**Standard of Care**

**Fluid Resuscitation**

**Objectives:**
1. To assist in the identification for fluid resuscitation in critically ill patients.
2. To assist the MD in the calculation of percentage of burn.
3. To restore adequate hemodynamic status.
4. To replace electrolytes lost through fluid resuscitation.
5. To assess for over hydration.
6. To replace electrolytes lost through loss of skin integrity in the burn patient.

**Process Standards:**
1. Assessment for static indicators of fluid status shall be done at least every 4 hours by assessing skin, breath sounds.
2. Vital signs shall be assessed at least hourly and documented when performed.
3. All intake and output shall be monitored hourly.
4. Assessment for dynamic indicators for fluid status shall be done as ordered by the MD or needed by the RN. These indicators are stroke volume variation (SVV), central venous oxygenation (ScVO₂), orthostatic hypotension (rarely done in the ICU), and passive leg raising (PLR).
5. If a patient has + response to PLR, ScVO₂ < 70% or SVV > 15, the MD shall be notified for possible need for fluid resuscitation.
6. Crystalloid may be the fluid of choice for resuscitation. If so, standard formula is 20 – 40 cc/kg.
7. Colloids may be used for resuscitation if the presence of capillary leak syndrome is predicted.
8. In Burn Patients,
   a. Fluid resuscitation will be formulated using the Berkow Formula calculation of total body surface area burn. The findings will be documented on the patient’s door chart.
   b. The wounds will be cleaned to make a more accurate calculation of the burned area.
   c. Fluid therapy will be initiated as ordered according to the crystalloid resuscitation formula:

**Parkland Formula—Adult**

4cc R/L X wt(kg) X %TBSA burned = ml R/L for the first 24 hours

give ½ total amount in first 8 hrs from time of burn

give ¼ total amount in second 8 hrs

give ¼ total amount in third 8 hrs

**Pediatric Burn Resuscitation Formula:**

10%‐15% TBSA Burn = D5 ½ NS at maintenance

15%‐30% TBSA Burn = D5 ½ NS at 1 ½ to 2 times maintenance
>30% TBSA Burn = D5 ½ NS at maintenance along with
Parkland formula: 3ml R/L/kg for every 1% TBSA Burn

**Pediatric Maintenance Formula: D5 ½ NS over 24 hours**
100 ml/kg for the first 10 kg of body weight
50 ml/kg for the next 10 kg of body weight
20 ml/kg for additional weight above 20 kg of body weight

6. The baseline assessment of the patient will include breath sounds, urine output, heart rate, and blood pressure with additional assessment of CVP, PAP, PAWP, SVI, SVV, CO and or ScVO₂ if available.

7. The effects of fluid resuscitation on the hemodynamic status of the patient will be documented through an ongoing hourly assessment of the patient’s vital signs. The MD will be notified of any abnormal findings.

8. The urine output will be documented hourly with notification of MD should the output drop below ½-1cc/kg/hour. Any presence of myoglobin will be reported to the MD.

9. The results of baseline and routine lab will be documented with notification of MD for any abnormal data. Specific attention will be paid to serum sodium, potassium, calcium, phosphorous, and albumin.

10. Additional fluids and/or albumin will be administered as ordered according to serum sodium and albumin levels.

**Outcome Standards:**
1. The patient will maintain adequate hemodynamic status.
2. The patient will maintain adequate electrolyte and albumin levels.

Reference: