

SEPSIS STABILIZATION

The following clinical recommendations have been developed to aid in the early identification and management of suspected sepsis. A patient may screen positive for infection and receive treatment while other diagnoses are considered or managed. This guideline is in the interest of initiating stabilization and facilitating safe and expeditious transfer, while maximizing the chance for survival. Please use your clinical judgment; these are only recommendations. UW physicians are available for consultation through the Transfer Center.

STEP 1- SUSPECT

IS THERE A SUSPECTED SOURCE OF INFECTION?

- Respiratory
- Blood Stream
- Urinary
- Abdominal
- Wound / Soft Tissue
- Device-related
- Endocarditis
- Central Nervous Sys.
- Travel Associated
- Epidemic
- Other:

STEP 2- SCREEN

SIGNS OF INFLAMMATORY RESPONSE?

SIRS

- Temperature $>38^{\circ}\text{C}$ or $<36^{\circ}\text{C}$
- Heart rate >90 beats
- Tachypnea (≥ 22) or $\text{PaCO}_2 <32$ or intubation
- WBC $<4,000$ or $>12,000$

qSOFA

- Hypotension (SBP ≤ 100)
- Altered mentation (GCS ≤ 13)
- Tachypnea ≥ 22

STEP 3- START

TAKE ACTION & BEGIN EMERGENCY TREATMENT

- Airway, breathing and circulatory support
- Administer broad-spectrum antimicrobials
- Begin fluid resuscitation: 30ml/kg Ringers Lactate
- Assess Severity:
 - Lactate
 - Cultures (do not delay antimicrobials to obtain cultures)

ONGOING CARE – REASSESS & RESPOND

DETERMINE RESPONSE TO TREATMENTS & EVALUATE NEED FOR FURTHER CARE

REASSESS

- Lactate ≥ 2
- Exam c/w hypo-perfusion
- Passive Leg Raise shows fluid responsive
- MAP < 65 mmHg
- CVP < 8
- $\text{ScVO}_2 < 70\%$

RESPOND

- Norepinephrine to keep MAP ≥ 65 mmHg
- Repeat fluid bolus 10-30mL/kg LR
- Verify broad antimicrobial tx
- Add vasopressin or epinephrine for persistent shock
- Consider vent. support

CONSIDER

- Dobutamine or other inotrope
- Corticosteroids
- Transfusion if Hgb < 7
- Surgical source control

Revised Definitions for Sepsis and Septic Shock (Sepsis-3)

- **Sepsis:** The new definition for sepsis includes entities formerly known as “sepsis” and “severe sepsis,” and is newly defined as life-threatening organ dysfunction (increase in SOFA score ≥ 2) caused by a dysregulated host response to infection.
- **Septic shock** is a subset of sepsis with profound circulatory and cellular/metabolic abnormalities defined by persistent hypotension requiring vasopressors to maintain MAP ≥ 65 mmHg and serum lactate level > 2 mmol/L despite adequate volume resuscitation.

Highlights from the Sepsis-3 Task Force:

- **SOFA:** A Sequential Organ Failure Assessment Score increased by ≥ 2 from baseline is recommended to define organ dysfunction. SOFA grades the organ systems of Respiratory, Coagulation, Liver, CNS and Renal each on a 0 to 4 point scale.
- **qSOFA:** A new screening tool called the quick SOFA is recommended for early identification of Sepsis. qSOFA scores a point for each of respiratory rate ≥ 22 , altered mentation, or systolic BP ≤ 100 mmHg. qSOFA ≥ 2 outperforms SIRS and other scoring systems to predict mortality outside of the ICU.
- **Mortality:** With the new definitions, sepsis is associated with 10%, and septic shock with 40%, hospital mortality in the large retrospective dataset analyzed.

Fluid Responsive (after initial fluid resuscitation)

Fluids should be regarded as an intervention like any medication or procedure and should be used judiciously -not reflexively- after initial 30-60mL/kg bolus. Fortunately, many techniques are available to help guide fluid administration.

Perform frequent assessment of fluid responsiveness	
Low tech	Higher tech
Give fluid and assess response	Pulse pressure variation monitoring
Calculate shock index (>0.8 suggests volume depletion)	CVP > 8 (or > 12 if on ventilator)
Assess urine output	Ultrasound study of vessels, lung, heart
Do a passive leg raise & assess change	Change in cardiac output with expiratory pause on vent
Trend perfusion with ETCO2	Non-invasive cardiac output