Surviving Sepsis: Time is Tissue
Implementing Evidence Based Practice Through Early Identification and Goal Directed Therapy

BACKGROUND

Sepsis is a complex disease often disguised as hypotension, lethargy, shortness of breath, or anxiety. Timing is key to survival. Early recognition and aggressive resuscitation initiated within the first six hours can reduce mortality by 34%. Mortality increases by 7.6% for each hour delay in antibiotic administration.

The Surviving Sepsis Campaign partnered with the Institute for Healthcare Improvement (IHI) to incorporate its “bundle concept” into the diagnosis and treatment of patients with sepsis, severe sepsis and septic shock.

The Sepsis Resuscitation and Management Bundles were derived from the 2008 Surviving Sepsis Campaign Guidelines. A “bundle” is a group of therapies for a given disease that, when implemented together, may result in better outcomes than if implemented individually. Bundle elements are built around best evidence-based practices. Each bundle contains objectives to be accomplished within specific timeframes.

There are two Severe Sepsis Bundles: the resuscitation bundle, which should be implemented within the first 6 hours of recognition, and the management bundle, which should be implemented within the first 24 hours of recognition.

Project Aim
To decrease mortality in the medical-surgical patient population with a diagnosis of severe sepsis or septic shock 25% by December 31, 2010.

Project Objectives
1. 100% of the SNW unit clinical staff will receive education on the signs and symptoms of SIRS, sepsis, severe sepsis and septic shock by December 1, 2009.
2. The SNW Sepsis Improvement Team will develop and refine a sepsis recognition tool for the SNW sepsis team to trial by November 3, 2009.
3. 100% of SNW unit clinical staff will recognize the signs and symptoms of severe sepsis and septic shock by December 31, 2009 via test in Healthstream.
4. Disseminate education on sepsis utilizing a case study approach, including the sepsis electronic assessment tool in EPIC, to all inpatient units by February 28, 2010.

Results
1. Chart reviews were completed on medical-surgical patients transferred to ICU & treated for severe sepsis and/or septic shock from the ICU monthly convenience sample September, 2009 – February, 2010.
2. 100% of the RN and CNA staff on the 5NW unit completed the sepsis competency post test.
3. SNW clinical team presented sepsis education at housewide staff meeting:
   - Review of sepsis pathophysiology
   - Sepsis case study
   - Sepsis Electronic Risk Assessment
4. Inpatient nursing staff (RN’s & CNA’s) completed Sepsis competency post test:
   - RN compliance 84%
   - CNA compliance 89%
5. Continue analysis of severe sepsis/septic shock patients transferred to ICU post staff training to determine:
   - Early recognition with appropriate treatment
   - Transfers from medical-surgical units to ICU
   - Sepsis Best Practice Alerts generated from EMR
   - RRT responses related to sepsis
   - Resuscitation bundle compliance (6-hour bundle)
   - Sepsis Related Mortality Reduction – a decrease from 23% in 2008 to 14% in 2009 from the ICU severe sepsis/septic shock convenience sampling

Design Process
1. The Salem Health 5-Step Execution Model was utilized to achieve the desired outcome. The Plan-Do-Study-Act (PDSA) method was used to evaluate small tests of change to determine outcome.
2. Focus group of SNW Medical-Surgical unit clinical staff, Physician Champion, Nurse Manager, Clinical Educators & Performance Improvement Consultant collectively reviewed current resources, literature and best practices. The group reviewed current projects instituted in the Intensive Care Unit and Emergency Department which have positively impacted mortality rates from severe sepsis and septic shock.
3. Examined sepsis assessment tool and algorithm design used in the Emergency Department.
4. Analyze and evaluate data from random sample of patients in medical-surgical units transferred to ICU in severe sepsis/septic shock.
5. Develop sepsis assessment tool specifically for medical-surgical units. Sepsis Assessment Tool was trialed and refined by clinical team members.
6. Design & implement sepsis education presented at 5NW unit staff meeting. All RN’s and CNA’s to complete Sepsis post-test via Healthstream.
7. Present sepsis education at all unit staff meeting, including electronic Sepsis Risk Assessment in EPIC.

References