

DRIVING EVIDENCE-BASED SEPSIS RECOGNITION & INTERVENTION IN THE ED

Jeanie Bollinger, MSN, RN, ACCNS-AG, CCRN, Clinical Nurse Specialist
 Rosemary Arviso-Green, MBA, BSN, RN, Nursing Quality Manager Emergency Department
 Mission Hospital | Asheville, NC

BACKGROUND

The incidence of sepsis is increasing at a rate of 8.7% per year, resulting in 260,000 deaths. The economic burden of sepsis totals approximately \$20 billion a year. Compliance with the Surviving Sepsis Campaign bundle has demonstrated a 25% relative risk reduction in mortality. Nurses play a significant role in the early identification and application of evidence-based sepsis care.

PURPOSE

This evidence-based project describes the role of nursing in the early recognition of patients presenting with sepsis, severe sepsis and septic shock. The application of a performance improvement initiative to enhance timely application of the sepsis bundle components is also described.

METHOD

Bi-monthly meetings of an interdisciplinary performance improvement sepsis team revealed opportunities for process improvements in the Emergency Department sepsis bundle implementation. The team discussed quality metrics of bundle components and developed an action plan for improvement. Successes and opportunities for improvement were relayed to nursing staff via 1:1 bedside interaction, newsletters, flyers, unit education and an on-unit video display monitor.

SETTING

The project was conducted at a Level II Trauma Center in a large, regional-referral community hospital.

Focus: Emergency Department

1. Severe Sepsis/Septic Shock metrics: Present on admission to ED: 83% (Jan 2014-July 2015)
2. Sepsis is a time-sensitive emergency
3. Nurses play a key role in early identification of sepsis which increases the opportunity for patient survival

Barriers to Sepsis Bundle Implementation

1. Sepsis may not be viewed as a time-sensitive emergency by all team members.
2. Once Sepsis starts, it is difficult to manage.
3. Multiple process elements are required for composite sepsis bundle implementation.

Society of Critical Care Medicine: 2012 Sepsis Bundle Guidelines

To be completed within 3 hours of time of presentation:

1. Measure lactate level
2. Obtain blood cultures prior to administration of antibiotics
3. Administer broad spectrum antibiotics
4. Administer 30 ml/kg crystalloid for hypotension or lactate ≥ 4 mmol/L.
 - * "Time of presentation" is defined as the time of triage in the emergency department or, if presenting from another care venue, from the earliest chart annotation consistent with all elements of severe sepsis or septic shock ascertained through chart review.

To be completed within 6 hours of time of presentation:

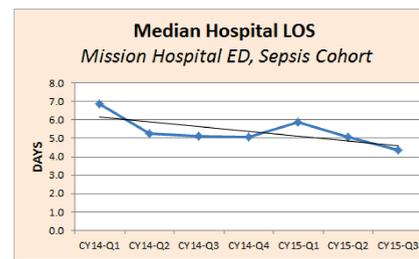
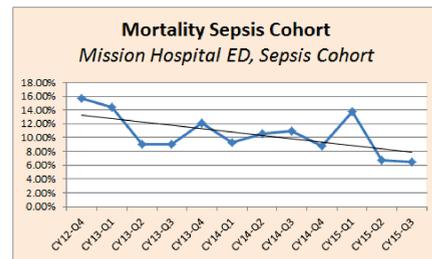
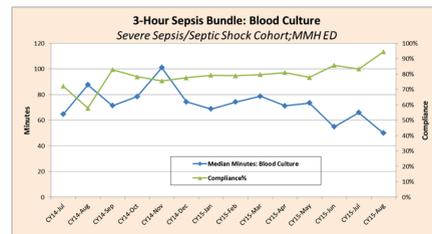
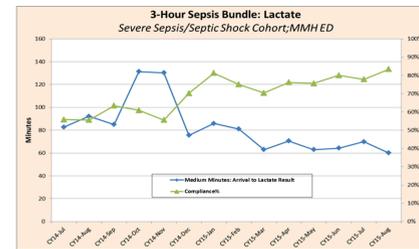
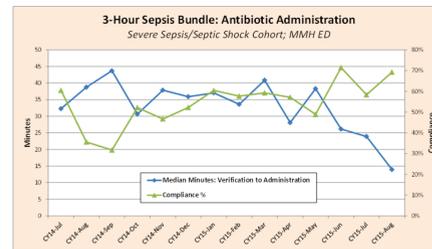
5. Apply vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥ 65 mmHg.
6. In the event of persistent hypotension after initial fluid administration (MAP < 65mmHg) or if initial lactate was ≥ 4 mmol/L, re-assess volume status and tissue perfusion and document findings.
7. Re-measure lactate if initial lactate elevated.

INNOVATION: ED EARLY RECOGNITION TRIAGE ALERT PROCESS

If a patient has **three (3)** or more of the following criteria at triage, a Triage SIRS Alert will fire and **automatic labs will be ordered:** CBC with a diff, CMP, Lactic Acid and a UA.

- Temperature >100.4F, <96.5F
- Respiratory rate > 20/min
- SpO2 < 90%
- Suspect Infection: Yes (Added to triage form December 2014)
- Heart Rate >90BPM
- SBP < 90mmHg
- Altered LOC: Yes

METRICS DRIVING PRACTICE



NURSING RECOGNITION AND FEEDBACK

Sepsis Sleuth | Monthly award given for fastest antibiotic administration time

30 Minutes or Less | Monthly recognition of antibiotic time from Rx verification to administration
 Goal: <30 minutes; ED Goal: 50% of ABX 30 minutes or less

"Life-Saver Sepsis" Sleuth Scorecard | Sepsis 3-hour bundle compliance

Sepsis Sleuth "Lifesaver" Scorecard

You completed the following (checked items)
Goal <3 hours

Lactate: _____

Blood Cultures: _____
(before ABX)

Antibiotics: _____
(<30 min. from Rx verification)

IV Fluids: _____
(start 10 minutes from order entry)

SUMMARY

- Early recognition (prior to organ dysfunction) and timely interventions reduce sepsis mortality and hospital LOS.
- Bedside nurse participation in an evidence- and protocol-based process improves outcomes for patients with severe sepsis and septic shock.
- Meaningful recognition articulates the value that each nurse brings to the organization.
- The analysis of quality metrics via an interdisciplinary team with real time feedback to nursing end users can create a behavioral change in the delivery of care and improve patient outcomes.

