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Efforts towards the development of new pediatric sepsis definitions

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We thank Dr. Shime and colleagues for wading into the difficult issue of diagnosing sepsis.[1] The SIRS criteria, while crafted for research purposes, have gained traction in clinical practice to identify children with sepsis. However, in both high resource and austere settings the SIRS criteria has not proven very useful in this regard. In resource rich areas SIRS is not practical primarily because of its high sensitivity and low specificity. In low and middle income countries (LMIC), the SIRS based sepsis definitions are not only poorly specific, but are also difficult to apply because a leukocyte count is not routinely available. In addition, in our study, conducted in a resource constrained setting, we found that among children admitted with a proven or suspected infection, the traditional SIRS-based criteria identified nearly all admitted children (86%) as septic.[2] The corresponding sensitivity and specificity for in-hospital mortality was 95% and 15%, respectively. Therefore, our findings lead us to conclude that there is a need for a more specific definition of sepsis.

The recently published Sepsis-3 definition of sepsis, currently limited to adults, has been endorsed by many, but not all, international bodies with an interest in sepsis.[3, 4] Although we applaud the progress towards an improved and more clinically relevant definition of sepsis in adults, it is limited primarily to the resource rich populations in which it was derived and validated. However, any approach to diagnosis and treatment of sepsis should be context specific. Thus, we believe that efforts to develop a parallel pediatric definition must consider the many issues specific to LMICs, since the majority of sepsis deaths worldwide occur in LMICs.

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This effort is sorely needed and presents an opportunity to engage with stakeholders in LMICs to ensure that data can be generated from these areas to assist in the derivation and validation of practical definitions. In the meantime, we are left with administrative, clinical and research criteria which identify specific populations of children with sepsis with some overlap.[5] We are aware that there are efforts underway to reassess our approach to recognition of sepsis in children. Ours is not the last word, and we share the sentiments of our colleagues and look forward to efforts to improve criteria for defining sepsis in children.

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