The Extended Congress: Reimagining scientific meetings after the COVID-19 pandemic [version 1]

Alvaro Margolis¹, Jann Torrance Balmer², Andrea Zimmerman², Antonio López-Arredondo³

¹EviMed
²University of Virginia
³EviMed; School of Engineering

Abstract
This article was migrated. The article was marked as recommended.

The COVID-19 pandemic has profoundly impacted the medical meetings planned for 2020. This health crisis has caused the cancellation, postponement or a pivot in educational design to virtual formats. In the latter case, the format for virtual meetings has remained very similar to the cancelled face-to-face meeting, by using primarily web conferencing systems.

This article intends to start a dialogue with the medical education and events community about possible delivery formats. Among them, the concept of an "Extended Congress" is introduced.

The extended congress uses the extension of time, space and languages to a scientific meeting. It aims to: 1) unleash the reach of traditional meetings through the use of technology to access larger audiences in different languages, across a country and internationally, with local leaders to help interpret the knowledge and localize it, and 2) to improve knowledge translation into practice through a sequential and active learning process.

An ongoing example is described as a proof of concept: the Latin American Peritoneal Dialysis Extended Congress attracted 774 remote participants from over 20 countries, 93% of whom were paid registrants. Initially designed as a hybrid (live plus remote) event scheduled for March 2020, it had to be reframed as a remote only meeting due to the COVID-19 pandemic, thus protecting the health of members while providing continued value to the organization and attendees of the event.
With this experience in mind, the authors are currently designing programs in the United States, through collaboration with the University of Virginia Office of Continuing Medical Education.

In summary, the design of meetings can better utilize and integrate technology and reach larger audiences with a blend of formats. Those organizations that adapt more quickly to offer these events will concentrate more of the share, as seen with the adoption of technology by other industries.

**Keywords**
Internet, Learning Analytics, Continuing Medical Education, elearning, learning technologies, medical conferences, scientific meetings, change, COVID-19, crisis management
**Introduction**

The COVID-19 pandemic, among its many effects in almost every facet of our lives, has profoundly impacted the medical meetings planned for 2020. For the meetings and conferences scheduled in the first half of the year, organizations were faced with decisions such as cancellation, postponement or a pivot to virtual formats (McKimm et al., 2020; McGowan, 2020; Gravitz and Frellick, 2020), with little time for planning. In the latter case, the virtual formats selected, due to the speedy implementation, have remained similar to the structure of the cancelled face-to-face meetings, using primarily web conferencing systems such as Zoom, or sometimes recorded lectures, with little interaction among participants, mostly through open social networking applications such as Twitter, LinkedIn and Facebook.

In many occasions, these scientific meetings that were modified to virtual formats were provided at no cost, as shown in this example (ACC, 2020), which added to the negative financial impact of the organizations involved, already strained because of the cancellation of the live event, with new obligations and less income.

Furthermore, this traditional format - with live activities via web conference - is not well suited for the remote participant, because it is not feasible to keep the participants’ undivided attention through internet-based activities over many hours and days, and often in different time zones. In a live meeting, almost all of the participants’ time is devoted to the meeting, but in a virtual event their dedication is highly impacted by their daily work obligations and family life, therefore requiring a more realistic and staged approach that allows for flexibility in participation.

For the meetings scheduled for the second half of 2020, a decision to convert to a virtual format allows more time for planning and implementation to provide a better educational and networking design (AMEE, 2020). As organizations plan to review their schedule for live meetings and conferences with a traditional format, there are still options to incorporate technology and extended participant engagement. Regardless of the familiarity and value proposition of a live face to face meeting, planners need to actively explore contingency plans for the increased use of technologies to augment or replace the essential content being delivered to participants as well as social interaction among attendees. As we plan for 2021 and beyond, the changes in medical meetings and live activities need to consider multiple approaches that include technology.

Please note that the term “medical meetings” is used in this article to refer to scientific conferences for healthcare practitioners and those in related fields. Moreover, many of these concepts could be applied to other industries where scientific meetings take place.

This article intends to start a dialogue with the medical education and events community about possible delivery formats, that may be helpful to the medical organizations and meeting organizers in charge of coming events, along with other colleagues who are reflecting on these topics and having an open dialogue with the medical education community through this Journal (Sandars et al., 2020; Fawns, Jones and Aitken, 2020). Among possible delivery formats supported by information and communication technologies, the concept of an “Extended Congress” is introduced as an alternative.

**The Extended Congress**

**Definition**

The concept of “Extended Congress” (Margolis, 2020) leverages the extension of time, space and languages of a scientific meeting into a framework where learning can be integrated with the demands of work/life. For example, a large conference in Infectious diseases or in Cardiology in the US or Europe, or a smaller medical meeting as well, could be extended in space (to reach a larger audience who would not normally participate in that conference). This increased accessibility could include domestic and foreign live and remote participants from different states, countries or continents, allowing participants to be able to both attend and present their research live or remotely. Expand time by extending the activity over 4 to 8 weeks, to allow those live attendees and those who attend remotely, to network with each other and to acquire the valuable new knowledge and validate it with colleagues through an engaging conversation (Margolis et al., 2019). Importantly, this Extended Congress model also fosters delivery in languages (allowing to those who do not master English - or another language that is the official language of the event - to participate, with subtitled lectures and discussion forums in their own languages).

Furthermore, distributed live activities in English and/or local languages during the congress could coexist, at different locations of the countries or the world, either face-to-face or remotely through the Internet, led by local congress ambassadors, taking into account the possible decreased international mobility of participants after the pandemic, and willingness or not of participants and speakers to attend crowded spaces. Finally, a possible spin-off of the live meeting could be the Conference highlights, delivered later in time, summarizing and discussing in English and/or local languages the key results of the meeting over a period of 6-8 weeks, similar to a massive open online course (MOOC), thus evolving from its traditional format (ASN, 2019).
Although this concept was originally designed to be incorporated into hybrid events with a central live meeting as an integral part of the educational plan, the conversion to a fully virtual Extended Congress approach could serve as a substitute for the live or hybrid event, because of the travel and gathering restrictions that are currently in place for this year. In any case, the virtual extended meetings could become a new type of event with its own merits for these organizations, together with the hybrid and traditional live meetings.

Rationale
Professional communities of specialists benefit from meetings as a dedicated space for sharing the latest research, and interacting with peers and experts. Many reputed conferences already host a large international audience, and the associations that organize them have year-long relationships with national and regional societies of the same specialty (ESC, 2020; ACC, 2020). However, unleashing the reach of these events through the use of technology could eventually help access even larger audiences, across a country and internationally. If language barriers are minimized, the impact of the education and research can be expanded. Finally, a better educational design, with group discussions leading to collective reflection, and sequential activities over time, could help knowledge translation into practice, a feature that traditional congresses frequently lack (Davis et al., 1999; Mansouri and Lockyer, 2007).

Prior experiences
The concept of “virtual congress” is not new. In fact virtual congress approaches have been around for over two decades (Lecueder and Manyari, 2000). A number of scientific societies have introduced technology into their meetings in various ways, such as the use of smartphone Apps and social networking applications (e.g. Twitter) during the conference, conference summaries through Webinars or recorded videos, or availability of congress sessions as enduring materials. While these approaches improve and enhance the learning, they are not intended as a comprehensive solution for those who cannot attend onsite or designed to create an engaging learning experience over time for those who did attend.

Moreover, the concept of congress highlights available months after a conference are a well-recognized feature of some major international conferences, such as the ASN highlights (ASN, 2020). This distribution approach helps to provide information but these events are often delivered onsite at different locations over one day, often in English. In considering technologic enhancements, the delivery of primarily didactic content can be re-envisioned to foster greater engagement and application of new knowledge. Also, two of the authors’ team (AM/AL) have experience in creating and delivering geographically distributed live face-to-face or remote activities as launching events of international online courses (Cohen et al., 2014). The conceptualization of a multi-modal educational design can foster the integration of remote presentations of research and exchange during the live meeting, as in the original design of the AMEE 2020 live conference and also in its current virtual format.

However, none of these examples mentioned above comprehensively address the needs of the different stakeholders involved in a medical meeting, particularly the potential participants in the healthcare community (attendees and potential attendees, researchers, speakers) and the institution organizing the meeting, as well as the commercial supporters, the professional conference organizers, and other vendors and contractors involved in the conference services industry.

Meetings serve as a primary source of value, revenue and networking for its members and attendees. The customs and patterns of engagement associated with traditional live meetings help organizations to share their organizational identity and have been a consistent source of revenue. Major changes that impact the organization’s value proposition can be viewed with suspicion and anxiety. The consideration of a new approach is now a reality due to the pandemic and requires a re-assessment of existing practices as these decisions may ultimately affect overall sustainability for the organization, and learning experiences, after the assessment of ongoing implementations, will be available.

A proof of concept: the Latin American Peritoneal Dialysis Extended Congress
Two of the authors’ team (AM/AL) envisioned the concept of technology-based education through Extended Congresses for years, but the risk benefit equation was not reasonable for many associations and organizations. However, in October 2019, the Colombian Association of Nephrology, organizers of the 7th Latin American conference of Peritoneal Dialysis, accepted the challenge and the project was launched (Extended Congress, 2020).

The design of the Peritoneal Dialysis Extended Congress is shown in Figure 1. As it can be seen, it is built on the foundation of a live two-day conference, which also included as parallel sessions other topics besides peritoneal dialysis, in partnership with Mayo Clinic. The live conference was scheduled for March 27-28, 2020 and was focused on Colombian healthcare professionals and those from neighboring countries (around 300 to 400 attendees). The addition of the extended congress created an opportunity to enhance wider reach. This activity utilized a platform familiar to a
number of physicians and healthcare professionals who usually take online courses in nephrology in the region and was endorsed by the Latin American Society of Nephrology (SLANH), a trusted partner for the attendees, as well as the International Society of Peritoneal Dialysis (ISPD).

The design of the extended congress included:

- The first week, when the live conference takes place ("pre-congress" and "congress", March 23-28, in Figure 1), provided both onsite and remote participants with full access to the virtual component of the congress, and those remote participants who started the registration process but did not finish it had free access to this week as well. This week included a space for participating in online networking, recorded mini-lectures, and a review of papers and posters accepted to the conference, where participants could vote and interact with researchers (see Figure 2). Also, congress news were planned to be written by local correspondents at the conference. A launching Webinar of the Extended Congress, summarizing the main outcomes of the event, was planned.

- The following five weeks after the initial conference session (weeks of March 30 to May 3), were focused on the main topics of the conference, addressed with short lectures, reading materials, clinical simulations and case discussions in clinical forums. Collective reflection with peers and experts is maximized by interaction and participation with experts and tutors and the use of social networking tools in the platform (Margolis et al., 2019). This part of the extended congress required a registration fee.

- A final week (May 4-10), included closing discussions and a farewell forum.

In addition, a nursing track was specifically designed for the extended congress, thus allowing an important segment of the target audience related to peritoneal dialysis to have a unique set of content and activities, tutored by nephrology nurses.

**Pivoting to virtual**

By March 11, 2020, less than three weeks before the scheduled date for the live congress, the face-to-face event was cancelled because of the COVID-19 pandemic. In light of this change, all participants were encouraged to participate in the virtual component of the congress where most of the characteristics of the live event were included, particularly the presentations of research already accepted and coverage of the main topics of the congress. Naturally, the conversations and discussions include the use of peritoneal dialysis and COVID-19. The extended congress is now progressing, including discussions about the higher value of peritoneal dialysis in an era of confinement, or the use of peritoneal dialysis in COVID-19 related acute kidney injury.
As of April 10, the distribution of participants to the extended congress is similar to anticipated expectations. The extended congress has a wide attendance from over 20 Spanish-speaking countries of the region and Brazil, Spain, USA and Portugal (Table 1).

Seven hundred and twenty (93%) of the attendees are paid participants; the other 54 (7%) are full scholarship participants from Venezuela and others who requested them. Additionally, another 1986 professionals were granted free access to the initial week, as pre registrants to the activity, which is done automatically with all the educational activities: 393 (20%) of them accessed the platform. A full report of the congress statistics will be available following the conclusion of the congress.

When this activity was implemented as a proof of concept, we decided to run it with a minimum viable set of functionalities (just “plain vanilla”, with nothing else added), taken from the online courses that we already were implementing (Margolis and López-Arredondo, 2019). Therefore, the educational format of each of the weeks, the starting week, the free initial period to all participants (including pre registrants who did not pay), the social engagement strategy (Margolis et al., 2019) and the launching live event were taken from the online courses and repurposed in meaning for this activity. Still, some new functionalities were added, particularly a feature that allowed the possibility of discussing papers and posters accepted to the congress on the platform, which has been found to be quite engaging (Figure 2).

The decision of focusing on Spanish-speaking participants mostly (and not Portuguese-speaking ones) was selected, to minimize risk. However, faculty presenters were diverse, speaking English, Portuguese and Spanish, with lectures being subtitled and slides translated into Spanish when necessary. More functionalities and a more comprehensive model could be implemented in following programs, after a formal assessment of this pilot project (Figure 3).
Table 1. Distribution of participants by country

| Country      | Participants | Percentage |
|--------------|--------------|------------|
| Mexico       | 160          | 20.7%      |
| Argentina    | 131          | 16.9%      |
| Costa Rica   | 94           | 12.1%      |
| Peru         | 85           | 11.0%      |
| Chile        | 57           | 7.4%       |
| Colombia     | 48           | 6.2%       |
| Ecuador      | 41           | 5.3%       |
| Uruguay      | 35           | 4.5%       |
| Venezuela    | 21           | 2.7%       |
| Brazil       | 20           | 2.6%       |
| El Salvador  | 18           | 2.3%       |
| Guatemala    | 16           | 2.1%       |
| Bolivia      | 14           | 1.8%       |
| Portugal     | 5            | 0.6%       |
| Honduras     | 5            | 0.6%       |
| Paraguay     | 5            | 0.6%       |
| United States| 4            | 0.5%       |
| Panama       | 3            | 0.4%       |
| Spain        | 3            | 0.4%       |
| Dominican Republic | 3 | 0.4% |
| Other        | 6            | 0.8%       |
| **TOTAL**    | **774**      | **100.0%** |

Figure 3. A more developed model of the extended congress
A second challenge, particularly when the event is fully virtual, is to implement a reasonable alternative for the live exhibit hall, because the budget for traditional events usually is substantially supported by exhibitors. In our example, there was no commercial funding for the virtual component (income was based on registration fees), but this is not generally the case.

A third potential challenge is to enroll remote participants in these activities: in this example there was a good reach, but it is something to consider.

Finally, ensuring online networking is paramount, as in any congress.

Programs being implemented by the University of Virginia School of Medicine and Nursing
The University of Virginia (UVA) Office of Continuing Medical Education - CME - (UVA, 2020) has been involved in web-based and innovative continuing education for physicians, nurses and healthcare professionals for over twenty years. The expansion of hybrid continuing professional activities to integrate live and pre-produced content (lectures, posters, case presentations) creates new opportunities for incremental learning and professional development. Educational programming, through the extended congress or other innovative designs, can create a nimble and responsive environment that is accessible to healthcare professionals and teams as needed. The University of Virginia is actively working to utilize platforms such as the extended congress approach, to enhance networking, active learning that is relevant, timely and evidence-based. The COVID crisis has significantly changed the accessibility of continuing professional development and creates an urgent need for asynchronous learning opportunities that can be utilized without leaving the work environment. We are designing courses and activities that can benefit multiple target audiences, consistent with the changing care environments, team member roles and responsibilities and need for comprehensive quality care. The extended congress is particularly helpful as we can modify the balance of live and hybrid content as needed to meet the needs of our target audiences and stakeholders.

The University of Virginia Office of CME and SONCE (School of Nursing continuing education) are working collaboratively to create programming that leverages the expertise of our faculty, our professional joint providership relationships and to drive substantive discussions based on current research and clinical evidence. The University of Virginia collaborated with EviMed, Hospital Italiano de Buenos Aires (a main academic center in Argentina) and the Global Alliance for Medical Education - GAME- on a regional meeting in Latin America focused on advances in continuing medical education in 2015. This initial collaboration fostered new ideas and approaches that are now being integrated into much of UVA’s continuing education (CE) and Performance Improvement opportunities.

UVA is now exploring how to pivot much of the programming into hybrid formats. The need for virtual learning is now a critical component in quality CE as we are aware that healthcare institutional resources are going to be limited. In spite of these financial challenges, there has never been a greater need for highly relevant and timely CE programming. Everyone in the healthcare team can benefit from quality CE that is workplace based and relevant to the provision of quality patient care. The changes in the delivery of healthcare that utilizes telehealth technologies also increases the familiarity and ease of technology-based solutions. UVA, like many academic institutions, includes regularly scheduled series (RSS), departmental conferences as well as asynchronous web-based continuing education. Our joint provider organizations need our guidance and leadership to create ongoing CE opportunities for their constituent audiences.

The transition of our CE programming, particularly in light of the changing healthcare environment, is moving at a rapid pace. We are actively creating alternative approaches for our course directors and planning committees that reflect this new reality. We plan to leverage our long-standing experience in web-based education into a broad-based armamentarium of educational design options that can be tailored to the needs of our learners. The process we use is shown in “Supplementary File 1”.

Other models: Is virtual reality the solution?
When going virtual, an appealing solution could be to use Virtual Reality (VR), as several organizations have (Fink, 2020; Begg, 2020). According to the Oxford Dictionary, Virtual Reality is “the computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.” There is extensive and successful experience in the use of virtual reality in medical education (Walsh et al., 2020; Heather, Chinnah and Devara, 2019).

In practice, two ways for the use of VR in medical meetings can be envisioned:
Without special VR lens: VR is an added presentation layer, similar to the way Street View is an added layer to Google Maps. It looks like a computer game. The question is how much this additional layer adds to the main layer (i.e., lectures, panels, masterclass sessions, research paper and poster presentations, polls, chats and other types of interactions), where the main value to the participants lies. Additionally, how much of a barrier will it become, in terms of complexity and development cost, hardware and bandwidth, participant’s technological ability, among other concerns. There might be niche uses in specific parts of the virtual meetings, for example by integrating into gamification.

With special VR lens: It is a very immersive experience, like a live conference. The problem is that with current technology VR with lens is not tolerable for long periods of time, in contrast to a live conference where participants often spend all day over several days engaged. Additionally, its use adds hardware requirements (the VR lens) that are not yet of general usage. There might be niche uses in specific parts of the virtual meetings, for example in skills-based simulation workshops.

In both cases, the effort to develop these solutions is significant. There certainly will be early adopters of it (Sahin, 2006), but the authors have doubts about the actual acceptance of this technology as the comprehensive solution for a virtual meeting, due to the low added value, therefore with a low return of investment, and the technical complexity of implementing it. As mentioned above, there might be specific sessions of the meetings that could benefit from using VR.

Technology evolves over time, and features may change in a way that will make it easier to adopt in the future. Right now, the added value of Street View to Google Maps is an analogy to keep in mind.

Discussion
The impact of the COVID-19 pandemic on scientific meetings has been daunting. It is summarized in (PCMA, 2020): “What has been your biggest challenge professionally and at your organization during the pandemic? The responses fell into these main buckets: dealing with the loss of income or revenue; uncertainty preventing their ability to plan “intelligently”; communication issues; difficulty convincing leadership of the need to pivot to digital; canceling events and managing contracts, damages, and payments; getting a handle on producing a virtual event; managing their teams, particularly during this time of stress and uncertainty; and navigating the possibility of having to change their own roles in the wake of event cancellations.”

This pandemic precipitated the need to integrate technology. The Extended Congress and other virtual conferences have demonstrated in practice that a significant proportion of the human learning and interaction can be implemented online with reasonable results, thus speeding the adoption of digital technologies in various aspects of our lives. Scientific meetings are not the exception, and they could meet their key objectives (knowledge transfer and networking) by introducing new approaches to educational delivery that could increase their reach, knowledge translation into practice, and encourage global discussions and intercommunication between peers and course faculty.

This paper addresses how technology can help address the impact of the pandemic on 2020 medical meetings. In turn, these ongoing experiences will provide evidence to decision-makers that can influence the long-term impact of the introduction of technology to all stakeholders involved. For example, while conference organizers worry that remote activities risk onsite attendance, in our experience this consequence does not happen (Lombardi et al., 2018; Margolis et al., 2015). On the contrary, in this example the international profile of the regional association is now much higher than a few years ago: therefore their traditional live conferences have a large onsite participation.

Furthermore, as mentioned before, commercial exhibitors are an important component of the budget related to medical meetings. The revenue generated by exhibitors and vendors creates a significant reason to consider creative options when pivoting to virtual (PCMA, 2020; SACME, 2020). Accreditation standards require that planners should ensure that “commercial support should follow principles of fairness, transparency, and separation of promotion from education” (International Academy for CPD Accreditation, 2018). The search for creative ways to address their presence under these rules, providing similar value to exhibitors and participants, needs to be tested. As expressed by a participant in (SACME, 2020), the challenge is “how to recreate the exhibit experience”, connecting with a remote audience (which in turn could be even larger than the onsite face-to-face registrants).

In the coming years, we will see a mix of hybrid events (where the live component may have a large central location and satellite ones) and virtual only events, based on the explosion of experiences during this year, where organizations take more risks than usual (because the usual status quo is not possible or even reasonable). As stated by a participant in
“... it forced my whole organization to rethink our event design. I didn’t have to sell anyone on a new tool, because everyone is open to tech now.”

The positive elements of this new model are extending the reach of the main events, including different regions of the world and different languages, acting as an insurance policy (both for speakers’ availability and primarily for the event itself), and improving the educational impact on practice. Regarding the insurance aspect of designing a virtual component, it is expressed by a participant in the PCMA survey (PCMA, 2020), “I’d incorporate a virtual component from the beginning. Don’t play catch up - refocus energy to something you’ve already built rather than scramble to reinvent the wheel.”

Finally, a concentration effect with the introduction of digital technologies can be expected for the major conferences of each specialty, as shown with the entertainment and news industries (Elberse, 2013; Lee and Molla, 2018). Quoting the conclusions reached by Harvard researcher Anita Elberse, who studies the entertainment industry (Elberse, 2013): “... advances in digital technologies foster concentration and a winner-take-all dynamic (...). New technologies increasingly give people around the world access to the most sought-after television programs, movies, books, and opera performances.”

Conclusions

Congress will probably continue to be mostly onsite, with a more intensive integration of technology to reach members of the professional community who cannot attend the live events. As stated by a participant in a survey (PCMA, 2020), “face-to-face will return, but with a need to better incorporate digital in what were previously face-to-face only events.”

The main stakeholders will continue to have an important role in the new state of affairs. However, those organizations that adapt more quickly will concentrate more of the share, as seen with the entertainment and the news industries (Elberse, 2013; Lee and Molla, 2018). Many of them are already acting internationally. These actions can be propelled by the use of technology.

Take Home Messages

- Meetings of the future will probably utilize technology more extensively to reach members of the professional community who cannot attend the live events.
- The Extended Congress concept is one of the possible formats to be used, extending a traditional meeting in the dimensions of time, space and languages.
- The current stakeholders will continue to have an important role in the new state of affairs.
- Those organizations which adapt more quickly to implement these new models will concentrate more of the share, as seen with the adoption of technology by the entertainment and news industries.

Notes On Contributors

Alvaro Margolis is an internist with a Master’s degree in Medical Informatics from the University of Utah (USA). He has held academic positions at the Schools of Medicine and Engineering, Universidad de la República, Uruguay, is Founding Member of the International Academy of Health Sciences Informatics, and Associate Editor of Applied Clinical Informatics. He is the President of the Global Alliance for Medical Education (GAME), and Director of EviMed, a CME company working across the Americas. ORCID: https://orcid.org/0000-0002-2631-2323

Jann Torrance Balmer PhD RN serves as the Director for Continuing Medical Education (CME) of the University of Virginia School of Medicine and as the Co-Lead Nurse Planner for the School of Nursing. Dr. Balmer serves on the NPD Commission on Accreditation for the American Nurses Credentialing Center. She served on the American Board of Medical Specialties Vision Commission, and as the President, Past President and Board Member of the Alliance for Continuing Education in the Health Professions (formerly Alliance for CME) from 2005 - 2012.

Andrea Zimmerman, EdD is learning engineer at the Office of CME of the University of Virginia, and has worked in higher and continuing education since 2007 to provide innovative and engaging learning opportunities to clinicians and biomedical scientists, bridging the gap between bench and bedside. Dr. Zimmerman serves on the Excellence in Educational Design Award Committee for the Alliance for Continuing Education in the Health Professions. ORCID: https://orcid.org/0000-0002-3688-0842
Antonio López-Arredondo is a computer engineer, Adjunct Professor at the Health Informatics Laboratory, Universidad de la República, Uruguay. He is also Chief Technology Officer at EviMed.

Appendices
Access to the pilot extended congress (in Spanish)
https://redemc.net/congresoextendido
User: MedEdPublish
Password: February2019

Declarations
The author has declared the conflicts of interest below.
Alvaro Margolis and Antonio López-Arredondo are directors at EviMed, responsible for the pilot program described in the article. Jann Balmer and Andrea Zimmerman have nothing to disclose.

Ethics Statement
This is an opinion article that uses previously published data and data coming from routine program evaluation, not requiring ethics approval.

External Funding
This article has not had any External Funding

Acknowledgments
The authors thank the Colombian Association of Nephrology (ASOCOLNEF) and the extended congress coordinators Gustavo Aroca, Thyago Moraes and Susana Marcos for their willingness to implement this activity. They also wish to thank Lea Aneiro and Sharon Wolman for the creativity in its implementation.

Figure 1–3. Source: the authors.

Bibliography/References
AMEE. (2020) AMEE 2020: The Virtual Conference. Available at: Reference Source (Accessed: 12 May 2020).
ACC. (2020) Global Hub. Available at: Reference Source (Accessed: 12 May 2020).
American College of Cardiology and World Congress of Cardiology. (2020) Virtual meeting. Available at: Reference Source (Accessed: 12 May 2020).
ASN. (2020) ASN Highlights: Translating Kidney Week Into Clinical Practice. Available at: Reference Source (Accessed: 12 May 2020).
Begg, R. (2020) Virtual Reality Check: Replacing Industry Conferences with VR. Machine Design. Available at: Reference Source (Accessed: 12 May 2020).
Cohen, H., Margolis, A., González, N., Martínez, E., et al. (2014) Implementation and evaluation of a blended learning course on gastroesophageal reflux disease for physicians in Latin America. Gastroenterol Hepatol. Aug-Sep; 37(7): 402-407. Reference Source
Davis, D., Obrien, M. A. T., Freemantle, N., Wolf, F. M., et al. (1999) Impact of Formal Continuing Medical Education. JAMA. 282(9), p. 867. Reference Source
Elberse, A. (2013) Will digital technologies end the dominance of blockbusters? In Elberse, A. Blockbusters: Why Big Hits - and Big Risks - are the Future of the Entertainment Business. New York, Faber and Faber. Available at: Reference Source (Accessed: 14-May-2020).
Extended Congress. (2020) Latin American Virtual Congress on Peritoneal Dialysis. Available at: Reference Source (Accessed: 14-May-2020).
Fawans, T., Jones, D., Atikken, G. (2020) Challenging assumptions about “moving online” in response to COVID-19, and some practical advice. MedEdPublish. 9, (1). 83. Reference Source
Gravitz, L. and Frellick, M. (2020) More Medical Conferences Fall to Coronavirus. (Accessed 14-May-2020). Available at: Reference Source (Accessed: 14-May-2020).
Heather, A., Chinnah, T., Devaraj, V. (2019) The Use of Virtual and Augmented Reality in Anatomy Teaching. MedEdPublish. 8, [2], 7. Reference Source
International Academy for CPD Accreditation. (2018) Consensus Statement for Independence and Funding of Continuing Medical Education (CME)/Continuing Professional Development (CPD). Available at: Reference Source (Accessed: 14-May-2020).
Lecueder, S. and Manyari, D. E. (2000) Virtual Congresses. Journal of the American Medical Informatics Association. 7(1), pp. 21–27. Reference Source
Lee, E. and Molla, R. (2018) The New York Times digital paywall business is growing as fast as Facebook and faster than Google. Times’ online subscription sales jumped 46 percent in 2017 to $340 million. Digital ad sales rose 14 percent to $238 million.) Vox. Available at: Reference Source (Accessed: 14-May-2020).
Lombardi, R., Ferreiro, A., Rosa-Diez, G., Margolis, A., et al. (2018) Raising Awareness of Acute Kidney Injury: A Latin American Experience. Kidney International Reports. 3(6), pp. 1416-1423. Reference Source
Mansouri, M. and Lockyer, J. (2007) A meta-analysis of continuing medical education effectiveness. Journal of Continuing Education in the Health Professions. 27(1), pp. 6–15. Reference Source
Margolis, A. (2020) How to Migrate From a Traditional Live Congress to a Hybrid or Totally Virtual Congress? A Case Study. Alliance Almanac. Available at: Reference Source (Accessed: 14-May-2020).
Margolis, A., Gonzalez-Martinez, F., Niboa, O., Abbud-Filho, M., et al. (2015) Online Continuing Medical Education for the Latin American Nephrology Community. Stud Health Technol Inform; 216: 372–375. PubMed PMID: PubMed Abstract.

Margolis, A., Lopez-Arredondo, A., Garcia, S., Rubido, N., et al. (2019) Social learning in large online audiences of health professionals: Improving dialogue with automated tools. MedEdPublish. 8, [1], 55. Reference Source

Margolis, A. and Lopez-Arredondo, A. (2019) Eight years of MOOCs for physicians across Latin America. 2019 IEEE Learning With MOOCS (LWMOOCS). Reference Source

McGowan, B. S. (2020) Continuing Medical Education in a Time of Social Distancing. Alliance Almanac. Available at: Reference Source (Accessed: 14-May-2020).

McKimm, J., Gibbs, T., Bishop, J., Jones, P. (2020) Health Professions’ Educators’ Adaptation to Rapidly Changing Circumstances: The Ottawa 2020 Conference Experience. MedEdPublish. 9, [1], 47. Reference Source

PCMA. (2020) Survey results: How Is COVID-19 Changing the Business Events Industry? Available at: Reference Source (Accessed: 14-May-2020).

SACME Virtual Journal Club. (2020) Available at: Reference Source (Accessed: 14-May-2020).

Sahin, I. (2006) Detailed review of Rogers’ diffusion of innovations theory and educational technology-related studies based on Rogers’ theory. The Turkish Online Journal of Educational Technology. 5. 14–23.

Sandars, J., Correia, R., Dankbaar, M., de Jong, P., et al. (2020) Twelve tips for rapidly migrating to online learning during the COVID-19 pandemic. MedEdPublish. 9, [1], 82. Reference Source

University of Virginia Office of Continuing Medical Education. (2020) Available at: Reference Source (Accessed: 14-May-2020).

Walsh, K., Elhassa-Abdalla, M., Berlingieri, P., Foo, J., et al. (2020) High value and low-cost virtual reality healthcare professional education: proceedings of a roundtable workshop. MedEdPublish. 9, [1], 57. Reference Source
Open Peer Review

Migrated Content

Version 1

Reviewer Report 20 July 2020

https://doi.org/10.21956/mep.20090.r30939

© 2020 Lockyer J. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Jocelyn Lockyer
University of Calgary

This review has been migrated. The reviewer awarded 5 stars out of 5

The Margolis et al. (2020)1 publication should provide encouragement to organizations developing and implementing plans to continue their CPD work during and after this pandemic. There is no doubt that the CPD organizational survivors will be those who have determined ways to move into virtual and/or hybrid formats. The authors provide excellent and timely examples from their own work—the Latin American Peritoneal Dialysis Extended Congress and from the University of Virginia School of Medicine and Nursing. They offer practical advice on transitioning but also practical tips on how to make it happen and make it effective. They recognize the challenges of ensuring technological support, sufficient funding, marketing and online networking so that participants can engage with others as they would do at a face/face event. Hand-in-hand with the virtual conference is the need to support conference attendees to ensure they maximize their learning. A recent article by Tobin (2020)2 provides some guidance for learners. He presents several key strategies—going to a smaller program the first time, getting ready by blocking off the calendar so that the day is focused on learning, getting familiar with the software tools that will be available, taking notes and chatting with others during and after the session to consolidate ideas, be in the moment and realize you are unlikely to view on-line presentations later. For both the CPD organization and the learner, planning ahead and anticipating how to maximize the experience is key. It is a learning journey for everyone but worth the plunge. There is no doubt that learner expectations for safe high quality programming will be different post-COVID. 1. Margolis A, Balmer J, Zimmerman A, López-Arredondo A, 2020, 'The Extended Congress: Reimagining scientific meetings after the COVID-19 pandemic', MedEdPublish, 9, [1], 128, https://doi.org/10.15694/mep.2020.000128.12. Tobin TJ, How to make the most of a virtual conference, Chronical of Higher Education, July 14, 2020. https://www.chronicle.com/article/How-to-Make-the-Most-of-a/249171
**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 11 July 2020

https://doi.org/10.21956/mep.20090.r30942

© 2020 Aboulsoud S. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Samar Aboulsoud**  
CAIRO UNIVERSITY, SCHOOL OF MEDICINE

This review has been migrated. The reviewer awarded 4 stars out of 5

I would like to thank the authors for presenting a topic that is so relevant and useful for the current situation. As we are all shifting to digital formats for education and online communication, it is definitely important to introduce and test new concepts that can support and improve the electronic modes of learning. The extended congress model has a great opportunity to be widely used in the world of virtual learning. However, and as the concept is still in its early days, it is essential to use a comprehensive evaluation model to evaluate the learning process and to analyze data and feedback from different stakeholders over a reasonable period of time. It will also be interesting to test the applicability of the extended congress model to a variety of settings e.g. different countries, cultures, and healthcare professions. If this model proves its effectiveness, I believe it will provide lots of opportunities for interprofessional education. It will also be helpful to delineate the difference between “extended in space” and the traditional virtual conference. The expanded time is an interesting concept that can reinforce the learning but I believe this requires effective techniques that ensure the engagement of participants, which might be a challenge, especially over a long period of time. For the readers’ convenience, it would be nice to have a summary of the article. Thank you again for the opportunity to review this paper and I will definitely be interested to use the concept as an educational modality and I am really keen to read a follow up on this article and to learn more about the extended congress model as it ripens and matures.

**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 05 July 2020

https://doi.org/10.21956/mep.20090.r30940

© 2020 Centeno A. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.
Angel Centeno
Universidad Austral

This review has been migrated. The reviewer awarded 4 stars out of 5

Interesting paper on a timely problem: medical meetings during the pandemic. The authors present the example of one meeting that rapidly changed its format to the extended format. After an interesting introduction to the topic, they conclude that this is an option for the future. Would be interesting to have more information on aspects such as the continuity and engagement of the participants during the five weeks: does it decay?, is there any information concerning their active personal interaction? They mention “reasonable results” that need to be specified. Besides, if networking is one of the basic objectives of these meetings it is not clear how it can be sustained and promoted with this new format. A comment on that would be interesting. Are there any special characteristics of institutions that would benefit more (or less) of this format? In short it is a valid option for scientific meetings, and adding to the economic and financial aspects, the academic value of the extended meeting needs to be considered in detail.

Competing Interests: No conflicts of interest were disclosed.

Reviewer Report 30 June 2020
https://doi.org/10.21956/mep.20090.r30941

© 2020 Parboosingh J. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

John Parboosingh
University of Calgary, Canada

This review has been migrated. The reviewer awarded 5 stars out of 5

The authors describe an educational design that has the potential to foster group discussions leading to collective reflection and sequential activities over time, features that foster knowledge translation into practice. The article succeeds as intended, to start a dialogue with the medical education and events community about delivery formats with the potential to achieve this ambitious goal. While many readers including CPD providers will focus on the obvious challenges of adopting extended congresses, such as the costs and ethics and acceptance of new technologies, I use this review to highlight an equally important issue which needs to be included in this dialogue. The extended congress has the potential to provide a home (1) for health professionals to regularly network with peers and engage in self-managed learning activities that inform practice. This goal is best achieved by changing how we think about learning and planning new programs. For instance, we should think of learning as emerging from
continuing conversations among networked participants who, owning the education process, create content relevant to current practice and ‘pull’ evidence-based best practices into the conversation. (2) Relationships among trusted peers provide practitioners with the motivation to talk about their practice, critically reconstructing practice incidents as they do informally at work, for instance at coffee and lunch breaks. (3) Such engagement should be a prime objective in extended congresses. As Anand states describing HBX, the Harvard Business School's learning platform, “If we could crack the code of engagement, we felt, reach would follow”. (4)For extended congresses to achieve these goals there is a need for planning and support teams to include information and network specialists, as mentioned by the authors, but also professionals with expertise in social learning (5) and community facilitation (6).

1. Graham T. McMahon (2016) What Do I Need to Learn Today? — The Evolution of CME, N ENGL J MED 374;15.
2. Jordan ME, Lanham HJ, Crabtree BF, et al. The role of conversation in health care interventions: enabling sensemaking and learning. Implement Sci. 2009;4:15.
3. Lanham HJ, McDaniel RR Jr, Crabtree BF, et al. How improving practice relationships among clinicians and non-clinicians can improve quality in primary care. J Comm J Qual Patient Saf. 2009;35:457–466.
4. Anand B. (2016). Chapter 29. The Content Trap: A Strategist's Guide To Digital Change, Random House.
5. FutureLearn's Social Lead, David Thair, shares his top six tips for getting the most out of social learning features https://about.futurelearn.com/blog/6-social-learning-tips.
6. Jakubec S, Parboosingh J, Colvin B. Introducing a multimedia course to enhance health professionals' skills to facilitate communities of practice: experiences of the first cohort of course participants. J Health Organ Manage. 2014;28(4):477–494.

**Competing Interests:** No conflicts of interest were disclosed.

Reviewer Report 25 June 2020
https://doi.org/10.21956/mep.20090.r30943

© 2020 Filipe H. This is an open access peer review report distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Helena Filipe**
Hospital of the Armed Forces/PL-EMGFA

This review has been migrated. The reviewer awarded 5 stars out of 5

Thank you for the opportunity to review the manuscript, which I read with great pleasure. It reads well and despite long, the reader is urged to read along with continuing interest. If already relevant, the pandemic made central, the topic approached by Margolis and Associates. The way Authors introduce their writing purpose: a “starting dialogue” with the reader and the whole CPD community and the innovative learning methodology they introduce and propose: the “Extended Congress” raise immediate and unwavering curiosity till the conclusion of the article. The Authors, two at least are renowned
experienced educators, start by comprehensive and systematically framing their work in evidence. They picture the difference between the model they propose with previous or ongoing others and underline the benefit of theirs and why they developed it. A table could be built upon this. The “Extended Congress” model allows for a triad learning expansion (space, time and languages), which Authors very elegantly sustain. After wisely balancing the support of their model on evidence and prior experience, they provide a clear description of its implementation. A note of remark for caring to develop a blended model offering learning experiences encompassing dialogue and conversation beyond discussion, self and collective reflection on new learning and, including an online networking space to develop relationships and further new learning. The methodology is clearly explained to the point of replication and embraces social learning principles, active learning, multifaceted formats and incorporates the longitudinal component. All of those have been associated to effective CPD programs. Thank you for itemizing the challenges encountered and overcome. The Authors explained the importance of establishing bonds and partnerships to create and implement these kinds of CPD programs. The article provides a holistic perspective on longitudinal hybrid CPD programs and that includes all stakeholders usually involved in CPD live programs, challenges they can face and benefits these learning formats can bring. Probably new actors will emerge, some probably evolving from reshaping preexisting roles. New and exciting challenges are posed to CPD educators. Interesting thought on progressing the model eventually considering virtual reality. Would probably include this section as a possible line of continued investigation. There is a good discussion section and the expression “refocus energy to something you’ve already built rather than scramble to reinvent the wheel.” translates well the authors’ vast experience and previous work on this medical education area. The take home messages were surgically extracted and summarize well the whole article. The supplementary file is an excellent standalone document showing a comprehensive and useful checklist to eventually underpin a future rubric to guide organizing teams to plan and evaluate learning experiences. Looking forward to reading the next article expanding on the impact of the “Extended Congress” model on several evaluation levels and to learn about further developments.

References: RM Cervero, JK. Gaines, The Impact of CME on Physician Performance and Patient Health Outcomes: An Updated Synthesis of Systematic Reviews Journal of Continuing Education in the Health Professions, 35(2):131–138, 2015J Parboosingh, VA. Reed, JC Palmer, HH Berstein. Enhancing Practice Improvement by Facilitating Practitioner Interactivity: New Roles for Providers of Continuing Medical Education Journal of Continuing Education in the Health Professions, 31(2):122–127, 2011

**Competing Interests:** No conflicts of interest were disclosed.