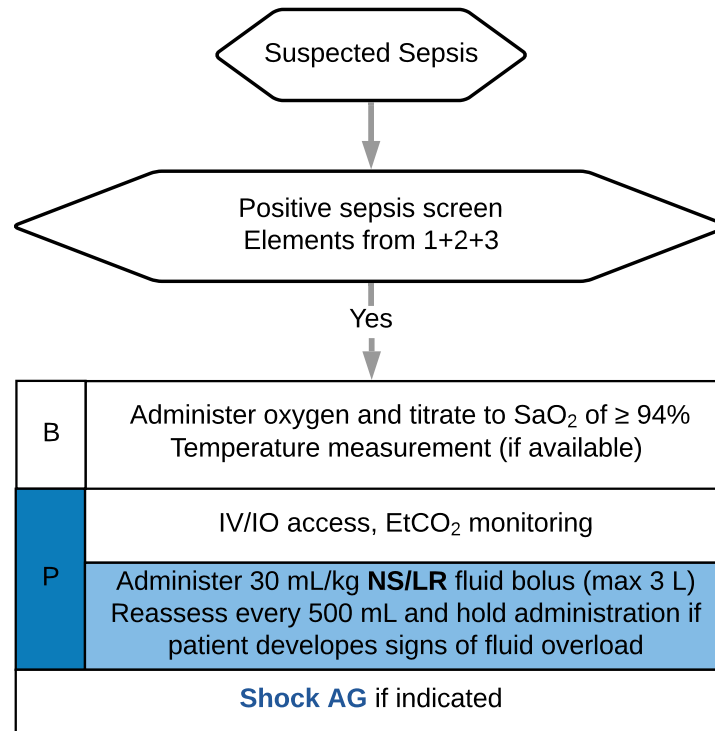


Septic Shock Administrative Guideline

History	Signs and symptoms	Differential
<ul style="list-style-type: none"> • Duration and severity of fever • Past medical history • Medications / Recent antibiotics • Immunocompromised (transplant, HIV, diabetes, cancer) • Last acetaminophen or ibuprofen 	<ul style="list-style-type: none"> • Fever/chills • Altered mental status • Delayed capillary refill • Chest pain, cough, headache, abdominal pain, dysuria • Nausea, vomiting, diarrhea 	<ul style="list-style-type: none"> • Infection - pneumonia, UTI, cellulitis, abscess, gastrointestinal • Malignancy • Heat related illness • Hyperthyroid • Meningitis • Hyperglycemia/hypoglycemia • Overdose (sympathomimetic, anticholinergic)



Sepsis Screen																					
1	Suspected Infection or immunosuppression High Risk Pediatric Patients																				
2	Two or more markers of Systemic Inflammatory Response Syndrome (SIRS): <table border="1"> <tr> <td>Temp ≥ 100 or ≤ 97</td> <td colspan="3">Pediatric</td> </tr> <tr> <td>HR ≥ 90</td> <td>0-2 y</td> <td>2-10 y</td> <td>10-14 y</td> </tr> <tr> <td>RR ≥ 20</td> <td>HR >190</td> <td>>140</td> <td>>100</td> </tr> <tr> <td>Glucose > 140 in non-diabetic</td> <td>RR >50</td> <td>>34</td> <td>>30</td> </tr> <tr> <td>Altered mental status</td> <td colspan="3">Capillary refill delayed > 2 sec Mental status: decreased arousability, irritable,</td> </tr> </table>	Temp ≥ 100 or ≤ 97	Pediatric			HR ≥ 90	0-2 y	2-10 y	10-14 y	RR ≥ 20	HR >190	>140	>100	Glucose > 140 in non-diabetic	RR >50	>34	>30	Altered mental status	Capillary refill delayed > 2 sec Mental status: decreased arousability, irritable,		
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3	Findings of Shock: SBP < 90 or MAP < 65 or SBP drop of 40 mmHg from prior baseline ETCO ₂ ≤ 25 O ₂ sat ≤ 92% on RA Mottled or cold extremities Central cap refill ≥ 3 seconds Purpuric rash No radial pulse <table border="1"> <tr> <td colspan="2">Pediatric</td> </tr> <tr> <td>SBP <70 + (age in yr x 2)</td> <td>3 or more exam criteria</td> </tr> <tr> <td colspan="2">2 or more exam criteria in high risk patient</td> </tr> </table>	Pediatric		SBP <70 + (age in yr x 2)	3 or more exam criteria	2 or more exam criteria in high risk patient															
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Education/Pearls

Sepsis is a life-threatening condition in which the body's immune response to infection injures its own tissues and organs. When this occurs, the body generates an inflammatory reaction, which is called Systemic Inflammatory Response Syndrome (SIRS), defined by vital sign abnormalities. Tachypnea or tachycardia may precede shock and AMS. Suspect sepsis in the elderly with AMS or hypothermia, post-operative patients, or unwell-appearing patients with fever. Fever may be absent in immunocompromised patients. See the table below for other high-risk scenarios that should increase your suspicion for sepsis.

- Sepsis is categorized the following ways:
 - Sepsis - a suspected infection with 2 or more SIRS criteria (tachypnea, tachycardia, abnormal temperature, and a white blood cell abnormality on lab draw)
 - Severe sepsis - sepsis with the presence of organ dysfunction, such as AMS or hypotension. Lactate, a consequence of tissue metabolism, rises when organ dysfunction is present. Severe sepsis is responsive to fluid resuscitation.
 - Septic shock - severe sepsis and poor perfusion, unimproved after fluid bolus.
- Sepsis can be monitored and treated:
 - Quantitative waveform capnography - can be used as a surrogate for lactate monitoring in detecting metabolic acidosis. $\text{EtCO}_2 < 25$ mm Hg are associated with serum lactate levels > 4 mmol/L, indicating severe sepsis/septic shock.
 - IV access - 2 large bore (18 gauge) IVs are preferred for patients with shock. Do not delay transport if unsuccessful in obtaining IV access.
 - IV fluid - suspected septic patients should receive repeated fluid boluses while being checked frequently for signs of pulmonary edema (particularly in dialysis and CHF patients). Stop fluid infusion in the setting of pulmonary edema; re-evaluate lung exams every 500 mL of fluid.
 - Supplemental oxygen - titrate to oxygenation saturation $\geq 94\%$. Septic patients are especially susceptible to traumatic lung injury and ARDS.
 - Airway - If artificial ventilation is necessary, avoid ventilating with excessive tidal volumes. If CPAP is utilized, airway pressure (PEEP) should be limited to 5 cmH₂O

Suspected Infection or immunosuppression

Open wounds, sores, cellulitis
UTI
Pneumonia
Meningitis
Indwelling medical device
Vomiting, diarrhea
Recent surgery/procedure
Chemotherapy in the past 6 weeks
Chronic steroid use

Pediatric high risk:

Malignancy
Asplenia/sickle cell disease
Bone marrow transplant
Indwelling medical device
Solid organ transplant
Severe intellectual disability
Immunocompromise