Taming Sepsis: Simulation-based Educational Program

M. Isabel Friedman, DNP, MPA, RN, BC, CCRN, CNN, CHSE
Barbara DeVoe, DNP, FNP-BC

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Disclosure

M. Isabel Friedman, DNP, MPA, RN, BC, CCRN, CNN, CHSE
Barbara A. DeVoe, DNP, FNP, BC
Center for Learning and Innovation, North Shore-LIJ Health System

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Objectives

Session Goal: Describe how an innovative educational program can impact patient outcomes.

Session Objectives:

• Describe TSEP™ the innovative educational program designed to assist nurses in the early identification and prompt treatment of patients in the sepsis continuum.

• Describe how the multimodal design utilizes online learning and simulation to assist in the application of evidence based practice to patients in the sepsis continuum.
## The System Today

<table>
<thead>
<tr>
<th>Clinical Enterprise</th>
<th>Educational Enterprise</th>
<th>Research Enterprise</th>
<th>Insurance Enterprise “CareConnect”</th>
<th>Community Health Enterprise</th>
<th>NS-LIJ Ventures</th>
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<td>Inpatient facilities</td>
<td>GME/CME</td>
<td>Discoveries</td>
<td>Risk</td>
<td>Community benefit</td>
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<td>Ambulatory/outpatient</td>
<td>Medical School/Elmezzi</td>
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<td>Hospice</td>
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<td>Population health</td>
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**Partnerships**
Sepsis Facts in US

Sepsis is a complex condition that occurs as a result of the systemic inflammatory response to infection

• Mortality: 11th leading cause of death
  – Sepsis: 10.6%
  – Severe sepsis and septic shock: 15-30%
• Increases by 13% annually
• Primary cause of death in hospital non-cardiac ICUs
• **Blended Learning:**
  – Simulation
  – Online modules

• **Modules:**
  – Bundles
  – TeamSTEPPS®
  – Health Literacy and Cultural Awareness
  – Sepsis, severe sepsis and septic shock discipline specific educational module with case studies
TSEP™

• Implementation
  – Nursing

• Diffusion
  – Nursing specialties
  – Interprofessional
  – Physician specialties
Simulation and Debrief
Case Study #1

• Chris Jones a 53 year old presents to the ED with complaints of persistent cough for three days. Past medical history non-contributory. Woke this morning with difficulty breathing. Weighs 83 kg.

• Temp: 102°F
• Respiratory Rate: 21/min
• Heart RSR rate of: 88/min
• Breath sounds: Bilateral Crackles
• BP: 122/82
Case Study #1

• What is the patient’s triage level?
  • Level 3

• Report to the Physician includes?
  • SBAR or other organized hand-off

• Where is the patient on the sepsis continuum
  • Sepsis

• Based on the sepsis bundles, what orders would the nurse expect from the Physician?
  • Lab orders including cultures, lactate, antibiotics and consider fluids
<table>
<thead>
<tr>
<th>Stage</th>
<th>Definition</th>
<th>SIRS Criteria</th>
<th>ED Super SIRS Criteria</th>
<th>ED Triage Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepsis</td>
<td>Suspected infection + 2 or more SIRs criteria</td>
<td>T-38.3°C (101°F) or T-36°C (96.8°F) HR: &gt; 90 RR: &gt; 20 WBC &gt; 12,000 or &lt; 4,000</td>
<td>HR: ≥ 120 RR: ≥ 24 Unexplained altered mental status</td>
<td>3 Tier System Urgent</td>
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<td>5 Tier System ESI Level 3</td>
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<tr>
<td>Severe Sepsis</td>
<td>Suspected or documented infection + organ dysfunction</td>
<td>T-38.3°C (101°F) or T-36°C (96.8°F) HR: &gt; 90 RR: &gt; 20 WBC &gt; 12,000 or &lt; 4,000</td>
<td>HR: ≥ 120 RR: ≥ 24 Unexplained altered mental status</td>
<td>3 Tier System Emergent</td>
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<td>5 Tier System ESI Level 2</td>
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<td>Septic Shock</td>
<td>Severe Sepsis + persistent hypotension that does not respond to appropriate fluid resuscitation</td>
<td>T-38.3°C (101°F) or T-36°C (96.8°F) HR: &gt; 90 RR: &gt; 20 WBC &gt; 12,000 or &lt; 4,000</td>
<td>HR: ≥ 120 RR: ≥ 24 Unexplained altered mental status</td>
<td>3 Tier System Emergent</td>
</tr>
<tr>
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<td></td>
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<td></td>
<td>5 Tier System ESI Level 1 or 2</td>
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</tbody>
</table>
Case Study #2

• Mary Jones an 88 year old nursing home resident admitted directly to the telemetry unit because of a near syncopal attack. Sudden onset of confusion. Has a chronic foley and weighs 65 kg.

• Temp: 95°F
• Respiratory Rate: 24/min
• Heart Sinus Tach rate of: 120/min
• Breath sounds: Clear
• BP: 82/44
Case Study #2

• What is the patient’s current condition?
  • Patient requires immediate intervention

• Report to the Physician includes?
  • SBAR or other organized hand-off

• Where is the patient on the sepsis continuum
  • Severe Sepsis

• Based on the sepsis bundles, what orders would the nurse expect from the Physician?
  • Lab orders including cultures, lactate, antibiotics, & fluid resuscitation at 30ml/kg
TSEP™ Achievements

• Over 4500 clinicians educated
• TSEP™ module pre/post assessment scores indicate statistical significance
• Knowledge transfer evident during simulation/debrief
• Learner satisfaction of TSEP™ over 90%
• Fulfills requirement for New York State Department of Health Public Health Law 405.4
Keys to Success

- Health System Strategic Initiative
- Interprofessional Team
- Education TSEP™ PSI
- Clinical Transformation Methods Coaching
Sepsis Task Force guidelines issued (February 2009)
Focus on early identification & timely antibiotics in the ED (March 2011)
TSEP™ instituted (January 2012)
Six Sigma & Lean projects (April 2013)
Focus on Fluids (January 2015)

NSLIJ System Review
Raw Sepsis and Severe Sepsis/Septic Shock Mortality Rate
(January 2008 - April 2015)
References


Questions?