Pediatric Sepsis Initiative in the Emergency Room
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Background
Overwhelming infection manifested as septic shock is one of the leading causes of pediatric mortality. Despite the existence of literature describing improved outcomes from goal-directed therapy, there continues to be less than desired quality of care delivered to this patient population resulting in suboptimal outcomes. The need to improve outcomes in the diagnosis and treatment of children with septic shock is of paramount importance to pediatric care providers and to the children and families the subspecialty serves. Thus, in conjunction with the Pediatric Septic Shock Collaborative, we will implement evidence-based, nationally recommended practices for pediatric sepsis care in the Comer ED from triage assessment to initial patient management to disposition.

The Intervention
• Education on the signs of sepsis for the attendings, residents and nurses that work in the Comer ED
• Introduction of an intervention bundle of best practices for pediatric patients suspected to have sepsis in the Comer ED
  • Development of Sepsis Screening Triage Tool
  • Best Practice Alert for Sepsis
  • Sepsis Clinical Pathway
  • ED Sepsis Order Set – Initial hour
  • Sepsis Flow Sheet and Checklist
• Integration of Sepsis Screening Triage Tool into EPIC
• Best Practice Alert in EPIC
• Providing Feedback through Sepsis Alert Summary

Aim
• To decrease mortality from pediatric septic shock
• To evaluate the difference in time to antibiotics and time to first IV fluid bolus after the introduction of intervention bundle for pediatric sepsis in the Comer ED

Results

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<tr>
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<th>Pre-Intervention (n = 41)</th>
<th>Post-Intervention (n = 14)</th>
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</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>4.88%</td>
<td>7.1%</td>
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<tr>
<td>Antibiotics &lt; 60 min</td>
<td>51.22%</td>
<td>69%</td>
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<tr>
<td>Bolus Start &lt; 20 min</td>
<td>7.32%</td>
<td>50%</td>
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<tr>
<td>Bolus Completed &lt; 20 min</td>
<td>n/a</td>
<td>57%</td>
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Lessons Learned
• Education on pediatric sepsis and the implementation of an intervention bundle of best practices has increased awareness of suspected sepsis in the Comer ED overall
• The results show increased compliance with goal-directed therapies
• The intervention bundle has made a significant difference in the administration time of antibiotics and the time to first IV fluid bolus
• There has been 57% compliance with the goal of completing the first IV fluid bolus in < 20 min on the clinical sepsis pathway
• There was one death in the post-intervention group
• The results were not stratified for sepsis severity; the presentation of the patient who died in the post-intervention group was severe including cardiac arrest just after arrival to the ED

Next Steps
• Expansion of Sepsis Initiative to the Pediatric Floors and Pediatric ICU in Comer
  • Creating Continuing Sepsis Order Set
  • Education for the Floor and PICU nurses
  • Resident research project – further education of the residents
• Integration of the early identification of sepsis tool, sepsis pathway and best practice alert into PET (pediatric emergency response team) calls

Acknowledgements
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