

Pediatric cardiac intensive care units: The way forward

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Pediatric cardiac intensive care has evolved as a distinct limb of efficient pediatric cardiac programs in the developed nations. With increasing demand for congenital heart surgery in the developing nations, concept of pediatric cardiac intensive care units (PCICU) is critical to the success of these programs. In the early years of development of congenital heart surgery, the pediatric cardiac surgeons were primarily responsible for postoperative intensive care.^[1] Over the past three decades, other pediatric cardiac professionals (cardiology, cardiac anesthesia, critical care physicians, and ancillary staff) have started contributing increasingly to the care of these patients. Thus, pediatric cardiac intensive care has emerged as a new subspecialty to cater to the unique need of children with congenital and acquired heart disease.

With facilities for accurate diagnosis and scope of complete correction, more and more children and infants are undergoing surgical treatment for congenital heart disease in the neonatal period and infancy, and there is an increasing demand for dedicated personnel for the specialized intensive care of these critically ill children. This has translated into better outcomes in several centers. The team-oriented focus allows all the members of the unit to have intellectual ownership in the program and contribute to the care of the child, thus exploiting the full advantage of each discipline. In areas where adult cardiac care is linked with pediatric program, the adult health care professionals may not be able to provide optimal care for neonates and small infants.^[2] To ensure a holistic evidence-based intensive care unit (ICU) care, it is now imperative to specially train and sustain pediatric critical care physicians, nurses, and supportive staff, who are adept at handling this population.

In the current study published with this issue,^[3] the authors have concluded that a dedicated PCICU resulted in a shorter ventilator stay, with rapid deescalation of inotropes, with an overall decrease in the PCICU stay, when compared with the results wherein the adults and pediatric cardiac surgery cases were dealt within the same ICU. It was also observed that there was a decreased incidence of central line related blood stream infection

due to early removal of invasive lines in the dedicated PCICU group. The results are encouraging, but this study has limitations especially with regards to the lack of description of the case profile and the complexity of the congenital heart disease in the two groups, which has not really been categorized. This can be a significant variable with respect to the outcome designs in the two study groups. Also the results attributed to a dedicated PCICU in this study are also determined in our experience to a certain extent by factors such as complexity of the surgery and preoperative case profile. It should be stressed that a dedicated unit helps in streamlining of the standards of procedures for a unit, and this is probably the most important factor improving outcome. The article definitely adds on to the justification for a dedicated PCICU, relating from the experience of developed nations and the improving result scenario in the developing nations at major centers. A dedicated PCICU results in a better continuity of care, with specific attention to the ancillary critical care areas such as nutrition, metabolic issues, pain relief, and psychosocial factors like involving the parents in the recuperative process of the operated kid.

Clinical decision making for a critically ill child requires a multidisciplinary approach with a critical care physician interacting with various associated subspecialties, combine their clinical skills, past experiences, and knowledge, to analyse the situation at hand to decide the best course of action, compatible with the critical care pathways, and translate them into a action plan at the bedside.^[4] A dedicated PCICU does facilitate early extubation and deintensification protocols over a period of time, besides blood product usage regulation, reduction of laboratory tests, strict antibiotic policy and medication management, with overall reduction in ICU stay. The crux of the problem in today's day and time is a limited number of trained pediatric cardiac intensivists. There is also a considerable attrition from already existing cadre due to migration to developed nations for a better financial profile. Pediatric cardiac intensivists active in this field should encourage and inspire fresh graduates to fill existing training positions. Structured and accredited training programs are essential to facilitate the retention of the fresh trainees,

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as it provides them with a strong platform for the future. The profession of pediatric cardiac intensive care is highly demanding in terms of efficiency, skill, and long working hours and stress and emotional exhaustion can precipitate potential burn outs. A program with periodic diversification in the fields of research and academics can prevent this and ensure retention and longevity, with a upbeat moral of the entire PCICU staff.

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