Transitioning to Virtual Meetings: Experiences From the Society for Education in Anesthesia Virtual Fall 2020 Meeting

Susan M. Martinelli, MD, FASA
Fei Chen, PhD, MEd
Robert S Isaak, DO, FASA

Adrian Hendrickse, BM FRCA
Bryan Mahoney, MD

Carol Ann B. Diachun, MD, MSEd
John D. Mitchell, MD

Introduction

Many physicians look forward to continuing medical education (CME) conferences. Traditionally, these conferences present the opportunity for physicians to obtain knowledge about innovations in their field of interest, present research findings, and network with a diverse group of individuals. The COVID-19 pandemic has forced physicians to reinvent the CME conference. Given the public health restrictions that require physical distancing to limit spread of the coronavirus, congregating in large groups is inadvisable and often restricted. To that end, many hospital systems have prohibited business-related travel, and many have restricted funding to attend such events. Thus, the virtual platform has become the primary approach for CME conferences.

The authors recently transformed the 2020 Society for Education in Anesthesia (SEA) Fall conference, usually a 1-day, face-to-face event that includes keynote speakers, panels, interactive workshops, and society committee meetings, into a free, virtual conference to respect public health measures and budgetary restrictions of SEA members. We anticipate that virtual conferences will continue to play a significant role in physician CME, not only because of continuing COVID-19-related restrictions but also due to their appeal to individual physicians, specialty societies, and institutions with lower costs and increased scheduling flexibility. Through this paper, we share our experience in hosting a virtual CME conference along with tips for organizing virtual conferences in the future. Box 1 summarizes lessons we learned during this process.

Logistics

When designing the schedule and format of a virtual conference, it is critical to consider the various needs of the attendees. Some of these considerations include what day(s) of the week to schedule the conference, what time of day, how many days to host the conference, and which type of learning activities should be offered (eg, lectures, workshops, panels, etc.).[1]

First, the attendees at a virtual conference are likely to participate from multiple time zones. Given the nature of the practice of medicine, physicians begin and end their daily schedules at varying times, resulting in inconsistency when attendees can join the conference. For instance, if a conference were to begin at 8:00 AM Eastern Standard Time (EST), then attendees on the west coast would need to join at 5:00 AM Pacific Standard Time. Conversely, if the conference were scheduled to start at 4:00 PM Pacific Standard Time, then attendees on the east coast would need to join at 7:00 PM EST. Both situations are impractical for many attendees. As a result, scheduling virtual conferences at the extreme ends of a day will likely lead to a decrement in the number of attendees joining. Therefore, scheduling a conference in the middle of the day, between 10:00 AM to 5:00 PM EST, is likely to capture the greatest participation.

Regarding the day of the week to host a virtual conference, weekends are least likely to conflict with physicians' clinical schedules. However, many physicians use the weekends to recuperate and spend time with friends and family. Hence, scheduling a virtual conference on Saturday or Sunday may decrease attendance. As a result, physicians with dedicated or protected nonclinical time on a weekday, whether a full day or a portion of the day, are probably most likely to attend.

Given the constraints on the time of day and days of the week to schedule a virtual conference, organizers should consider moving away from well-established conference schedule traditions (eg, a conference that historically runs 1 day or over 3 days) and either reduce their content or spread the activities over a greater number of days, each with shorter time frames. A major advantage that may occur as a result of using shorter blocks of time over multiple days is the ability to maintain attendees' attention more effectively, as many people find it difficult to remain attentive to a virtual conference run over several hours.[2] Shorter sessions may also attract a greater number of attendees throughout the conference (eg, due to potential scheduling conflicts for some portion of the conference and not on other portions of the conference).

With those considerations in mind, the SEA Fall 2020 conference was scheduled

over 2 days (instead of the traditional 1-day format) from 10:00 AM to 2:00 PM EST each day with a midday break. The dates included the original Friday before the American Society of Anesthesiologists meeting and the prior Thursday, dates that attendees had likely already preplanned for travel and live attendance. Further, smaller 90-minute interactive workshops were held on Tuesday and Thursday evenings at varying times (5:00 PM EST, 6:00 PM EST, and 7:00 PM EST start times) during the 3 weeks leading up to the main conference.

It is critical to design a conference program that provides value to the attendees (eg, education, networking, inspiration, and professional development). When creating the program, incorporation of ideas and opinions from a diverse group is helpful in ensuring the content is informative, timely, and relevant to the target audience.[1] SEA created a task force comprised of the SEA 2020 Fall Meeting Directors, the SEA Board of Directors, the SEA executive administrators, and members of the SEA Committees on Educational Meetings and on Advancement of Technology to include a variety of perspectives and skills in educational content, technical expertise, meeting administration, and finance to address the multitude of changes for the conversion of the original program to a virtual format.

Traditional in-person conferences often combine plenary lectures with panel presentations and interactive workshops to balance the needs of attendees. In the virtual format, a plenary lecture is easiest to deliver from technological and coordination perspectives. However, for adult learners, it is important to provide variety in content delivery formats. Thus, incorporation of panel discussions with audience question and answer time and workshops can be valuable if properly planned and coordinated. For the SEA Fall 2020 Meeting, workshops were not included as a part of the 2-day meeting schedule but were rather provided to attendees in the weeks before the meeting as a form of "preconference" opportunities. In addition to 2 plenary lectures, there were 3 panel presentations with associated question and answer sessions to provide attendees a greater degree of interactivity with the presenters. When putting together a conference schedule that has multiple presentations over a prolonged time, attendees require thoughtfully scheduled breaks to allow them to get food or drink or to address other needs while not missing out on the conference content.

One final logistical consideration is whether content should be delivered live or prerecorded. Live content offers a degree of spontaneity but carries the increased risk of audio-visual problems.[3] Prerecorded lectures may appear more professional and polished but can feel somewhat impersonal and less like one is attending a conference. Prerecorded lectures with speakers responding in real time to chat box comments while being available to answer questions and otherwise interact with attendees at the conclusion of their presentation may represent an acceptable compromise. For the SEA meeting, we felt that the sensation of speaking to a live audience was the most important aspect to preserve, so we primarily took that approach.

ATTENDANCE AND FEEDBACK

In preparation for this transition to a virtual conference, it was unclear how attendance would compare with previous traditional conferences. As shown in Figures 1 and 2, the number and the geographical distribution of total attendees at this year's virtual SEA conference is comparable to attendance at the 2 previous in-person conferences also aligned with the American Society of Anesthesiologists. This year, we had an increase in the number of attendees, which may be attributed to both the virtual format and the free registration. A total of 86 people attended sessions on both days, with a peak of 116 participants at any one point during the conference.

After each day of the conference, feedback was solicited from attendees via a survey to determine improvements for future virtual conferences. Most attendees indicated that they enjoyed the conference, and the sessions provided relevant information with strong speakers. Many attendees found the amount of content appropriate for a virtual conference. Some respondents had initial concerns over the virtual format but found the experience much better than anticipated. Some challenges were identified that need to be addressed in future virtual conferences. Table 1 lists some themes accompanied with direct quotes on positive experiences and challenges specifically related to the virtual format of the conference experience and suggestions for improvement.

INDUSTRY SPONSORSHIP

There are a number of viable options for financial sponsorship in the remote conference space. Many approaches from live conferences can be adapted to a virtual environment, while there are some opportunities that are unique to the virtual realm to explore. A recent review of best practices of virtual conferences suggests that the process should be consistent with the values and previous experiences of the organization and members.[1]

During live conferences, industry sponsors typically have physical booths with opportunities allotted within the conference schedule for interacting with attendees and sharing product and contact information. This approach can be readily recreated during a virtual conference. Within most virtual conference platforms, there are options for breakout sessions that can be entered from a common conference page. These breakout rooms can remain live during lectures or can be opened during breaks or other specifically allotted networking time to allow participants and sponsors to interact in a virtual setting. These virtual rooms can also be hosted on separate channels to avoid conflict or issues surrounding the CME accreditation of the conference educational content.[3] Additional conventional options used in other venues include the inclusion of banner advertising or other marketing strategies in conference materials, acknowledgement of sponsors verbally during daily logistics communication, or the provision of industry-sponsored talks at the beginning or end of conference days.[3]

Outside of medicine, some targeted marketing options have been embraced as part of conference sponsorship. One highly

desirable avenue for sponsors is access to contact information of conference attendees for marketing purposes. Caution should be taken if considering this approach to avoid possibly violating conference attendees' privacy. While this is a potential risk during live events as well, it may be easier for sponsors to access user data during online interactions or lists of user emails and attendee data during the course of the setup of the organization of a virtual conference and exhibition environment. Some variations on this tactic include an "opt out" approach where attendees can choose not to receive marketing information at the time of registration or an "opt in" approach where attendees can select to receive information from specific sponsors. While the most restrictive, the "opt in" approach allows for the most targeted marketing and increases the likelihood of attendee engagement with the sponsor either before or during the conference. Other strategies for sponsorship include pop-up (windows appearing on top of the primary content that must be viewed and clicked to remove them) advertising during the event or the use of "bumper" advertisements (6-second unskippable video segments) provided before or after enduring materials for later online viewing.[4] These approaches should be considered with caution to mitigate the impact on attendee experiences and comply with Accreditation Council for Continuing Medical Education requirements for avoiding bias in presentations and separating advertising content clearly from CME content. Like single CME in-person events, single virtual CME events must comply with the same Accreditation Council for Continuing Medical Education regulations.

The SEA opted not to address sponsorship for their fall conference both due to time constraints in the conference launch and the limited number of vendors and sponsors typically present at live SEA meetings. We plan to evaluate these options further in the future if virtual or hybrid meetings continue.

NETWORKING

Networking is an opportunity to meet and develop a relationship with the aim of furthering mutual interests. In an era when many functions of in-person conferences can be replaced by other formats or approaches, networking is an essential component that remains difficult to recreate.[1,5,6] National conferences provide an opportunity for meeting potential employers, developing mentoring and research connections, and building friendships and professional relationships. Students, residents, and junior faculty have all been substantially impacted by the reduced ability to network during the pandemic.[7] When planning the SEA 2020 Fall conference, we elected to primarily focus on the delivery of educational content. However, participant postcourse feedback made it clear that the top component that members missed in the virtual format was the opportunity for networking. Given that physical distancing policies will persist in the foreseeable future, it is important to provide viable forums for networking within a virtual conference. Several potential options are worth considering.

Many virtual meeting platforms provide features that allow for participants to privately message or chat with one another during the meeting. Some also allow participants to create or link a profile including keywords or topics of interest so that they may be sought out by other participants with shared interests during the conference. These feature sets do have a learning curve and many participants may be unaware of them or be unwilling to learn how to use them. Thus, if incorporated, they need to be heavily advertised, with tutorials offered in advance and live technical support provided during the meeting.

Breakout sessions can be orchestrated to create opportunities for discussion and promote small group interactions.[5] Random groupings can create some of the spontaneity of "bumping into" someone in the hall at a live meeting, whereas prearranging discussion groups based on mutual interests can enhance project-oriented networking. A mix of both approaches may allow for both elements to occur. Discussion groups can be moderated or left unstructured with a facilitator present to spark discussion of a topic.[3,8] We believe this approach may help take the place of our informal tradition of "dine around sessions" and are seeking to integrate this further into future meetings.

It is also possible to arrange for targeted individual or small group meetings between members and organizational leadership. During in-person conferences, the SEA has accomplished this with a reception where board members each sit at a table and society members can choose to join a conversation with them for a preset period of time before rotating to meet with another board member. This approach can be recreated in the virtual setting with breakout rooms moderated by board members or senior organization members that allow society members to join at preset intervals.[8] The SEA is also looking to integrate this approach to ensure continued member contact with leadership despite current restrictions.

With these possible approaches, time must be allocated within the conference structure to encourage interactions. Having multiple specific time segments set aside for networking will encourage participants to view this as an essential part of the course and engage more fully in this important activity.

FINANCIAL CONSIDERATIONS: REGISTRATION COSTS AND REVENUE GENERATION

Virtual conference platforms come in a wide range of costs based on either a one-time or monthly payment structure. Costs of the platforms vary with the number of attendees, selection of registration options, technical support requirements, and use of virtual breakout rooms for vendors or networking. Production support, including audio-visual expertise, needs to be available both during the preparation phase and delivery of the conference. Technical problems must be anticipated during the conference and need to be immediately resolved by designated support persons who may be on site for in-person meetings or remote for virtual meetings. However, significant savings can be made compared with traditional in-person conference

expenses with the reduced need for on-site staff and their associated costs.

There are some expenses that are common to all conference formats. For instance, some speakers will require an honorarium for their services. Additionally, for CME credits to be offered, there is typically a fee to be paid to the accrediting organization for this service. A conference brochure, updates to the parent organization's existing website, and social media advertising will need to be designed, produced, and disseminated. This can be done by volunteers from within the society but can also be contracted out to other professional organizations for a fee. Lastly, the conference registration platform often has a small associated fee for each charge transaction.

Like traditional in-person conferences, virtual conferences rely on registration fees and sponsorship to produce revenue for the parent organization. One significant distinction between the two conference formats is the price of attendance. Virtual conference organizers may choose to charge lower registration costs than traditional conferences because the cost of delivering a virtual conference can be much lower.[3]

Although educational content from virtual and in-person conferences can be recorded and archived for later viewing, this has not been a common practice for in-person conferences. These on-demand recordings have the potential of generating additional income. Recorded content can be made accessible at no expense to meeting attendees, while nonattendees can pay a separate fee to access the educational content. Alternatively, to increase society membership, the recorded content could be made available to due-paying society members on the society website.[3]

For smaller conferences (less than 300 attendees) like the SEA fall meeting, there are multiple virtual platforms that cost less than US $5000. Some of the costs from in-person conferences, such as hotel space and food, do not occur with the virtual form, which allows for savings to be passed on to conference attendees.

CHOOSING A VIRTUAL CONFERENCE PLATFORM

There are a variety of platforms with an array of options available for hosting a virtual meeting. In selecting a platform, we considered the mission of our organization, the needs of our planning committee and presenters, and the needs of our audience. Table 2 provides a list of top candidate features and costs as of June 2020. Our goal was to choose a platform that provided the meeting features that our society members value while accounting for cost and the barriers to attendee engagement inherent in a virtual format. Specifically, our desire to maintain opportunities for networking and interactive workshops within an easy-to-use and professional interface came into conflict with the tolerability of prolonged time in front of a computer screen and cost considerations. This led us to a hybrid approach to choosing the platform.[2]

Appealing features we found among platforms we investigated included registration management systems priced per registration or as a percentage of the registration fee, well-designed lobbies with space for general conference information, and intuitive displays with speaker and session information resembling that found in commonly used mobile conference apps.[1,3,7] Some platforms provide video conferencing within their product, while others embed video conferencing from a different platform directly within the user interface. Nearly all virtual conference platforms provide the option of presenting live presentations, recorded presentations, or a combination.

Historically, SEA fall conferences have consisted of multiple educational sessions (eg, plenary lectures and panels) in a single large conference room followed by multiple simultaneous workshops in smaller conference rooms. Platforms designed for separate concurrent sessions imposed awkward limitations when applied to a "single space" format. These included requiring users to leave and reenter the main room between speakers and did not provide the same ease of use for question and answer and chat features one finds in Zoom.

Ultimately, we found that the platforms that provided all possible features (eg, registration, virtual lobby with speaker and session information, networking, and vendor space) were better suited for larger conferences running multiple concurrent sessions. As the single large conference room components of our meeting were those most suitable for a live virtual meeting, we abandoned our traditional in-person format and used Zoom Webinar for a 2-day conference of 3 to 4 hours each day, providing only the content previously presented in our single large conference room during in-person meetings. We gave attendees and members the chance to attend workshops separately during the weeks preceding the meeting through a separate registration.

While this proved to be a successful format based on attendee feedback, we have begun exploring future options for a platform that can provide a space for networking and poster presentations to use alongside the Zoom Webinar format to better approximate what our members value in our in-person meetings.

FUTURE DIRECTIONS

Perhaps virtual CME conferences will be sustained beyond the pandemic as some physicians demonstrated preference for this format. Alternatively, a hybrid conference format may be developed to provide more flexibility to attendees. Moving forward, it will be critical to query the society's membership to understand their needs and preferences regarding the planning of future meetings. A hybrid approach may continue to allow for greater flexibility in meeting attendance (eg, attendees may be able to attend portions of a meeting that do not conflict with other obligations) and cost savings (eg, less expense on travel). However, the benefits of in-person conference attendance (eg, interaction with colleagues) will be unevenly distributed to meeting attendees if some are in person and others are remote. Inevitably, some organizations will provide hybrid options for future meetings, and it will be important to gain feedback from attendees, both in-

person and remote, regarding how well the meeting format meets their learning needs.

Conclusion

We were able to successfully transition the SEA Fall 2020 conference to a virtual platform with greater attendance than previous in-person conferences. There are many items to take into consideration when converting a traditionally in-person CME conference into a virtual conference. Important considerations include costs, virtual platform selection, industry sponsorship, and participant interactivity and networking as well as the conference schedule and format of sessions. Table 3 compares these components regarding virtual and in-person conferences. When fully considering and balancing the issues surrounding a virtual meeting, organizers can provide a cost-effective, educational, and professionally fulfilling conference for their members and constituents.

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*The following authors are at the University of North Carolina at Chapel Hill, Chapel Hill, NC: **Susan M. Martinelli** is a Core Residency Program Director and Professor of Anesthesiology; **Fei Chen** is an Assistant Professor of Anesthesiology Education; **Robert S. Isaak** is an Associate Professor of Anesthesiology. **Adrian Hendrickse** is an Associate Professor of Anesthesiology, University of Colorado, Anschutz Medical Campus, Aurora, CO. **Bryan Mahoney** is a Residency Program Director and Vice Chair of Education at Mount Sinai West and Morningside Hospitals, New York, NY. **Carol Ann B. Diachun** is an Associate Chair and Professor of Anesthesiology and Residency Program Director at University of Florida College of Medicine, Jacksonville, FL. **John D. Mitchell**, is an Associate Professor of Anesthesiology and Director, Center for Education Research Technology and Innovation (CERTAIN) at Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA.*

Corresponding author: Susan M. Martinelli, MD, FASA, Department of Anesthesiology, University of North Carolina at Chapel Hill, N2198 UNC Hospitals CB #7010, Chapel Hill, NC, 27599. Telephone: (919) 966-5136, Fax: (984) 974-4873

Email address: Susan M. Martinelli: smartinelli@aims.unc.edu

Abstract: The COVID-19 pandemic has forced organizers of traditional in-person continuing medical education conferences to transition to a virtual format. There are both advantages and disadvantages to this change in format. When planning a virtual meeting, several factors require consideration, including costs, virtual platforms, sponsorship, networking, and meeting logistics. This manuscript describes the authors' experiences of transforming the Society of Education in Anesthesia 2020 Fall Meeting into a virtual conference and explores the lessons learned and future impacts of this new medium.

Keywords: Continuing medical education, anesthesia education, virtual education, COVID

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Figures

Figure 1. *Society for Education in Anesthesia (SEA) fall conference attendance. The number of attendees and breakdown of attendees according to membership and trainee status is shown for 3 past fall SEA conferences. The 2019 fall conference was excluded because it was associated with the Society of Academic Associations of Anesthesiology and Perioperative Medicine conference, while all other fall conferences were associated with the American Society of Anesthesiologists. SEA had 471, 413, and 451 members in 2017, 2018, and 2020, respectively. Thus, the 121, 96, and 153 SEA member attendees represent 26%, 23%, and 34% of the total SEA members respectively.*
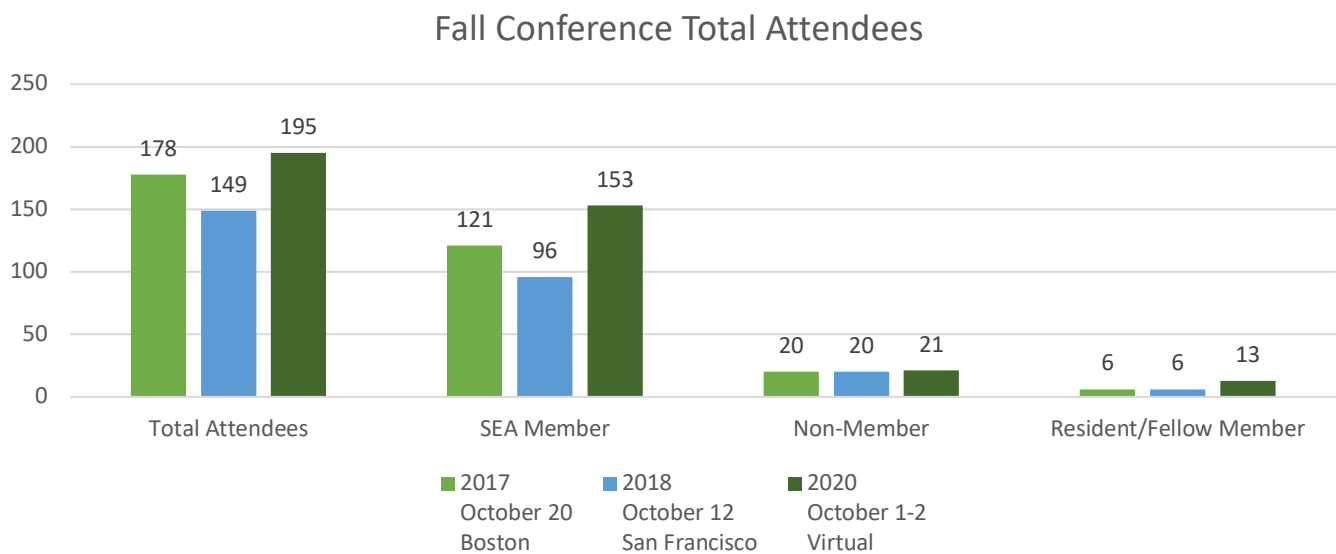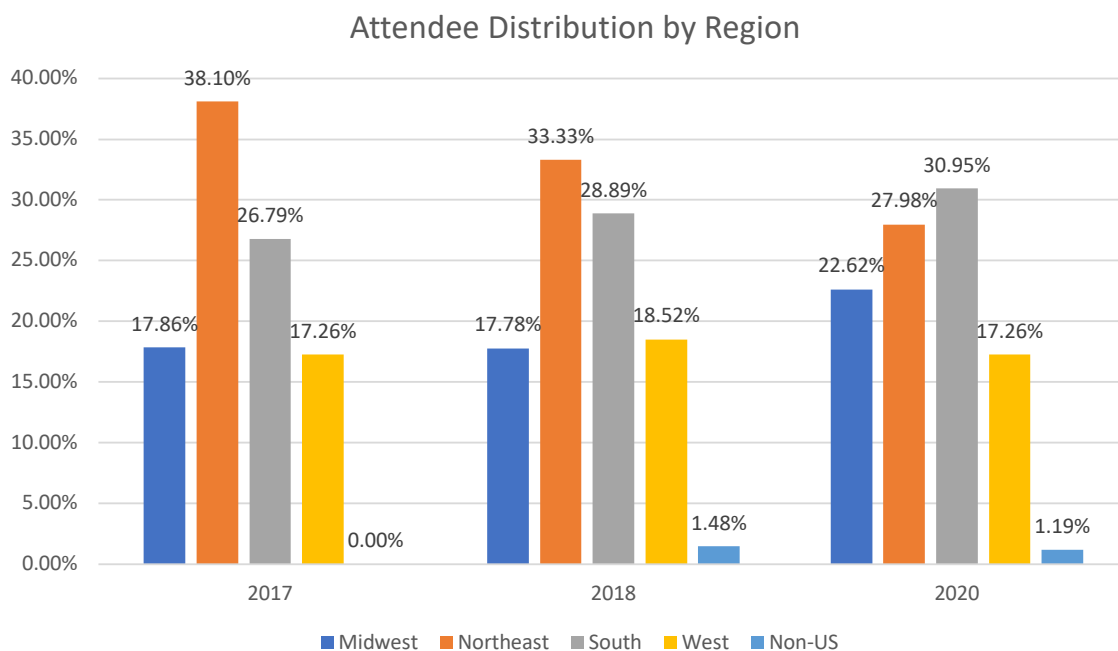

Fall Conference Total Attendees

Legend:
- 2017 October 20 Boston
- 2018 October 12 San Francisco
- 2020 October 1-2 Virtual

Figure 2. *Society for Education in Anesthesia (SEA) fall conference attendee distribution by geographic location. The 2017 meeting was held in Boston (Northeast), the 2018 fall meeting was held in San Francisco (West), and the 2020 fall meeting was virtual.*

Attendee Distribution by Region

Legend: Midwest, Northeast, South, West, Non-US

Tables

Table 1. *Evaluation Themes and Selected Quotes From Conference Attendees on Feedback and Suggestions for Improvement*

Positives	• **Content**
	    o "Condensed topic with high relevance for the audience."
	    o "Outstanding quality of presentations and choice of topics."
	    o "Succinct, informational, practical."
	    o "Very organized."
	• **Speakers**
	    o "All presentations were excellent."
	• **Timing (length, time of day)**
	    o "Pretty good, I like the short session (rather than having a full day in virtual meetings)."
	• **Accessibility to all**
	    o "Virtual format made it accessible to "all" - but didn't stop people from barging in my office all afternoon yesterday!"
	    o "Easy to attend without traveling - truly appreciated this this year."

Challenges	• **Technology glitches**
	    o "Valiant attempt with some good speakers but not the same as live meetings, usual technical glitches."
	    o "Technical issues with connection (audio and video quality)."
	• **Lack of networking/interactivity**
	    o "Only thing I miss is the chance to see/talk to other meeting attendees."
	• **Timing (length, time of day)**
	    o "Zoom fatigue when sessions longer than 2 hours in a row - need to provide a significant break in between - 5 minutes nowhere near long enough."
	    o "It is challenging for me to stay focused during a long webinar."
	    o "Started at an odd time. Hard to get part day off."
	    o "Can be problematic for people whose department policies for granting CME time off requires a minimum hours of CME (the entire SEA conference is only 5.5 hrs, which is not much for a 2-day conference)."

Suggestions	• **Keep the virtual option after COVID**
	    o "I really like the virtual format.... Can we provide a virtual option for all meetings in the future even post-pandemic? It was cheaper and easier to juggle professional and personal responsibilities. Maybe add a fun session that's super interactive and chat-room-y?"
	    o "THANK YOU FOR MAKING THE MEETING VIRTUAL - I HOPE A VIRTUAL OPTION REMAINS AFTER COVID. As a mother of three - leaving town is always a big production and additional expense that it would be wonderful to have the option of avoiding."
	• **Adjust timing (length, time of day)**
	    o "Considering time zones and having longer breaks to account for lunch would have been good."
	    o "Attendance at my institution might increase if the timing gets right, such as evening meetings."
	    o "Really easy to digest the amount presented in this shortened meeting format. I like the idea of having workshops on different days. It is all a little easier on the brain."

Tables *continued*

Table 2. *Virtual Conferencing Services*

	Remo	Hopin	PheedLoop	Zoom Conferencing
Website	www.remo.co	https://hopin.to	https://pheedloop.com/features/virtual-events	zoom.us
Live streaming	Yes	Yes	Yes, recommend integrating with Zoom	Yes
Breakout rooms	Yes, 6 max per table as of June 2020	Yes, video is limited to 10	Yes, video is limited to Zoom license used for integration	Yes
Virtual exhibit hall	No	Yes	Yes	No
Chat/question and answer	Yes, upvoting for question and answer. No polling. All three levels of chat, table, personal, and general.	Yes	Yes	Yes
Poster sessions	No	Yes	Yes	No
"Accidental" networking	Yes	Yes	Yes	No
Dual window, PowerPoint, and video	Yes	Yes	Yes	Yes
On demand content	No	No	Yes	No
Gamification (leaderboards, points, badges, etc)	No	No	Yes, with app add-on	No
Mobile app	No	No	Yes, add-on	Yes
Multispeaker delivery	Yes	Yes	Yes	Yes
Mobile friendly	No	No	No, add on mobile app	Yes
Sponsors	Yes	Yes	Yes	No
Maximum attendees	800 Total per "building" but can go over 800 at additional cost; 6 per table as well as 6 max "on stage"	Depends on plan but can host thousands	No limits, depends on Zoom license for streaming	Depends on license
Cost[a]	US $950/mo for up to 800 attendees; if billed annually, it is $760/mo	Annual license of US $12 000 (to get full package)	US $1000 flat cost per event up to 499 attendees and $7 per attendee; live event support is $450; app is additional fee; would also require Zoom license for each room	500-participant meeting room, US $64.99/mo; 500-participant webinar, $140/mo

[a] Prices may vary. The cost listed is the package that the Society for Education in Anesthesia required for the Fall 2020 meeting as of June 2020.

Tables *continued*

Table 3. Virtual Versus In-person Conferences

	Virtual	**In Person**
Travel	• No need for attendees and speakers to travel • May be able to attract high profile speakers and more attendees	• Some prefer opportunity to see new conference locations/cities • Protected time away from other responsibilities to attend conference
Costs	• Lower for attendees and hosts • Cost of virtual platform and technical support	• Cost of hotel space, food/drink, on-site support
Technical	• Easy to record for on-demand viewing • Sessions can be prerecorded for more predictability • Recording of material allows previously conflicting sessions (posters, abstracts) to be accessed	• Less risk of technical difficulties • More hours of the day can be used due to differences in time zones
Sponsorship	• Sponsors can possibly have more targeted interactions with participants	• Participants are able to try products and equipment out • Sponsors may achieve more traffic past a physical booth
Networking	• May be able to put people together in a breakout room that would not have met in person	• Networking is organic and spontaneous • Ability to interact with presenters

Box 1. Lessons learned from planning a virtual conference

- Allocate time in the conference-planning phase to evaluate and compare various virtual platforms to identify the best fit for your conference.
- Registration costs for a virtual conference may be less than for an in-person conference.
- Attendees want an opportunity to network with their colleagues.
- When determining if and how to use industry sponsorship, ensure that continuing medical education requirements and attendee experience are considered.
- Expect the virtual conference format to be different from the in-person conference.
  - Content should occur mid-day (10:00 AM to 5:00 PM EST).
  - Weekdays may lead to better attendance.
  - Deliver a reduced amount of daily conference content (3 to 4 hours maximum).
- Ensure technical support is available for technical difficulties.