OPEN

Twenty-Five Years of *Pediatric Critical Care Medicine*: An Evolving Journey With the World Federation of Pediatric Intensive and Critical Care Societies

KEYWORDS: critically ill children; global health; multidisciplinary collaboration; pediatric critical care; Pediatric Critical Care Medicine: abstracts; pediatric critical care physicians, nurses, and allied healthcare workers; resource-limited settings; scaling knowledge; World Federation of Pediatric Intensive and Critical Care Societies; World Federation of Pediatric Intensive and Critical Care Societies World Congress

Jeffrey P. Burns, MD, MPH[1,2,3]

Brenda M. Morrow, PT, PhD[3,4,5]

Andrew C. Argent, MD, MMed (Paeds), MD (Paeds), FCPaed (SA), FRCPCH[3,4,5]

Niranjan Kissoon, MBBS[3,6,7,8]

The inaugural issue of *Pediatric Critical Care Medicine* (PCCM) was published in July 2000 under a co-sponsorship and collaboration of the World Federation of Pediatric Intensive and Critical Care Societies (WFPICCS) and the Society of Critical Care Medicine. Our official journal, the first scientific, peer-reviewed journal to focus exclusively on the challenges and breakthroughs in pediatric critical care practice and research, has flourished and evolved along with WFPICCS to serve our global community over these 25 years. As the Editors-in-Chief who have so skillfully led PCCM over this time recently observed, "…our specialty has broadened and matured; researchers are coordinated across institutions and countries; the professions working in the field are intentionally collaborative…" (1).

WFPICCS is a 'society of societies.' Established in Paris in September 1997 by several internationally recognized leaders in the field of pediatric critical care, our mission is to "advocate for the care of critically ill and injured children worldwide; to advance professional knowledge and share best practices; and to give each child the best chance for survival and quality of life, including its family." The founders of WFPICCS understood that more could be achieved by harnessing and creating a network of international expertise, experience, and influence to improve the outcomes of children suffering from life threatening illness and injury in all environments across the world, than by the efforts of any nation or continent acting in isolation. By 2009, WFPICCS described the global community working to further research, set priorities, mentor the next generation, and scale the knowledge needed to care for critically ill infants and children (2). Then, in 2014, WFPICCS sought broader engagement to include the perspectives of colleagues working where most critically ill children reside; that is, in low- and middle-income countries, where intensive care resources are limited or nonexistent (3, 4). Today, WFPICCS includes 52 regional, national, and international societies across six continents, representing well over 100,000 pediatric and neonatal critical care physicians, nurses, and allied health care workers (see https://wfpiccs.org).

DOI: 10.1097/PCC.0000000000003611

PCCM is—and has been for 25 years—the cornerstone of fulfilling WFPICCS' mission. With the proliferation of textbooks, podcasts, social media, and new journals in the field broadly encompassed by pediatric critical care, information is increasingly available everywhere, while a platform for sharing peer-reviewed knowledge from internationally recognized experts is more imperative than ever. PCCM is that platform. WFPPICS and PCCM have shared the vision to contextualize and scale knowledge to the widest possible audiences as our common mission. Our efforts have enabled multidisciplinary experts across low-, middle-, and high-income environments to share and debate their perspectives on the evolved science and proposed care guidelines in our field at the dozen WFPICCS Congresses that have been held since 1992. Over the years, PCCM and WFPICCS have tried to be inclusive of non-English speaking colleagues by the translation of abstracts of selected articles published in PCCM in Chinese, French, Italian, Japanese, Portuguese, and Spanish, while a new section on "PCCM International" highlights the imperative of sharing a global perspective on issues in our field on a regular basis with all readers of the Journal (5).

The Supplement that accompanies the November 2024 issue of PCCM well reflects our shared mission of scaling the insights of colleagues from multiple disciplines across the world, with the publication of the 462 abstracts that were presented at the 12th Congress of World Federation of the Pediatric Intensive and Critical Care Societies in Cancun, Mexico, in June 2024 (6). While these observational data of case reports, case series, and preliminary reports of clinical investigations carry less weight when assessing the quality of evidence to inform the strength of recommendations (7), these abstracts are a unique and invaluable dataset for our community. The 60 oral abstracts and 402 poster abstracts published here are in effect an incomparable tapestry of the current and real-world observations, concerns, and research priorities of colleagues on six continents and 76 countries across the world. The richness of ideas and perspectives described in the supplement leads us to suggest that the many pediatric critical care research consortia (as well as any curious and aspiring researcher) across the world would benefit from undertaking a rigorous and systematic analysis of these conference abstracts as a unique source to identify gaps in our knowledge and help guide research priorities in our field going forward. Building partnerships and communities of practice around topics of interest should be another byproduct of the supplement.

Acknowledging the inherent limitations of abstracts, it is equally true that this method of sharing knowledge has always been the vehicle by which an observation emerges to become the consequential first link in the chain of evidence that ultimately advances the science of our—or any—field of medicine. One notable and frequently cited example of this were the initial case reports of several men presenting with Kaposi's sarcoma and *Pneumocystis* pneumonia that in retrospect were the initial observations that catalyzed the awareness of the emerging AIDS/HIV epidemic in the 1980s (8). In our field, the seminal publication in the *New England Journal of Medicine* on the use of continuous positive airway pressure ventilation for infants with idiopathic respiratory distress syndrome (surfactant deficiency) that marked the modern era of the application of positive pressure for this disorder was first presented in abstract form as a cases series (9). Readers of the Journal may be even more surprised to learn that this work was itself stimulated and built upon on a case series from South Africa by pediatricians who reported their observations on the significance and physiologic basis of grunting in spontaneously breathing infants with surfactant deficiency (10).

WFPICCS World Congresses are a unique forum in our field where one can engage in one setting with colleagues presenting abstracts that reflect the global diversity of contexts, cultures, and medical environments that encompass the field of pediatric critical care. The 12th World Congress at Cancun, Mexico, in June 2024 was especially notable as the first live gathering of WFPICCS colleagues across the world since the 9th World Congress in Singapore in June 2018. The COVID-19 pandemic touched all our lives in different ways but the isolation from our colleagues globally was universally felt. The meeting in Cancun underlined the need for the world congress where we are nourished and reinvigorated by the warmth and friendship that WFPICCs has encouraged and facilitated over the years. Colleagues from Argentina, Australia, Austria, Bangladesh, Barbados, Belgium, Bolivia, Botswana, Brazil, Cambodia, Canada, Chile, China, Colombia, Costa Rica, Cuba, Ecuador, Egypt, Ethiopia, France, Germany, Ghana, Greece, Guatemala, Haiti, Honduras, India, Indonesia, Iraq, Ireland, Israel, Italy, Jamaica,

Japan, Jordan, Kazakhstan, Kenya, Kuwait, Latvia, Lebanon, Lesotho, Libya, Malawi, Malaysia, Mali, Mexico, Montenegro, Namibia, Nepal, Netherlands, Nicaragua, Nigeria, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Rwanda, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, Uganda, United Kingdom, United States, Uruguay, Venezuela, Zambia, and Zimbabwe traveled great distances and gathered for over 5 days at Cancun quite simply to be part of a global community that seeks to address the many current and emerging challenges of caring for critically ill children everywhere across the world.

Why should we stay connected as a global community going forward? Most fundamentally because there are valuable insights that emerge from throughout the world that challenge presumptions and inform practice everywhere. A paradigmatic example of this is the Fluid Expansion as Supportive Therapy (FEAST) trial, a randomized controlled trial of fluid resuscitation in febrile children with signs of circulatory impairment, undertaken over 10 years ago in sub-Saharan Africa that applied an international standard of practice (bolus-fluid resuscitation) and compared it with the local standard of care (no bolus-fluid resuscitation). Maitland et al (11) found that fluid boluses significantly increased 48-hour mortality in critically ill children with impaired perfusion in this resource-limited setting. These findings were at first met with skepticism by many clinicians in parts of the world where the "international guidelines" typically emerge and where pediatric sepsis is commonly associated with bacterial sepsis. Yet, the vast majority of children dying from shock in the world today live in countries where nonbacterial pathogens such as viruses (e.g., gastroenteritis with severe dehydration, dengue hemorrhagic fever/dengue shock syndrome) and parasites (e.g., malaria) are the triggers of severe morbidity and mortality, in addition to bacterial pathogens. This study is not only one of the most highly cited in our field, but it also stimulated fundamental reconsideration of fluid-resuscitation guidelines and positive fluid balance in all settings (12). Even further, the 2011 FEAST study was another in the body of recent literature finding that "less therapy may be more in pediatric intensive care," including neuromuscular blockade, sedation practices, packed RBC replacement thresholds (13), oxygen target thresholds (14), and is currently being explored for blood pressure thresholds (15). This emerging body of literature well supports the notion that international pediatric critical care guidelines must recognize the need for "tailored approaches for different settings" (16).

WFPICCS and PCCM have indeed evolved together in promoting awareness of the unique realities of providing pediatric critical care in different environments across the world. Going forward the challenges of emerging pathogens, antimicrobial resistance, and the many ramifications of climate change and political disruption on the health of children will require an ongoing alliance between WFPICCS and PCCM as never before. The Supplement of abstracts from the 12th Congress of WFPICCS well demonstrates that commitment. A strong validation of the success of our collaboration over the past 25 years in scaling knowledge to colleagues around the world is the Journal's 2023 impact factor rating of 4.0. This places PCCM as one of the most consequential journals in its two categories: "Critical Care Medicine" (where it is ranked 9th out of 54 critical care journals, placing it in the 84th percentile) and "Pediatrics" (where it is ranked 12th out of 186 journals, placing it in the 94th percentile) (17). There will be challenges but welcomed opportunities as the Journal transitions to a fully online format beginning with the January 2025 issue. Regardless, WFPICCS and PCCM will evolve in collaboration and maintain our unwavering focus on scaling knowledge to colleagues everywhere on the challenges and breakthroughs in pediatric critical care practice. The success of this collaboration will continue to depend on the unwavering engagement of colleagues worldwide.

1 *Division of Critical Care Medicine, Department of Anesthesiology, Critical Care & Pain Medicine, Boston Children's Hospital, Boston, MA.*

2 *Department of Anaesthesia, Harvard Medical School, Boston, MA.*

3 *World Federation of Pediatric Intensive and Critical Care Societies.*

4 *Department of Pediatrics and Child Health, University of Cape Town, Cape Town, South Africa.*

5 *Division of Pediatric Intensive Care, Red Cross War Memorial Children's Hospital, Cape Town, South Africa.*

6 *Institute for Global Health, BC Children's Hospital and BC Women's Hospital + Health Centre, Vancouver, BC, Canada.*

7 *BC Children's Hospital Research Institute, BC Children's Hospital, Vancouver, BC, Canada.*

8 *Department of Pediatrics, University of British Columbia, Vancouver, BC, Canada.*

The authors have disclosed that they do not have any potential conflicts of interest.

For information regarding this article, E-mail: jeffrey.burns@childrens.harvard.edu

REFERENCES

1. Tasker RC, Kochanek PM: 25 years of pediatric critical care medicine: An evolving journal. *Pediatr Crit Care Med* 2024; 25:583–587
2. Kissoon N, Argent A, Devictor D, et al: World Federation of Pediatric Intensive and Critical Care Societies—its global agenda. *Pediatr Crit Care Med* 2009; 10:597–600
3. Argent AC, Ahrens J, Morrow BM, et al: Pediatric intensive care in South Africa: An account of making optimum use of limited resources at the Red Cross War Memorial Children's Hospital. *Pediatr Crit Care Med* 2014; 15:7–14
4. Kissoon N, Burns J: Who should get pediatric intensive care when not all can? A call for international guidelines on allocation of pediatric intensive care resources. *Pediatr Crit Care Med* 2014; 15:82–83
5. Tasker RC: Editor's choice articles for May. *Pediatr Crit Care Med* 2024; 24:353–355
6. Abstracts From the 12th Congress of World Federation of the Pediatric Intensive and Critical Care Societies. *Pediatr Crit Care Med* 2024; 25(Suppl 1)
7. Guyatt GH, Oxman AD, Vist GE, et al; GRADE Working Group: GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. *BMJ* 2008; 336:924–926
8. Centers for Disease Control (CDC): Kaposi's sarcoma and Pneumocystis pneumonia among homosexual men—New York City and California. *MMWR Morb Mortal Wkly Rep* 1981; 30:305–308
9. Gregory GA, Kitterman JA, Phibbs RH, et al: Treatment of the idiopathic respiratory-distress syndrome with continuous positive airway pressure. *N Engl J Med* 1971; 284:1333–1340
10. Harrison VC, Heese Hde V, Klein M: The significance of grunting in hyaline membrane disease. *Pediatrics* 1968; 41:549–559
11. Maitland K, Kiguli S, Opoka RO, et al; FEAST Trial Group: Mortality after fluid bolus in African children with severe infection. *N Engl J Med* 2011; 364:2483–2495
12. Obonyo NG, Olupot-Olupot P, Mpoya A, et al: A clinical and physiological prospective observational study on the management of pediatric shock in the post-fluid expansion as supportive therapy trial era. *Pediatr Crit Care Med* 2022; 23:502–513
13. Valentine SL, Kudchadkar S, Ward S, et al: Nonpulmonary treatments for pediatric acute respiratory distress syndrome: From the second pediatric acute lung injury consensus conference. *Pediatr Crit Care Med* 2023; 24(Suppl 1 2S):S45–S60
14. Mozun R, Schlapbach LJ: A critique of the "conservative versus liberal oxygenation targets in critically ill children" multicenter, randomized clinical trial published in the lancet 2024—more on "less is more?.". *Pediatr Crit Care Med* 2024; 25:e338–e342
15. Darnell R, Brown A, Laing E, et al; Protocolised Evaluation of Permissive Blood Pressure Targets Versus Usual Care (PRESSURE) Trial Investigators on behalf of the U.K. Paediatric Critical Care Society Study Group (PCCS-SG): Protocol for a randomized controlled trial to evaluate a permissive blood pressure target versus usual care in critically ill children with hypotension (PRESSURE). *Pediatr Crit Care Med* 2024; 25:629–637
16. Carrol E, Ranjit S, Menon K, et al: Operationalizing appropriate sepsis definitions in children worldwide: Considerations for the pediatric sepsis definition taskforce. *Pediatr Crit Care Med* 2023; 24:e263–e271
17. Clarivate: Journal Citation Reports. Available at: https://clarivate.com/products/scientific-and-academic-research/research-analytics-evaluation-and-management-solutions/journal-citation-reports/. Accessed August 1, 2024