



Initial Management Guidelines for Pediatric Burn Patients

If immediate transfer to pediatric burn center is not feasible view the following recommendations

A,B,C, D, E

Assessment and Monitoring	Intervention/Care																		
Airway Maintenance with Cervical Spine Protection																			
For airway compromise/injury: <ul style="list-style-type: none"> • History of closed space fire • Hypoxia • Facial burns • Stridor • Carbonaceous sputum • Nasal singe Glasgow Comma Scale/LOC * see attached	Consider inhalation injury <ul style="list-style-type: none"> - Supportive therapy, O2, head sniffing position - Bag with non- rebreather - Early intubation - Permissive hypercapnea - Low PIP Assess Glasgow prior to intubation Collar in place or sand bags																		
Breathing and Ventilation: Assess for appropriate rate and depth of respirations Monitor pulse oximetry Check CO level <i>Recommend Braslow tape for equipment and medications</i>	See above for mechanical ventilation guide <u>Guide:</u> <table style="display: inline-table; vertical-align: top;"> <tr> <td></td> <td><u>RR norms</u></td> </tr> <tr> <td>Newborn to 3 months</td> <td>30 – 60</td> </tr> <tr> <td>6 Months</td> <td>25 – 40</td> </tr> <tr> <td>1 year – 4 years</td> <td>20 – 30</td> </tr> <tr> <td>6 years – 8 years</td> <td>18 – 25</td> </tr> <tr> <td>10 years – 12 years</td> <td>15 - 20</td> </tr> </table>		<u>RR norms</u>	Newborn to 3 months	30 – 60	6 Months	25 – 40	1 year – 4 years	20 – 30	6 years – 8 years	18 – 25	10 years – 12 years	15 - 20						
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Circulation with Hemorrhage Control Pulses and capillary refill Skin color HR Blood pressure, manual cuff initial <i>Children can compensate up to 25% blood loss</i> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Heart Rate</th> <th colspan="2" style="text-align: left;">Blood Pressure</th> </tr> </thead> <tbody> <tr> <td>Newborn to 3 mo</td> <td>100 – 160</td> <td>60 - 95</td> </tr> <tr> <td>6 mo to 1` year</td> <td>90 - 120</td> <td>80 - 100</td> </tr> <tr> <td>2 years to 4 years</td> <td>85 – 120</td> <td>80 - 110</td> </tr> <tr> <td>6 to 8 years</td> <td>70 - 110</td> <td>80 - 110</td> </tr> <tr> <td>10 to 12 years</td> <td>60 - 90</td> <td>90 -120/135</td> </tr> </tbody> </table> Temperature	Heart Rate	Blood Pressure		Newborn to 3 mo	100 – 160	60 - 95	6 mo to 1` year	90 - 120	80 - 100	2 years to 4 years	85 – 120	80 - 110	6 to 8 years	70 - 110	80 - 110	10 to 12 years	60 - 90	90 -120/135	IV start – unaffected arm if possible, > 22 Gauge, X 2 Labs: Basic – patients with no physiologic abnormalities Hemoglobin, ALT/AST, UA Comprehensive – patients with moderate to severe injury CBC, CMP, PT/PTT, UA Stat labs – ISTAT at discretion of team leader CXR EKG with electrical injury
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Disability	Monitor LOC with VS																		
Exposure <i>Utilize formula/grid to estimate burn size and depth</i> <i>See tools below</i> Disposition – Consider ICU or step down for pediatric burns >15%	Remove all clothing Roll – maintaining C-spine precautions Keep patient normo-thermic Keep patient covered – clean sheets and blankets ok Cover patients head Use Bear hugger or like devise if available Warm IV fluids																		

LUND AND BROWDER CHARTS

IGNORE
SIMPLE ERYTHEMA

Superficial
 Deep

REGION	%
HEAD	
NECK	
ANT.TRUNK	
POST.TRUNK	
RIGHT ARM	
LEFT ARM	
BUTTOCKS	
GENITALIA	
RIGHT LEG	
LEFT LEG	
TOTAL BURN	

RELATIVE PERCENTAGE OF BODY SURFACE AREA
AFFECTED BY GROWTH

AREA	AGE 0	1	5	10	15	ADULT
A = 1/2 OF HEAD	9 1/2	8 1/2	6 1/2	5 1/2	4 1/2	3 1/2
B = 1/2 OF ONE THIGH	2 3/4	3 1/4	4	4 1/2	4 1/2	4 3/4
C = 1/2 OF ONE LEG	2 1/2	2 1/2	2 3/4	3	3 1/4	3 1/2

Fluids for Burn Resuscitation		Foley
Mild ≤ 1 %	None	No
Moderate 2 - 9 %	Maintenance IV with Dextrose	No
Moderate 10 - 14 %	Maintenance IV with Dextrose	No
Major ≥ 15%	< 30 kg: LR + < Maintenance (D5 LR), Use Parkland formula ≥ 30 kg: LR Titrate IV's per urine output	Yes monitor Q1h

Pediatric Fluid Calculation ml/kg/hr

4 ml's/hr (for 1st 10 kg) x ___ kg = ___ ml/hr
 2 ml's/hr (for 2nd 10 kg) x ___ kg = ___ ml/hr
 1 ml/hr (for add'l 1 kg) x ___ kg = ___ ml/hr

Example: 25 kg child
 4 x 10 (kg) = 40 ml/hr
 2 x 10 (kg) = 20 ml/hr

Determining Depth of Burn

Admit burns of hands, feet, face, genitals and across joint borders

See attached pediatric medication guide

Calculation of type	Intervention/Care
<p>Mild /Superficial (1st degree)</p> <ul style="list-style-type: none"> - Involves epidermis, red, painful, no blisters 	Calculate % Debridement if necessary – 1,2,3 ouch Ibuprofen/Acetaminophen Dress with Bacitracin Open to air or kling Discharge home Follow up burn clinic
<p>Moderate/ Partial Thickness (2nd degree)</p> <ul style="list-style-type: none"> * Superficial thickness, epidermis destroyed and minimal damage to dermis pink or red, moist, weepy, blanching, blisters, painful * Deep partial thickness, epidermis and dermis involved red or pearly white, drier in appearance white, cherry red, brown or black in color hard and leathery insensitive to pinprick 	Calculate % Ibuprofen/Acetaminophen, Morphine Procedural sedation Lorazepam Debridement by surgery Dress wound: Silvadene, or Xeroform/Bacitracin Exudry, Kling & Flexinet Maintenance IV fluids Oral nutrition
<p>Major/Full Thickness (3rd degree)</p> <p>All epidermis and dermis destroyed White, brown, dry, leathery with possible coagulated vessels</p>	Calculate % Note if circumferential for future assessment Parkland formula for IV's Medicate Dressing See care specifics next page

If transfer to a regional burn center is not feasible – Care suggestions for care of a patient with > 20% burns, Secondary Survey			
			Call 202 476 8206 (surgical fellow on call) with questions or concerns
Assessment/Monitoring		Intervention/Care	
History: Circumstances of injury Obtain medical history Allergies Medications Previous illness, past medical history Last meal or fluid Events/environment related to injury		Note: Inquire as to family support and location of other family members Determine who can make medical decisions if parent unavailable	
Complete Physical Examination: <ul style="list-style-type: none"> • Head to toe exam • Reassess TBSA and depth of burn • Monitor the following signs and symptoms in full thickness and circumferential burn injuries for circulatory compromise: <ul style="list-style-type: none"> - Pallor or cyanosis - Capillary refill \geq 5 seconds - Progressive loss of sensation or motor function - Progressive decreases or absence of pulses - Inability to ventilate in patients with deep circumferential burns of the chest - Unexpected increase or change in pain in limb 		Labs: Pts < 3 yrs Blood, urine and throat culture, CBC and urinalysis Recommend care to include VS q2h 'til stable than q4h, include pulses I&O with VS Abdominal girth in children < 1 year with residual checks minimum q8h – feeding intolerance	
Comfort <ul style="list-style-type: none"> - Frequent pain and sedation assessment – minimum with VS - Minimum every 4 hours - Before and after pain/sedation - See attached pain medications and pediatric dosing 		Pain Scale's – see medication sheet Verbal and non-verbal <i>Note scale used in patient record</i> Recommend pain/opioids and sedation drips with intubated patients	
Wound Care – Daily for \geq 20% Assess the wound and monitor for Change in wound appearance Change in size Signs and symptoms of infection Recommend foley for genital/perineal wounds		Care: <ul style="list-style-type: none"> - Pre-medicate as indicated - Use distraction, music, singing, counting - Gather all equipment - clean procedure- - Open all wrappers - Place generous amount of silveradene on gauze dressing(s) – keep wound moist until next change -Remove old dressing – Keep patient covered as much as possible, room warm, draft free is possible -Wash wound with warm tap water and soap with wash cloth – pat dry - Wrap fingers and toes separately – making sure no skin to skin contact, then place kling or wrap dressing - Elevate burned extremities 	
Silvadene	Bacitracin	Erythromycin ointment -	Bacitracin or Sulfamylon
Deep partial thickness Full thickness Circumferential (hands/feet) Flame, explosives, grease	Face Perineum Superficial	Eye	Ear