

# Physician Education Express

## Sepsis Recognition & Treatment – Provider Responsibilities



**Audience:** Physicians, Residents, Nurse Practitioners, Physician Assistants, and Pharmacists

**Education Level:** Yellow

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CDC defines sepsis as “life-threatening organ dysfunction caused by a dysregulated host response to infection.” Sepsis is a medical emergency and early detection, and treatment can improve patient outcomes.

### Sepsis Facts

- 1 in 3 patients who die in the hospital setting had sepsis during that hospitalization (Sepsis Alliance Institute)
- Research shows that **the first hour following identification is key**. This is known as the Golden Hour. This golden hour bundle includes five evidence-based steps which are immediately recommended to begin upon presentation.
  - Measure lactate level (repeat lactate if initial lactate elevated [ $>2\text{mmol/L}$ ])
  - Obtain blood cultures before administering antibiotics
  - Administer broad-spectrum antibiotics
  - Begin rapid administration of  $30\text{mL/kg}$  crystalloid fluids for hypotension or lactate  $>4\text{mmol/L}$
  - Initiate vasopressors if hypotensive during or after fluid resuscitation to maintain mean arterial pressure  $\geq 65\text{mm Hg}$
- In 2022, (Jan-Oct) 884 patients across IU Health had a sepsis related death.

### IU Health Inpatient Sepsis Action Plan

In 2023, IU Health created an Inpatient Sepsis Continuous Quality Improvement Program. The aim of this program is to save lives and reduce suffering by improving sepsis recognition and treatment. This program includes:

- Implementing a Cerner Alert & Screening Process on medical surgical units for patients  $\geq 18$  yo
- Revising and measuring use of the Sepsis and Septic Shock Order Sets
- Monitoring key metrics such as sepsis mortality, antibiotic administration, blood culture, lactate, and use of order sets

**Cerner Alert & Screening Process:** A new alert and screening tool will be integrated into Cerner for Inpatient Nursing and Providers. The goal of this is to support earlier identification of patients on Medical Surgical Units who are at risk of or may have SIRS, Sepsis, or Septic Shock.

1. Alert will fire for nurses if SIRS, Sepsis, or Septic Shock criteria is met.
2. Nurse evaluates patient to ensure they meet SIRS, Sepsis, or Septic Shock Alert criteria and have signs or symptoms of new or worsening infection.
3. If patient screens positive, and has no pending lactate orders, a lactate order will be auto entered via system protocol and drawn by the nurse. Furthermore, the nurse will ensure the patient has patent IV access. Provider notification of a positive screen will occur via normal processes, (Diagnoses, call, etc.)
4. Upon reviewing the patient, if provider deems the patient does have sepsis or septic shock, the provider is encouraged to initiate the appropriate sepsis or septic shock order sets.

[Click here to view screenshots of the alert criteria and nurse screening tool.](#)

## Sepsis Treatment Key Points:

1. If initial lactate is  $>2$ , repeat lactate should be ordered 6 hours later.
2. Antimicrobials should be started within the first hour of sepsis detection. Ideally, cultures should be obtained before antimicrobials are started.
3. IV fluid resuscitation should be started within the first hour after detection. ESRD and HF Patients should not automatically be excluded from 30mL/Kg fluid resuscitation. A patient's clinical condition should be assessed for appropriate IV fluid resuscitation.
4. Fluid responsiveness should be checked in accordance with your local resources and protocols to assess for possible early initiation of vasopressors.

[Click here to view the Sepsis and Septic Shock Order Set Job Aide](#)

## Frequently Asked Questions:

1. **Why are we working on Inpatient Sepsis right now?** Sepsis is the number one cause of preventable mortality at IU Health. Inpatient Sepsis is a natural continuation of the work that started in 2019 when IU Health implemented a similar sepsis recognition and treatment program in the emergency departments. Additionally, outside agencies including CMS and insurance payors such as Anthem are requiring us to have a continuous quality improvement program in place to improve the care of inpatients with sepsis.
2. **Why are we using SIRS and not qSOFA?** Right now, SIRS criteria are what IU Health has the functionality to track in Cerner. Additionally, SIRS criteria are the patient safety standard that outside agencies hold us to. In the future, IU Health will switch to NEWS as a screening tool. Currently, IU Health is running NEWS data behind the scenes for 6 months to make informed decisions based on data analytics. The Surviving Sepsis Campaign recommends against using qSOFA compared with SIRS, NEWS, or MEWS, as a single screening tool for sepsis or septic shock. Additionally, the required component of patient level of awareness is not routinely captured electronically.
3. **Is there going to be suppression criteria for the alert?** Yes. The nursing alert will be suppressed according to the following:
  - a. Active Resuscitation Status order = DNR/DNI Comfort Measures exists
  - b. Severe Sepsis (R65.20) or Septic Shock (R65.21) diagnosis code suppresses alerts for 3 days (span visits)
  - c. Any sepsis or septic shock order set suppresses alerts for 48 hours
  - d. Any IV/IM/IO abx admin suppresses alerts for 48 hours. Specific meds are captured in the hyperlink above.
  - e. Alerts suppressed for 4 hours after documentation of a Surgery Stop Dt/Tm or PACU In Dt/Tm
  - f. Alerts suppressed for 24 hours after a sepsis or shock alert fires
  - g. Alerts suppressed for 12 hours after SIRS alert fires
4. **What is the provider expectation if notified of a positive sepsis screen?** Act fast, if you're called about a positive sepsis, it is considered a priority response. If the patient does have sepsis or septic shock, initiate the appropriate sepsis or septic shock powerplans.
5. **Why should I use the order set?** The order sets are evidence-based and help to cognitively unload clinical decisions that need to be made in a timely manner.
6. **Will the order sets still be a subphase in the admission order sets?** No, the sepsis and septic shock order sets will no longer be subphases in the admission order set. They will be standalone order sets in order to have other subphases embedded within it (e.g. vasoactive medication subphase).
7. **How is the antimicrobial section displayed?** The antimicrobial section will be divided into 8 subphases based on suspected source. The antimicrobial doses in the order sets will be flexed by the patient's weight (e.g. only ceftriaxone 2 gm will display for patients  $\geq 120$  kg). Indications will be defaulted in the order sets.