

FEATURE

Digital Enhancements of Scientific Content at Virtual and Hybrid Conferences

Qing Zhou, PhD, ELS / Regeneron Pharmaceuticals Inc, Tarrytown, NY

ABSTRACT

Since the beginning of 2020, scientific conferences around the globe have evolved quickly to adapt to a virtual or hybrid format when in-person meetings were disrupted by the COVID-19 pandemic. With the digital platforms now in place to enable virtual participation, interaction with scientific content in a digital format will likely become a new norm of the scientific conference experience. Digital enhancements of scientific presentations and posters may help bridge the gap of communication in a virtual format and may extend the reach of scientific content. This article provides a brief overview of common types of digital enhancements and summarizes insights from two conference organizers from their conversations at the “InformED” podcast. Researchers, conference organizers, and medical communication and publishing professionals will continue to optimize the digital enhancements and explore innovations to maximize the value of scientific content disseminated at virtual and hybrid scientific conferences.

At traditional in-person scientific conferences, scientific content is typically delivered through oral presentations to a live audience in meeting rooms or through display of posters in large exhibition halls. In the last decade or so, even before the coronavirus disease 2019 (COVID-19) pandemic, a trend toward the use of digital content had already started among many scientific conferences in which e-posters were displayed on large screens instead of on poster boards and recorded oral presentations and e-posters were made available on demand to meeting attendees after the conference.

The arrival of the COVID-19 pandemic in early 2020 put an abrupt stop to in-person meetings and forced all scientific conferences to quickly adapt to either an entirely virtual format in which all participants joined online, or a hybrid format that combined some on-site participation elements with virtual participation of those who were unable to travel on-site due to travel or quarantine restrictions, or who



preferred to attend remotely for other reasons.¹⁻⁷ With the emergence of multiple variants of (SARS-COV-2), much uncertainty remains as to when the world will ever return to a pre-COVID-19 state in which fully in-person conferences will resume. Virtual and hybrid conference formats also opened unprecedented opportunities of wider outreach to members and audiences around the globe. As meeting organizers have already invested in and developed online platforms, these digital infrastructures will likely stay to enable hybrid conferences even after the COVID-19 pandemic is over.⁵⁻⁷ Therefore, interaction with scientific content in a digital format will likely become a new norm of the scientific conference experience.

DIGITAL ENHANCEMENTS OF SCIENTIFIC CONTENT AT VIRTUAL AND HYBRID CONFERENCES

What are the digital enhancements in the era of virtual and hybrid conferences? How do conference attendees interact and consume these digital enhancements? The answers to these questions are slightly different for the 2 main types of conference content, oral presentations and posters.

For oral presentations, a prerecorded video of the oral presentation is usually required ahead of the conference. If a discussant is assigned to moderate a session with several talks, the discussant’s presentation that summarizes different talks may also be prerecorded. In a hybrid meeting,

even when most presentations are delivered live on-site, prerecorded presentations may still be required as backup in case a presenter is unable to travel on-site.

During a virtual or hybrid conference, live broadcasting of oral presentations is either delivered live, prerecorded, or a mix of both is essential to create a “live” experience for meeting attendees to listen and watch these talks for the first time. To add to the live interactions, presenters and moderators typically join live either onstage (for live presentations) or on screen (by applications such as Zoom) for discussions and Q&A. Virtual participants can typically submit text-based questions by a chat function on the meeting platform which are then selected by the moderator for answering and discussion.

For scientific posters, digital enhancements refer to additional materials beside the poster file itself on the virtual meeting platform. In the absence of face-to-face interactions between presenters and poster viewers, these digital enhancements may help bridge the gap of communication. Common digital enhancements include

- QR codes embedded in posters. These QR codes can link to supplementary materials such as methodological details, additional results, and additional resources.
- Poster slides. These slides, usually brief (eg, 5-10 content slides, as specified by the conference), provide a succinct summary of the poster, thus offering a quicker and easier read, especially on smaller screens of hand-held devices.
- Audio or video recording of the poster. In these recordings, the presenter can give an overview of the poster and explain certain key points of the research work. In the absence of face-to-face interactions, these recordings offer a personal touch to the virtual posters.

In addition, for both oral presentations and posters, the conference platform may enable additional enhancements such as auto-generated captions or transcripts accompanying audio and video recordings. The conference platform may also allow a meeting attendee to reach out to a presenter to ask questions, thus providing an opportunity of developing professional connections that may translate into future collaborations.

INSIGHTS FROM MEDICAL SOCIETIES AND CONFERENCE ORGANIZERS

Several episodes on the InformED podcast offered interesting insights on digital enhancements from the perspective of medical societies and conference organizers. InformED

is a podcast series created by the International Society for Medical Publication Professionals (ISMPP), in which the host interviews different guests in episodes to talk about key trends and issues facing medical communication and publication professionals in an ever-evolving field.

In episode 4 of the 2020 season,⁸ the podcast host Rob Matheis, ISMPP President and CEO, interviewed Travis Hicks, the Director of Web Operations at American Society of Clinical Oncology (ASCO). The 2020 ASCO conference took place entirely in a virtual format at the end of May 2020. An important insight by Hicks is that consumption of scientific content becomes the “primary focal point” of the virtual meeting experience.⁸ The amount of content consumed over 3 days of the virtual ASCO conference was impressive: 2.5 million pageviews in 2 days; and at one point 16,000 individuals were watching live, with 30,000 more viewing on-demand content. In the absence of the other social aspects of a traditional conference, attendees naturally focused on content, and many discussed the content online through social media. For digital enhancements, a big difference from previous in-person meetings is the incorporation of the poster video on the platform. It turned out that videos were the most consumed pieces, although other enhancements were also valuable such as slides for download and links to additional resources. ASCO also developed homegrown applications to allow meeting attendees to ask questions to presenters, which helped with building professional rapport and connections.

In 2 more recent episodes in the 2021 season (episodes 3 and 4),^{9,10} Matheis talked to David Barrett, the CEO of the American Society of Gene and Cell Therapy (ASGCT), on navigating the changing medical conferences. In part 1 of the conversation, Barrett reflected on recent experiences from virtual ASGCT meetings and pointed out that the aspect valued the most by attendees was the access to live meeting content (eg, live presentations or prerecorded materials) as they are being presented.⁹ Although some technical difficulties caused temporary interruptions of content broadcasting, the meeting organizers were able to fix the problems and restore content streaming. Another important aspect valued by meeting attendees was engagement with speakers during the live sessions. Attendees could submit questions that were monitored by the session chair and “upvote” certain questions to the front of the line for answering. In addition, Barrett reflected that the virtual format made it possible for attendees to switch from one talk to another quickly among different sessions (or “talk surfing”), which might not have been possible during conventional meetings.

In part 2 of the conversation that focuses on virtual display of scientific posters, Barrett also emphasized the importance of poster slides and prerecorded content that can enhance the reach of virtual posters.¹⁰ The built-in feature for contacting poster authors also allowed for connections between the attendees and the presenters. Initial metrics from the virtual conferences suggested that about 50% of meeting attendees visited the digital poster halls, with varied view counts of individual digital posters (ranging from low dozens to several hundreds of views per poster). Although no comparison can be made due to lack of similar metrics for traditional conferences, these numbers may suggest a more active engagement with poster materials by conference attendees. Looking ahead, Barrett mentioned that the hybrid meeting model would likely stay, as the meeting organizers are trying to “marry” the 2 approaches of live engagement and enduring the sharing of digital contents to maximize the value of scientific conferences.¹⁰

SUMMARY AND OUTLOOK

Scientific conferences around the globe have quickly evolved to embrace virtual and hybrid meetings in the last 2 years. The hybrid meeting approach will likely stay even after the COVID pandemic and become a new norm for scientific conferences. Digital enhancements of scientific presentations and posters are therefore important to bridge the gap of communication in a virtual format and may extend the reach of scientific content. Still, virtual interactions may not fully achieve the effect of in-person interactions, and there are still drawbacks of digital content such as technical difficulties affecting live streaming and the need for additional resources and IT capabilities to effectively manage and maintain all digital content by the meeting organizer. Researchers, conference organizers, medical communicators and publishing professionals will continue to optimize the digital enhancements and explore innovations to maximize the value of scientific content disseminated at virtual or hybrid scientific conferences.

Author declaration and disclosures: *The author notes no commercial association that may pose a conflict of interest in relation to this article. The views and opinions expressed in this article are those of the author and do not necessarily reflect the views of Regeneron or its employees.*

Author contact: *qzhou.writer@gmail.com*

References

1. Speirs V. Reflections on the upsurge of virtual cancer conferences during the COVID-19 pandemic. *Br J Cancer*. 2020;123(5):698-699.
2. Gupta MP, Sridhar J, Wykoff CC, Yonekawa Y. Ophthalmology conferences in the coronavirus disease 2019 era. *Curr Opin Ophthalmol*. 2020;31(5):396-402.
3. Rundle CW, Husayn SS, Dellavalle RP. Orchestrating a virtual conference amidst the COVID-19 pandemic. *Dermatol Online J*. 2020;26(7):13030/qt5h19t1jx.
4. Weiniger CE, Matot I. Craving togetherness: planning and replanning a national society hybrid conference during the COVID-19 pandemic. *Br J Anaesth*. 2021;126(3):e116-e118.
5. Hameed BZ, Tanidir Y, Naik N, et al. Will “hybrid” meetings replace face-to-face meetings post COVID-19 era? Perceptions and views from the urological community. *Urology*. 2021;156:52-57.
6. Porpiglia F, Checcucci E, Autorino R, et al. Traditional and virtual congress meetings during the COVID-19 pandemic and the post-COVID-19 era: is it time to change the paradigm? *Eur Urol*. 2020;78(3):301-303.
7. Hanaei S, Takian A, Majdzadeh R, et al. Emerging standards and the hybrid model for organizing scientific events during and after the COVID-19 pandemic. *Disaster Med Public Health Prep*. 2020:1-6. <https://doi.org/10.1017/dmp.2020.406>
8. InformED. Episode 4: digital enhancements: which are worth the investment? *ISMPP*. Published August 11, 2020. Accessed January 2, 2022. <https://ismpp.memberclicks.net/ismpp-podcasts-2020>
9. InformED. Episode 3: Successfully navigating the changing medical conference landscape: pt. 1. *ISMPP*. Published August 10, 2021. Accessed January 2, 2022. <https://ismpp.memberclicks.net/ismpp-podcasts>
10. InformED. Episode 4: Successfully navigating the changing medical conference landscape: pt. 2. *ISMPP*. Published August 31, 2021. Accessed January 2, 2022. <https://ismpp.memberclicks.net/ismpp-podcasts>