

## BURNS – PEDIATRIC

APPROVED: Gregory Gilbert, MD EMS Medical Director  
Nancy Lapolla EMS Director

DATE: July 2018

### **Information Needed:**

- Type and source of burn: explosion, chemical, electrical, steam, smoke or toxic fumes
- Complicating factors: exposure in enclosed space, total time exposed, drugs or alcohol
- Medical history: cardiac or respiratory disease, circulatory problems, etc.
- Physical Exam: presence or absence of sputum, singed nasal hairs, and quality of voice
- Utilize the Broselow Tape to measure length and then SMC Pediatric Reference Card for determination of drug dosages, fluid volumes, defibrillation/cardioversion joules and appropriate equipment sizes

### **Objective Findings:**

- Evidence of inhalation injury or toxic exposure, i.e. carbonaceous sputum, hoarseness, or singed nasal hairs
- Measure the extent of the burn including the depth, full or partial thickness and the total body surface area (TBSA) affected. As a guide, the surface area covered by the patients palm equals one percent of his TBSA.
- Identify entrance or exit wounds if electrical or lightning strike
- Identify associated trauma from explosion, electrical shock, or fall

### **General Burn Treatment:**

- Routine medical care
- Stop the burning process
- Oxygenate with BVM as needed
- Should not delay transport to appropriate facility, if feasible
- Continuous cardiac monitoring: treat dysrhythmias according to appropriate protocols
- Consider IV/IO access (avoid burned skin but use if necessary).
- Consider IV/IO fluid bolus of NS
- Consider pain management, see Interim Pediatric Pain Assessment and Management protocol (June 2016)

### **Treatment (Thermal):**

- Remove jewelry and non-adhered clothing. Do not break blisters
- Cover affected body surface
  - If <5% of body surface, cover with sterile, moist saline dressing

- If >5% TBSA, cover with sterile or clean dry sheet
- Use sheets/blankets to prevent hypothermia if burns are extensive
- For major burns, establish IV or IO access, preferably in unburned skin.
- For less severe burns, consider vascular access for pain management.
- Transport to appropriate facility (see Precautions and Comments)
- If partial or total thickness >5% TBSA :
  - Give IV/IO fluid bolus of NS. May repeat two times as indicated.
  - Contact Pediatric Base Hospital Physician for additional fluid orders.
- Monitor lung sounds

**Treatment (Chemical):**

- Decontamination and HazMat procedures if indicated
- Provide routine medical care as soon as it is safe
- Brush off dry powder if present
- Remove any contaminated or wet clothing (including underwear)
- Irrigate with copious amounts of saline or water

**Treatment (Electrical):**

- Moist dressing on exposed, injured area
- Continuous cardiac monitoring: treat dysrhythmias according to appropriate protocols

**Major burn is defined as:**

- >5% of TBSA partial or full thickness burn
- Burns to critical areas: face, hands feet or genitalia, perineum, or major joints
- Electrical burns or lightning injury
- Chemical burns
- Respiratory burns
- Burns associated with trauma

**Transportation:**

- Patients with minor burns should be transported to the closest appropriate hospital
- Patients with suspected partial or full thickness (>5%TBSA), electrical burns or full thickness burns of critical areas (hands, face, or perineum) should be transported to Santa Clara Valley Medical Center or St. Francis Hospital – Bothin Burn Center
- Patients with a combination of burns and trauma should be transported to the appropriate Trauma Center
- Patients with respiratory symptoms or physical evidence of respiratory burns (singled nasal hair, soot in the oropharynx) should be transported to the closest receiving hospital

### **Precautions and Comments:**

- Depth of burn:
  - Superficial = 1st degree (skin red but intact with pain)
  - Partial thickness = 2nd degree (severe pain with blisters)
  - Full thickness = 3rd degree (no sensation in burned skin)
- Contact Pediatric Base Hospital Physician for further fluid orders, assistance with destination decision, or further pain management orders if needed.
- Inhalation injuries may cause delayed but severe airway compromise. Be prepared and transport to nearest ED.
- Do not apply ice or ice water directly to skin surfaces as additional injury may result.
- Consider presence of associated multisystem trauma if patient presents with signs or symptoms of hypovolemia or hypoperfusion. See Trauma Protocol for associated trauma.
- Trauma takes precedence over burns. When trauma is suspected, transport to a Trauma Facility or contact Pediatric Base Hospital Physician to help determine destination decision.
- Air medical response should consult their medical direction protocols/procedure for appropriate destination.
- Document the total IV fluid administered on the PCR and provide this in report to the receiving hospital.