Notes/Definitions

- Prioritize life-threatening conditions and initiate appropriate care while preventing hypothermia.
- Assess burn depth, total body surface area (TBSA) involvement, and the presence of inhalation injury or associated trauma. Do not include superficial burns (first-degree) burns when calculating TBSA.

Base Hospital Contact for Burn Unit Destination if criteria met

BLS Interventions

- Refer to OCEMS General BLS Standing Orders SO-BLS.
- Break contact with causative agent.
- Remove jewelry and clothing from the area involved.
- Begin flushing burns with copious amounts of cool running water (target 20 minutes; do not delay transport).
- Keep the patient warm and prevent hypothermia.

Thermal Burns

- For burns <10% TBSA, stop burning by flushing with cool running water or saline.
- For burns >10% TBSA, in addition to cool running water, cover with dry dressing and keep patient warm.
- Do not allow patient to become hypothermic.

Toxic Inhalation (e.g. CO exposure, smoke, gas)

- Move patient to a safe environment.
- 100% O2 via mask.
- Monitor respiratory status.

Chemical Burns

- Remove contaminated clothing.
- If dry chemicals, brush and flush with copious amounts of cool running water.
- If liquid, flush with copious amounts of cool running water.

Tar Burns

- Do not remove tar.
- Cool with copious amounts of cool running water.

ALS Interventions

- Cardiac monitoring if applicable.
- 12-lead ECG if applicable.
- Obtain IV / IO (in non-burned area) if applicable.
- Obtain capnography if applicable.
- Consider advanced airway management if applicable.
- Treat for respiratory distress, wheezing, bronchospasms, or suspected smoke inhalation:
  - ► **Albuterol 6 mL (5 mg)** – continuous nebulization
- Treat for pain choosing one of the following to administer:
  - ► **Fentanyl 50 mcg IV / IM** – may repeat once after 3 minutes, hold for SBP < 90
  - ► **Fentanyl 100 mcg IN** – may repeat once after 3 minutes, hold for SBP < 90
  - ► **Morphine sulfate 5 mg (or 4 mg CARPUJECT™) IV / IM / IO** – may repeat once after 3 minutes, hold for SBP < 90

- ► **Ketamine 0.1 mg / kg IV** – may repeat once after 15 minutes, max single dose 10 mg
- ► **Ketamine 0.5 mg / kg IM** – may repeat once after 15 minutes, max single dose 50 mg
- ► **Ketamine 1 mg / kg IN** – once, max dose 100 mg
- ► **Ketorolac 15 mg IV / IO / IM** – once

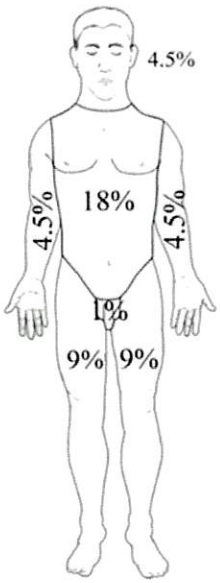
- Treat for hypotension (Systolic BP ≤ 90) or signs of shock:
  - ► **Normal Saline 250 mL IV / IO bolus** – may repeat up to 1 liter to maintain adequate perfusion.

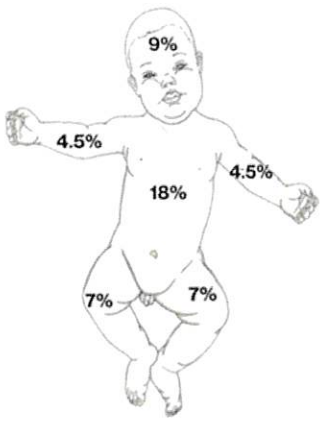
Transport Consideration

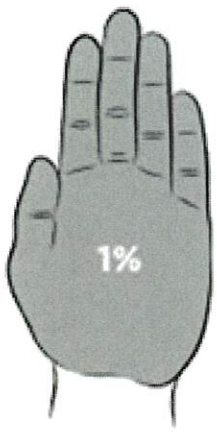
- Base Hospital Contact required if any of the following criteria are met:
  - Suspected inhalation injury (patients burned in an enclosed space, patients with facial burns, hoarseness, dyspnea, soot in mouth, carbonaceous sputum, singed nasal hairs).
  - Partial-thickness (second-degree) burns >10% TBSA.
  - Any full-thickness (third-degree) burns.
  - Burns involving the face, hands, feet, genitalia, perineum, or major joints.
  - Electrical burns due to high voltage (≥ 1000 volts), including lightning injuries.
  - Chemical burns.
  - Circumferential burns.
  - Burns in patients with significant preexisting medical conditions that may complicate recovery (e.g. diabetes, renal failure, cardiac or pulmonary disease).
  - Burns with associated trauma where the burn injury increases risk of morbidity or mortality.
- ALS escort to nearest appropriate ERC or as directed by the Base Hospital.

Additional Considerations

- Assessment utilizing the Rules of 9 and Palmar Method (patient's palm), refer to OCEMS PR-003.







Palmar, palm + fingers of patient = 1%

- Suspected carbon monoxide toxicity can cause inaccurate O2 saturation readings because the pulse oximeter cannot differentiate between carbon monoxide and oxygen molecules.
- Electrical burns may cause significant internal injury with minimal external findings. Assess for cardiac dysrhythmia and associated trauma.
- Chemical burns, some chemicals can react with water and may worsen the burn or produce hazardous fumes (e.g., sodium, phosphorus, acetyl bromide, aluminum carbide, silicon tetrachloride).
- Patients with burn injuries are at an increased risk of hypothermia. Avoid prolonged cooling and keep the patient covered and warm.
- Circumferential burns of the chest and extremities may impair ventilation or circulation.
- 20CRW (20 minutes of cool running water) within the first three hours prevents worsening injury, reduces pain, lowers risk of infection, and improves long-term outcomes.

Base Hospital

- Consider routing patient to an ERC with a Burn Unit if any criteria are met (refer to list above within the Transport Consideration section).
- If an airway cannot be secured, consider transport to the nearest ERC.
- Inhalation of smoke generated from burning plastics or petroleum products may produce cyanide toxicity. If cyanide toxicity is known or suspected, consider treatment with:
  - ► **Hydroxocobalamin 5 gm in 200 mL normal saline IV** - once

Cross References:
SO-BLS General BLS Standing Orders
SO-M-035 Respiratory Distress
SO-M-045 Shock (Symptomatic Hypotension)
PR-003 Estimate of Body Surface Area Burned and Disposition
PR-030 Endotracheal Intubation (including EtCO2)
PR-070 Ketamine Analgesia
PR-130 Hydroxocobalamin for Cyanide Toxicity
PR-135 Supraglottic Airway Device Placement – Adult/Adolescent