‘S’ is for Sepsis, STEMI, and Stroke: Early Interventions to Improve Patient Outcomes

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‘S’ is for Sepsis, STEMI, and Stroke: Early Interventions to Improve Patient Outcomes

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Scripps Memorial Hospital
Patient Care Manager
Emergency Department
Objectives

1. Define Sepsis
2. Review current state
3. Review early interventions
4. Implementation of a Code Sepsis Program for improved patient outcomes
About Scripps Health

Not-for-Profit, Integrated Health Care System in San Diego, California
Operating Two of San Diego’s Six Trauma Centers

$2.9 BILLION IN REVENUE
15,300 EMPLOYEES
2,475 PHYSICIANS
747 IN FOUNDATION MODEL
About Scripps Health (cont.)

Scripps Hospital Campuses
Scripps Clinic
Scripps Coastal Medical Center
Scripps Cardiovascular Institute
Scripps Home-based Care
Scripps Skilled Nursing Preferred Network
Imaging Healthcare Specialists (IHS)
Pioneers Memorial Hospital, an Affiliate of the Scripps Health Network
• Scripps Memorial Hospital La Jolla
  – 400 licensed beds
  – 47 emergency department (ED) beds and 4 trauma beds: 45,000 ED visits
  – Level II Trauma Center
    • Comprehensive Stroke Center
    • Left Ventricular Assistive Device (LVAD)
  – Staffing
    • All RN staffing
    • Emergency Medical Technicians (EMTs) and Certified Nurse Assistants (CNA)
• **What is Sepsis?**

  “a life-threatening organ dysfunction due to a dysregulated host response to an infection”

  Third International Consensus Definitions Task Force, 2016

• **Importance Nationally:**
  - More than 1 million Americans diagnosed with Sepsis annually
  - 10% of hospital admissions
  - 50% of hospital deaths
  - 21.1% of all hospital charges
  - Most expensive cause of hospitalization ~$21 billion annually

  Surviving Sepsis Campaign
Sepsis

a global burden

~ 27 000 000
people per year develop sepsis

~ 19 000 000
people per year survive

Survivors may face lifelong complications

~ 8 000 000
people per year die

~ 6 000 000
neonates and children under five die of sepsis

Maternal Death
Sepsis is one of the most common causes

Everybody can develop sepsis following an infection

Sepsis is an emergency\(^1\)

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We are moving in the right direction.

30% Decline in sepsis mortality
Due to timely and aggressive treatment, California hospitals have experienced 30 percent reduction in sepsis mortality, with increasing reductions each year.

California Hospitals’ Practices Have Saved Lives
36,000+ lives saved from 2011–2015

Sepsis in California (cont.)

Sepsis in California (cont.)


*Source: OSHPD Discharge Data; Data reflect updated Modified Dombrovskiy Method of case identification (ICD-9 & ICD-10).
What California Hospitals Are Doing to Survive Sepsis

1. **Upstream Prevention**
   - Build readiness and antimicrobial stewardship and infection prevention programs

2. **Early Diagnosis**
   - Screening tools promote early identification in ED and inpatient settings

3. **Rapid Response**
   - 24/7 rapid response through sepsis teams and sepsis coordinators

4. **Evidence-Based Treatment**
   - Definitive and aggressive treatment with protocols, interventions, and checklists within time-sensitive windows

5. **Continuous Reassessment**
   - Monitoring patient response and status for recovery

Within 3 hours of recognition of Sepsis:
- Measure initial lactate
- Obtain Blood Cultures (prior to ABX)
- Administer broad spectrum ABX
- Administer 30 ml/kg for hypotension or a lactate ≥ 4.0
- Repeat lactate after initial fluid resuscitation

Within 6 hours of recognition of Sepsis:
- Start vasopressors for hypotension that doesn’t respond to initial fluid resuscitation
- Reassessment of Tissue Perfusion by MD/NP/PA to include all 4 elements:
  - VS, Cap Refill, Skin findings, Cardio-Pulmonary
  - New 2018 guidelines make this requirement easier
## Quality/Patient Safety Improvement System

<table>
<thead>
<tr>
<th>INVENTORY</th>
<th>Measure and Report</th>
<th>Prioritize</th>
<th>Focus</th>
<th>Performance Challenge</th>
<th>Scripps Standards</th>
<th>A3 Problem Solving</th>
<th>Management System</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is in Scope?</td>
<td>Data Governance - Data collection - Interrater reliability - Documentation &amp; coding - Data Sources</td>
<td>Pugh Matrix - Severity - Frequency - Detectability - Connection to Strategy</td>
<td>What do we need to work on now?</td>
<td>Annual Objectives and Targets</td>
<td>Subject Matter Expert Groups (Care Line, others)</td>
<td>- Understand gap to standard using data and observations - Improvement Strategy (Model Cell?) - Develop Standard Work</td>
<td>Problem solving and coaching for development</td>
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**Joint Quality Leaders**

**Acute Care Steering Executive Cabinet Board of Trustees (Quality Committee)**

**SME Group**

**Acute Care Steering & Hospital Operations Portfolio Review**

*Supported by:
Executive Team: Governance and Accountability (Portfolio Review)
Value by Design: Improvement Model Governance
Joint Quality Leadership & Corporate Resources: Coordination/Support for - Scope, Data Governance, Site Pace Setter, EPIC Workflows and Reporting, Information Flow, Support to SME group, CFI/Education, Communications, Policy updates, Product Decisions, Documentation Standards/HIM*
## A3 Improvement Work

<table>
<thead>
<tr>
<th>Data Governance</th>
<th>Standards</th>
<th>Standard Work</th>
<th>Daily Management</th>
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<tbody>
<tr>
<td>SEP1 core measure</td>
<td>One Scripps standard for <strong>defining</strong> Sepsis</td>
<td>Model Cell (CV 2017)</td>
<td>Daily unit level problem solving</td>
</tr>
<tr>
<td>Interrater reliability</td>
<td>One Scripps <strong>standard</strong> for caring for these patients in the ‘best known way’ (clinical expert group/SME)</td>
<td>2018 Acute Care Performance Challenge</td>
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<tr>
<td>Standard process for resolving data quality issues</td>
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<td>- All Emergency Departments</td>
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<td>- Urgent Care TP</td>
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<td>- Med/Surg (Green – assess EPIC capabilities)</td>
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System-Wide Sepsis Core Measure Performance

SEP-1 Early Management Bundle Severe Sepsis/Septic Shock OFI Rate
Site = ALL

Start of the System-Wide Efforts and the Chula Vista Model Cell  Current Average = 52 %
Performance

Historical: 42% reduction in care bundle defects in 6 years

Current: 42% reduction in care bundle defects 18 months
Where are our OFIs?

Systemwide OFI Distribution

- Lactate: 51%
- Fluids: 37%
- Bld CX not drawn in time: 3%
- Bld CX not drawn: 3%
- No IV ABX: 2%
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<td><strong>Sepsis Criteria</strong> (MUST HAVE AT LEAST 2 WITH NEW/SUSPECTED INFECTION):</td>
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<td>- HR &gt; 90</td>
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<td>- SBP &lt; 90</td>
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<tr>
<td>- RR &gt; 20</td>
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<td>- TEMP &gt; 38</td>
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<td>- TEMP &lt; 36</td>
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<tr>
<td>- MAP &lt; 65</td>
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<tr>
<td>- NEW ONSET ALTERED MENTAL STATUS</td>
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# Code Sepsis Handoff Tool

**CODE SEPSIS FLOWSHEET**

**Scripps Health**

**CRITERIA (AT LEAST 2 OF THE FOLLOWING) WITH NEW OR SUSPECTED INFECTION:**

- **Check all that apply:**
  - Cardiac:
    - HR > 90
    - SBP < 90
    - MAP < 65
  - Temp: □ > 38°C (100.4°F)
  - Respiratory: □ RR > 20
  - Neuro: □ New onset altered mental status
  - Lab: □ WBC > 12,000
    - □ WBC < 4,000
    - □ Bands > 10%

**CODE SEPSIS** Date: ___________ Time: ___________ □ Cancelled

RN Name/Corp ID: ________________ MD Name/Corp ID: ________________

**MUST BE COMPLETED WITHIN 3 HOURS**

- □ SEPSIS PFO(s) INITIATED
- □ INITIAL LACTATE
  - TIME: ___________ LEVEL: ___________
- □ REPEAT LACTATE IN 2 HOURS
  - TIME: ___________ LEVEL: ___________
- □ BLOOD CULTURES X 2 BEFORE ANTIBIOTICS (Do not delay ABX if unable to obtain both sets within 60 minutes)
- □ 1st ABX ADMINISTERED within 60 minutes
  - □ Use Sepsis Antibiotic PFO
  - □ UA may be obtained AFTER antibiotic
  - ONLY if hypotensive (SBP <90 or MAP <65) or Lactate ≥ 4.0:
    - □ NS or LR administration
      - 30 mL/kg x _____ (kg) = _____ mL

**MUST BE COMPLETED WITHIN 6 HOURS**

- □ VASOPRESSORS (For persistent ↓-BP after initial fluid bolus)
  - Physician to perform and document FOCUSED SEPSIS TISSUE PERFUSION REASSESSMENT

**ADMISSION HAND-OFF**

The following elements were NOT completed in ED:

- □ REPEAT LACTATE
  - TIME DUE: ___________
- □ 30 mL/kg FLUID BOLUS
  - VOLUME REMAINING FOR INFUSION: _____ mL

**OTHER NOTES:**
Chasing the OFI Rate

Sepsis Audit Tool

(Place Patient Sticker Here)

Primary RN: ____________________________

ED MD: ____________________________

Time Code Sepsis called: _____________________

Lactate x2: Yes  No  if no, then why __________________ _____________________

Bl Cx x2: Yes  No  if no, then why ___________________ ____________________

Abx < 60 min: Yes  No if no, then why ________________ _______________________

IVF (30ml/kg): Yes  No if no, then why _______________ ________________________

Tissue perfusion reassessment by MD after IVF completed: 

Yes  No if no, then why: ________________________________

Time all measures met: __________________________

Person completing this form: __________________________

Please staple this form to the completed Sepsis Handoff Tool
SEP 1 Early Management Severe Sepsis/Septic Shock
October 17-September 18

Sepsis Patient Age

Sepsis Patient Gender

Sepsis Patient Disposition

Source of Sepsis

Updated 10.3.18
SEP 1 Early Management Severe Sepsis/Septic Shock
Opportunity for Improvement OFIs
(Oct 17 - Sep 18)
SEP 1 Early Management Bundle OFI Rate
Oct 17 - Sep 18
Lower is Better
• We improved at a faster rate because we:

  ✓ System standard defined by clinical experts (Defining a Sepsis Patient, Bundles, Order Set, Epic workflow, Code Sepsis)
  ✓ Supported development of a model cell to do focused process improvement and share learning
  ✓ Created an environment of collaboration and learning
    ✓ Training available to all problem solvers and coaches (A3 problem solving, meeting facilitation, clinical sepsis review)
    ✓ Materials from the model cell were made available and adapted with site feedback (e.g. Sepsis as a 3rd “S”)
    ✓ Supported problem solving locally (site problem solver/coach, VBD support, site-based interdisciplinary team, link to portfolio, visual management, tiered huddles, coaching)
    ✓ Established a path for escalation of decision-making to resolve system level problems
  ✓ Provided easy access to performance data
Next Steps

• Create a workflow using EPIC
• Roll out housewide
Questions??
Thank You

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