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From the Editor

When Practice Outruns Evidence: Custom, Structure, and Access in Pediatric Critical Care

Pediatric emergency medicine and pediatric critical care are not simply the settings in which severe illness is managed. They are the disciplines in which evidence must be converted into bedside judgment under maximal time pressure. Three developments of the past several months shaped the preparation of this issue.

The first was the March 2026 publication of the Surviving Sepsis Campaign international guidelines for sepsis and septic shock in children.¹ A panel of 68 international experts representing 13 organizations, supported by 6 methodologists, updated the 2020 guideline and issued 61 statements, 20 of them new. The principal conceptual shift is the move away from definitions based on the systemic inflammatory response syndrome toward organ-dysfunction criteria. Under the 2024 Phoenix consensus criteria, a score of 2 or higher was associated with in-hospital mortality of 7.1% in higher-resource settings and 28.5% in lower-resource settings.^{1,2} Several recommendations reach the bedside directly: conditional support for cardiac and lung point-of-care ultrasound to guide resuscitation, a conservative oxygenation target for intubated children after resuscitation, and a conditional recommendation favoring high-volume hemofiltration when renal replacement therapy is required. The panel also found insufficient evidence to recommend co-treatment with methylene blue for children with persistent hypoperfusion despite other vasoactive medications, a conclusion directly relevant to one of the series published here.¹

The second was GASTRIC-PICU, published online in JAMA on June 12, 2026.³ In a pragmatic non-inferiority trial across 23 pediatric intensive care units (PICUs) in the United Kingdom and 1 in Switzerland, 4700 invasively ventilated, gastrically fed children were randomized to no routine gastric residual volume assessment or to assessment at least every 6 hours. Omission met the noninferiority margin for the clinical composite of survival and ventilator-free days at day 30 [adjusted odds ratio, 0.95; 95% confidence interval (CI), 0.86-1.05] and modestly improved energy delivery at 72 hours (80.3% vs. 76.8%; adjusted mean difference, 3.24 percentage points; 95% CI, 1.29-5.19), with no excess of ventilator-associated pneumonia or necrotizing enterocolitis.³ The trial is best read as a deimplementation study. A practice sustained for decades on physiological plausibility alone was finally tested at scale, and the assumption underlying it did not survive the test. The lesson concerns method rather than feeding.

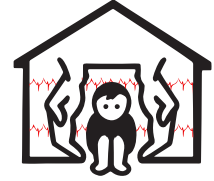
The third development moves beyond physiology to the architecture of care. By the end of 2025, 117.8 million people were forcibly displaced worldwide, an estimated 45 million of them children.⁴ For pediatric emergency departments, that figure is not sociological background. It is a condition of practice. A recent multicenter study from İstanbul offers a national parallel: among 5685 PICU admissions during 2023 across 10 units, 53 children had laboratory-confirmed measles, with a median age of 1.3 years, and 81.1% were classified as unvaccinated for the analysis.⁵ The absolute numbers are small, but the preventive signal is not, and it ties preventive pediatrics to critical care more tightly than we have been accustomed to assume.

The clinical contributions in this issue fall into three groups.

The first concerns refractory shock, extracorporeal support, and renal replacement. Ekren and colleagues report 125 continuous renal replacement therapy (CRRT) procedures in 85 children, with shorter filter survival on heparin than on citrate ($p=0.002$) and an association between pretreatment acidemia, low bicarbonate, elevated lactate, and mortality.⁶ The anticoagulation finding is consistent with a 2025 meta-analysis of 638 pediatric patients,⁷ although a retrospective single-center design cannot exclude confounding by indication, since heparin is preferentially withheld from children already at risk of bleeding. Read with that caution, the study contributes national data to a question the international literature has not settled. Emer Dilaver et al.⁸ describe methylene blue in 10 children with catecholamine-resistant shock: systolic pressure rose significantly, the vasoactive-inotropic score did not respond consistently, and 90% died. The authors interpret this as a consequence of late administration in an extremely ill cohort rather than lack of drug effect, an interpretation that is plausible but that a series of this size and

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design cannot distinguish from the alternative. Given that the Surviving Sepsis Campaign panel found the evidence base too thin to support any recommendation,¹ transparently reported series of this kind, including those with disappointing results, are necessary for defining the hypotheses that future comparative studies will need to test. The letter from Özcan et al.⁹ extends the discussion from physiology to system design: half of Turkish centers transfer their candidates for extracorporeal membrane oxygenation (ECMO), annual case volume falls below 5 in 80% of centers offering the technique, and the unavailability of double-lumen cannulae for infants pushes units toward venoarterial support. The constraint here is access, not technology.

Trauma, toxicology, and neurologic emergencies form the second group. İrday et al.¹⁰ document thoracic injury in 29% of 375 trauma admissions over 7 years, with tube thoracostomy in 53.2%, surgery in 11.9%, and significantly prolonged intensive care stay ($p=0.002$). The fact that earthquake-related injuries ranked second among injury mechanisms is a reminder that disaster preparedness is not theoretical in this region. In a cohort of 391 acute poisonings, İldeş et al.¹¹ sharpen the age-dependent distinction between accidental domestic exposure in young children and intentional ingestion in adolescents ($p<0.001$). The concentration of rodenticide exposure among the youngest is a public health and regulatory concern, not only a clinical one. The protocol by Kocaoğlu et al.¹² on raised intracranial pressure, covering optic nerve sheath diameter measurement, thresholds for hyperosmolar therapy, and the move away from routine hyperventilation, is one of the most immediately useful contributions in this issue for trainees.

The third group comprises case reports, each of which tests a boundary of clinical reasoning. Battal et al.¹³ describe commotio cordis following peer bullying, with subsequent hypoxic-ischemic encephalopathy. The case shows that commotio cordis should not be regarded as a phenomenon confined to organized sport, and that outcome depends on how rapidly defibrillation is delivered, a point reinforced by the 2025 resuscitation guidelines' emphasis on rapid recognition and defibrillation.¹⁴ Balkan et al.¹⁵ report bilateral pulmonary embolism in a child with Klippel-Trenaunay syndrome, instructive for its early echocardiographic risk stratification and for conservative anticoagulation in a hemodynamically stable intermediate-risk presentation; their restraint in not inferring causality from the association with sirolimus is methodologically appropriate.¹⁵ Qureshi and Futela,¹⁶ reporting a late neonatal humeral shaft fracture with bridging callus, return us to the discipline of differential diagnosis: birth trauma, inflicted injury, and bone fragility cannot be separated on a single radiograph.

Not every advance in critical care arrives as a measurement. Demir Acar et al.¹⁷ interviewed 12 pediatric emergency nurses about caring for refugee children and their families and documented increased workload, language barriers that interrupt both treatment and discharge teaching, the emotional weight of encountering neglect, and a determination to treat every child alike despite those pressures. Twelve participants cannot establish prevalence, and the study does not claim to. What qualitative work of this kind can show, and quantitative work may not capture as readily, is the mechanism by which social conditions become clinical risk. A discharge instruction that is not understood is functionally equivalent to one that was never given.^{4,17} Secondary traumatic stress among staff belongs among our quality indicators and is not yet there.

Taken together, these papers describe a field that can no longer be satisfied with asking what should be done. The more exacting question is this: on what evidence, within which system constraints, and with recognition of which inequities do we act? GASTRIC-PICU shows what happens when that question is finally put to a practice that had never faced it. The same scrutiny has not yet been applied to much of what we do in refractory shock, pediatric CRRT anticoagulation, and ECMO triage. This issue measures that distance.

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Prof. Hayri Levent Yılmaz, MD.

Editor-in-Chief

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