Standards of Care for the Septic Patient

Objectives:
1. To provide prevention, early detection and prompt interventions of signs or organ instability, deterioration or complications such as ARDS, DIC, and renal failure, by frequent ongoing assessments of the following systems:
   a. respiratory
   b. central nervous system
   c. cardiovascular
   d. renal
   e. gastrointestinal
   f. hepatic
   g. hematologic
   h. integumentary
2. To optimize tissue oxygenation and perfusion.
3. To closely monitor and document the effects of therapeutic interventions such as fluid therapy, diuretics, vasoactive drugs, and provisions for individual organ support such as CRRT and mechanical ventilation.
4. To identify and treat infectious source and prevent further infections.
5. To assist in identifying concerns, limitations, and needs of the patient and the patient’s family that may assist in reducing the stress and anxiety levels associated with the current illness.

Process Standards:
1. Identify SIRS criteria and inform physician if present.
   a. Body Temperature > 38 or <36 degrees C
   b. Heart rate >90
   c. Respiratory Rate >20 or pCO2 <32 or mechanical ventilation needed
   d. WBC >12 x 10^9/L, <4 x 10^9/L, or >10% immature band forms
2. Auscultate and document initial breath sounds, respiratory rate, depth, rhythm every 4 hours or as ordered.
3. To help clear pulmonary secretions, turn every 2 hours and suction PRN, if the patient’s SaO2 remains stable, documenting the amount, color, character, and odor of pulmonary secretions.
4. Fluid resuscitation may be performed with 20 – 40 cc/kg.
5. If the patient is mechanically ventilated, monitor and document ventilator settings: FIO2, mode, tidal volume, and rate. Also monitor respiratory parameters: peak inspiratory pressure and exhaled tidal volume. Ventilator support shall be provided to minimize barotraumas.
6. Document vital signs hourly. (HR, P, BP) or more often if needed.
7. Blood, urine, and sputum cultures will be obtained due to physicians order in a timely manner.
   a. If possible cultures will be obtained prior to antibiotic initiation.
8. Continuous cardiac monitoring will be present with documentation of rhythm at least every 4 hours.
9. Obtain and document hemodynamics values if PA cath present every 4 hours or more if indicated and notify MD of significant changes. Oxygenation profiles should also be done as needed to assess oxygen delivery and consumption.
10. Obtain and document minimally invasive hemodynamics (CI, SVI, SVV) if present hourly until stable then at least every 4 hours. (CI: 2.5 – 4; SVI: 35 – 45; SVV<15)
11. Obtain and document ScVO2 if present hourly until stable then at least every 4 hours. ScVO2 should be > 70.
12. Assess, describe and document every 4 hours the patient’s LOC. If sedation and neuromuscular paralyzation is being utilized, assess level of paralyzation with a nerve stimulator every 4 hours or more frequently if indicated.
13. Administer volume expanders as ordered. Closely monitor for signs and symptoms of fluid overload:
   a. PCWP>20
   b. Crackles
   c. Edema
   d. Weight gain
   e. Dyspnea
   f. Pink, frothy sputum

14. Administer vasoactive and inotropic drugs as ordered. Closely check solution, concentration, and infusion rate, and titrate rate to set parameters. Document the patient’s response to these drugs. All vasoactive medications are infused via control pump.

15. Monitor and document intake and output hourly. (minimally adequate UO is 0.5 ml/kg/hr)

16. Assess organ perfusion by:
   a. monitoring cardiac rhythm and BP continuously
   b. evaluating LOC hourly and noting changes in mental status
   c. obtaining hemodynamic values with ABG and mixed venous saturation as ordered
   d. measuring urine output hourly, noting oliguria
   e. auscultating BS every 4 hours or as indicated
   f. testing NGT aspirate and all stools for blood as indicated
   g. checking skin temperature, color, dryness, and turgor
   h. assess periphery for capillary refill (normal <3 seconds)

17. Monitor mixed venous saturation (SvO2) as ordered to assess whether oxygen delivery matches tissue oxygen demands. Attempt to maintain DO2I > 600 and VO2I>160.
   a. DO2I (oxygen delivery)  CI x Hgb x 13.4 x SaO2
   b. VO2I (oxygen consumption)  CI x Hgb x 13.4 x (SaO2 - SvO2)
   c. Obtain serum lactate levels as ordered.

18. Assess for S/S of accompanying complications and intervene promptly:
   A. DIC
      1) petechiae or purpura
      2) oozing from puncture sites or wounds
      3) peripheral thrombosis
      4) hemoptysis
      5) increase in abdominal girth
      6) occult blood in urine or stools
      7) thrombocytopenia
      8) decreased fibrinogen, increased PT/PTT, thrombin time and the presence of D-Dimer
   B. ARDS
      1) bilateral diffuse pulmonary infiltrates often accompanied by normal PCWP.
      2) refractory hypoxemia
      3) marked reduction in pulmonary compliance
   C. Renal Failure
      1) lack of adequate UO
      2) elevated BUN, creatinine
      3) proteinuria, and/or bacteriuria, hematuria
   D. Early Septic Shock
      1) increased CO/CI, low PCWP,SVRI
      2) fever or hypothermia
      3) tachypnea or tachycardia
      4) leukocytosis
      5) unexplained jaundice and rapid rise in hepatic enzymes
19. Provide oral care to reduce the risk of aspiration on contaminated oral secretions.

20. Provide for nutritional support ASAP and enterally if possible. If TPN is necessary, check solution, rate, and additives for accuracy. Change enteral feeding bags every 24 hours. Change TPN solution, tubing, and filter every 24 hours.

21. Assess gastric pH every 4 hours. If patient is receiving enteral feedings, assess gastric residual every 4 hours or as indicated.

22. Record the patient’s weight daily.

23. Administer ordered medications, such as antibiotics, steroids, vasopressors, positive inotropes, and Activated protein C, within a timely manner.

24. If Activated protein C is ordered the nurse will:
   a. administer for 96 hours via IV control pump at 24 mcg/kg/hr.
   b. notify the physician if any bleeding occurs and follow the physicians order.
   c. Stop the infusion 2 hours prior to invasive procedures with high risk of bleeding.
   d. Notify the physician if the platelet count is not within normal limits
   e. Assess for bleeding.

25. All hospital and unit policies regarding infection control will be adhered to decrease the risk of nosocomial infections.

26. Provide ongoing assessment of patient and patient’s family level of anxiety and intervene appropriately as follows:
   a. demonstrate concern when providing care
   b. explain anticipated diagnostic procedures, monitoring equipment, and plan of care; keeping explanations basic
   c. encourage questions and verbalization of anxieties, fears, and concerns

27. Prevent hazards of immobility by instituting the following measures if indicated:
   a. heel/elbow pads
   b. sequential compression devices
   c. turning and repositioning every 2 hours
   d. WOCN consult
   e. Nutritional consult
   f. OT/PT consult

outcome Standards:

1. Patient will be free of or have early detection and prompt interventions of signs or organ instability, deterioration or complications such as ARDS, DIC, and renal failure.
2. Tissue oxygenation and perfusion will be restored.
3. Patient will be free of any organ support such as vasopressors and CRRT.
4. Patient free of nosocomial infections.
5. The patient and family understand disease process and medical treatment.

Please send Severe Sepsis Guidelines

http://www.sh.lsuhs.edu/policies/policy_manuals_via_ms_word/Nursing/Critical%20Care%20Guidelines/severesepsisguidelines.pdf
Reference: