

Physical or virtual? Or is there a middle path? - Reimagining medical conferences in the COVID-19 era

It is not the strongest of the species that survive nor the most intelligent, but the one most responsive to change. - Charles Darwin

The year 2020 has been a period of most rapid transition in human adaptation. As coronavirus disease-2019 (COVID-19) swept through the world and disrupted our lives and professions, a new paradigm quickly emerged. Fueled by the innate genotypic human characteristic of self-preservation, we quickly learned to do what we did in a radically different format. Teaching and learning, for example, have transformed from being predominantly physical to virtual. As the pandemic tapers off, do we lapse back to our pre-2020 lavish ways and means, or embrace the change and continue to enjoy the fruits of virtual learning, or try to find a hybrid sweet spot and tread the safer and saner conservative middle path in these times of continued uncertainty?

Physical vs Virtual Meeting - Which is Better?

Physical meetings have over a 180-year history and have evolved to be one of the traditional teaching and learning platforms in medicine. Such events provide for conventional face-to-face human interactions, skills transfer through hands-on courses, attentive and relatively captive audience with minimal parallel distractions, and opportunities for networking, social connections and camaraderie. However, the disadvantages are the cost of conducting such meetings, enormous cumulative time invested by the delegates and the faculty, wasted resources, gender and social inequalities in participation, a large carbon footprint and, of course, the risk of disease transmission in the current times.

A virtual meeting is not the second-best alternative to a conventional physical meeting, but a complement with its pros and cons. The technology and ease of conducting virtual meetings have tremendously evolved since the first Internet World Congress for Biomedical Sciences was held in 1994. Virtual events eliminate travel, are faster to organize, provide more value at a fraction of cost, chat rooms and virtual common interest rooms enable networking, create a level playing field and thus democratize education, help foster social and gender equity in participation, provide uninterrupted access across timezones, and are environment friendly.^[1-9] Virtual meetings, however, are criticized for being impersonal, faceless, listener attention being diluted by parallel distractions, and prone to technical glitches. Aspects of a physical meeting that cannot be replicated in a virtual setting include the time and intensity to explore complex scientific issues, the ability to interact spontaneously, and the opportunity to strengthen relationships.^[1-9]

Carbon Footprint - Big and Black

Physical conferences that involve delegate and faculty travel (2–5 tons of CO₂ emission for an international flight and 0.5–2 tons for flights within the country for each traveler), ground transportation, hotel stay, convention venues, nonpermanent conference and exhibition hall buildup, nonrecyclable single-use merchandise, food (over 50% of catered food is wasted), and plastic waste have a disastrous environmental profile and tend to leave a large carbon footprint.^[2,3] These emissions are well above the annual limit of 2.3 tons per person necessary to curb climate change.^[2,3] In an analysis of 270 physical conferences between 2016 and 2020 for sustainability and inclusivity, it was found that 860,000 people spent more than \$1.288 billion and generated over 2 million tons of CO₂, but with suboptimal social diversity and gender equity.^[4] Travel to attend the 2019 meeting of the American Society of Tropical Medicine and Hygiene involving 4834 participants and 44.6 million kilometers, equated to 58 return trips to the moon and an estimated 8,646 tons CO₂ emission.^[5] The average 4-day, 1000-attendee national conference generates about 3000 tons of CO₂ emissions. At this rate, an AIOS annual conference would generate about 30,000 tons of CO₂ emissions!

Virtual conferences, necessitated by the COVID-19 pandemic, have reduced emissions by up to 99.97%, and it is estimated that holding conferences biennially in accessible locations and increasing virtual presentations may be associated with reduction in emissions by 90%.^[7,8] The American Psychiatric Association saved the estimated equivalent of burning 500 acres of dense forest or 22 million pounds of coal by holding the 2020 conference virtually.^[9] Suggested measures to reduce the carbon footprint of an event are to 1. convert to hybrid meetings that maximize the advantages of both physical and virtual conferences, 2. hold physical meetings biennially and alternate with virtual events, 3. choose certified green convention centers that are environment friendly, 4. avoid build-up of temporary structures, 5. minimize the use of plastic and disposables; go green and avoid giveaways such as printed brochures, program books, and conference kits; and shift to ePosters from physical posters, and 6. reduce wastage of food.^[2-9] Responsible professional medical societies must aim at environmentally sustainable and carbon-neutral events and follow the United Nations Sustainable Events guidelines.^[6] There is no room for complacency.

In an era when even the Olympics are going green, what are we, in healthcare, waiting for?^[7]

Band, Baaja, and Badshah - Whose Money is it Anyway?

Physical conferences are resource-intensive. Apart from expenses for the venue, setting, audiovisual arrangements, transportation, comfort breaks and food, physical events indulge in gargantuan showbiz-style social events, billing about 160–180 million rupees for a big, fat national event of about 4000–6000 professional delegates. These events may be externally sponsored but, as it curiously happens, the sponsors have an uncanny way of passing on their promotional expenses

right to the end of the funnel; the healthcare system or the patient or the ophthalmologist invariably bears the brunt for the bumped-up drug or medical equipment cost. The attendees together lose 400,000–600,000 work hours over 4–6 days in traveling and in attending the conference, with an estimated cumulative value of about 400–600 million rupees.

Hybrid Model - The Sweet Spot

A hybrid model would involve a physical meeting with a seamlessly woven-in virtual component. Key international and national speakers who are unable to travel, can lecture virtually to a physically gathered audience and take questions live online, thus enriching the learning experience. Synchronous virtual sessions will help democratize the event by allowing residents and trainees, and socially, financially, or logistically challenged ophthalmologists who are unable to travel, to be part of the learning process. It will also help reduce the overall physical attendance at the conference if a portion of delegates were to opt for virtual participation. The dissolved borders would help augment virtual international participation. An asynchronous on-demand online access to the curated content following the event will help in the continued dissemination of knowledge and improve accessibility.

Now is the Time - The Risk Lies in Inaction

The need for connection with others is becoming increasingly important as we move to a world where people's knowledge and expertise are a function of the networks – both face-to-face and online – they possess rather than the contents of their heads. If in our work lives, we are spending more time learning socially than being trained in the classroom, our meetings must provide the same relative opportunities. – Adrian Segar

The rapid emergence and precocious maturity of virtual teaching and learning models may be considered as one of the positive spin-offs of the momentum created by the pandemic. Physical meetings, however, have their virtues and are important for social interactions. As we stand at the inflection point, optimal integration of physical and virtual conferences into a hybrid model and finding a sweet spot is the next level that we look forward to.

As Tessa Richard (rephrasing Doug Altman) states in her blog, “We need fewer conferences, better conferences, and conferences held for the right reason.”^[10] The immediate solution lies in being able to organize one purposeful, carefully planned, environmentally sustainable, and financially conservative hybrid conference each year - a physical event, carefully blended with synchronous and asynchronous virtual components, and complemented by focused, rationally implemented, and conveniently spaced virtual events through the year. We need to act now. The risk lies in inaction.

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Access this article online	
Quick Response Code:	Website: www.ijo.in
	DOI: 10.4103/ijo.IJO_400_21

Cite this article as: Honavar SG. Physical or virtual? Or is there a middle path? - Reimagining medical conferences in the COVID-19 era. *Indian J Ophthalmol* 2021;69:475-6.