

SEPSIS - Unrecognized Killer

Sepsis accounts for over 270,000 deaths in the United States each year. One in three patients who die in a hospital die from a sepsis related cause. This life-threatening condition begins (over 87% of the time) where the patient lives, making it an important issue for EMS. The nation's leading sepsis organization, Sepsis Alliance, strives to save lives and reduce suffering by raising awareness of sepsis as a medical emergency. Sepsis Alliance, in their August 10, 2018 "Sepsis: First Response" video, states that 60% of the patients with sepsis are transported to the emergency department is by EMS.

EMS leaders and educators have an opportunity to impact sepsis at all stages. Reinforcing the quality of patient assessment on patients with altered mental status (AMS) or potential infection should consider sepsis as a differential diagnosis. The Center for Disease Control (CDC) provides educational materials on their **Get Ahead of Sepsis** campaign. Per the CDC press release, "sepsis is the body's extreme response to an infection. It is life-threatening, and without timely treatment, sepsis can rapidly lead to tissue damage, organ failure, and death. Like anaphylaxis shock from a bee sting, it is not the bee sting that kills people, it is the body's response to the allergen." The signs of a low-acute infection can be elusive however, a patient's condition can quickly change where the signs of sepsis become obvious.

A useful memory aid: infection + bad vitals = sepsis; sepsis + signs of shock = septic shock. Khan Academy has great videos on the subject of sepsis, its pathophysiology and septic shock. [View the video on septic shock from Khan Academy.](#)

More information on the CDC [Get Ahead of Sepsis Campaign](#) here.

Check out the following resources for more information on Sepsis:

1. EMS1.com
2. [Quick Sepsis Organ Failure Assessment.net.org](http://QuickSepsis.org)
3. [National Model EMS Clinical Guidelines, Version 2.1](#)
4. [The Journal of Emergency Medical Services, Thu, Sep 1, 2016](#)
5. [Pediatric Scenario Guidebook, page 18](#)

Quiz Yourself

1. Which key vital sign identifies sepsis?
2. What defines the CHART acronym used for patient assessment when infection or sepsis is suspected?
3. What defines SIRS (System Inflammatory Response Syndrome), Sepsis and Septic Shock?
4. What is one important goal for EMS providers?
5. What is Disseminating Intravascular Coagulation (DIC)?
6. What is ARDS (Acute Respiratory Distress Syndrome)?
7. What is the leading cause of pediatric deaths worldwide?
8. What is the usual fluid bolus for a pediatric patient in shock?
9. What is the first rule for healthcare providers treating a patient with sepsis?
10. Who is at risk from sepsis besides everyone?

Answers

1. No one sign, no symptoms leads to a diagnosis of sepsis.
2. C = **Chief Complaint**; H = **History**: past illness or infections, antibiotic uses, incident(s) that might cause infection; A = **Assessment**: key vital signs that relate to perfusion, such as blood pressure, pulse, respiratory rate, pulse oximetry, end-tidal carbon dioxide levels, temperature; R = **Red Flags** for infection or sepsis. Think broadly, consider differential diagnosis; T = **Treatment**: administer IV fluids by protocol, transport and communicate with the receiving center the impression the patient's condition is "sepsis" (using the word is important to those receiving the patient).
3. SIRS, Sepsis and Septic Shock:
 - **Systemic Inflammatory Response Syndrome (SIRS)** = Presence of two or more of the following
 - Temperature less than 97°F or greater than 100.4°F
 - Heart rate greater than 90/minutes
 - Respiratory rate greater than 20/minutes
 - **Sepsis** = SIRS with a suspected or proven infection
 - **Septic Shock** = Sepsis with refractory hypotension or signs of hypoperfusion despite adequate fluid resuscitation, end organ dysfunction, oliguria, altered mental status
Patients are considered to have septic shock if they have sepsis plus hypotension after aggressive fluid resuscitation (up to 40ml/kg) for an adult.
4. Promote sepsis awareness to others, recognize sepsis as a killer is key.
5. The final life-threatening stage of sepsis before death. If identified early, aggressive treatments can be life-saving.
6. A concomitant underlying affect in sepsis.
7. Sepsis
8. 20 milliliter per kilogram
9. Body Substance Isolation (BSI), Personal Protective Equipment (PPE) that protects their skin, eyes, mouth and airway (if the situation requires it).
10. Persons with weakened immune systems, chronic conditions, extremes of age: very young and very old, people who are in close contact with persons with infections.