Nurse Driven Fluid Resuscitation Protocol

MINNESOTA BURN SURGE FACILITIES

These materials were developed by the Minnesota State Burn Centers—Hennepin County Medical Center and Regions Hospital—in conjunction with the Minnesota Department of Health. ***They are recommendations for patients being treated for burns at a Burn Surge Facility.*** If at any time a provider needs to consult with a Burn Center, please contact them. All prescribing providers at the BSF have authority to prescribe treatment they deem appropriate in their facility.

Burn Center Contact Information

Call the referring Burn Center for assistance with pain medications, sedation, wound care, nutrition, and other questions.

HCMC: 1-(800) 424-4262 or 612-873-4262

Regions Hospital: 1-(800) 922-BURN (2876)

Indications for Fluid Resuscitation

- Adults with >20% Total Body Surface Area (TBSA)
- Children with >15% TBSA
- Inhalation Injury
- Electrical Injury

Burn Diagram should be completed by Admitting Provider

- Determine TBSA using either the Lund Browder method or the Wallace Rule of Nines.[1]

Initial Fluid Resuscitation Calculations for Burns

1. **Modified Parkland Formula → 24 hour total**

Patient Weight (kg)	
TBSA (%)	

2 mL x _____ kg x _____% burn = _____ mL = 24-hr total[2]

2. **Calculate Hourly Resuscitation Volumes**
   Half (½) of the 24-hour total should be given in the *first eight (8) hours*.

   24-hr total _____ mL ÷ 2 = _____ mL ÷ 8 hrs = _____ mL/hr

   The other half of the 24-hour total should be given over the *remaining sixteen (16) hours*.

   24-hr total _____ mL ÷ 2 = _____ mL ÷ 16 hrs = _____ mL/hr

3. **Obtain a provider order for fluids and titration. Have provider double check all calculations.**

---

[1] The Lund Browder method is the gold standard of practice to determine TBSA.

[2] 24-hour fluid total is a starting point **only**. Titrate fluids based on urine output (see next page).

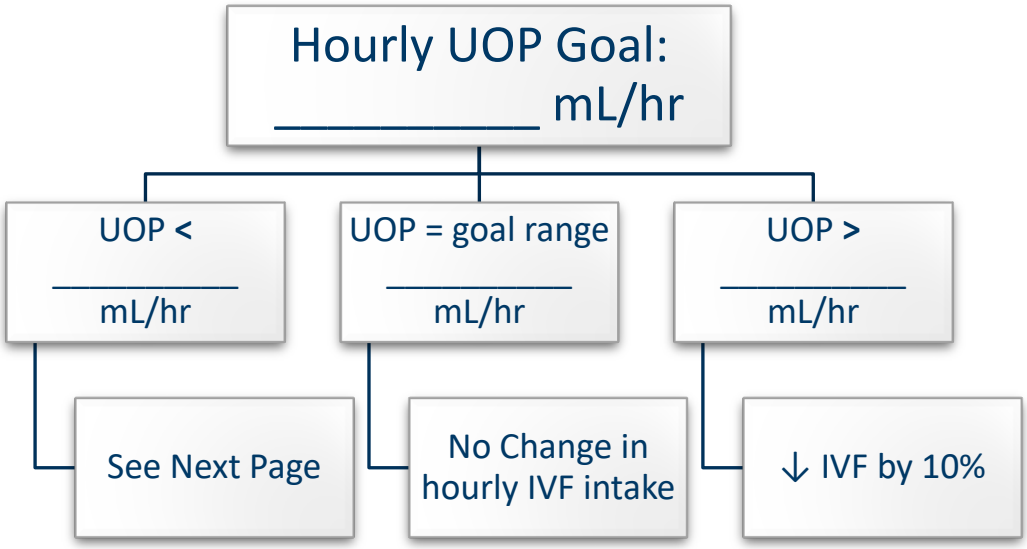
Types of IV Fluid

- Recommended **crystalloid** is **Lactated Ringer's**.
- Administer **colloid (FFP or Albumin)** once the patient has received **100 mL/kg** of **total IVF** (including pre-admission). Colloid should be given over 8 hours.
- **NO crystalloid boluses** (Normal saline, half-normal saline, Lactated Ringer's, D5W, or D5NS).

Titrate IV fluids to Hourly Urine Output (UOP)

- Hourly fluid volume should include *ALL* IV fluids (sedation, medication, vasopressors, electrolyte replacement, etc.)
- **Electrical Injury ONLY**
  - **Adult**: keep UOP **75-100 mL/hr** until urine is *clear and yellow*
  - **Child**: keep UOP **2 mL/kg/hr** until urine is *clear and yellow*
- **ALL Burn Injuries** (circle appropriate goal range and fill in chart below)

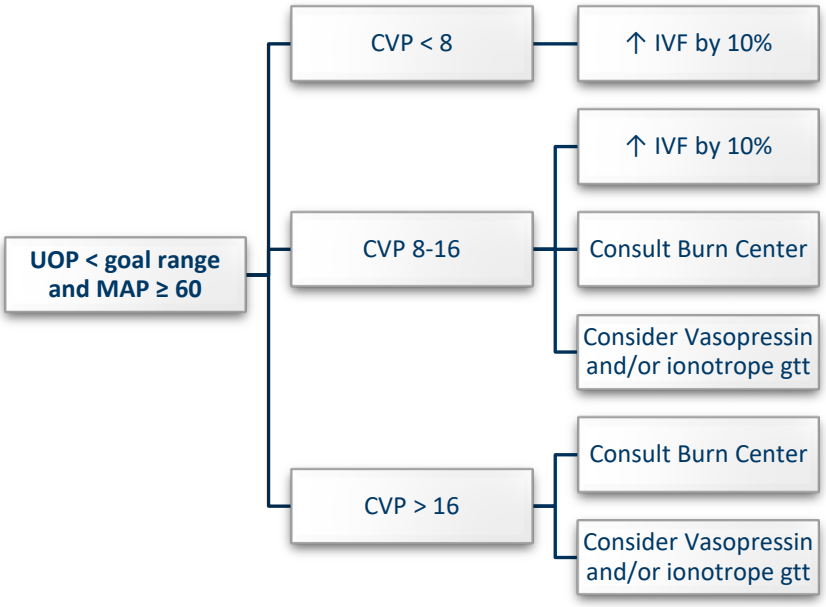
Weight (kg)	UOP Goal Range (mL/hr)
< 39 kg	See pediatric order set
40—44 kg	15—20 mL/hr
45—54 kg	15—25 mL/hr
55—64 kg	20—30 mL/hr
65—74 kg	20—35 mL/hr
75—84 kg	25—40 mL/hr
85—99 kg	25—45 mL/hr
> 100 kg	30—50 mL/hr

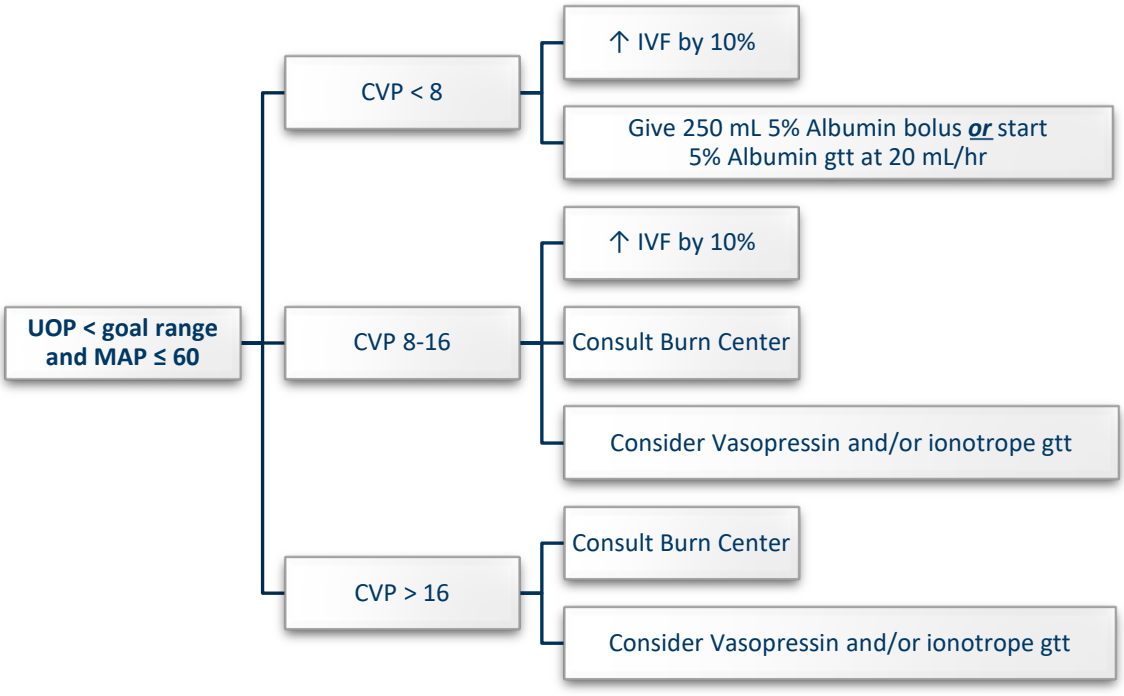


- **To decrease IVF by 10%**
  - Total Hourly IVF x 10% = _____ mL
  - Total Hourly IVF ***– 10%*** = New Total Hourly IVF
- **To increase IVF by 10%**
  - Total Hourly IVF x 10% = _____ mL
  - Total Hourly IVF ***+ 10%*** = New Total Hourly IVF

When UOP is Less Than Goal Range

- **Obtain MAP and CVP on patient**





Burn Patient Inputs and Outputs Tracking Record

Patient Name:	**Date/Time of Injury:**
Mod. Parkland Formula: mL/hr in first 8 hrs mL/hr over 16 hrs	**Initial Fluid Rate:** mL/hr **Switch from crystalloid to colloid**[3] when patient receives: 100 mL x _____ kg = _____ mL
Patient Weight (kg): kg	**Goal Range Hourly UOP:** mL

Date	Time	Intake (mL)						Urine Output	Action
		Continuous IVF	Medications	Drips (gtt)	Transfusions	Other	**Total Fluid**		

[3] See page 2