

Severe Sepsis Resuscitation Protocol: Invasive

WHO	<p>Septic Patient with Lactate ≥ 4 mmol/L or MAP < 65 after 2 liters crystalloid AND Goals of care are curative</p>
INITIAL RESUSCITATION	<ul style="list-style-type: none"> Administer 20-30 ml/kg isotonic crystalloid bolus over 20 minutes Send cultures of all likely sources of infection Think of source control (Infected catheter? Operative intervention for infection? Drainable pus?) Administer antibiotics to cover all likely sources of infection Place full-sterile central line in the IJ (preferably with ultrasound) or subclavian vein
SpO2	<p>If patient's O₂ saturation is $< 90\%$ on high fiO₂ supplemental oxygen (non-rebreather mask), consider:</p> <ul style="list-style-type: none"> Intubation (Beware, the patient may drop their blood pressure precipitously) <ul style="list-style-type: none"> Place on lung protective ventilation Place on pain control regimen, administer sedation after pain controlled
FLUIDS	<p style="text-align: center;">Choose 1 Strategy</p> <ul style="list-style-type: none"> Dynamic IVC Ultrasound-Keep giving 500-1000 ml boluses of isotonic crystalloid until there is $< 30\%$ change in IVC size if not intubated or $> 12\%$ if intubated. CVP-Administer fluids until CVP > 10 mm Hg in non-intubated patients and > 14 mm Hg in intubated patients. Empiric Fluid Loading-Patients with severe sepsis/septic shock may require at least 6 liters of fluid during their acute resuscitation (first 6 hours of care).
RE-CHECKING MAP	<ul style="list-style-type: none"> If MAP is < 65 after adequate fluid loading, start vasopressors. Titrate vasopressors to achieve a MAP ≥ 65.
TISSUE OXYGENATION	<ul style="list-style-type: none"> Send repeat lactate AND ScvO₂ If lactate has cleared by $\geq 10\%$ AND ScvO₂ $\geq 70\%$, go to disposition If ScvO₂ < 70 OR lactate hasn't cleared by $\geq 10\%$, choose 1 Option: <ul style="list-style-type: none"> If Hb < 7: transfuse 1 unit of PRBC <li style="text-align: center;">or Additional Fluids: if using CVP to determine fluid status, administer an additional liter of isotonic crystalloid <li style="text-align: center;">or Inotropes: especially if heart appears hypodynamic on echo. If calcium is low, replete that first. If not, administer dobutamine 5-20 mcg/kg/min. <li style="text-align: center;">or Intubate: to decrease pulmonary metabolic load <li style="text-align: center;">or If Hb 7-10: consider transfusion. Especially in elderly patients or patients with coronary artery disease Send repeat lactate and ScvO₂. If ScvO₂ < 70 or if lactate still has not cleared by $\geq 10\%$, continue with the above, trending lactates and ScvO₂ every 1 hour until these two goals are met.
DISPOSITION	<ul style="list-style-type: none"> Patients should get ICU consultation. If not an ICU candidate, should go to appropriately monitored bed. Periodically recheck patient for MAP ≥ 65, good mental status, and good urine output. Consider trending lactate every Q 2-4 hours. If it starts rising again, restart protocol.