Rapid Cycle Change Approach to Management of Severe Sepsis
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Problem
Sepsis is a severe illness caused by overwhelming infection. Sepsis strikes approximately 750,000 people in the U.S. and is responsible for more than 215,000 deaths annually. Mortality remains high at 28-50% at a cost of $17 billion each year (Russell, 2006).

Evidence
Early Goal Directed Therapy has been shown to positively impact mortality (Rivers, Nguyen, Havstad, et al., 2001). Guidelines have been developed to increase compliance with management protocols (Dellinger, Levy, Carlet, et al., 2008)

Strategy
An interdisciplinary team was created to improve early recognition, process of care, and mortality in septic patients. A plan, study, do, act, methodology was used with rapid cycle changes to improve the management of severe sepsis and septic shock.

Practice Change
Emergency Department /Critical Care staff was educated on the recognition of severe sepsis, septic shock and principles of Early Goal Directed Therapy.

Education was implemented over six months and sepsis “bundle” order sets were developed.

Patients admitted to critical care units with two or more systemic inflammatory response syndrome (SIRS) indicators and/or organ system failure, hypotension, and hypoperfusion were placed on the sepsis protocol.

Evaluation
Data was collected prospectively with regards to process of care and "goals met" at 6 hours. Mortality data was collected retrospectively.

Results
Early trends show outcomes improvements. Results from third quarter of 2008 are: 23 deaths in 187 patients placed in the protocol; a 38% reduction in risk-adjusted mortality for sepsis in 2008 over 2007; a reduction in raw mortality of 57% despite a 24% increase in appropriately recognizing principle (admitting) diagnosis of Sepsis; an increase in "goals met" at 6 hours from 33% to 81%.

This equates to 31 LIVES SAVED in 2008.
**Recommendations**
Six and 24 hour bundled sepsis orders improve process of care and in-hospital mortality in patients with severe sepsis and septic shock.

**Lessons Learned**
Positive results require close interdisciplinary collaboration, physician leaders and timely feedback.

**Bibliography**
