

The impact of COVID-19 on the conduct of medical conferences: A paradigm shift

Highlights on Pediatric Cardiac Society of India (PCSI) 2021

COVID-19 has changed the way we live, and it has impacted almost all the professional activities of health-care profession. Medical education took a backseat during the initial phases of the pandemic, but has made a strong comeback possibly in a better format. The COVID-19 pandemic has permanently reset the way we learn and do our academic meetings. This editorial highlights the 21st Annual Conference of the Pediatric Cardiac Society of India (PCSI 2021), which was conducted amid the global pandemic, and discusses the advantages, disadvantages, and future of such hybrid academic meetings.

Professional medical meetings have nearly a 200-year history and are established platforms for learning. Conferences are useful in continuing medical education, dissemination of knowledge, imparting new skills, enabling interaction with opinion leaders, developing consensus, and adoption of newer ideas relevant to own population. The medical profession and interventional cardiology in particular need to remain at the cutting edge of science, and over the years, physical conferences have played a major role in achieving these objectives. However, over time, many of the conferences have steered away from their clearly defined objectives. Now, we possibly have a large number of medical conferences being organized than is actually required. It is estimated that in 2019, India had more than 300 national and regional conferences/meetings in various facets of cardiology alone. Some of the Indian conferences have been criticized for their lavish and grandeur ways, especially the social programs and the 7-star culture. Despite the huge overall footfalls in these conferences, as suggested by the registration statistics, often, the scientific halls remain empty.^[1] Physical meetings need an enormous cumulative work hour of both faculty and delegate, and more importantly, this results in a wastage of natural resources and also indirectly resulting in environmental hazards. For example, the carbon footprints of physical meetings are prohibitively high. In an analysis of 270 physical conferences held between 2018 and 2019, 859,114 researchers, assuming average spent of US\$1500 per person, spent a total of US\$1.288 billion and generated over 2 million tons of CO₂.^[2,3] By participating in one international conference, an individual may emit more than the permissible

personal annual limit of 1.5 tons of CO₂ emission, a limit suggested for reaching the maximum environmental warming target of 1.5°C.^[4] In essence, most of the physical meetings have become too large, too expensive, and have been a drain on the industry, academia, and even the environment. Hence, a rethink on medical conferences was long overdue and an enormous global health crisis, the COVID-19 pandemic, has made it happen.

ONLINE AND HYBRID MEETINGS: NOT A NEW PHENOMENON

The first Internet World Congress for Biomedical Sciences was held nearly 3 decades back.^[5] Even prior to the pandemic, a lot of academic courses were held online. In fact, PCSI has been offering weekly online educative courses for the fellows for many years now. Many of the larger physical meetings were routinely webcast in the pre-pandemic period; however, the participation was muted. The pandemic had put an end to physical meetings for nearly 2 years and has paved the way for online courses and meetings. Initially, online sessions consisted of case presentations, fellows teaching, focused sessions, and industry sessions, but later expanded to national- and international-level conferences. During the pandemic, virtual meetings have become a “viral phenomenon.” The ease of doing virtual meetings has simplified during the pandemic with the availability of dedicated platforms and integration of networking platforms with conference websites. Most can attend a virtual meeting with minimum basic gadgets such as a smartphone/laptop/tab and a reliable internet connection.

In 2020, the PCSI had to cancel its annual meeting and postponed the World Congress of Pediatric and Congenital Heart Surgery meeting that was planned to be held simultaneously in New Delhi. In 2021, again, with the emergence of the deadly second wave of COVID-19 all across India, there were no takers for doing a full-fledged annual meeting of PCSI. A gloomy situation of the PCSI conferences being abandoned for two consecutive years was brewing. At this time, the team from All India Institute of Medical Sciences, New Delhi, with a help from other pediatric cardiology professionals in New Delhi took up the task to conduct the PCSI 2021. We are happy

to highlight the various challenges faced by us during this process and also the highlights and unique features of this first hybrid conference of PCSI.

PEDIATRIC CARDIAC SOCIETY OF INDIA 2021: SETTING THE STANDARDS

When we started to plan for PCSI 2021, toward the end of June 2021, we ourselves were sceptical and apprehensive that how successful a hybrid national conference is going to be. We were wandering uncharted waters in troubled times. However, PCSI 2021 ended up as one of the most memorable conferences and managed to set a high standard. The highlights are summarized in Table 1. The most unique aspects included a truly hybrid meeting with the physical audience in New Delhi as well as in satellite meeting venues in Bengaluru, Chennai, and Kolkata in addition to online mode. The theme of the meeting was “Consolidating the Gains.” The scientific program was diverse and inclusive. We had multiple facets of pediatric cardiac care covered including cardiac surgery, interventional cardiology, echocardiography and imaging, fetal cardiology, electrophysiology and pacing, pulmonary hypertension, acquired heart disease, cardiac anesthesia and intensive care, nursing, and perfusion. Beating the odds, we had distinguished speakers from across the globe, which could not have been possible in a physical meeting. We had multiple joint sessions with organizations such as Association for European Paediatric and Congenital Cardiology (AEPC), Pediatric and Congenital Interventional Cardiovascular Society (PICS), Pediatric and Congenital Electrophysiology Society (PACES), and *European Heart Journal* (EHJ). The

Table 1: Key highlights of Pediatric Cardiac Society of India 2021

Truly hybrid meeting
4-hub model-New Delhi (main venue), Bengaluru, Kolkata, and Chennai (satellite venues)
9-days event covering all aspects of pediatric cardiac care
120 sessions
5 parallel virtual halls
3 parallel physical halls
Seamless switching between halls
147 hours of total content
Faculty & Experts
International-105 (SAARC countries-16)
National-495
Inclusive participation
Total delegate registered-3300
International delegate-600
Total online attendance-2300*
Total physical attendance at 4 venues-700
Quality research presentations
Award sessions-12
Abstracts presented-205
Cases discussed-65

*Individuals with unique email id who attended at least 10 min of sessions. SAARC: South Asian Association for Regional Cooperation countries including Bangladesh, Maldives, Nepal, Pakistan, and Sri Lanka

biggest advantage of this hybrid meeting was breaking all the boundaries and time zones. We had faculty and delegate participating from across the globe. In a way, the virtual platform thus proved to be a blessing in disguise.

Lifetime achievement awards were conferred on two stalwarts of pediatric cardiac care in India, Prof. Balram Airan and Prof. Anita Saxena, while Prof. Shyam S Kothari delivered the prestigious Prof. Raj Tandon oration. For the first time, we had a quiz competition for pediatric cardiology fellows in fond memory of the late Prof. Rajnish Juneja. Besides live streaming of all the sessions, the entire proceedings were recorded, and the videos have been made available online on a YouTube channel (<https://www.youtube.com/channel/UChauJuQS4Y2MqUgxMprHOWg/videos>). An event involving >500 faculty and >3000 delegates for a national meeting in pediatric cardiology spread over 9 days testifies the efforts made by organizing teams at various venues. The organizing committee members, office bearers, and faculty of PCSI and those of AEPC, PICS, PACES, and EHJ, contributed immensely to making PCSI 2021 a grand success [Appendix 1]. The overall expenses were only a fraction (estimated 20%) of usual physical meetings of this scale. The industry participation was also encouraging and permitted smooth conduct of the meeting. The conference platform enabled not only scientific deliberation in multiple halls but also poster/abstract sessions, a place for networking and industry exhibition. The real icing on the cake moment was “PCSI Utsav,” a virtual gala night, where PCSI members and their family members showcased their extracurricular talents and as expected there were many surprises.

POST-COVID 19: HOW WILL WE EVOLVE?

Change the game, don't let the game change you-Macklemore

After the end of the pandemic, we may go back to our old ways. However, a new era of medical conferences may emerge. Virtual and hybrid meetings should become the norm. This would enable wider participation of both delegates and faculty. Clear-cut objectives are more likely to be achieved at a fraction of the cost (>70%-80% reduction) in virtual meetings. The impact of virtual meetings will be lesser on the environment too. Fully virtual meetings may reduce 99.9% of carbon emissions and hybrid meetings may reduce it by 91%.^[6] It is the responsibility of every medical society to organize meetings/conferences to be environmentally conscious and plan carbon-neutral sustainable events. Some of the ways suggested are summarized in Table 2.

The main advantage of physical meetings may be limited to learning specific hands-on skills. However,

Table 2: Ways to make the scientific meeting environment friendly

Make it fully virtual
 Hybrid-increase virtual attendance
 Change to a location that is more accessible
 Multi-hub model
 Combine major meetings
 Reduce the frequency of meetings
 Encourage low carbon alternatives to travel
 Green and sustainable conference venues
 Nonconference, open access dissemination of research
 Working out a carbon budget and audit for each major meeting

some may argue that there is no substitute for in-person meetings. Some of the major disadvantages of virtual meetings include limited engagement of the audience, lesser attention span with parallel distractions, and lack of face-to-face interaction. The purpose of in-person meetings goes beyond learning objectives. Meeting friends, interacting with the leaders, networking opportunities, and visiting various places are some of the advantages of physical meetings. Virtual meetings have mushroomed during the pandemic and a recent survey^[7] suggested that many doctors are overwhelmed with the number and content of webinars. The same authors have compiled an interesting set of recommendations for organizing successful virtual meetings.^[7]

While learning is possible virtually, physical meetings will have their own place. Physical and virtual meetings need not always be competitive but can be considered complementary to each other. Thus, hybrid meetings, like PCSI 2021, may be the sweet spot. We hope that the future PCSI meetings will continue to be in a hybrid format. The challenge is going to be in striking the right balance.

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APPENDIX

Appendix 1: Joint sessions held during PCSI 2021

Joint sessions held during PCSI 2021

We wish to place on record our wholehearted thanks for the following societies which had joint sessions during PCSI 2021. The sessions were made possible at a short notice due to the untiring efforts of many individuals, some of whom are listed here. The session details and the faculty are also listed.

Association for European Paediatric and Congenital Cardiology (AEPC)

Zdenka Reinhardt (Freeman Hospital, Newcastle upon Tyne, UK) and **Werner Budts** (Scientific secretary of AEPC, CSC UZ Leuven, Belgium)

AEPC at PCSI 2021: Consolidating the gains: Operated TGA

Long term issues after the arterial switch operation and treatment

Moderators: Katarina Hanseus, Sweden, Hitendu Dave, Switzerland, KS Iyer, New Delhi, Rajesh Sharma, New Delhi

Is the pulmonary root and trunk a good replacement for the aortic?	Zohair Al Halees, Saudi Arabia
Left sided problems after ASO: Etiopathogenesis and treatment	Mark Hazekamp, Netherlands
Basis of-and interventional treatment of right sided problems after ASO	Oliver Stumper, UK
Right sided problems after ASO: Surgical solutions	Vladimiro Vida, Italy
Coronary problems after ASO and coronary reoperations after ASO	Emre Belli, France
Are long term problems after ASO with LeCompte preventable with spiral great artery reconstruction?	Shu- Chien Huang, Taiwan

AEPC at PCSI 2021: Consolidating the gains: Pediatric heart failure

Moderators: Ina Michel-Behnke, Austria, Anita Saxena, New Delhi, Sandeep Seth, New Delhi

Pathophysiology of HF in children	Dimpna C. Albert-Brotons, Saudi Arabia
HF-Standard of care and outcome in children	Barbara Cardoso, UK
Emerging medical therapies in pediatric heart failure	Damien Bonnet, France
Nonpharmacological therapies for HF in children	Zdenka Reinhardt, UK
Transplantation in children-Status in India	KR Balakrishnan, Chennai

Pediatric and Congenital Electrophysiology Society (PACES)

Seshadri Balaji (Oregon Health & Science University, Portland, US)

PACES Education Committee Co-Chairs

Kara Sachie Motonaga (Stanford University, US) and **Eric Silver** (Columbia University Irving Medical Center, US)

PACES (Pediatric and congenital electrophysiology Society) at PCSI 2021

Tachyarrhythmias in specific situations in pediatric age group

Moderators: KK Talwar, New Delhi, Calambur Narasimhan, Hyderabad, Yash Lokandhwala, Mumbai, Mohan Nair, New Delhi, Praloy Chakraborty, Canada

Long QT syndrome	Shashank Behere, US
Brugada syndrome	Cecilia Gonzalez Corcia, UK
Catecholaminergic polymorphic ventricular tachycardia	Christina Miyake, US
Hypertrophic cardiomyopathy	Seshadri Balaji, US

PACES (Pediatric and Congenital Electrophysiology Society) at PCSI 2021

2021 PACES Expert consensus on management of CIEDs in the pediatric population

Moderators: Michael Silka, US, Mani Ram Krishna, Thanjavur, Dwivedi SK, Lucknow

Overview of the development process	Maully Shah, US
Pacemaker recommendations	Bryan Cannon, US
ICD recommendations	Kara Motonaga, US
CIEDs in low-and middle-income countries: Impact of the new recommendations	Ajit Kumar VK, Thiruvananthapuram

Pediatric and congenital interventional cardiovascular society (PICS)

Bharat Dalvi (Mumbai, India) and **Ziyad M. Hijazi** (President of PICS, Weill Cornell Medicine, Qatar)

PICS in PCSI session -

Expanding the horizon of pediatric cardiac interventions

Moderators: Snehal Kulkarni, Mumbai, Ziyad Hijazi, US, Bharat Dalvi, Mumbai, Nageswara Rao Koneti, Hyderabad

Percutaneous valve therapies beyond melody	Shabana Shahanavaz, US
Sinus venosus ASD closure: Case selection and step-by-step	Sivakumar K, Chennai
Current status of biodegradable devices in pediatric interventions	Daniel S. Levi, US
Interventional cardiology in 2040 -- as I see it!	Lee Benson, Canada
Case in the box: Harmony step-by-step	Matt Gillespie, US
Case in the box: Percutaneous reverse Pott's shunt	Younes Boudjemline, Qatar

European Heart Journal (EHJ)

Filippo Crea (EHJ Editor-in-chief), **Ganesan Karthikeyan**, Co-Editor (South Asia), European Heart Journal

Pulmonary hypertension in congenital heart disease (CHD)

Moderators: Snehal Kulkarni, Mumbai, Filippo Crea (EHJ Editor-in-chief), Italy, Jagan Mohan Tharakan, Thiruvananthapuram, Ganesan Karthikeyan, New Delhi

Pulmonary hypertension in CHD in India: A status report	Krishna Kumar R, Kochi
Understanding the mechanisms associated with the progression of pulmonary hypertension in CHD	Margarita Brida, Croatia
Operability in CHD with pulmonary hypertension	Shyam S Kothari, New Delhi

Nursing session – Children's Heartlink

Adriana Dobrzycka, US, Bistra Zheleva, US, Veera Rajasekhar, India, Nisha Thomas, New Delhi