## APPENDIX G: SEVERE SEPSIS RESUSCITATION PROTOCOL: INVASIVE

### SEVERE SEPSIS RESUSCITATION PROTOCOL: INVASIVE

<table>
<thead>
<tr>
<th>WHO</th>
<th>Septic Patient with Lactate ≥ 4 mmol/L or MAP &lt; 65 after 2 liters crystalloid and goals of care are curative.</th>
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</table>
| INITIAL RESUSCITATION | • 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 U (preferably with ultrasound) or subclavian vein. |
| SpO2 | If patient’s O2 saturation is < 90% on high fiO2 supplemental oxygen (non-rebreather mask), consider:  
• INTUBATION (Beware, the patient may drop their blood pressure precipitously)  
  • Place on lung protective ventilation.  
  • Place on pain control regimen, administer sedation after pain controlled. |
| FLUIDS | Choose 1 Strategy:  
• 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 | If MAP is < 65 after adequate fluid loading, start vaspressors.  
• Titrated vaspressors to achieve a MAP ≥ 65. |
| TISSUE OXYGENATION | • Send repeat lactate and ScvO2.  
• If lactate has cleared by ≥ 10% and ScvO2 ≥ 70%, go to disposition.  
• If ScvO2 < 70 or lactate hasn’t cleared by ≥ 10%, choose 1 Option:  
  • IF Hb < 7: transfuse 1 unit of PRBC or  
  • ADDITIONAL FLUIDS: if using CVP to determine fluid status, administer an additional liter of isotonic crystalloid 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 or  
  • INTUBATE: to decrease pulmonary metabolic load 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 ≥10%, continue with the above, trending lactates and ScvO2 every 1 hour until these two goals are met. |
| DISPOSITION | • 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. |