

Reference 807

Core Principles: Managing Sepsis

Rev: 2/18

**Rule #1** Sepsis is a life threatening condition that can occur when a systemic reaction known as Systemic Inflammatory Response Syndrome (SIRS) develops in response to an infection.

- SIRS can occur in response to many insults to the body, including trauma, surgery, inflammatory diseases, and most commonly, infection. Sepsis occurs when this inflammatory response occurs in response to an infection in the body.

**Rule #2:** Sepsis is a disease that can present on a continuum from a relatively mild to a fatal condition, and is defined based on the following clinical findings:

- Sepsis = presence of two or more of the following with a known or suspected infection:

Adult	Pediatric		
>14 years	Newborn	Infant	Toddler and up
Heart rate >90	Heart rate >200	Heart rate >170	Heart rate >130
Respiratory rate > 20	Respiratory rate > 60	Respiratory rate > 40	Respiratory rate > 25
Temperature >100.4 or <96.0	Temperature >100.4 or <96.0	Temperature >100.4 or <96.0	Temperature >100.4 or <96.0

- Severe Sepsis = known or suspected infectious process + abnormal vital signs as above + organ dysfunction.

Altered level of consciousness
Hypoxia/respiratory distress
Presence of hyperglycemia (BG > 140mg/dl) in a non-diabetic patient
Hypoperfusion—as evidenced by altered skin perfusion, hypotension
End-tidal CO <sub>2</sub> (ETCO <sub>2</sub> ) < 25 mmHg

- Septic Shock: severe sepsis that does not respond to fluid resuscitation, requiring vasopressor therapy to support perfusion.

**Rule #3:** Suspect sepsis is the following patients:

- The elderly (age > 70)
- The very young with fever (Infants age < 3 months)
- Diabetics
- Recently hospitalized patients or those living in SNFs
- Patients who have recently had surgery or an invasive procedure
- Patients with:

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- Cancer
- Renal disease
- Malnutrition
- Alcoholism
- Diabetes
- Other immune compromising diseases or conditions

Rule #4: Suspect sepsis in patients with the following symptoms:

- Fever
- Respiratory symptoms such as shortness of breath, tachypnea, cough
- Abdominal symptoms such as vomiting, diarrhea, or abdominal pain
- Urinary symptoms such as urinary frequency, pain with urination, flank pain
- Skin infections
- General weakness, lethargy, ALOC, especially in the elderly.
- Hyperglycemia (BG >140 mg/dl in a patient with no known diabetes)
- End-tidal CO<sub>2</sub> readings that are abnormally low (< 25mmHg)

Rule #5: Field care of the septic patient focuses on early recognition of possible sepsis, initiating therapy to support the patient's airway, breathing, and circulation, and early notification to the receiving hospital.

- Provide airway management as needed
- Oxygenate to maintain SAO<sub>2</sub> of 95%
- NS fluid therapy to maintain adequate perfusion. Initial fluid therapy for severe sepsis/septic shock in adults is 30 ml/kg. Further fluid therapy should be administered by Base Hospital Physician order only.
- Initial fluid therapy for severe sepsis/septic shock in pediatric patients is up to three (3) 20 ml/kg fluid boluses. Reassess response to fluid therapy between boluses. Further fluid therapy should be administered by Base Hospital Physician order only.
- Vasopressors are rarely indicated in the field as they are administered to septic patients only after substantial IV fluid resuscitation.
- Hospital reports should indicate that you are transporting a patient with "suspected sepsis."

Rule #6: Administer IV fluid cautiously to patients with impaired cardiac function.

- Patients with a history of CHF, cardiomyopathy (abnormally enlarged heart), or other major heart defects are at greater risk for fluid overload with large volume IV fluid boluses. Administer IV

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fluid in 10ml/kg increments and reassess respiratory status and lung sounds before administering more fluid.

Rule #7: The elderly and immune compromised patient may not present with a history of fever.

- Septic patients may actually lose heat through vasodilatation and present with normothermic or even cool skin, and a normal or low temperature.

Rule #8: Hypoglycemia is uncommon in non-diabetic septic patients, but can occur with overwhelming sepsis, and is associated with a high mortality rate.

Rule #9: The most common sites of infection in septic patients include the following:

- Lungs
- Abdomen/Pelvis
- Urinary Tract
- Soft tissue (primarily skin infections)

Rule #10: The single most important element of the pre-hospital management of sepsis is recognizing that a patient might be septic, and communicating this information to the ED as soon as possible.



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