Core Measures
SEPSIS UPDATES

Patricia Walker, RN-BC, BSN
Evidence Based Practice Manager
Quality Management Services
UCLA Health System, Ronald Reagan Medical Center
Severe Sepsis and Septic Shock

Based on Our Understanding of the New Core Measures
Severe Sepsis and Septic Shock Criteria We Have Created a Process Map and Disease Continuum
## Adult Sepsis Screening Tool

Complete Adult Screens for **ALL** pts ≥18y/o

### Sepsis Screen - Complete ALL Sepsis screening questions once per shift

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Helpful Tips</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does patient have a suspected or confirmed infection OR compromised immune system?</td>
<td>[ ] Yes</td>
<td>[ ] No</td>
<td>![Helpful Tips Image]</td>
</tr>
<tr>
<td>2. Two (2) or more NEW signs of SIRS?</td>
<td>[ ] Yes</td>
<td>[ ] No</td>
<td>![Helpful Tips Image]</td>
</tr>
<tr>
<td>3. This shift, does patient have 1 or more NEW or ACUTE ONSET signs of organ system dysfunction or failure?</td>
<td>[ ] Yes</td>
<td>[ ] No</td>
<td>![Helpful Tips Image]</td>
</tr>
</tbody>
</table>

### Helpful Tips

- **SIRS**
  - T >38.3 degrees C (≥101 degrees F) OR <36 degrees C (≥96.8 degrees F)
  - HR >100
  - RR >20
  - WBC >12,000 OR <4,000 OR >10% Bands

- **Organ dysfunction/failure**
  - Metabolic: New serum glucose >400 in absence of diabetes or steroid use OR lactate >35mg/dL
  - Respiratory: O2Sat <90% on room air OR need for O2 2L OR any form of mechanical ventilation
  - Renal: Creatinine >2.0 or an increase in Cr >0.5mg/dL from baseline OR urine output <0.5 ml/kg/hr OR UOP <30mL/hr
  - Neurological: Platelets <100 OR increased PT/PTT with INR >1.5 without blood thinners
  - Hepatic: Elevated AST (SGOT) >7 OR ALT (SGPT) >7 OR Total Bilirubin >2.0
  - altered Mental Status OR decrease LOC OR decrease GCS

### Screen Results

<table>
<thead>
<tr>
<th>Screen</th>
<th>POSITIVE Screen for Severe Sepsis or Septic Shock</th>
<th>NEGATIVE Screen for Severe Sepsis or Septic Shock</th>
</tr>
</thead>
</table>

### Helpful Tips

- If ALL questions 1-3 are **YES**:
  1. Document Screen **POSITIVE** for Severe Sepsis/Septic Shock and 2) Implement Sepsis Nursing Protocol and contact physician. **NOTE**: BPA will only trigger once per 48hrs for documented POSITIVE Screens
- If ANY of questions 1-3 is **RO**:
  Document Screen **NEGATIVE** for Severe Sepsis/Septic Shock & continue to monitor patient for acute changes
Nursing Sepsis Protocol

For adults with normal renal function:
1) Measure lactate level.
2) Obtain blood cultures x 2 prior to administration of antibiotics.
3) Administer broad spectrum antibiotics within one (1) hour of sepsis presentation or positive sepsis screen.
4) Administer 30 mL/kg crystalloid for hypotension and/or lactate 36 mg/dL.

Surviving Sepsis Campaign

- **Vital Signs**
  - Maintain Mean Arterial Pressure (MAP) > 65 mmHg
  - Routine, Until discontinued starting Today at 1630 Until Specified

- **Nursing**
  - Antibiotics must be administered within 1 hour of sepsis identification and after cultures have been obtained.
  - Routine, Until discontinued starting Today at 1630 Until Specified
  - Antibiotics must be administered within 1-hour of sepsis identification.

- **Labs**
  - **Now Labs**
    - Lactate
      - STAT, Once First occurrence Today at 1630
      - Redraw Lactate 3 hours after 1st lactate level if first lab result is >18 mg/dl
  
  - **Microbiology**
    - Blood Cultures x 2 from different sites:
      - Blood cultures x 2 at separate sites:
        - Blood culture #1
          - STAT, Once First occurrence Today at 1630
        - Blood culture #2
          - STAT, Once First occurrence Today at 1630
### Update to Care Connect Physician Order Set

#### IV Fluids

- **IV Fluids**
  - sodium chloride 0.9% IV soln
    - Intravenous, Continuous
  - lactated ringers IV soln
    - Intravenous, Continuous

- **IV Fluid Bolus**
  - IV fluid should be at least 30 mL/kg to achieve fluid resuscitation to be completed within the first 6 hours. If unable to maintain SBP >90 after initial fluid resuscitation, consider vasopressor therapy.
  - sodium chloride 0.9% bolus
    - 30 mL/kg, Intravenous, As needed for, until SBP >90, x*** (doses)
  - lactated ringers bolus
    - 30 mL/kg, Intravenous, As needed for, until SBP >90, x*** (doses)

#### Medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vasopressors</strong></td>
<td>0 of 2 selected</td>
</tr>
<tr>
<td>Antibiotic Unknown Source</td>
<td>0 of 4 selected</td>
</tr>
<tr>
<td>Antibiotic Unknown Source: If allergy or prior exposure</td>
<td>0 of 2 selected</td>
</tr>
<tr>
<td>Antibiotic Abdomen</td>
<td>0 of 4 selected</td>
</tr>
<tr>
<td>Antibiotic Abdomen: If allergy or prior exposure</td>
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</tr>
<tr>
<td>Antibiotic Community Acquired Pneumonia (CAP)</td>
<td>0 of 1 selected</td>
</tr>
<tr>
<td>Antibiotic Hospital Acquired Pneumonia (HAP)</td>
<td>0 of 2 selected</td>
</tr>
<tr>
<td>Antibiotic Hospital Acquired Pneumonia (HAP): If allergy or prior exposure</td>
<td>0 of 1 selected</td>
</tr>
<tr>
<td>Antibiotic Urinary Tract Infection</td>
<td>0 of 1 selected</td>
</tr>
<tr>
<td>Antibiotic Urinary Tract Infection: If allergy or prior exposure</td>
<td>0 of 1 selected</td>
</tr>
<tr>
<td>Antibiotic Hematology/Oncology</td>
<td>0 of 1 selected</td>
</tr>
<tr>
<td>Antibiotic Hematology/Oncology: If allergy or prior exposure</td>
<td>0 of 1 selected</td>
</tr>
</tbody>
</table>
Sepsis Core Measures are coming on October 1, 2015. Following initial time of presentation (TOP):

**Complete within 1 hour (max)**
- **Initial Lactate Level** (per nursing protocol, no co-sign required)
  - If initial lactate >18mg/dL
    - Repeat serum Lactate level per nursing protocol if most recent lactate level >18mg/dL

**Complete within 6 hours (max)**
- **Blood Cultures** X 2 sets (per nursing protocol, no co-sign required)
  - *NOTE: 4 bottles total, minimum of 8-10mL per bottle

**3 hours**
- RN to contact MD/NP to request orders for IV Abx & fluid bolus*

**+3 hours**
- Administer IV broad spectrum antibiotic or other approved combination of antibiotics (RN to contact MD to request orders for Abx)
  - If hypotension persists within 1 hour of completing 30mL/kg fluid bolus, continue interventions. If pt no longer hypotensive after 30mL/kg, STOP!

- If SBP <90 or >40 below baseline or MAP <65
  - *OR*
    - Initial Lactate level ≥36mg/dL
      - Total bolus minimum of 30mL/kg must complete in <3hrs from TOP; Administer only 0.9% NS or LR fluids

**Initiate Vasopressors** (contact MD for orders)
- Vasopressors to be initiated for hypotension unresponsive to fluid bolus of 30mL/kg

**AND**
- Repeat volume & tissue perfusion assessment including (ALL must be documented by physician/NP):
  - Complete Vital Signs, AND
  - Cardiopulmonary exam, AND
  - Capillary refill evaluation, AND
  - Peripheral pulse evaluation, AND
  - Skin exam

- OR - Any two of the following:
  - Central venous pressure (CVP) measurement
  - Central venous oxygen (ScVO2) measurement
  - Bedside cardiovascular ultrasound
  - Positive lung permeability fluid challenge: 500mL NS/ LR in 30min

*Note: 4 bottles total, minimum of 8-10mL per bottle.*
SEPSIS: Defining a Disease Continuum

**SIRS**
- Any ≥ 2 of the following
  - Temp >38.3°C (101°F) or <36°C (96.9°F)
  - HR > 90 /minute
  - RR > 20/minute
  - WBC > 12,000 or <4,000 or >10% bands

**SEPSIS**
- ≥2 SIRS (+) suspected or confirmed infection (i.e-UTI, PNA, wound etc.)

**Severe Sepsis**
- Sepsis (+) NEW or ACUTE onset organ dysfunction &/or failure OR provider documentation of severe sepsis

**Septic Shock**
- Severe Sepsis (+) hypotension (SBP ≤90 or ≥40mm/Hg) OR lactate ≥36mg/dL OR provider documentation of septic shock

*Initiate Severe Sepsis/Septic Shock: Early Management Bundle as soon as patient meets criteria for Severe Sepsis &/or Septic Shock*
Core Measures Bundle Elements

• (*') **Severe Sepsis** – **Implement bundle within 3 hours of TOP**
  ✓ Draw lactate
  ✓ Draw Blood Cultures x 2 sets (4 bottles) **before** abx
  ✓ Administer broad spectrum IV abx

• (**') **Septic Shock** – **Implement bundle within 1 hour of TOP**

  • **Initiate all elements required for Severe Sepsis plus:**
    ✓ Administer IVF bolus of 0.9% NS or LR 30ml/kg (complete within 3 hours of TOP)
    ✓ If hypotension persists within 1 hour of completion of IVF bolus, administer **vasopressors**
    • and perform **volume and tissue perfusion assessment**.
    ✓ If initial lactate > 18, repeat lactate within 3 hours after initial lactate
    ✓ If initial lactate ≥ 36, repeat lactate within 3 hours after initial lactate **AND** perform
      • **volume and tissue perfusion assessment**.

• For additional details, see Process Map of Severe Sepsis & Septic Shock: Early Management Bundle
NEW BUNDLES AND CMS “CORE MEASURES” TO BEGIN OCTOBER 2015

• To be completed within three hours of time of presentation*:
  • Measure lactate level
  • Obtain blood cultures prior to administration of antibiotics
  • Administer broad spectrum or approved combination of antibiotics
  • Administer 30ml/kg crystalloid for hypotension or lactate ≥4mmol/L or ≥ 36

* “Time of presentation” is defined as the time of earliest chart annotation consistent with all elements severe sepsis or septic shock ascertained through chart review.
To be completed within six hours of time of presentation:

• Administer vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥65mmHg

• In the event of persistent hypotension after initial fluid administration (MAP < 65 mm Hg) or if initial lactate was ≥4 mmol/L, re-assess volume status and tissue perfusion and document findings according to Table 1

• Re-measure lactate if initial lactate elevated > 2 OR >18
Document reassessment of volume status and tissue perfusion with either:

• Repeat focused exam (after initial fluid resuscitation) by licensed independent practitioner MD/PA/NP including vital signs, cardiopulmonary, capillary refill, pulse and skin findings
  • Or
    • Two of the following: Measure CVP
    • Measure ScvO2
    • Bedside cardiovascular ultrasound
    • Dynamic assessment of fluid responsiveness with passive leg raise or fluid challenge
Time Zero

• Will always be when the chart annotation suggests signs and symptoms are all present

• May be from nursing charts, lab flow sheets, physician documentation, anything with a time stamp

• Will equal triage time if all signs and symptoms are present at triage
Two Clocks

• Severe Sepsis: Three hour and six hour Counters

• Septic Shock: Three hour and six hour Counters

• Clinical example follows
A patient developed severe sepsis at 3 p.m. but did not become hypotensive and fail to respond to fluids until 5 p.m.

Does the shock clock start at 5 p.m.?

If so, then does the six hour window to complete the physical exam requirement begin at 5 p.m. with the shock clock at 3 p.m. when severe sepsis was first noted?
Two Clocks cont.

• The **severe sepsis clock** would start with the presentation of severe sepsis (**3 p.m.**).

• The **septic shock clock** would start with presentation of septic shock (**5 p.m.**).
  
  • The presentation of severe sepsis at **3 p.m.** will trigger the following counters with the start time being **3 p.m.**:
    - The **Sepsis Three Hour Counter** would require the following be completed by **6 p.m.**:
      - Initial lactate level measurement
      - Antibiotic administration
      - Blood cultures drawn prior to antibiotics
    - **Sepsis Six Hour Counter** would require the following to be completed by **9 p.m.**:
      - Repeat lactate if initial lactate is >2 or > 18
The presentation of **septic shock** at **5 p.m.** will trigger the following counters with the start time being at **5 p.m.**

- The **Shock Three Hour Counter** would require the following be completed by **8 p.m.**:
  - Resuscitation with 30 mL/kg of crystalloid fluids

- The **Shock Six Hour Counter**, **ONLY** if hypotension persists, would require the following be completed by **11 p.m.**:
  - Vasopressor administration

- Repeating the volume status and tissue perfusion assessment
Questions ?
Sepsis Day 2015

UCLA Sepsis Day Event
Sept 23, 2015