Caring for a Burn in the Emergency Department

- The indications for ventilatory assistance are the same as with any other trauma patient. Most burns greater than 10% total body surface area will do better with 40% humidified oxygen by mask.
  - The treatment for carbon monoxide poisoning (carboxyhemoglobin greater than 15%) is 100% oxygen.

- Remove all clothing, jewelry and metals if the patient has incurred a large burn. For a small burn, remove all items around the involved area.

- Cool all areas of burn with room temperature water/saline if the burn is less than 15 minutes old. All efforts should be made to prevent the patient from becoming hypothermic.

- Don’t delay diluting all chemical burns with copious amounts of water while attempting to determine the chemical or obtaining a specific antidote. Chemical burns to the eyes will need continuous irrigation until seen by an ophthalmologist.

- Make a rapid estimation of the total body surface area burn (see diagram on back)

- For Burns > 20% total body surface area or significant electrical injuries:
  - insert a large bore peripheral IV of Lactated Ringers (see fluid recommendations below)
  - insert a Foley catheter to monitor hourly urine output
  - insert a NG tube
  - monitor vital signs, mental status and urine output frequently

- Obtain accurate weight of the patient if possible. If not, get an estimate from the patient or family.

- No need to treat with broad spectrum antibiotics

- Give Tetanus booster

**Severity Determination**

- **First Degree**
  - superficial, red, mild discomfort

- **Second Degree (Partial Thickness)**
  - red, moist, blisters, swollen, painful

- **Third Degree (Full Thickness)**
  - White or khaki, charred, dry, no sensation

**Quick Fluid Recommendations for Burns >20% TBSA**

<table>
<thead>
<tr>
<th>Age</th>
<th>Fluid Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 5 yrs</td>
<td>125ml LR/hr</td>
</tr>
<tr>
<td>6-13 yrs</td>
<td>250 ml LR/hr</td>
</tr>
<tr>
<td>≥ 14 yrs</td>
<td>500 ml LR/hr</td>
</tr>
</tbody>
</table>
**Total Body Surface Area (TBSA) Guideline**

**Burn Center Referral Guidelines:**
- Partial thickness burns greater than 10% total body surface area (TBSA)
- Burns that involve the face, hands, feet, genitalia, perineum, or major joints
- Full thickness burns in any age group
- Electrical burns including lightning injuries
- Chemical burns
- Inhalation injuries
- Patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
- Burned children in hospitals without qualified personnel or equipment for the care of children
- Patients who require special social, emotional, or rehabilitative interventions

**Prepare Patient for Transport to Burn Center**
- You do not have to clean wounds before transport but if you do; wash with any type of surgical soap and place patients in dry dressings between clean sheets. Do not apply topical agents.
- Ensure patient is kept warm by applying blankets as needed.
- Provide summary of patient’s intake and output

**Reference of body surface area adjusted by age**

<table>
<thead>
<tr>
<th>Age</th>
<th>&lt;1 year old</th>
<th>1-4 yrs</th>
<th>5-9 yrs</th>
<th>10-14 yrs</th>
<th>15 yrs</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>19%</td>
<td>17%</td>
<td>13%</td>
<td>11%</td>
<td>9%</td>
<td>7%</td>
</tr>
<tr>
<td>Thigh</td>
<td>5.5%</td>
<td>6.5%</td>
<td>8%</td>
<td>8.5%</td>
<td>9%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Lower Leg</td>
<td>5%</td>
<td>5%</td>
<td>5.5%</td>
<td>6%</td>
<td>6.5%</td>
<td>7%</td>
</tr>
</tbody>
</table>

**Topical Recommendations for Outpatient Burn Care**

**Silver Sulfadiazine** covered with gauze. Patient should be instructed to apply in a thick layer and keep covered with gauze. Wounds should be washed once a day with soap and water removing all creams, ointments and loose skin. **Do not use on face.**

For faces, we recommend **Bacitracin** ointment except areas around eyes. Bacitracin ophthalmic ointment should be used on tissue surrounding eyes. Needs to be reapplied 3-5 times a day. Once a day, wash face with soap and water removing ointment and loose skin.

Sunscreen is recommended once burns have healed.