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

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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
• 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)

Sepsis Overview

• 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

Survivors in percent

Adult patients with antibiotic therapy

Time in hours till start of therapy

We are moving in the right direction.

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.)


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

Evidence-Based Sepsis Treatment

Quality/Patient Safety Improvement System
A3 Improvement Work

Data Governance
- SEPI core measure
- Interrater reliability
- Standard process for resolving data quality issues

Standards
- One Scripps standard for defining Sepsis
- One Scripps standard for caring for these patients in the ‘best known way’ (clinical expert group/SME)

Standard Work
- Model Cell (CV 2017)
- 2018 Acute Care Performance Challenge
  - All Emergency Departments
  - Urgent Care TP
  - Med/Surg (Green – assess EPIC capabilities)

Daily Management
- Daily unit level problem solving

System-Wide Sepsis Core Measure Performance

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%
- Bid CX not drawn in time: 3%
- Bid CX not drawn: 3%
- No IV ASX: 2%
A3: Process Mapping

Staff Education: The Third “S”
Early Identification: Empowering the Nurse

Sepsis Criteria (MUST HAVE AT LEAST 2 WITH NEW/SUSPECTED INFECTION):
- HR > 90
- SBP < 90
- RR > 20
- TEMP > 38
- MAP < 65
- NEW ONSET ALTERED MENTAL STATUS

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Code Sepsis Handoff Tool

CODE SEPSIS FLOW SHEET

Criteria (at least 2 of the following w/ new or suspected infection):
- Cardiac:
  - HR > 90
  - SBP < 90
  - RR > 20
  - TEMP > 38
  - MAP < 65
- Respiratory:
  - New onset altered mental status
- Neuro:
  - New onset altered mental status
- Lab:
  - WBC > 12,000
  - Platelet > 400

CODE SEPSIS Date: ____________ Time: ____________ □ Cancelled

RN Name/Corp ID: ____________ MD Name/Corp ID: ____________

**MUST BE COMPLETED WITHIN 3 HOURS**
- Initial lactate
- Admit lactate in 2 hours
- Blood cultures x 2 before antibiotics
- Administer antibiotics within 60 minutes
- Exception: SST: < 200 for patients ≥ 65 with SST risk factors

**MUST BE COMPLETED WITHIN 6 HOURS**
- 30 mL/kg lactate bolus
- 30 mL/kg fluid bolus
- Volume remaining for infusion: _________ mL

ADMISSION HAND-OFF

The following elements were NOT completed in ED:
□ Repeat lactate
□ Pulse due
□ 30 mL/kg fluid bolus
□ Volume remaining for infusion: _________ mL

Order Notes:
Management for Daily Improvement

Recognizing Great Work

Sepsis Stars
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 Bundle Severe Sepsis/Septic Shock OFI Rate (LA JOLLA)

P Chart

Month

Nov 11, 2016 14:54:42
Reflecting on our Rate of Improvement

- 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??

Suspect SEPSIS
Save Lives
Thank You

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