

APPENDIX G: SEVERE SEPSIS RESUSCITATION PROTOCOL: INVASIVE



Greater New York Hospital Association/United Hospital Fund Quality Initiatives

STOP SEPSIS COLLABORATIVE

SEVERE SEPSIS RESUSCITATION PROTOCOL: INVASIVE

WHO	Septic Patient with Lactate \geq 4 mmol/L or MAP $<$ 65 after 2 liters crystalloid and goals of care are curative.
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.
SpO ₂	<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>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 \geq 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 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 \geq10%, 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 \geq 65, good mental status, and good urine output. • Consider trending lactate every Q 2–4 hours. If it starts rising again, restart protocol.