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American College of Critical Care Medicine Clinical Practice Parameters for Hemodynamic Support of Pediatric and Neonatal Septic Shock

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Abstract

Objectives:

The American College of Critical Care Medicine provided 2002 and 2007 guidelines for hemodynamic support of newborn and pediatric septic shock. Provide the 2014 update of the 2007 American College of Critical Care Medicine “Clinical Guidelines for Hemodynamic Support of Neonates and Children with Septic Shock.”

Design:

Society of Critical Care Medicine members were identified from general solicitation at Society of Critical Care Medicine Educational and Scientific Symposia (2006–2014). The PubMed/Medline/Embase literature (2006–14) was searched by the Society of Critical Care Medicine librarian using the keywords: sepsis, septicemia, septic shock, endotoxemia, persistent pulmonary hypertension, nitric oxide, extracorporeal membrane oxygenation, and American College of Critical Care Medicine guidelines in the newborn and pediatric age groups.

Measurements and Main Results:

The 2002 and 2007 guidelines were widely disseminated, translated into Spanish and Portuguese, and incorporated into Society of Critical Care Medicine and American Heart Association/Pediatric Advanced Life Support sanctioned recommendations. The review of new literature highlights two tertiary pediatric centers that implemented quality improvement initiatives to improve early septic shock recognition and first-hour compliance to these guidelines. Improved compliance reduced hospital mortality from 4% to 2%. Analysis of Global Sepsis Initiative data in resource rich developed and developing nations further showed improved hospital mortality with compliance to first-hour and stabilization guideline recommendations.

Conclusions:

The major new recommendation in the 2014 update is consideration of institution—specific use of 1) a “recognition bundle” containing a trigger tool for rapid identification of patients with septic shock, 2) a “resuscitation and stabilization bundle” to help adherence to best practice principles, and 3) a “performance bundle” to identify and overcome perceived barriers to the pursuit of best practice principles.

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