Burns Lesson

• Assess for and manage any respiratory burns that may go along with other tissue injuries—respiratory burns are a priority over tissue care. Assess for smoke inhalation (singed nasal hairs, dark sputum or nasal drainage). Smoke inhalation has carbon monoxide and cyanide exposure associated with it (maximize oxygenation).

• First priority for the patient’s care is to stop the burning process while maintaining responder safety. Large volumes of the cleanest available water is appropriate (tap water beats fire apparatus tank water when available). Many ambulances do not carry enough sterile water to adequately decon a chemical burn. A Morgan Lens is a valuable tool for irrigating burns to the eyes.

• Electrical burns injure via the heat generated.

• Chemical burns tend to involve tissue destruction.

• Depth of burn: superficial, partial thickness, full thickness; epidermis, dermis, subcutaneous, muscle; superficial is just epidermis; partial thickness is epidermis and varying amounts of dermis; impossible to tell depth initially (may be more than 24 hours until sure)

• Size of burn area: rule of nines or Lund-Browder chart or rule of palms (general familiarity—not memorized)

• Circumferential burns can create a tourniquet effect due to the tightening eschar and require an escharotomy.

• Dressings should be dry except for small areas (varies by protocol from 1-10%) where moist dressings (not soaked—moist means you cannot squeeze any water out) are allowed. The risk of widespread use of moist dressings is systemic hypothermia. The benefit is for pain control although IV analgesia is often needed anyway. New antimicrobial dressings are available in some systems.

Advanced Providers:

• IV fluid therapy is designed to replace both lost volume and anticipated hypovolemia. The Parkland Burn formula is an example. A more field-friendly method is to give crystalloids in the normal manner as for other volume replacement with medical control consult. NS is fine although some protocols describe LR as having some benefit.

• Smoke inhalation increases the quantity of fluid needed for resuscitation.
Link to Sacramento County apartment fire / rescue that we reviewed in class with key learning points as follows:

- Fire standby calls require that you pay close attention to radio channel assignments, tactical radio traffic, vehicle positioning and be clear on Fire Department / ICS terminology such as:
  - Divisions (geographic assignment)
  - Groups (functional assignment)
  - Command Post location
  - Structure “side” designations:
    - Alpha or A side is the address side
    - Bravo or B side is the next side clockwise from Alpha
    - Charlie and Delta are the sides continuing clockwise

- Patients may come to you at any time (civilian and firefighter).
- Your usual fire department resources for drivers / helpers may be limited by the need for fire attack / additional rescues.
- While “rehab” is a necessary function at many fire scenes and EMS may assist with those duties, the EMS crew must be immediately ready to receive patients at any time. Additional EMS units may be needed in order to have a unit available at all times.
- It is rarely most appropriate for EMS crews to remain in their vehicle in a staging location well away from the involved structure once initial fire attack and water supply apparatus have been placed.
- Do NOT drive over fire hoses unless specifically directed to do so.