Impact of the COVID-19 pandemic on pediatric cardiac care in India: Time for action!

Few would have imagined that the year 2020 would witness such a cataclysmic turn of events. Our world has unfortunately got used to wars, political turmoil, economic uncertainties, tsunamis, earthquakes, terrorist attacks, and other upheavals, but nothing has prepared us for the havoc that COVID-19 has unleashed. It has been well over 7 months since the virus surfaced in one part of the world and as of now, there appears to be no sign of it going away!

The pandemic has brought even the wealthiest of nations to its knees. Medical infrastructure across the globe has been overwhelmed, and the most resilient of economies faces the prospect of an economic recession, even a "depression." Governments have had to make difficult choices between "saving lives and saving livelihoods," i.e., enforcing stringent lockdown measures to curb the spread of the virus on the one hand and on the other allowing economic activity, risking an overwhelming avalanche of sickness and death.

In most countries, a vast majority of health-care facilities and personnel have been diverted to the care of COVID patients and the available resources are being channelized to enhance the capacity to isolate and treat COVID-affected patients. The problem is even more acute in the low- and middle-income countries, which even before the pandemic suffered from a significant mismatch between supply and demand for affordable and quality health care. Non-COVID patients suffering from chronic illnesses such as malignancies, chronic heart disease, renal failure, diabetes, and other major ailments have struggled to continue with their treatment and have sadly become the victims of "collateral damage" in this pandemic.

Children suffering from congenital and acquired heart disease have been the "Innocent Bystanders" who have suffered while the world battles COVID-19. The situation has been particularly grim in India, which has for decades struggled with the largest population of congenital heart disease in the world. Over the years, our country has worked steadily on "capacity building" of "quality pediatric cardiac care." Dedicated pediatric cardiac units delivering high-quality care had sprung up in most metro cities and even in many tier-2 cities. Public awareness had improved, and a steadily growing economy meant that there were many who could afford to pay for the relatively expensive private pediatric cardiac health care. Diagnostic facilities had improved even in small towns enabling neonatal heart disease to be detected in time, facilitating early referral to a treating hospital. Those of us who have been involved with pediatric cardiac care for the last three decades and more, have been witness to an unimagined growth in our specialty, with the bar being steadily raised higher.

The COVID-19 pandemic has brought this energetic "forward movement" to a grinding halt. Children and babies as well as pediatric cardiac units have been hit hard and both are struggling to survive. The extended period of lockdown, which included cessation of air and rail transportation, meant that sick neonates and infants could not be transported to cardiac care centers unless they were within reach by road. Even then, precious time was often lost in obtaining necessary permissions to cross state borders and overcome curfew timings. I had a newborn with interrupted aortic arch brought to me, unmonitored, after the father had driven continuously for 20 hours from a town 1000 km away. The baby made a miraculous recovery after surgery. However, it is likely that thousands of infants were less fortunate and may have perished as "innocent voiceless bystanders."

In most hospitals, elective cardiac surgery was stopped and available intensive care unit (ICU) and workforce resources were diverted to enhancing capacity to deal with COVID patients. Surgical output in most active pediatric cardiac units came crashing down to as low as 10% of the normal output. Salaried doctors faced pay cuts as hospital revenues plummeted. Surgeons who worked on a "fee-for-service" model were most hit, and some units were actually forced to shut down as they had become financially unviable or unsustainable.

It is, thus, ironical that in a country with one of the largest burdens of congenital heart disease, highly trained and skilled pediatric cardiologists and surgeons are underemployed or underutilized. This state of affairs if prolonged may lead to these personnel getting deskilled and demoralized, when so much has been invested into prolonged and arduous training.

On the patient side, it is likely that many infants and children would have had a worsening of their clinical

condition and would either perish or become a higher surgical risk. As the lockdown eases and many units are attempting to resume elective surgeries, fresh challenges surface. With the sharply rising numbers of COVID cases in the metro cities, preoperative testing of patients and their attendants has become imperative. However, given the significant false-negative rate of the reverse-transcription-polymerase chain reaction (RT-PCR) test, there is a constant worry that one may inadvertently operate on a child with COVID and put the child and the entire operating team as well as ICU staff at risk. On the one hand, it is fortunate that children appear to be more tolerant of the disease and rarely manifest symptoms, but, on the other hand, it puts the whole burden of proof on a less-than-perfect RT-PCR test. Cardiac surgery on a COVID-positive patient has been shown to be associated with a huge increase in morbidity and mortality even in relatively low-risk surgeries. Treating each patient as being potentially COVID positive has warranted major changes in operating room and ICU protocols. Complex neonatal surgery is challenging at any time, but performing such surgeries with full personal protective equipment is even more challenging and taxing. There is nothing worse than misting of one's loupes at a crucial stage in a complex surgery!

Return to the previous normalcy seems to be a remote and distant reality. There are many challenges on the supply side. Supply of consumables required for surgery has been affected by disruptions in the supply chain and a serious cash flow crunch. Many units face a workforce shortage as nurses and junior doctors have been rostered for COVID duties and have to go through a mandated period of quarantine. Some others have to be quarantined because they have tested positive or have been a close contact of a spouse or family member who has acquired the disease. The extra precautions that need to be taken even for routine surgeries have also increased the hospital costs, leading to an upward revision of surgical packages, making pediatric cardiac care even more expensive. I have navigated a few babies and their families through cardiac surgery during this period. Each family has different logistic problems, and hand holding every terrified family makes the specialty even more labor intensive.

On the demand side, patient numbers will be slow to rise. Pediatric cardiac surgery in India is very sensitive to the economic milieu. In private hospitals, most patients are those whose parents pay out of pocket. The pandemic has led to widespread loss of jobs, shutdown of businesses, and huge pay cuts. Many families have had to dip into the savings that may have been set aside for a child's surgery for their daily sustenance, causing major mental anguish. Many would have supported their child's surgery through their job-linked corporate insurance policy. Such options vanish into thin air when there is no job. There are other practical problems too. Hotels and guesthouses are still not open for business, and are most unwilling in most parts of our country to house anyone linked to a hospital. Hence, it becomes very difficult for outstation patients to come for surgery unless the hospital makes arrangement for the stay, not only of the patient but the attendants as well, and that too in a safe and inexpensive manner.

Patients also fear coming to hospitals for the fear of acquiring COVID, and many have postponed elective surgeries indefinitely. Thus, logistic issues related to pediatric cardiac care only seem to multiply.

Another major hit to hospital revenue has been the loss of international patients. Most pediatric cardiac units in the private sector have balanced their finances with additional revenue from international patients. With a total embargo on international travel, this significant source of revenue has dried up, adding to the ever-increasing financial woes of hospitals. It is also likely that with government coffers drying up due to the huge economic fallout of the pandemic, government-sponsored schemes supporting pediatric cardiac surgery will also be squeezed out. Over the next few months, pediatric units will find it a challenge to keep themselves afloat.

The COVID-19 pandemic has therefore taken a toll on pediatric cardiac services in our country as a huge collateral damage. Infants and children with congenital heart disease have suffered indirectly from the pandemic even though they have been innocent bystanders. It may be a long time before pediatric cardiac services in the country return to prepandemic levels. It is imperative that surgeons, cardiologists, anesthetists, perfusionists, and intensivists sustain their morale, spirits, and skills to ride through this storm. Pediatric cardiac care teams will have to be extremely resilient and will have to innovate and restructure the way they work to get through this crisis. The way pediatric cardiac care is delivered will need to be redefined. Cost containment will have to be the "mantra," and the entire care pathway will need to become more streamlined and efficient. There will be a compulsion to incorporate telemedicine and remote monitoring into our daily practice. Eventually one hopes that this is yet another "trial by fire" that our specialty will come through – scorched but not defeated. Babies will continue to be born with congenital heart disease and the demand for effective care will continue. How we work around the challenges and "reinvent the wheel" will determine the future of pediatric cardiac care in our country.

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Submitted: 22-Jun-2020 **Accepted:** 23-Jun-2020 **Published:** 03-Jul-2020

Access this article online

Quick Response Code:

Website: www.annalspc.com

DOI: 10.4103/apc.APC_153_20

How to cite this article: Iyer KS. Impact of the COVID-19 pandemic on pediatric cardiac care in India: Time for action! Ann Pediatr Card 2020;13:183-5.