

Adult Hospital Burn Disaster Crisis Standards of Care

Initial Management Guidelines for the Adult Burn Patient

Burn Disaster Crisis Standards of Care

If transfer to University of Utah Health Care Burn Center is not feasible, consider Burn Center consultation at (801) 581-2700.

Prior to initiating care of the patient with wounds it is critical that healthcare providers take measures to reduce their own risk of exposure to potentially infectious substances and/or chemical contamination. In addition, patients with burns/wounds are at high risk for infection and potential cross contamination. Body substance precautions are the most effective way to do this. The level of protection utilized will be determined by patient presentation. Patients with burns > 20% TBSA are most at risk.

Primary Assessment

Intervention /Care	Key Points
<p>Airway maintenance with C-Spine Protection Consider inhalation injury with :</p> <ul style="list-style-type: none"> • History of closed space fire • Hypoxia • Facial Burns • Stridor • Carbonaceous sputum • Nasal Singe • Hoarseness <p>Treatment</p> <ul style="list-style-type: none"> • High flow oxygen using a non-rebreather mask, wean as appropriate. • Early intubation (Assess Glasgow prior to intubation) • Secure the ETT with ties passed around the head, do not use tape as it will not adhere to burned tissue. • A nasogastric tube should be inserted on all patients who are intubated. 	<ul style="list-style-type: none"> • Airway edema increases significantly after fluids are started. • Stridor or noisy breath sounds are indicators of impending upper airway obstruction. • Prophylactic intubation is often preferred because the ensuing edema obliterates the landmarks needed for successful intubation. • An endotracheal tube that becomes dislodged may be impossible to replace due to obstruction of the upper airway by edema. <p>Comfort Care Patients</p> <ul style="list-style-type: none"> • Patients placed in the comfort care category should not be intubated. Oxygen should be administered to aid comfort and prevent air hunger.
<p>Breathing and Ventilation</p> <ul style="list-style-type: none"> • Assess for appropriate rate and depth of respirations in addition to breath sounds. • Monitor pulse oximetry and obtain ABGs • Check CO level if indicated • In circumferential torso burns monitor chest expansion closely. Chest/abdominal escharotomy may be necessary; consider burn center consult. 	<p>An escharotomy is an incision performed longitudinally through burned tissue down to subcutaneous tissue over the entire involved area of full thickness circumferential (or nearly circumferential burn) that is causing constriction and loss of peripheral perfusion or airway constriction. Finger escharotomies are rarely indicated.</p>
<p>Circulation with Hemorrhage Control</p> <ul style="list-style-type: none"> • Heart Rate • Blood Pressure • Pulses and capillary refill • Skin color of unburned skin 	<ul style="list-style-type: none"> • Due to the increased circulating catecholamines and hypermetabolism associated with burn injuries, a normal heart rate for an adult is 100-120 bpm.

<ul style="list-style-type: none"> • Cardiac monitoring as appropriate and available • One large bore IV or IO line should be inserted until it is determined that adequate resources are available for all patients. Secure well. • IV/IO Priority should be given to patients with burns >20% TBSA. Starting points for fluid resuscitation rates are as follows : <ul style="list-style-type: none"> 5 years or younger: 125 ml LR/NS/hr 6-13 years of age: 250 ml LR/NS/hr 14 years or older: 500 ml LR/NS/hr • More definitive calculation is performed during the secondary survey when TBSA is known. • Patients with burns usually do not develop shock within 60 minutes from time of injury if left untreated unless there are associated injuries or medical conditions in addition to the burn. Manage any bleeding as soon as possible. 	<ul style="list-style-type: none"> • Heart rates above this may indicate hypovolemia, inadequate oxygenation, unrelieved pain or anxiety. • Heart rates below this level may be due to an underlying cardiac abnormality. Dysrhythmias may be the result of an electrical injury and are abnormal. • The B/P in the early stages of burn resuscitation should be the individuals pre-injury B/P. • IV's may be placed through burned skin if necessary, suture to secure in place or use coban or kerlix roll. • Oral resuscitation should be considered for awake alert pediatric patients with burns < 10% TBSA and adult patients with burns < 20% TBSA using flavored sport drinks and/or an equal electrolyte maintenance solution. Have the family monitor the quality and quantity of urinary output and watch for signs of dehydration. • When supplies of LR are depleted, fluid resuscitation may continue using NS, ½ NS or colloids. Do not use fluid containing glucose. <p>Comfort Care Patients IVs should be started for administration of medication to manage pain and anxiety. Do not administer large volumes of fluid. Excessive fluid will result in decreased circulation and increased pain due to edema.</p>
<p>Disability</p> <ul style="list-style-type: none"> • Consider using the "AVPU" method: <ul style="list-style-type: none"> -A – Alert -V – Responds to verbal stimuli -P – Responds to painful stimuli -U – Unresponsive 	<p>Typically the burn patient is alert and oriented If altered neurological status, consider associated injury, CO poisoning, substance abuse, hypoxia, medications administered or pre-existing medical conditions.</p>
<p>Exposure</p> <ul style="list-style-type: none"> • Check temperature • Remove all clothing and jewelry • Keep patient and environment warm 	<p>Localized hypothermia causes vasoconstriction to the damaged area reducing blood flow and tissue oxygenation and may deepen the injury. Systemic hypothermia (core temp less than 95° F / 35° C) induces peripheral vasoconstriction that may increase the depth of the burn and interfere with clotting mechanisms and respiration in addition to causing cardiac arrhythmias.</p>

Initial Management Guidelines for the Adult Burn Patient

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Secondary Assessment

History:

- Consider the use of “Ample” to aid in obtaining information
 - A- Allergies
 - M - Medications
 - P – Previous illness, past medical history
 - L – Last meal or fluid intake
 - E – Events/environment related to the injury
- Do not use silver sulfadiazine on a patient with a sulfa allergy; instead use another topical or wound coverage product.

Intervention /Care

Burn Specific Physical Examination:

Airway and Breathing

- Supportive therapy and O₂; wean as appropriate.
- Unless contraindicated by the patient’s medical condition or associated trauma, the head of bed should be elevated to minimize facial and airway edema.
- Use reverse Trendelenburg for patients with C-spine precautions.
- Chest X-ray if intubated, inhalation injury suspected or underlying pulmonary condition.
- Chest X-ray will usually be clear on admit. If inhalation injury is present the X-ray will show infiltrates around the second day correlating with a deteriorating oxygen status.
- Frequent suctioning is necessary to prevent occlusion of the airway and endotracheal tube. Anyone with an inhalation injury is subject to increased respiratory secretions and may have a large amount of carbonaceous debris in the respiratory tract.

Estimate Burn Size and Depth:

- Determine the extent of the burn using the Rule of Nines, Rule of the Palm or Lund-Browder chart.
See Burn Estimate and Diagram.

Initiate Fluid Resuscitation:

Initiate fluid resuscitation for a patient with a TBSA >20% (adult) or >10%TBSA (child).

- $4\text{ml (LR)} \times \text{body weight (kg)} \times \text{TBSA \% burn} = \text{Lactated Ringers solution (LR) fluid in first 24 hours post burn (calculate from time of burn)}$.
- Give half the fluid (LR) in the first 8 hours then the next half (LR) over the next 16 hours.

See Fluid Infusion Rate

Resuscitation Guidelines:

- Insert a foley. Priority should be given to adult burn patients with burn injuries greater than 20% and pediatric patients with burn injuries greater than 10% TBSA.
- Burns of the penis may require insertion of a foley catheter to maintain patency of the urethra.
- Titrate IV rate to maintain a urine output: 0.5ml/kg for adults (30-50ml/hr).

See Adult Fluid Resuscitation Order

Eyes

- Remove contacts prior to eyelid swelling if facial involvement.
- Fluorescein should be used to identify corneal injury.
- If eye involvement consider consulting an ophthalmologist.

Circulation

- Elevate burned extremities on pillows or blankets to improve circulation and minimize edema.
- Monitor pulses with a Doppler, if necessary.
- Circumferential chest injuries may become life threatening; an escharotomy may be necessary.
- Verify that pulselessness is not due to profound hypotension.
- Scrotal swelling, though often significant, does not require specific treatment.

Monitor for the following signs and symptoms in full thickness, circumferential burn injuries which may indicate circulatory compromise:

- Pallor or cyanosis of distal unburned skin on limb.
- Capillary refill > 5 seconds.
- Unrelenting deep tissue pain.
- Progressive loss of sensation or motor function.
- Inability to ventilate in patients with deep circumferential burns of the chest.

Body Temperature

- Keep patient normo-thermic, especially during wound care.
- Keep patient covered. When supplies of blankets are depleted, patients can be wrapped in plastic wrap or aluminum foil for insulation and warmth.
- Warm the room.
- Warm IV fluid if possible, especially if patient is very hypothermic.

Labs

- Labs on admission and as dictated by medical condition:
 - Arterial Blood Gases if inhalation injury is suspected
 - Serum Chemistries/Electrolytes
 - Complete Blood Count (CBC)
 - Glucose Levels, especially in children and diabetics
 - EKG for electrical injury or cardiac history
 - Type and Screen if additional trauma is suspected
- Tetanus prophylaxis unless given in last five years.

Comfort:

- Frequent pain/sedation assessment; minimum every four hours.
- Assess patient pain score before and after pain/sedation medication given.
- Emotional support and education is essential.
- IV analgesia is the preferred route during the initial post injury period.
- Administer opioids in frequent small to moderate bolus doses.

See Pain Medication Guidelines

Adult Pain Medication Guidelines

Burn Disaster Crisis Standards of Care

*When possible, try to give patient oral pain medications. Please consider renal function before initiating any pain regimen, especially NSAIDs. With IV medications, titrate to effect and patient vital signs. **It is best to give smaller doses more frequently until the provider is comfortable with giving larger doses.** Patients will never be pain free; educate them about the burn injury and ask them what pain level is tolerable for them.

Mild to Moderate Pain:

Oral	IV
Acetaminophen 650-1000 mg	Acetaminophen 1000 mg
Ibuprofen 600-800 mg	Ketorolac 15-60 mg
Naproxen 250-500 mg	Fentanyl 25-50 mcg
Tramadol 50-100 mg	Morphine 0.5-2 mg
Acetaminophen with codeine 30/300 1-2 tablets	
Hydrocodone with acetaminophen 5/500 1-2 tablets	
Oxycodone with acetaminophen 5/325 1-2 tablets	

Moderate to Severe Pain:

Oral	IV
Hydrocodone with acetaminophen 7.5/500 1-2 tablets	Fentanyl 25-100 mcg
Oxycodone with acetaminophen 10/325 1-2 tablets	Morphine 2-4 mg
Oxycodone 5-15 mg	Hydromorphone 0.5-2 mg
Morphine 15-45 mg	Ketamine 0.3mg/kg /dose
Hydromorphone 2-6 mg	Ketamine 0.05-0.1mg/kg/hr (use as an adjunct)

For Moderate to Severe pain with around-the-clock use of oral pain meds, consider adding extended release products:

Methadone 5-10 mg PO twice daily
Oxycontin 10 mg PO twice daily
MsContin 15 mg PO 3 times daily

Burn Estimate and Diagram

Burn Disaster Crisis Standards of Care

Area	Birth-1 yr.	1-4 yr.	5-9 yr.	10-14 yr.	15 yr	Adult	2nd	3rd	TBSA% Total
Head	19	17	13	11	9	7			
Neck	2	2	2	2	2	2			
Ant. Trunk	13	13	13	13	13	13			
Post. Trunk	13	13	13	13	13	13			
R. Buttock	2.5	2.5	2.5	2.5	2.5	2.5			
L. Buttock	2.5	2.5	2.5	2.5	2.5	2.5			
Genitalia	1	1	1	1	1	1			
R. U. Arm	4	4	4	4	4	4			
L. U. Arm	4	4	4	4	4	4			
R. L. Arm	3	3	3	3	3	3			
L. L. Arm	3	3	3	3	3	3			
R. Hand	2.5	2.5	2.5	2.5	2.5	2.5			
L. Hand	2.5	2.5	2.5	2.5	2.5	2.5			
R. Thigh	5.5	6.5	8	8.5	9	9.5			
L. Thigh	5.5	6.5	8	8.5	9	9.5			
R. Leg	5	5	5.5	6	6.5	7			
L. Leg	5	5	5.5	6	6.5	7			
R. Foot	3.5	3.5	3.5	3.5	3.5	3.5			
L. Foot	3.5	3.5	3.5	3.5	3.5	3.5			
TOTAL									

Cause of Burn _____

Additional injuries _____

Date of Burn _____

Time of Burn _____

Age _____

Sex _____

Weight _____ kg

Height _____ cm

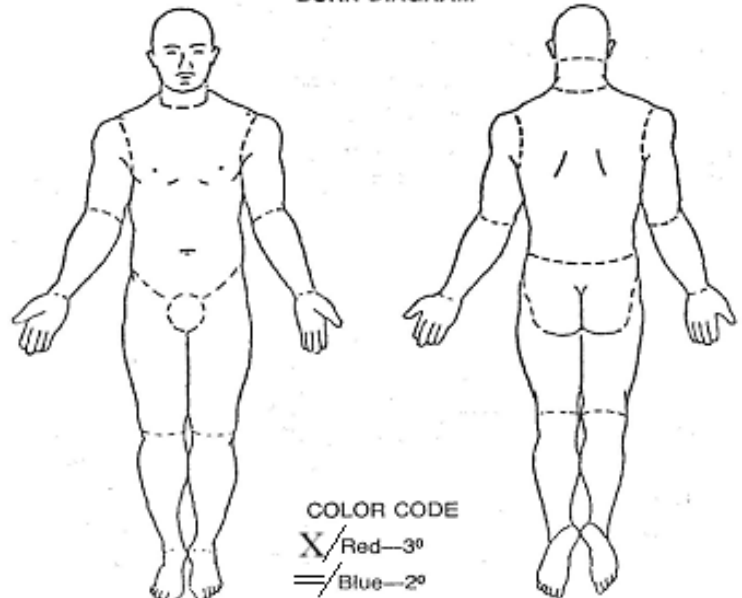
Date of assessment _____

Time of assessment _____

Assessed by _____

Triage Color: R Y G B

BURN DIAGRAM



Fluid Infusion Rate > 30kg

Burn Disaster Crisis Standards of Care

*Fluid of choice LR/NS, DO NOT use dextrose containing fluids

Wt (lbs)	Wt (kg)	% TBSA	/Hr for 1 st 8 Hrs of care	60 gtt set, gtt/min	20 gtt set, gtt/min	15 gtt set, gtt/min	10 gtt set, gtt/min
66	30	10	75	75	25.0	18.8	12.5
66	30	20	150	150	50.0	37.5	25.0
66	30	30	225	225	75.0	56.3	37.5
66	30	40	300	300	100.0	75.0	50.0
66	30	50	375	375	125.0	93.8	62.5
66	30	60	450	450	150.0	112.6	75.0
88	40	10	100	100	33.3	25.0	16.7
88	40	20	200	200	66.7	50.0	33.3
88	40	30	300	300	100.0	75.0	50.0
88	40	40	400	400	133.3	100.0	66.7
88	40	50	500	500	166.7	125.00	83.3
88	40	60	600	600	200.0	150.0	100.0
110	50	10	125	125	41.7	31.3	20.8
110	50	20	250	250	83.3	62.5	41.7
110	50	30	375	375	125.0	93.8	62.5
110	50	40	500	500	166.7	125.0	83.3
110	50	50	625	625	208.3	156.3	104.2
110	50	60	750	750	250.0	187.6	125.0
132	60	10	150	150	50.0	37.5	25.0
132	60	20	300	300	100.0	75.0	50.0
132	60	30	450	450	150.0	112.5	75.0
132	60	40	600	600	200.0	150.0	100.0
132	60	50	750	750	250.0	187.5	125.0
132	60	60	900	900	300.0	225.0	150.0
154	70	10	175	175	58.3	43.8	29.2
154	70	20	350	350	116.7	87.5	58.3
154	70	30	525	525	175.0	131.3	87.5
154	70	40	700	700	233.3	175.0	116.7
154	70	50	875	875	291.7	218.8	145.8
154	70	60	1050	1050	350.0	262.6	175.0
176	80	10	200	200	66.7	50.0	33.3
176	80	20	400	400	133.3	100.0	66.7
176	80	30	600	600	200.0	150.0	100.0
176	80	40	800	800	266.7	200.0	133.3
176	80	50	1000	1000	333.3	250.0	166.7
176	80	60	1200	1200	400.0	300.0	200.0
198	90	10	225	225	75.0	56.3	37.5
198	90	20	450	450	150.0	112.5	75.0
198	90	30	675	675	225.0	168.8	112.5
198	90	40	900	900	300.0	225.0	150.0
198	90	50	1125	1125	375.0	281.3	187.5
198	90	60	1350	1350	450.0	337.6	225.0
220	100	10	250	250	83.3	62.5	41.7
220	100	20	500	500	166.7	125.0	83.3
220	100	30	750	750	250.0	187.5	125.0
220	100	40	1000	1000	333.3	250.0	166.7
220	100	50	1250	1250	416.7	312.5	208.3
220	100	60	1500	1500	500.0	375.0	250.0
242	110	10	275	275	91.6	68.7	45.9
242	110	20	550	550	183.4	137.5	91.6
242	110	30	825	825	275	206.2	137.5
242	110	40	1100	1100	366.6	275.0	183.4
242	110	50	1375	1375	458.4	343.7	229.1
242	110	60	1650	1650	550.0	412.4	275
264	120	10	300	300	99.9	74.9	50.1
264	120	20	600	600	200.1	150.0	99.9
264	120	30	825	825	300.0	224.9	150.0
264	120	40	1200	1200	399.9	300.0	200.1
264	120	50	1500	1500	500.1	374.9	249.9
264	120	60	1650	1650	600.0	449.8	300

*Patients with traumatic injuries may require additional fluids.

Burn Triage Decision Table

Burn Disaster Crisis Standards of Care

BURN TRIAGE TABLE: This table illustrates the anticipated ratio of resources to benefit from the treatment of burns of various sizes in various aged patients. Each category reflects both the volume of resources necessary to care for the patients in each group, and the expected outcome.

Age	Burn Size Group, % TBSA All									
	0-9.9	10-19.9	20-29.9	30-39.9	40-49.9	50-59.9	60-69.9	70-79.9	80-89.9	≥ 90
0-1.99	Very High	Very High	High	High	High	Medium	Medium	Medium	Low	Low
2-4.99	Outpatient	Very High	High	High	High	Medium	Medium	Medium	Low	Low
5-19.99	Outpatient	Very High	High	High	High	High	Medium	Medium	Low	Low
20-29.99	Outpatient	Very High	High	High	High	Medium	Medium	Medium	Low	Low
30-39.99	Outpatient	Very High	High	High	Medium	Medium	Medium	Low	Low	Expectant
40-49.99	Outpatient	Very High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
50-59.99	Outpatient	Very High	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60-69.99	Outpatient	High	Medium	Medium	Low	Low	Low	Expectant	Expectant	Expectant
≥ 70	Very High	Medium	Low	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant

Palmieri TL et al.
Triage/Resource Table for a Burn Disaster
Developed from the American Burn Association NBR

Categories are defined as follows:

OUTPATIENT: Survival and good outcome expected without requiring initial admission.

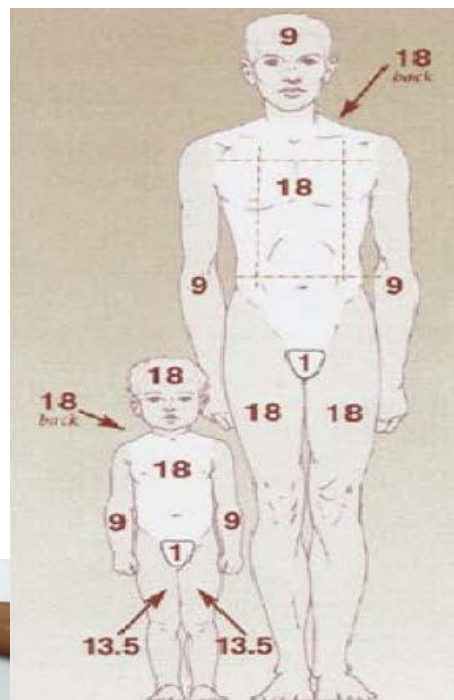
VERY HIGH: Mortality ≤10%, anticipated length of stay ≤ 14-21 days, 1-2 surgical procedures.

HIGH: Mortality ≤ 10%, anticipated length of stay ≥ 14-21 days, multiple surgical procedures.

MEDIUM: Mortality 10 – 50%, with provision of aggressive treatment which may require prolonged hospitalization and multiple surgical procedures.

LOW: Mortality 50 – 90%, even with provision of prolonged, intensive resources.

EXPECTANT: Mortality ≥ 90%, even with prolonged aggressive care.



Patients palm inclusive of fingers = 1%
Total Body Surface Area

Burn Triage Decision Table

Burn Disaster Crisis Standards of Care

BURN TRIAGE TABLE: This table illustrates the anticipated ratio of resources to benefit from the treatment of burns of various sizes in various aged patients. Each category reflects both the volume of resources necessary to care for the patients in each group, and the expected outcome.

Age	Burn Size Group, % TBSA WITH Inhalation Injury									
	0-9.9	10-19.9	20-29.9	30-39.9	40-49.9	50-59.9	60-69.9	70-79.9	80-89.9	≥ 90
0-1.99	High	Medium	Medium	Medium	Medium	Medium	Low	Low	Expectant	Expectant
2-4.99	High	High	High	High	High	Medium	Medium	Medium	Low	Low
5-19.99	High	High	High	High	Medium	Medium	Medium	Medium	Low	Low
20-29.99	Very High	High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
30-39.99	Very High	High	High	Medium	Medium	Medium	Medium	Low	Low	Expectant
40-49.99	Very High	High	Medium	Medium	Medium	Low	Low	Low	Low	Expectant
50-59.99	High	Medium	Medium	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60-69.99	Medium	Medium	Medium	Low	Low	Low	Expectant	Expectant	Expectant	Expectant
≥ 70	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant	Expectant

Palmieri TL et al.
Triage/Resource Table for a Burn Disaster
Developed from the American Burn Association NBR

Age	Burn Size Group, % TBSA NO Inhalation Injury									
	0-9.9	10-19.9	20-29.9	30-39.9	40-49.9	50-59.9	60-69.9	70-79.9	80-89.9	≥ 90
0-1.99-	Very High	Very High	High	High	High	High	Medium	Medium	Medium	Medium
2-4.99	Outpatient	Very High	High	High	High	High	High	Medium	Medium	Medium
5-19.99	Outpatient	Very High	High	High	High	High	High	Medium	Medium	Low
20-29.99	Outpatient	Very High	High	High	High	Medium	Medium	Medium	Medium	Low
30-39.99	Outpatient	Very High	High	High	Medium	Medium	Medium	Low	Low	Expectant
40-49.99	Outpatient	Very High	High	High	Medium	Medium	Medium	Low	Low	Expectant
50-59.99	Outpatient	Very High	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant
60-69.99	Very High	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant
≥ 70	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant

Fluid Resuscitation Calculation Sheet for the Adult Burn Patient > 30 kg

Burn Disaster Crisis Standards of Care

Fluid Resuscitation Formulas

Body surface area calculation equals (m²):

3600

Fluid resuscitation calculation

4 ml x weight (kg) x Burn Area (%TBSA)

Basal Fluid Requirement.

1500 ml / 24 hours x Body Surface Area

1. Fluid Resuscitation and Basal Requirement

Calculated fluid resuscitation and basal requirement

A. (4ml x _____ kg x _____ %TBSA) + (1500 ml x _____ m²) = _____ ml/ 24 hours

B. Resuscitation Fluid for the First 24 Hours

Give half the calculated volume in the first 8 hours. Then the other half in the next 16 hours.

i. 1st 8 hours = _____ ml = _____ ml/hr

ii. 2nd 8 hours = _____ ml = _____ ml/hr

iii. 3rd 8 hours = _____ ml = _____ ml/hr

The resuscitation fluid will be titrated hourly based on the patients urine output until the calculated maintenance rate goal is reached. **See fluid resuscitation order sheet for the burn patient >30 kg**

2. Maintenance fluids = Basal Fluid Requirement and Evaporative Water Loss

A. Basal Fluid Requirement = 1500ml x _____ m²

i. Total body surface area _____ m²

ii. 24 hours = _____ ml

iii. Hourly rate = _____ ml/hr

B. Evaporative Water Loss

Burn Patient > 30kg = (25 + %TBSA) x _____ m² = ml/hr

i. Calculated evaporative water loss

(25 + _____ %TBSA) x _____ m² = _____ ml/hr
= _____ ml/ 24 hrs

ii. **Total maintenance fluids** including basal requirement and evaporative water loss

1. **24 hours** = _____ ml

2. **Hourly rate** = _____ ml/hr

Fluid Resuscitation Order for the Adult Burn Patient > 30kg

STEP ONE

Use the Fluid Resuscitation Calculation Sheet for initial LR rate

Begin fluid resuscitation

LR @ _____ ml/hr

Then measure urine output hourly

Vital Signs Stable: HR<140, MAP >60

Vitals unstable:HR>140 or MAP < 60

CALL ATTENDING

Patients Admit Wt: _____ KG

Urine Output < 15 ml
(If < 15cc/hr for 2 hrs see 3 boxes down)

Urine Output 15-29 ml

Urine Output 30-50 ml

Urine Output > 50 ml

Urine Output > 200 ml

Increase IV rate by 20% or 200 cc/hr (which ever is greater)

Increase IV rate by 10% or 100 cc/hr (which ever is greater)

Leave IV at current rate

Decrease IV rate by 10% or 100 cc/hr (which ever is greater)

Consider decreasing IV rate every 1/2 hr by 10% Be sure to assess patients Blood Sugar, BP, HR, Lactic Acid, Hemoglobin, **before** decreasing IV Rate. CALL M.D./ CONSIDER BURN CENTER CONSULT

REPEAT STEP ONE EVERY HOUR UNTIL:

Urine Output < 15cc/hr for two hours despite an increase in fluid

Calculated Maintenance Rate _____ ml/hr is reached and held for two hours AND the pt. is at least 24 hours post burn

ALBUMIN PROTOCOL

If patient requires > Calculated Maintenance Rate or has complications related to edema consider albumin protocol

Patient may need colloid resuscitation: Call M.D./consider Burn Center Consultation to discuss starting 5% albumin at one-third current hourly rate, LR at two-thirds current rate. Example (If Current Rate of LR is 900 cc/hr, it should be changed to 600 cc/hr LR, and 300 cc/hr 5% Albumin.

Repeat step one until patient maintains Calculated Maintenance Rate with Urine output Greater than 30 cc/hr

When combined LR and Albumin rates reach the Calculated Maintenance Rate change to LR for two hours

If patient maintained Urine Output for two hours on LR and is 24 hrs post burn **FLUID RESUSCITATION IS COMPLETE** Change to **D5 0.45 NS with 20 mEq KCL/L At Calculated Maintenance Rate**

CALL M.D./CONSIDER BURN CENTER CONSULT and discuss beginning **ALBUMIN PROTOCOL**

Fluid resuscitation is **COMPLETE:**

Switch to **D5 0.45 NS with 20 mEq KCL** Run IV @ Calculated maintenance rate _____ ml/hr **GOAL RATE =ALL FLUIDS/HR (INCLUDING TUBE FEEDS)**

If patient again develops oliguria or hemodynamic instability **CALL MD/CONSIDER BURN CENTER CONSULT** And restart patient on LR Repeat **STEP ONE**

M.D. Signature _____

Date _____

RN Co-Sign _____

Date _____