engage with participants and address any comments and/or questions without disrupting the session.

There are several limitations to this cost–benefit analysis. This was a single-center, cost–benefit analysis and may not be generalizable to other institutions, particularly those with different resources and operating budgets. While there are clear economic benefits to transitioning GR programs into a virtual platform, we acknowledge that this model will reduce some of the intangible benefits of networking and socialization typically associated with in-person sessions. Furthermore, in the long term, virtual GR may impede speakers' ability to develop and refine their in-person public speaking skills. Even though video conferencing can support a successful lecture-style didactic format, other interactive and/or small-group activities may be more challenging to replicate in a virtual platform. Fortunately, several virtual conferencing packages enable breakout room functions to divide larger audiences into manageable groups for more intimate, team-based, discussions. While the benefits of a well-rehearsed and orated in-person presentation cannot be understated, we argue that the virtual platform provides new creative and interactive opportunities for GR speakers to teach useful information to save a life or at a minimum or prevent or reduce morbidity or hospitalization costs, while offering cost-saving benefits.

As educators, the value and impact of GR is not financial but on the creation and retention of entertaining knowledge in the audience. One of the limitations of our paper is that we focused on the financial analysis, rather than the learners' retention and higher-order assessment, of shifting GR to a theoretical virtual platform. Future studies are needed to evaluate learners' reception and knowledge retention from this new format. In theory, by increasing accessibility to a wider audience, shifting GR to the virtual platform could potentially lead to overall educational improvement.

The next step is to determine the validity of our intervention by comparing the actual cost of virtual GR in comparison to previous year's in-person GR events. Based on preliminary data, we purport that supporting an exclusively virtual GR program would lead to cost savings while maximizing educational value. A comparison of attendance could potentially serve as a proxy for engagement. Surveys could be sent to both speakers and attendees to assess for any improvements in participation and engagement. Other programs could also be assessed to determine whether this transition has been successfully attempted at other institutions; this would broaden generalizability of any evidence supporting a virtual GR program.

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CONFLICT OF INTEREST

The authors have no potential conflicts to disclose.

AUTHOR CONTRIBUTIONS

Megan Crossman assisted with the execution of the study design and played an integral part in drafting the manuscript. Timothy Sullivan provided statistical analysis and interpretation of the data. Dimitrios Papanagnou and Xiao Chi Zhang conceptualized the study, mentored the writing process, and provided revisions of the manuscript for intellectual content.

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