

CORE MEASURE SEP-1: SEVERE SEPSIS and SEPTIC SHOCK



SEP-1 is a national core measure that monitors compliance with the **SEVERE SEPSIS 3-HOUR** and **SEPTIC SHOCK 6-HOUR** care bundles as outlined below. Compliance with SEP-1 can reduce mortality, organ failure, length of stay, and expense.

1-12-16

SEPSIS

INFECTION (actual or suspected)
and

SIRS CRITERIA (2 or more due to infection):

- T >100.9 or <96.8F (>38.3 or <36C)
- HR >90
- RR >20
- WBC >12000 or <4000 or 10% bands

INITIAL WORKUP

1. **Labs:** lactate, CBC, platelets, INR, PTT, chems
2. **Assess for SEVERE SEPSIS** which is **NEW ORGAN DYSFUNCTION** of at least one organ felt to be due to sepsis:

- Hypotension*
- Altered mental status
- **Lactate >2**
- Creatinine >2.0
- Urine <0.5 mL/kg/hr (2 hr)
- INR >1.5 or PTT >60 (not on AC)
- Platelets <100,000
- Bilirubin >2.0
- Acute resp failure (new need for ventilator or BiPAP)

SEVERE SEPSIS

SEPSIS (infection and 2 SIRS CRITERIA)
and
NEW ORGAN DYSFUNCTION

3-HOUR BUNDLE

1. **Blood culture & lactate**
2. **IV Antibiotics**
3. **30 mL/kg (NS or Ringers)** for hypotension* or lactate ≥4

ALL ABX, SINGLE or DOUBLE COVERAGE, MUST START, NOT FINISH, WITHIN 3 HRS

- FLUID MUST START, NOT FINISH, <3 HRS
- MUST STATE VOLUME + TIME FRAME (OR RATE), NOT BOLUS OR WIDE OPEN
- EXAMPLES FOR 70 KG PATIENT:
 - NS, 30 ML/KG OVER 30 MINUTES
 - NS, 2100 ML OVER 1 HOUR

LACTATE NOTES

- Lactate ≥4 = septic shock regardless of SBP
- Repeat lactate within 6 hours if initial >2.0

SEPTIC SHOCK

SEVERE SEPSIS with LACTATE ≥4
or
SEVERE SEPSIS with PERSISTENT HYPOTENSION*

6-HOUR BUNDLE

1. **Vasopressor for persistent hypotension*** such as norepinephrine (Levophed), 2-20 mcg/min, titrate to MAP ≥65
2. **Repeat lactate** if initial >2
3. **Reassessment of volume status and tissue perfusion** in a note by MD/DO/PA/NP. Note must include the following:

* HYPOTENSION DEFINITIONS FOR SEP-1:

- **HYPOTENSION:**
SBP <90 OR MAP <65 OR SBP ↓ >40 FROM LAST READING DEEMED NORMAL FOR PATIENT
- **PERSISTENT HYPOTENSION:**
HYPOTENSION ON 2 CONSECUTIVE READINGS DURING FIRST HR AFTER 30 ML/KG COMPLETED

ALL OF THESE:

- Repeat vital signs →
- Heart/lung exam
- Capillary refill
- Peripheral pulses
- Skin color (pallor, cyanosis, etc.)

RN CAN OBTAIN VS BUT NOTE BY MD/PA/NP MUST STATE ALL 4 VS

OR TWO OF THESE:

- Central venous pressure
- Bedside cardiovascular US
- Central venous O₂
- Passive leg raise or fluid challenge (500mL/15 min)

WHEN DOES THE CLOCK START?	WHICH RESULTS NOT SENT TO CMS?	WHAT ABOUT FLUIDS IN CHF or ESRD?
<p>When the following is in the chart:</p> <ul style="list-style-type: none"> • SEVERE SEPSIS CLOCK: Infection (actual/suspect) + 2 SIRS + new organ dysfunction • SEPTIC SHOCK CLOCK: Infection (actual/suspect) + 2 SIRS + persistent hypotension <u>or</u> lactate ≥4 • EITHER CLOCK can also start, even without data, if MD/DO/PA/NP note states diagnosis is, or may be, present. 	<ul style="list-style-type: none"> • Age <18 • Transfer from other hospital • Refusal of labs, fluids, or abx • IV abx for >24 hrs before ED • Comfort care order within 3 hrs of presentation of severe sepsis, or 6 hrs for shock 	<ul style="list-style-type: none"> • The studies showing efficacy of SEP-1 did not show statistically significant higher rates of intubation due to fluid overload in CHF or ESRD patients.** • Septic CHF and ESRD patients, if hypotensive or lactate ≥4, have hypoperfusion due to intravascular volume depletion. This must be corrected quickly with fluids to reduce high risk of mortality. • Patient may need intubation to allow continuation of fluids to correct hypoperfusion. <p>** ProCESS, ProMISe, ARISE</p>