



# **Pediatric Sepsis – lessons learnt in the past 10 years and future directions**

**Luregn J Schlapbach**

Department of Intensive Care and Neonatology, and Children's Research Center, University Children's Hospital Zurich,  
University of Zurich, Zurich, Switzerland

---

The first Global Burden of Disease report on sepsis revealed that sepsis affects an estimated 25 million children every year, accounting for approximately 3 million deaths this age group. This burden of disease contrasts strikingly with the lack of evidence to guide best practice, and with the variability how sepsis is prevented, diagnosed, managed, and followed up.

Building on the World Health Organization declaration on sepsis, we will review current evidence on the epidemiology demonstrating the burden, and the features unique to children.

We will then critically discuss lessons learnt from the past 10 years, including evidence from observational and interventional studies which informed the 2020 pediatric Surviving Sepsis Campaign. Specifically, we will analyze the challenges for sepsis recognition, delivery of the initial sepsis bundle, and management of refractory septic shock.

Based on the currently available knowledge and experience, we will then explore how a roadmap on pediatric sepsis could look like; incorporating the needs for better prevention, diagnostic improvement, evidence-based management, and sustainable systems to support and follow-up patients and their families.



# **Pediatric Inflammatory Multisystem Syndrome – what can we learn from the pandemic for future pediatric intensive care?**

**Luregn Schlapbach**

Department of Intensive Care and Neonatology, and Children's Research Center, University Children's Hospital Zurich,  
University of Zurich, Zurich, Switzerland

---

Within weeks after the first wave of COVID-19 hit Europe, clusters of a novel inflammatory syndrome almost exclusively observed in children emerged. While the syndrome termed Paediatric Inflammatory Multisystem Syndrome Temporally Associated with COVID-19 (PIMS-TS), also termed MIS-C, shares similarities with Kawasaki disease, the phenotypic, epidemiological, and immunological studies conducted indicate PIMS-TS is a unique manifestation. Subsequently, similar reports emerged around almost the entire globe.

We will review the current evidence on pathophysiology, clinical presentation, treatment, and outcomes for children with PIMS-TS.

While children have been relatively spared from severe COVID-19 related disease, PIMS-TS offers insights into pediatric vulnerability to inflammation. The rapid international collaboration to foster a better understanding of this disease offers opportunities for future research and quality improvement which can extend to pediatric intensive care, and other diseases, such as sepsis. We will review scientific progress and lessons learnt from the development of interventional trial around COVID-19 and PIMS-TS which can inform on future progress in the field of intensive care.