

Lessons Learned

Scalding Burn and Burn Injury Care



Note: This incident was reviewed using the June 2009 updated Facilitated Learning Analysis (FLA) Implementation Guide. The Lessons Learned Analysis Options and FLA Guide are found at: http://fswb.shastatrinity.r5.fs.fed.us/safety/AAA-FLA_Investigation_Guide-9-09.pdf

Incident Date: July 2010

Narrative:

A firefighter was burned while using a backpack style camping stove during the dark, early morning hours of July 22 on an off-forest assignment. The stove was being used on the rear bumper of the engine to make coffee. It had reportedly been filled to mid level and had been turned down to make coffee.

The scalding burn occurred when boiling coffee grounds and water splashed onto the firefighter's chest, face, neck and hands as he was reaching to turn off the stove. It was reported that the stove top "burst open" or the stove fell over splashing the boiling liquid. Because of desert winds gusting up to 40 MPH blowing dust at the time, the firefighter was wearing safety glasses which may have also helped protect his eyes from being burned in this incident.

Strike team and engine crew members provided initial care with water, ice and burn gel before initiating transport to the Medical Unit. It reportedly took about half an hour to realize the severity of the burns. The Medical Unit Leader (MEDL) was first advised that the burns did not appear severe, but that they should be checked out. The engine was used to transport the burned firefighter to the Medical Unit at Base Camp where a Paramedic provided an evaluation, care and the recommendation that the firefighter be seen at a Burn Unit. From the Incident Medical Unit, the firefighter was transported to the Emergency Room (ER) at the nearby Regional Hospital where he was stabilized and medicated for pain. He was about to be released with instructions for self care, but the paramedic recommended and the firefighter advocated for himself for treatment at a Burn Center.

A Mass Casualty Incident was underway affecting ambulance availability and transfer protocols. As a result, the firefighter was discharged from the Regional ER, transported and then re-admitted rather than just being transferred to the Burn Center. The Kern County FD arranged for transport by engine rather than ambulance to the Burn Center in Bakersfield.

The firefighter was treated for and released with 1st degree burns to the back of hands, face and neck, and 1st to 2nd degree burns to the face and chest. From the time of the incident at 0400 – 0430 to arrival at the Bakersfield Burn Center at 1330, roughly 9 hours had passed.

Lesson(s) Learned and Recommendations from Participants:

- I think that high winds and gusts to 40MPH buffeting the engine may have contributed to the stove becoming unstable.
- The burn didn't look as serious as it was. It just looked like sunburn. Unlike a burn by fire, it was hard to judge the severity of the burn by its appearance. By comparison, a burn caused by fire presents more visible clues as to the severity of the burn.
- As a new EMT, he was my first patient. It was a new mental shift for me to go from treating him as my captain to treating him as my patient.
- The MEDL mentioned that, "I would change our response by directing the patient to be driven directly to the ER rather than to the medical unit to save 30 - 45 minutes."
- Some delay to getting to definitive care was also due to going to the local ER rather than directly to the more distant Burn Unit.
- After they gave me the pain meds, I started losing my ability to be an advocate for myself to be taken to a burn center. It would be good for all employees, including non-fire employees, to be familiar with burn injury criteria and protocols to provide advocacy for themselves or their co-workers.
- It would also be good for all employees to know about Hospital Liaison Programs that are in place both on the forest and on other forests, to provide for advocacy and support for employees who are injured and transported to medical facilities.
- Even after more than six weeks, the burned areas were still light and heat sensitive. This can be expected to last for up to a year.

Lesson(s) Learned and Recommendations from Facilitator:

- The burn injury standards of care as identified in the Red Book (Chapter 7) and in the NWCG Letter of July 2008 may be thought of primarily, or most commonly, as related to burns by fire.
- Since burns from boiling water may not be as common or visually appear as severe, the need for urgency of a response may not be initially apparent to responders or medical staff.
- All personnel should be familiar with the Burn Injury Standards for Care, from the individual employee, to EMTs, to Medical Units and leadership on incidents, and know that they can be found in the Red Book. In this case, the employee requested a Burn Center when the attending physician was ready to release him. Co-workers and Hospital Liaison Team members may also need to be prepared to provide advocacy for care of burned employees.
- I learned that not all Burn Centers appear in the listing we have as part of our Emergency Medical Response and Evacuation Plan (EMREP) resources. Some like the Grossman Burn Centers listed as being in Sherman Oaks, CA also have smaller units listed on their website, such as the San Joaquin Community Hospital in Bakersfield.
- Red Book, Chapter 7, Required Treatment for Burn Injuries (meeting certain burn criteria):
"After on-site medical response, initial medical stabilization, and evaluation ... (the firefighter) is immediately referred to the nearest regional burn center."
- Link to NWCG Standards for Burn Injury Care is found at:
<http://fswb.shastatrinity.r5.fs.fed.us/safety/Burn%20Injuries-StandardofCare.pdf>
- California Burn Centers and Trauma Centers are listed in Section 4 of:
<http://fswb.shastatrinity.r5.fs.fed.us/safety/emergencyresponse/index.shtml>