

Virtual Events in the Post-COVID-19 Pandemic Era in Medical Profession: A Narrative Review

AMIT GUPTA¹, JAINE JOHN CHENATT², TANUJ SINGLA³, DEEPAK RAJPUT⁴, SWEETY GUPTA⁵

ABSTRACT

The Coronavirus Disease 2019 (COVID-19) pandemic wreaked havoc on almost all aspects of life and has undeniably altered the landscape of the world forever. In the medical profession, everything from education to scheduling operations was affected. Educational events such as conferences, Continuing Medical Education (CME) and other events had to be converted into virtual conferences and meetings. However, now that the pandemic is slowly coming to an end and countries and borders have started to reopen, the question now remains- should we go back to our old ways or has this become the new normal? This review discusses the advantages and limitations of conducting virtual events and discusses future trends of holding such events in these uncertain times.

Keywords: Green conference, Hybrid conference, Virtual conference

INTRODUCTION

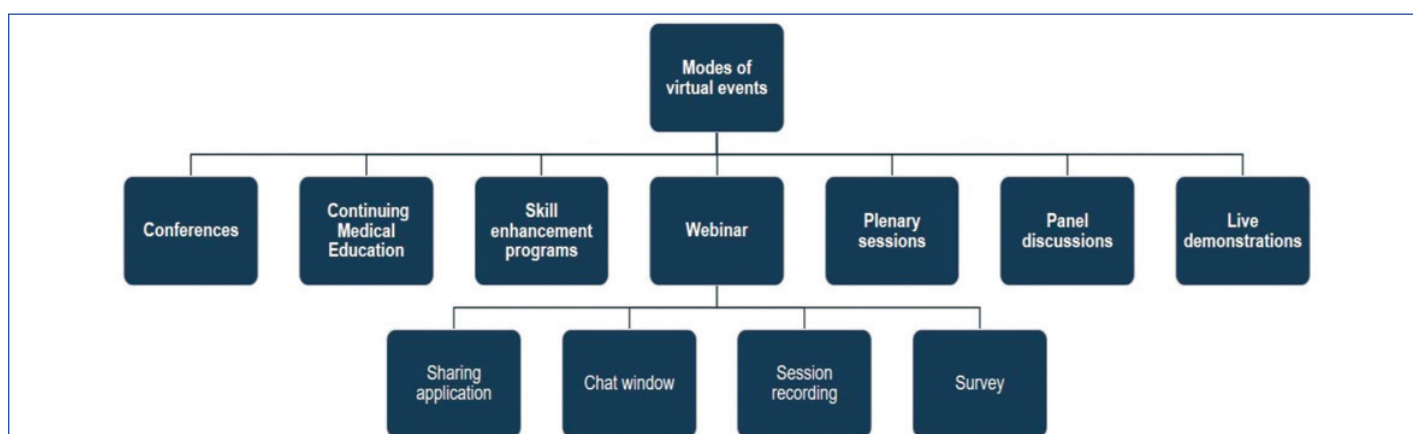
The COVID-19 pandemic has altered the landscape of the world in a multitude of ways. From elementary teachers conducting online classes to multinational corporations holding virtual meets. The COVID-19 pandemic is the fifth pandemic to occur in this world, the last pandemic being the 1918 Spanish flu. According to Liu YC et al., the index case was traced back to Wuhan city in China in late December 2019 [1]. Since then, it has spread to all corners of the world. The World Health Organisation (WHO) officially named the viral disease as COVID-19 on 12th February 2020; the causative virus was named as Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2) by the International Committee on Taxonomy of Viruses [2].

The pandemic took the lives of more than a million people- 2,222,810 have died from the disease as of February 1, 2021 [3]. Millions of workers lost their jobs, offices and workspaces were disrupted – this tragedy has most likely permanently altered the way of human life. Nevertheless, evolution warrants us to adjust to the new reality- in spite of the pandemic, life must go on. Adjustments were done indeed- Work From Home (WFH) environments were created, virtual conferences replaced traditional on-site conferences, meetings and classes became online. However, now that the pandemic is slowly coming to an end and countries and borders have started to reopen, the question now remains- should we go back to our old ways or has this become the new normal?

In the medical profession, the issues caused by the pandemic came at a considerable cost. The most notable were the complete stop of elective operations, suspension of outpatient clinics, interruption of medical education and deferment of competitive and license examinations. Continued Education is arguably one of the most important facets of a doctors' life. Medical science itself being an ever evolving and changing field, medical professionals need to keep themselves constantly updated by means of activities like CME, conferences, plenary sessions, workshops and other educational assemblies. The pandemic, however, caused a complete block on holding these activities in a physical manner. As Plato's Republic rightly said, "Our need will be the real creator", the pandemic forced medical professionals to adapt to the lack of physical infrastructure by holding academic activities online by the creation of virtual and hybrid events. This review aims to highlight the effects of the pandemic on academic and educational meetings and discuss future trends of holding such events in these uncertain times.

MODES OF VIRTUAL EVENTS

A virtual meeting is defined as a synchronous communication mediated by Information and Communication technologies, making it possible for two or more geographically remote people to interact and employ audio or video conferencing technologies, or computer mediated web-conferencing [Table/Fig-1] [4].



[Table/Fig-1]: Modes of virtual events.

1. **Conferences:** A virtual or online conference is defined as “A structured, time delineated, professional education event that is organised and attended on the internet by a distributed population of presenters and participants who interact synchronously and/ or asynchronously by using online communication and collaboration tools” [5].
2. **Webinar:** A webinar or a web seminar is a presentation, seminar, lecture or workshop transmitted over the internet. The broadcast may be one-way from the speaker to the audience or two-way with the participants who are able to interact with the presenters or other participants via audio or text. Most webinars are static in nature: information is delivered in a didactic way with the view for transmitting information. However, a more interactive approach from the presenter – by encouraging questions or discussions before, during or after the seminar can encourage more learning from the participants [6]. Some of the main characteristics of a webinar include the following [7].
 - a. **Sharing application:** By this feature, presenters may share their desktop or other applications to convey information.
 - b. **Chat window:** Participants may pose their questions or queries during or after the session without disturbing the flow of the presentation.
 - c. **Session recording:** Sessions may be recorded and links sent to participants; this is especially useful in academic sessions where participants may not be available at the stipulated time due to work conflicts. This feature may also aid in the archiving of important information.
 - d. **Survey:** The organisers can conduct post session surveys and polls for feedback which can improve future sessions.
3. **Continuing Medical Education (CME):** It is necessary for clinicians to regularly update their knowledge and skills to maintain the standards of clinical excellence required for the optimal care of patients [8]. Ever evolving technologies have made this possible even in the pandemic era. Module-based or skills-based CME courses can be done virtually with different credit scores according to the difficulty of the module. Most educational institutes require a certain number of CME credits to be acquired on an annual or five-year basis to renew their contracts or licenses. In India, 30 hours of CME credits are required every five years for license recertification. Thus, CME credit scores add to the clinician's professional growth, and virtual events have made this attainable.
4. **Skill enhancement programs:** Several virtual skill enhancement programs have been developed during the COVID-19 pandemic era. In India, The Association of Surgeons of India (ASI) have created their landmark National Online Skills Enhancement Program for residents (NSEP-PG) which is a unique web-based initiative, aims to ensure that surgical trainees learn the basics of common procedures which are not formally taught in regular teaching sessions or conferences. These videos, live streamed online and saved for future viewing, provide a lifeline for those residents especially affected by the COVID-19 era [9].
5. **Plenary sessions:** Plenary sessions broadcast via a communication channel to reach a large target audience. Supplemental platforms can be created to support discussions among participants [10]. Plenary sessions, including those part of large national and international conferences, can be especially beneficial as all members are expected to attend; hence by displaying it virtually, attendance is more accessible.
6. **Panel discussions:** Online panel discussions can be held to discuss debatable/controversial topics or to discuss current updates in a particular field.
7. **Live demonstrations:** Surgeries can also be live streamed online during a conference or as part of a teaching session. Participants can actively pose questions; the surgeon can demonstrate the relevant anatomy, critical steps and surgical techniques and teaching points of the surgery. This can serve as an accessory teaching aid. Although training in a virtual platform cannot as yet replace the traditional teaching, surgical skills or parts of the operation can be learnt via a virtual platform. For instance, Co M et al., developed a Web based Surgical Skills Learning session (WSSL) program where students who learnt surgical skills via the WSSL program were compared with a control set of students who learnt the same skills in a traditional face to face tutorials. The skills performance was assessed by a standardised marking scheme modified from the Objective Structured Assessment of Technical Skills (OSATS) and the results were comparable between the two groups [11]. Thus live demonstrations and virtual workshops can also be a part of the creation of an interactive virtual surgical rotation for undergraduate students in the COVID-19 pandemic [12]. Structured teaching modules can be created to engage the students and create a more engaging learning experience.

ADVANTAGES OF VIRTUAL CONFERENCES

Created out of necessity, virtual conferences turned out to be a blessing in disguise. By keeping conferences virtual, a significant number of unforeseen benefits were noted.

1. **Financial Savings:** By using an online platform, there is a significant financial benefit. For instance, the total conference cost of Virtual ACCESS (A Core-trainee led virtual Conference to Enhance Surgical Succession) Conference 2020 in the UK cost 302.56 pounds which was significantly less compared to traditional on-site conferences [13]. The financial implications are not only limited to the cost of hosting the conferences but also of the personal cost of attending the conferences. Accommodation, flight tickets and other travel costs such as visa bookings will all be significantly reduced for the attendee. Although setting up virtual conferences will have other added costs such as creation of software and Information Technology (IT) teams, event managers and website costs, this will still be significantly less than organising an on-site event.
2. **Accessibility:** Virtual conferences are more appealing due to their easy accessibility especially for the busy attendee. Doctors can attend multiple conferences at the fraction of the cost without the added need for travel costs. Apart from a reduction in expenditure, the participants can avoid taking days off which is a major issue in contract based doctors. For the organisers, an online platform eliminates the need for colossal infrastructure and other organising teams and catering services. The issue of social distancing is thus eliminated, thereby reducing infectious risk. Attendance conference is also increased- doctors from any part of the world can attend a conference from the comfort of their office, workspace or home. For instance, the European Academy of Neurology (EAN) 2020 Virtual Congress had 42,500 neurologists from across the world making it the biggest neurology conference in history [14].
3. **The CME boom and increased opportunities for education:** Virtual conferences and meets increase the opportunity for the trainee and senior doctors to present their work at a wider stage. To account for different time zones, prerecorded presentations can be employed. Doctors from poorly funded countries can easily participate in global discussions and present research [15]. Virtual conferences can hold virtual classes for trainees, live surgeries and workshops and other tutorials. By allowing video recording of the sessions, trainees

can watch the videos at their own time, thereby maximising the benefit of attending these conferences. Other educational opportunities include skill enhancement programs for residents and attendees alike. Virtual conferences can also host CME events to boost participation. CME credits are a vital part of a physicians career and is a prerequisite for advancement in their careers.

- 4. Reduction of infectious risk:** The number of COVID-19 cases are indeed dwindling down but there have been a number of peaks and troughs over the few months and the natural history of this disease is erratic to say the least. A number of mutated strains have also arisen; hence the risk of a new pandemic is always present. Even after cases reach a plateau it is still advisable to use personal protection in the form of masks. On the same note, traditional conferences still harbour a risk of creating a mass spreader event. In international conferences, there is an additional risk of cross border contamination [10]. The timing of the next pandemic is unpredictable; most planned conferences were cancelled at the start of 2020 due to the pandemic [16]; even conferences that were held for many years.

On another note, travelling to another destination for a conference always confers a health risk; be it traveller's diarrhoea, cultural foods, other infectious diseases like tuberculosis, viral illness or other contagious illnesses such as *Legionella*, the risk of acquiring an infectious disease is always a risk. Thus, virtual conferences practically eliminate the added infectious risk of attending a conference- even in the post pandemic world.

- 5. Reducing Carbon emissions:** Green Conference: Climate change is accelerating at an alarming rate. Doctors and other healthcare professionals should be forefront in the battle to reduce carbon emissions and maintain a sustainable environment for human existence. National and international conferences can now be considered an outdated luxury that the planet cannot afford [17]. Studies were done to estimate the carbon footprint of these conferences- for approximately 20 conferences a year in the US, Europe, Asia and Australasia, the travel impact alone would be 600000 tonnes of carbon which equate to the sustainable carbon emissions for around half a million population in India [18]. Doctors must lead by example- by moving to virtual conferences, there will be significant impacts on the environment.

LIMITATIONS OF VIRTUAL CONFERENCES

Virtual conferences are not without fault- there are many drawbacks as compared to traditional conferences. Some of the most important are listed below:

- 1. Networking:** One of the foremost drawbacks of virtual conferences is the lack of networking opportunities. A significant part of networking largely occurs during coffee breaks, or during lunch and dinners; entire research projects have been created during these little pockets of time [19]. Creativity flourishes during these little meetings and social gatherings. Virtual conferences cannot replicate the personal touch and face to face contact and potential tête-à-tête that a traditional conference can.
- 2. Technical difficulties and requirement for support teams:** Bandwidth and connectivity issues are other potential causes for concern. These are critical issues that must be managed to safeguard against interruptions. Video conferencing tools and IT managers are also required to coordinate the online platform and ensure the smooth facilitation of the program.
- 3. Academic tourism:** Virtual conferences, if continued in the postpandemic era, also eradicate the concept of "Academic tourism". Most often, large conferences are strategically placed in cultural heritage sites or areas with tourist attractions.

Thus, they provide a delightful bonding opportunity. By having concurrent social programmes, doctors can maximise opportunities of linking work with leisure activities thereby making such conferences more appealing [20].

- 4. Health issues:** Screen fatigue is also an important but often neglected cause of decreased participation in virtual conferences. Continuous screen usage results in eye strain that can have long term effects for the participant such as chronic headaches or new requirements for glasses/lenses. Computer vision syndrome, consisting of a constellation of symptoms such as ocular sprain, irritation, redness, dryness, blurred vision and double vision is a serious consequence of participation in these online events [21]. In one study, 56.1% of respondents experienced eye strain; 31.1% developed headache, 20.9% had neck pain and 17.2% had backache thus modification in the ergonomics of the working environment and education in proper eye care and posture is crucial in the prevention of this potentially disastrous syndrome [22]. E-thrombosis is also a rare but grave complication from prolonged sitting while using an online system. Immobility is a major risk factor and is, unfortunately, a side-effect of these virtual conferences- this can be mitigated by adequate education and encouragement of short breaks between lectures.
- 5. Distraction:** Attention span is another significant limiting factor of virtual events-Participants can get easily distracted in a virtual conference by work, home or other routine activities whereas traditional conferences provide a full immersion experience. Juggling between too many online events can result in loss of concentration and poor memory thus defeating the purpose of these conferences. Participation response is also more interactive in traditional conferences [23]. Getting a round of applause is a simple gesture, but this allows the participant to get a feeling of belongingness to a community or a fraternity that virtual conferences just cannot replace.
- 6. Accessibility:** In the rural setting, constant access to a wireless network is not always possible, and in some areas, especially in hilly or remote areas, mobile networks do not have an adequate range such that participation in the conference becomes cumbersome and glitchy. Thus, although the assumption is that accessibility is increased in a virtual platform, not all areas will have access to a good connection to view these conferences.

What Does the Future Hold? Are Hybrid Conferences the Answer?

Now that the COVID-19 pandemic is slowly coming to halt, countries are slowly starting to reopen again especially with the Vaccination rollouts in place. The question now remains: should one go back to traditional face to face conferences or continue with virtual conferences- both have their own set of charms and problems. In all actuality, the COVID-19 pandemic provided academicians with an opportunity to develop novel conference models to adapt to the new times; the hybrid conferences being the main attraction. A hybrid conference can offer a middle ground in situations where more traditional conferences are preferred but the benefits of a virtual conference are required. Hybrid conferences are essentially meetings where there are many small conventional sub conferences (or one single conventional conference) supplemented with virtual conferencing from work or home setting with all participants viewing and interacting with the same virtual content [10]. This provides the best of both worlds.

CONCLUSION(S)

There is an urgent need to frame guidelines for virtual medical conferences which can be applicable and acceptable at a global level to help medical personnel continue with medical education and skill acquirement. Medical professionals face a unique set of difficulties in education- hands on experience is a vital, if not major, part of

their career. How then, do we adapt to these complex demands in the pandemic and post pandemic era where the threat of the next pandemic always looms? Hybrid conferences certainly have the potential to be the solution. All things said, virtual conferences are probably here to stay- the level and degree would vary according to the requirements, finances, institutional policies and the way that the pandemic behaves on a global level.

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PARTICULARS OF CONTRIBUTORS:

1. Professor, Department of Surgery, AIIMS, Rishikesh, Uttarakhand, India.
2. Junior Resident, Department of Surgery, AIIMS, Rishikesh, Uttarakhand, India.
3. Junior Resident, Department of Surgery, AIIMS, Rishikesh, Uttarakhand, India.
4. Associate Professor, Department of Surgery, AIIMS, Rishikesh, Uttarakhand, India.
5. Associate Professor, Department of Radiation Oncology, AIIMS, Rishikesh, Uttarakhand, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Amit Gupta,
Professor, Department of Surgery, Level 6, Medical College Block, AIIMS,
Rishikesh, Uttarakhand, India.
E-mail: dramit2411@gmail.com

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