

Translating Research into Practice (TRIP) Improving Sepsis Recognition and Treatment

What does the evidence say?

- “Severe sepsis and septic shock are common and are associated with substantial mortality and substantial consumption of health care resources.”¹
- Rivers et al¹ found significant benefits in patient outcomes when goal-directed therapy was applied at an earlier stage of sepsis. If this early therapy is not comprehensive, the progression to severe sepsis may be well under way at the time of admission to the ICU.
- Studies have shown that early and aggressive fluid loading (**e.g. fluid resuscitation at 20mL/kg with a goal rate of 500 mL per 15 minutes**) appeared to be the key intervention decreasing mortality.^{2,3} Most patients require continued aggressive fluid resuscitation during the first 24 hours of management.²
- Appropriate **cultures should always be obtained before antimicrobial therapy is initiated.**^{2,3} Intravenous **antibiotic therapy** should be started **within the first hour of recognition of severe sepsis**, after appropriate cultures have been obtained.
- Initiating antibiotics is key to patient survival. A large retrospective co-hort study (N = 2,731 adult patients with septic shock) found that the speed with which appropriate antimicrobials are initiated after the onset of hypotension in patients with septic shock is one of the critical determinants in their survival. Survival dropped approximately 7.5% per hour delay over the first 6 hours.⁴

Change in Practice

- Evidence-based Sepsis Early Recognition Assessment and Treatment badge cards are provided to assist with earlier identification of patients with possible sepsis.
- If sepsis is suspected, inform the MD/Provider using SBAR communication and request/recommend an order to draw a BMP, CBC, lactate and blood cultures. **Blood cultures must be drawn prior to initiating antibiotic therapy.**
- Utilize the MET response to ensure prompt treatment of patients developing sepsis on the floor.
- Consider initiating the Severe Sepsis Order Set upon transfer to the ICUs to improve resuscitation.

Suspect Sepsis when a patient has ≥ 2 SIRS criteria (*Systemic Inflammatory Response Syndrome*) and a possible infection

SIRS CRITERIA

- HR >90
- RR >20
- Temp >38.3 or < 36°C
- WBC >12 or <4
- % Neutrophils > 72 or <39 on differential

SOURCES OF INFECTION

- Pneumonia
- UTI
- Acute Abdomen
- Meningitis
- Skin/soft tissue
- Bone/joint
- Wound
- Endocarditis
- Central line catheter
- Implantable device

Selected References

1. Rivers E. et al. Early goal-directed therapy in the treatment of severe sepsis and septic shock. *The New England Journal of Medicine*. 2001;345(19):1368-77. (Level II)
 2. Dellinger RP. et al. Surviving sepsis campaign: international guidelines for management of severe sepsis and septic shock:2008. *Intensive Care Med*. 2008; 34:17-60. (Consensus documents)
 3. Townsend SR, et al. Reducing mortality in severe sepsis: the surviving sepsis campaign. *Clin Chest Med* 2008; 29: 721-733. (Consensus document)
 4. Kumar A, et al. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. *Crit Care Med*. 2006;34(6): 1589-1596. (Level III)
- Kerveillant O., Johnson S., Dzialo M., Makic MBF. Jan 2011

