Non-Severe Sepsis Overview

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Session Objectives

1) Provide practical definition and background information on non-severe sepsis patients

2) Review key guideline/bundle topics relevant to this patient population, particularly those that impact time to antibiotics

3) Discuss purpose of identifying and reviewing the NSS patients in IPSO collaborative

4) Emphasize importance of learning from this patient population to improve sepsis care
I don't work well under pressure or under any other circumstance.
How does IPSO operationalize the spectrum?

Infection  Sepsis  Severe Sepsis  Septic Shock
### Ped Sepsis Definition v Adult Sepsis-3 vs IPSO

<table>
<thead>
<tr>
<th>Pediatric (Goldstein)</th>
<th>Adults (Sepsis-3)</th>
<th>IPSO (For Peds QI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infection</td>
<td>Infection</td>
<td>Non-Severe Sepsis (NSS) (inpatient, BCx, Abx in 24° minus SS/SS; includes Invasive Bacterial Infections)</td>
</tr>
<tr>
<td><strong>Non-Severe Sepsis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Severe Sepsis</strong></td>
<td>Sepsis</td>
<td>Suspected Severe Sepsis &amp; Septic Shock (vs 2 tier) (based on trigger tool/huddles)</td>
</tr>
<tr>
<td>Septic Shock</td>
<td>Septic Shock</td>
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**Sepsis Syndrome**

IPSO is using pragmatic PROSPECTIVE criteria/tools to approximate sepsis continuum and using Goldstein-like terminology.

*Champions for Children's Health*
Patients May Shift Around

Presentation → Inpatient Course → Outcome

No Sepsis

Non-SS (ROS, F&N) [largest n]

Severe Sepsis [medium n]

Septic Shock [smallest n]

PSSC / SSC

Severe Sepsis

Septic Shock

Non-SS

Intact Survival [largest n]

Survival + Morbidity [medium n]

Death [smallest n]

IPSO
AIMS

• **Decrease mortality** from Severe Sepsis by 75% in US Pediatric Acute Care Settings from a baseline of ~10% to 2.5% by 12/2020
  – Large goal impact, but smaller n

• **Decrease incidence** of hospital-onset Severe Sepsis by 75% in US Pediatric Acute Care Settings from a baseline of ~2% to 0.5% by 12/2020
  – Smaller starting incidence, but larger n

• **Pediatrics PREVENTION** success stories:
  – Vaccines, child safety seats, WCCs, etc
NSS Metrics: 1 outcome and 1 process

Hospital-Onset SS = SS/SS identified >24 hours after hospital presentation

Non-Severe Sepsis (NSS) denominator = Inpatient, BCx, Abx in 24° minus SS/SS <24h (POA)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Definition</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>Time from antibiotic order to antibiotic administration</td>
<td>Measures median time between writing antibiotic order and antibiotic administration</td>
<td>Decrease</td>
</tr>
</tbody>
</table>

Retrospective data to inform prospective QI
Severe Sepsis Incidence vs Mortality: Reducing Deaths at a Population Level

<table>
<thead>
<tr>
<th>Incidence Rate</th>
<th>Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unchanged</td>
<td>Unchanged</td>
</tr>
<tr>
<td>Reduced</td>
<td>Reduced</td>
</tr>
</tbody>
</table>

- Unchanged =
- Reduced ↓
- Reduced ↓↓↓

Analogous to CLABSI or CAUTI – Device Utilization vs HAI Rate
AIMS

Decrease the incidence of hospital-onset Severe Sepsis

Key Drivers/Bundles

I. Prevention Appropriate and timely treatment of non-severe sepsis (NSS) that may lead to severe sepsis

Secondary Drivers/Bundle Elements/Interventions

- Use clinical pathways and/or order sets for common bacterial infections
- Administer ordered antibiotics in a timely fashion
- Use a process to recognize clinical deterioration despite antibiotic treatment
NSS considerations

• Differences in ED vs inpatient (planned admission)
  • Not all kids in ED with BCx/Abx!

• Time from Abx Order to time of Abx admin;
  • Time-Zero **not** time of recognition or physiologic onset
  • Importance of antibiotic stewardship

• Automatable!
“Use Clinical Pathway / Order sets for common bacterial infections”

Less severe presentations of…

- Rule-Out-Sepsis
- Fever in neonate
- Fever & neutropenia
- Sickle cell disease & fever
- Transplant patients & fever
- Community Acquired Pneumonia
- Abscess/skin & soft tissue infection
- Appendicitis
- Preorbital cellulitis
- Nosocomial infections (HAIs)
Source Control

As part of prevention of hospital onset sepsis
e.g.….  
Appendiceal abscess drainage
CVL removal
SSI debridement
Etc.

Do you have standardized guidelines for these?
“Administer ordered antibiotics in <1 hr”

• Reminder:
  – Time-zero is ORDER (antibiotic stewardship)

• Potential PDSA Targets:
  – Pharmacy priority queue
  – Delivery of antibiotic to bedside
  – Nursing workflow priority queue
  – Vascular access
“Use a process to recognize clinical deterioration despite antibiotic treatment”

- i.e., sepsis screen, huddle, PEWS, etc
These hands just saved a life by administering an antibiotic in less than 30 minutes. Add sepsis sleuth to the list of ways I am AWESOME! someecards user card