



California Department of Forestry and Fire Protection

CAL FIRE

2009 FOCUS ON SAFETY



Burn Care Policies Review

CAL FIRE reviewed and completely revised its Burn Care policies in July of 2008. Prior to that, the burn policies had gone relatively unchecked for years despite significant changes in burn care management made from industry experts. It became apparent that the need existed to revamp our policies in order to be in line with “modern” terms, treatment, and management of employees who suffer from burn injuries.

The revised policies are now based on the most recent information and standards of care developed by the American Burn Association as recommended by the Committee on Trauma, American College of Surgeons. The policies are also meant to be in coordination and compliance with the California Interagency Burn Care Management Protocol, which has been adopted by CAL FIRE’s federal cooperators. The intent of such a Protocol is to best ensure that an employee of any fire agency receives the most appropriate and best quality of care in the event they sustain a burn injury.

It is important to note that CAL FIRE’s burn policies apply to all burn injuries regardless of cause. These policies are not just for burns sustained from wildland firefighting but for any incident in which a burn injury is sustained. The same standard of care is afforded to the employee sustaining a burn injury from structural firefighting, vehicular firefighting, hazardous materials, etc.

The intent of this review is to provide all CAL FIRE employees an opportunity to become distinctly familiar with the revised policies. It is paramount that Company Officers, Supervisors, and Managers become well oriented to the policies and process before the need arises to utilize them.



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Burn Care Policies Review

BURN TREATMENT - INTRODUCTION

1810

(No. 70 July 2008)

These guidelines are for the treatment and care of burned CAL FIRE employees and apply to all personnel acting under CAL FIRE direction. CAL FIRE employees will be treated according to CAL FIRE policy. These guidelines are based upon the burn center referral standard published by the *American Burn Association (ABA)* as recommended by the *Committee on Trauma, American College of Surgeons*. The following guidelines are also intended to mirror the *California Interagency Burn Care Management Protocol*, which has been designed and implemented in an attempt to standardize the burn treatment and transportation criteria of fire service personnel, regardless of agency, throughout California.

The leading cause of death in burn victims is infection of the burn wound. Wildland fire fighting has its own unique set of challenges. One of those is a lack of clean water. Obviously, using potable water to put out a fire that involves personnel is preferable to using chemically contaminated or brackish water. Unfortunately, putting the fire out in a wildland setting requires the use of readily available materials. This means that water from an open stream or pond may have to be used to stop the burning process.

NOTE: If the burned individual works for another agency, their representative(s) may provide treatment using their protocol. On incidents overseen by another agency, treatment and transportation procedures for CAL FIRE employees will be coordinated by the Incident Commander (IC) and the CAL FIRE Agency Representative on that incident. Local emergency medical service personnel must follow their local treatment protocols while treating and transporting injured CAL FIRE employees.

BURN CATEGORIES

1811

(No. 70 July 2008)

Burns are classified as either MINOR or SERIOUS as outlined below. The *American Burn Association (ABA)* burn center referral standard is the baseline for establishing the categorization and treatment of burn injuries. The ABA standard is based on recommendations from the *Committee on Trauma, American College of Surgeons*. Additional recommendations are incorporated to create a clearly understandable burn management protocol for injured personnel. These classifications are intended to facilitate simple decisions under field conditions and ensure that proper procedures are followed from the onset of injury. It is frequently difficult to categorize the exact extent of a burn and related injuries while in the field. It may take several days to establish the depth of a burn. When making triage decisions in the field, CAL FIRE staff will err on the side of overestimating the seriousness of an injury rather than underestimating it. See [Burn Flow Chart](#).

Minor Burns

Superficial (first degree) burns involving less than 10% of body surface area with none of the following factors:

1. Burns that involve the face, hands, feet, genitalia, perineum or joint areas; or
2. Burns resulting from chemical exposure; or
3. Burns with the potential of respiratory complications

Serious Burns

1. Partial thickness burns to greater than 10% of total body surface area in patients of all ages; or
2. Burns that involve the face, hands, feet, genitalia, perineum, or joint areas; or
3. All third degree burns; or
4. Electrical injuries (including those caused by lightning); or
5. Chemical burns; or
6. Confirmed or potential inhalation injuries**; or
7. Circumferential limb or chest burns

(** - For the purposes of this policy, all burns resulting from fire entrapments, direct flame contact or superheated gases will be treated as having the potential for inhalation injuries.)

Every burn patient must be continuously evaluated to ensure that his/her condition does not worsen and, therefore, place the individual in a more serious category.

BURN TREATMENT GUIDELINES

1812

(No. 70 July 2008)

These guidelines are to be used for the medical treatment of a burn and are consistent with the *California Interagency Burn Care Management Protocol*. The initial treatment provided at the scene of the burn injury is extremely important. Proper emergency care can contribute to the burn patient's survival and, in many instances, it minimizes complications later. The treatment guidelines listed below are intended to assist the CAL FIRE care provider with step-by-step treatment procedures in the field. (Also see the [Burn Flow Chart](#)).

TREATMENT OF MINOR BURNS

1812.1

(No. 70 July 2008)

Superficial (first degree) burns involving less than 10% of body surface area with none of the following factors:

1. Burns that involve the face, hands, feet, genitalia, perineum or joint areas; or
2. Burns resulting from chemical exposure; or
3. Burns with the potential of respiratory complications

GUIDELINES FOR THE TREATMENT OF MINOR BURNS

1812.2

(No. 70 July 2008)

1. Remove the burning agent/stop the burning process.
 - Move the patient away from the heat source.
 - Follow any chemically specific guidelines (i.e. dry vs. wet procedures).
2. Assess burn injuries/assess other injuries.
 - The highest medically trained CAL FIRE care provider immediately available will assess the patient.

- Burn injuries to the face, hands, feet, genitalia, perineum or circumferential burns of extremities or joints are to be considered “Serious” and require immediate transportation to the nearest appropriately equipped medical facility.
3. Apply clean (sterile if available) moist dressing.
 - Moisten only the dressing with sterile water. Do not immerse the burn patient in water.
 4. Optional use of dry, sterile, non-adherent dressings.
 - Remove jewelry.
 - Once pain has diminished, if no immediate medical attention is required, the moist dressings may be removed. If tolerated, the burn may be covered with a dry, sterile, non-adherent dressing (e.g., Telfa dressing or band-aid).
 - Do not break blisters. Do not attempt to debride.
 - Do not apply creams or ointments.
 - Evaluate Tetanus Toxoid immunization status and advise if booster is needed. Current status would be an immunization within the past five years. If status is not current, the individual should be immunized within 24 to 48 hours.
 5. Continue to evaluate the healing process.
 - Burn injuries require continued evaluation during the first 24 to 48 hours. If the injury becomes more extensive or signs of infection appear (redness, swelling, increase in exudate), have the burn evaluated by a physician or CAL FIRE Nurse Practitioner.
 - First and second degree burns can evolve to third degree.

TREATMENT OF SERIOUS BURNS

1812.3

(No. 70 July 2008)

1. Partial thickness burns to greater than 10% of total body surface area in patients of all ages; or
2. Burns that involve the face, hands, feet, genitalia, perineum, or joint areas; or
3. All third degree burns; or
4. Electrical injuries (including those caused by lightning); or
5. Chemical burns; or
6. Confirmed or potential inhalation injuries**; or
7. Circumferential limb or chest burns

(** - For the purposes of this policy, all burns resulting from fire entrapments, direct flame contact or superheated gases will be treated as having the potential for inhalation injuries.)

If there is any doubt about the level of medical treatment, CAL FIRE will err on the side of overestimating the seriousness of an injury. The recommendation for erring on the side of *overestimating* the seriousness of the burn should take into account the circumstances of the injury (facial burns from superheated combustion products may produce airway injury and subsequent respiratory compromise). Any delay in seeking medical treatment of a serious burn may ultimately compromise the care and successful treatment.

GUIDELINES FOR THE TREATMENT OF SERIOUS BURNS

1812.4

(No. 70 July 2008)

1. Remove the burning agent/stop the burning process. Move the patient away from the heat source.
2. Activate emergency medical system and notify Incident Commander.

- Request advanced life support (ALS).
 - Provide number of patients, percent of body surface burned (rule of 9s), classification of burns, and location of patients.
 - Advise of any complications (compromised airway, traumatic injuries, shock, etc.).
3. Assess airway and other life threatening injuries.
 - Assess and ensure airway.
 - Inspect for facial burns, singed facial and nasal hair, soot in nose or mouth, pain in mouth or throat, difficulty speaking or breathing; if present, assume smoke inhalation. Administer high flow oxygen.
 - Control bleeding and assess any traumatic injuries.
 - Treat for shock.
 - Lay the patient in a supine position. Elevate affected extremities.
 4. Follow any chemically specific guidelines (i.e. dry vs. wet procedures).
 5. Treat burn wounds.
 - Apply sterile dressing and wrap loosely.
 - Do not create hypothermia by soaking the patient or applying ice or ice water.
 - Remove any jewelry on affected extremities.
 - Gently remove or cut away clothing from the area of the burn, if possible, without disturbing the burned skin.
 - Cut around clothing adhering to skin. Clothing that may be a heat source should be carefully removed to avoid causing damage to underlying tissue. Do not remove dry clothing since this may contribute to hypothermia.
 - Sterile water is the solution of preference for irrigation and cooling procedures.
 - Do not break blister or try to debride the burn in the field.
 - Do not apply any ointments or creams.
 - If possible, remove contact lenses to prevent corneal injury in the case of ocular burns. (Edematous lids can cause pressure on the cornea, resulting in corneal abrasions if the contact lenses are not removed.)
 - Chemical ocular burns or exposures should be irrigated with a copious amount of saline or water. Saline is the solution of choice but irrigation should not be delayed if it is not readily available. The cleanest source of water should be used.
 - Splint fractures.
 6. Prepare the patient for transport.
 - Wrap the patient in a clean or sterile sheet and then a plastic sheet, blanket or sleeping bag. Extremities can be wrapped in chux and elevated.
 - On scene treatment SHOULD NOT delay transportation.
 7. Continue to assess patient for hypothermia and other complications.

TRANSPORTATION OF BURN PATIENTS

1813

(No. 19 May 2008)

MINOR BURN PATIENTS 1813.1

(No. 70 July 2008)

Those persons meeting the "minor" burn criteria needing medical treatment will be transported to an appropriate medical facility offering basic or comprehensive full service emergency care. Urgent Care facilities and clinics are not an acceptable source for the evaluation and treatment of burn injuries. Any minor burn(s) received during an entrapment, exposure to direct flame contact or exposure to superheated gases will be considered "serious" burns.

SERIOUS BURN PATIENTS

1813.2

(No. 70 July 2008)

Those persons meeting the "serious" burn criteria will be transported to the nearest facility offering basic or comprehensive full service emergency care for initial evaluation and stabilization. After stabilization, patients with serious burns will be transported to a qualified regional burn center as soon as possible for evaluation, treatment and follow up.

For California Burn Centers, see Emergency Command Center Procedures Handbook, Chapter 8100, ECC Operational Procedures -- Ready Reference (Procedure No. 26); see Definitions of Burn Care Facilities, and California Burn Centers {see exhibit} In all cases, the Agency Representative or Incident Commander has the discretion to request that burn injuries, regardless of their apparent severity, be evaluated at a qualified regional burn center.

The decision on the type of emergency transportation to use will be made cooperatively between the CAL FIRE care provider, Incident Commander, and the Emergency Command Center (ECC), taking into account the condition of the burn case and the availability of suitable emergency transportation. Methods of transportation may range from CAL FIRE equipment staffed by CAL FIRE personnel to ambulance or medivac units staffed by ALS personnel. When ALS personnel are caring for the patient, transportation will be based on local protocol.

When possible, at least one CAL FIRE employee will accompany the burn patient from the incident site to the treatment facility in order to maintain liaison with the ECC, interpret CAL FIRE policy, and provide for any other needs of the burned employee. If an appropriate person cannot go with the burn patient, it will be the ECC's responsibility to arrange for someone to be dispatched to fill that role. The CAL FIRE employee accompanying the burn patient will stay until relieved of responsibilities or until the unit has completed formal liaison arrangements.

The patient, patient's physician, and patient's family (as appropriate) will determine when and to which burn center the patient will be transported after stabilization. The CAL FIRE Nurse Practitioner will be available to assist with this decision, as necessary. (See [Section 1819](#), Responsibilities of Nurse Practitioner.)

BURN TREATMENT SUPPLIES

1814

(No. 70 July 2008)

Burn treatment supplies will be carried in all CAL FIRE chief officer vehicles, engines, crew carrying vehicles, bulldozers, and helicopters.

CAL FIRE BURN PACK

1814.1

(No. 70 July 2008)

All new or replacement burn packs must include, as a minimum, the supplies listed below:

- Three burn towel dressings, 20" x 30,"
- One burn towel face mask,
- Eight ounces isotonic eye wash and four eye pads,
- Two clean sheets,
- Minimum of 2000ccs of sterile water (bags or bottles)
- Two pair latex or vinyl gloves,

- One highway blanket or sleeping bag,
- Scissors,
- Plastic sheet,
- Two ABDs dressings,
- Four packages of 4 x 4 gauze dressings,
- Four chuxs, and
- Four pieces of 3 x 8 Telfa (non-adherent dressing).

California Burn Centers and Heliports (1700)

(No. 70 July 2008)

Northern Region

INSTITUTION ADDRESS PHONE NUMBER WEB SITE	BEDS DESIGNATED TO BURN UNIT	HELIPORT	BURN TEAM ON STAFF	FULL TIME BURN SURGEON	ABA VERIFIED BURN CENTER	DESIGNATED TRAUMA CENTER	UNIVERSITY TEACHING HOSPITAL
Doctor's Medical Center 2000 Vale Road San Pablo, CA 94806 Hyperbaric Burn Treatment Center Phone (510) 970-5700 FAX (510) 970-5767 www.doctorsmedicalcenter.org	16	On Site 43.3' diameter Night Capable Asphalt Pad 37/57/15 N. 122/20/13 W. FAA# 2220.8	Yes	Yes	No	No	No
UC Davis Regional Burn Center 2315 Stockton Boulevard Sacramento, CA 95817 Phone (916) 734-3636 FAX (916) 734-5375 www.ucdmc.ucdavis.edu	14	On Site 65' x 65' Night Capable Concrete Pad 38/33/17 N. 121/27/21 W. FAA# 2124.8	Yes	Yes	Yes	Yes Level I Adult/Pediatric	Yes U.C. Davis
Santa Clara Valley Medical Center 751 South Bascom Avenue San Jose, CA 95128 Phone (408) 885-6666 FAX (408) 885-6675 www.scvmed.org	8	On Site 65' x 65' Night Capable Concrete Pad 37/18/51 N. 121/56/03 W. FAA# 2202.3	Yes	Yes	No	Yes Level I	Yes Stanford
St. Francis Memorial Hospital Bothin Burn Center 900 Hyde Street San Francisco, CA 94109 Phone (415) 353-6255 FAX (415) 353-6258 www.saintfrancismemorial.org	10	None on site. Use ground transfer from Police or Fire heliports.	Yes	Yes	Yes	No	No

California Burn Centers and Heliports(1700)

(No. 70 July 2008)

Southern Region

INSTITUTION ADDRESS PHONE NUMBER WEB SITE	BEDS DESIGNATED TO BURN UNIT	HELIPORT	BURN TEAM ON STAFF	FULL TIME BURN SURGEON	ABA VERIFIED BURN CENTER	DESIGNATED TRAUMA CENTER	UNIVERSITY TEACHING HOSPITAL
LAC/USC Medical Center So. Cal. Regional Burn Center 1200 North State Street, Ward 12600 Los Angeles, CA 90033 Phone (323) 226-7991 FAX (323) 226-2713 www.usc.edu/patient_care/hospitals	21	On Site 55' x 55' Night Capable Asphalt Pad 34/03/36 N. 118/12/30 W. FAA# 1817.925	Yes	Yes	Yes	Yes Level I	Yes
Sherman Oaks Community Hospital Grossman Burn Center 4929 Van Nuys Boulevard Sherman Oaks, CA 91403 Phone (818) 907-4580 FAX (818) 907-2817 www.grossmanburncenter.com	30	On Site 48' x 52' Night Capable Concrete Pad 34/09/36 N. 118/26/58 W. FAA# 2294.5	Yes	Yes	No	No	No
Arrowhead Regional Medical Center Inland Counties Regional Burn Center 400 North Pepper Avenue Colton, CA 92324-1819 Phone (909) 580- 2100 FAX (909) 580-2120 www.arrowheadmedcenter.org	14	On Site 98' diameter Night Capable Concrete Pad 34/4/31 N. 117/20/57 W. FAA# 1428.3	Yes	Yes	No	Yes Level II	Yes
Torrance Memorial Burn Center 3330 Lomita Boulevard Torrance, CA 90505 Phone (310) 517-4622 FAX (310) 784-4803 www.torrancememorial.org	8	None on site. Use ground transfer from airport.	Yes	Yes	Yes	No	No

California Burn Centers and Heliports (1700)

(No. 70 July 2008)

Southern Region (continued)

INSTITUTION ADDRESS PHONE NUMBER WEB SITE	BEDS DESIGNATED TO BURN UNIT	HELIPORT	BURN TEAM ON STAFF	FULL TIME BURN SURGEON	ABA VERIFIED BURN CENTER	DESIGNATED TRAUMA CENTER	UNIVERSITY TEACHING HOSPITAL
UC Irvine Medical Center 101 The City Drive Orange, CA 92868 Maryanne Cinat, M.D. Phone (714) 456-5304 FAX (714) 456-8878 www.healthcare.uci.edu/bc.asp	16	On site 40' diameter Night capable Concrete Pad 33/47/20 N. 117/53/25 W. FAA# 1989.11	Yes	Yes	Yes	Yes Level I	Yes
Community Regional Medical Center Leon S. Peters Burn Center 2823 Fresno Street Fresno, CA 93271 Phone (559) 459-4220 FAX (559) 459-6808 www.communitymedical.org/burn.htm	14	On site 54' x 53' Night capable Concrete Pad 36/44/37 N. 119/47/06 W. FAA# 1590.14	Yes	Yes	No	Yes Level I	Yes
UC San Diego Medical Center 200 West Arbor San Diego, CA 92103 Phone (619) 543-6502 FAX (619) 543-6764 www.health.ucsd.edu/specialties/burn	20	On site 40' x 50' Night capable Concrete Pad 32/45/16 N. 117/09/53 W. FAA# 2165.3	Yes	Yes	Yes	Yes Level I	Yes