CAL-MAT Base Camp Field Guide
To Support the Mission of CAL FIRE

First Edition
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Emergency Medical Services Authority (EMSA)
California Medical Assistance Team (CAL-MAT)
&
San Diego / Imperial County Unit

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INTRODUCTION and PURPOSE

The mission of CAL-MAT when deployed during fires is to support CAL FIRE and other personnel, eg, vendors, federal responders, etc., at basecamp. CAL-MAT is composed of medical professionals and support personnel who are rapidly assembled into a Team by the Response Personnel Unit in the Disaster Medical Services Division (DMS) of the State EMSA Authority (EMSA) to fulfill the mission. This guide is meant to serve as a field manual to assist the variety of clinicians responding to a fire mission and was compiled by clinicians from the San Diego-Imperial CAL-MAT Unit. Material has been adapted from a variety of sources including FEMA's AEMS Field Guide, UpToDate, and our collective personal experience. If there are any issues regarding appropriate care of a patient or general policies/procedure of care provided, please contact

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We are at Fire Camp to help support the response to a major fire incident We represent CAL-MAT and EMSA, as well as Cal-Fire. They have high expectations and standards, which we meet with the utmost professionalism. It is imperative to the successful completion of the CAL-MAT mission that good communication, respect for other team members, and teamwork are employed. Being flexible is key. Sharing the workload and the ability to problem-solve problems are elements of a highly functioning team. Suggestions to the CAL-MAT Program, including the Program Medical Director and Program Manager, for modifications to medical cache are appreciated. Many of the policies and procedures are available on a shared drive and or posted on the CAL-MAT website (https://emsa.ca.gov/cal-mat/). There is a CAL-MAT medical folder that can be accessed from your personal device when connected to WiFi (https://caemsa.sharepoint.com/:f:/t/covid/Ehm1_vtZb3pFp3paindRJd4BEB4RSudA0a2WILDZdilGzw?e=V79MkF). If problems accessing the CAL-MAT Medical folder through this link, Contact Jesus Ochoa Cell: (916) 203-0814
Howard Backer, MD
CAL-MAT-Program Medical Director

Acknowledgements: *Dr. Asha Devereaux, MD, Medical Director, San Diego CAL-MAT, Dr. Chuck Wright and Honda McFadden RN are significant contributors and editors of content. This endeavor would not have been possible without the support of Unit Leader, Susan Erbs RN, and clinician authors throughout CAL-MAT.*

SECTION 1

Evacuation/Transfer to Higher Level of Care

Emergency Evacuation/Transfer: Transportation from the Fire Camp Base of Operations (BoO) in the case of serious illness or an injury that requires **urgent** treatment above and beyond CAL-MAT capability.

- ALS unit assigned to base camp for CAL-MAT use:
  - Stabilize patient to your ability for transport
  - Contact ALS unit lead regarding urgent transport
  - Ensure CAL-MAT lead is notified
  - Notify the base camp MED L
  - If information available, call receiving facility regarding transport
- ALS unit not assigned or not available:
  - Call 9-1-1 for transport – ensure you know the address of your location and give directions to your location on the base camp
  - Follow all other instructions listed above

BLS Evacuation/Transfer: Transportation from the Fire Camp BoO to receive a higher level of care which CAL-MAT cannot provide at the BoO.

- When BLS unit assigned to base camp for CAL-MAT use
  - Stabilize patient to your ability for transport
  - Contact BLS unit lead regarding urgent transport
  - Ensure CAL-MAT lead is notified
  - Notify the base camp MED L
  - If information available, call receiving facility regarding transport
- When BLS unit not assigned or not available.
  - If no other form of transportation can be provided and condition permits
    - Call 9-1-1 for transport – ensure you know the address of your location and give directions to your location on the base camp
  - Follow all other instructions listed above

Burn Evacuation/Transfer: Any BURN of any severity (even the mildest appearing burn) that occurs to any fire camp staff for any agency **must be reported to the MED L while the patient is still in the medical aid station.**

- Follow above instructions related to emergency or BLS evacuation procedures

SECTION 2

SARSCoV-2 (COVID-19)

COVID testing, treatment, and management is constantly changing. Please check to make sure you have the most up to date information.

COVID testing at Fire Camp must:

- Follow approved EMSA/CAL-MAT/CAL FIRE protocols
- Utilize approved forms for communicating test results
- Personnel must be trained on the test method to run the test

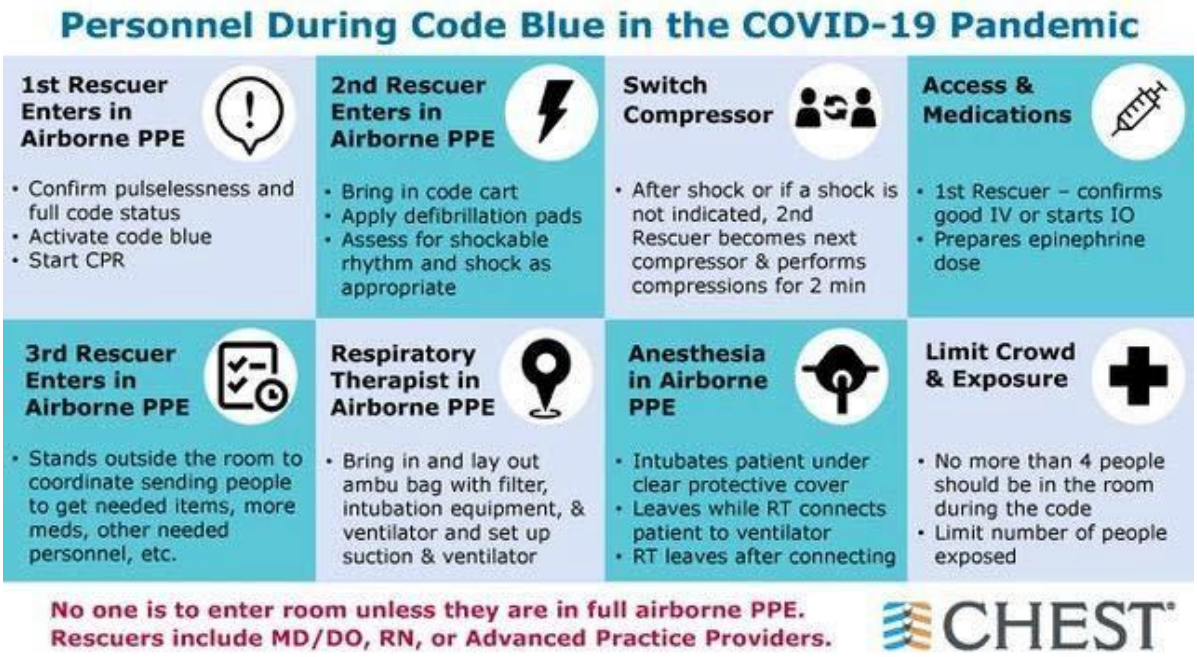
Once you arrive at a site, it is important the Mission Support Team (MST) lead contact the CAL FIRE MED-L to obtain a copy of the current protocols. It is also important to discuss:

- how to manage testing
- where the testing will be done
- isolation of patients
- test results (demobilize or not before results obtained)
- whether contacts need to be tested
- whether contacts need to be isolated
- where the test results get reported
- who is going to do contact tracing
- and any other protocols.

Refer to the EMSA guidelines for COVID Testing – **ANNEX A:**

Personnel Actions During Code Blue in the COVID-19 Pandemic

NOTE: Assume everyone is positive for COVID-19 and **at a minimum** all rescuers will wear an N-95 respirator with face shield.



SECTION 3

BURN MANAGEMENT

BRETT ROSEN, MD, HOWARD BACKER, MD, CHUCK WRIGHT MD, HONDA MCFADDEN, RN

As of 10/2020, the following burn protocols from CAL FIRE are dated and nearly 20 years old. Dr. Brett Rosen, CAL FIRE Medical Director, is in the process of revising the protocol and achieving administrative approvals. This will take time. The protocols are inconsistent and not clear. The flow chart says a minor burn can be seen as an outpatient and yet the written protocol says they need to go to a burn center. There are many other contradicting, such as a 1st degree classified as a serious burn if it was near an open flame.

The best advice is that you sit down with your MED-L at your Fire Camp and have an honest conversation as to how they want you to handle burns. Some want all burn patients to be transferred to a burn center and some are comfortable having 1st and small 2nd degree burns treated at camp. Some only want to use burn centers while others are comfortable with using a local ER before a burn center is considered.

The more you work this out ahead of time, the easier it will be to manage patients.

Refer to CAL FIRE Burn Management – **ANNEX C:**

REVIEW OF INJURY/ILLNESS:

A burn injury can result from direct or indirect contact with any heat source, including a flame, electrical, chemical, lightning, flammable liquid, flashes, radiation, or scalding liquids. Injuries can range from minor (1st and 2nd degree) to life-threatening (3rd and 4th degree burns).

SIGNS, SYMPTOMS, MANAGEMENT of First and Second Degree small burns

First degree (superficial thickness burns to skin)

- Redness
- Pain Swelling
- Gently clean and apply a topical antibiotic ointment and a fresh dressing every 12-24 hours.

Second degree (appear open, shiny, moist, blistered and pink or red. These burns are painful and sensitive to touch)

- Pain and redness
- Swelling
- Blistering
- If the blister is open and dried, gently debride the dead skin. Leave blisters intact. Apply either a topical antibiotic such as Silvadene or Bacitracin, or a Mepilex burn dressing. Bandage with a non-stick dressing such as Telfa if using a topical antibiotic.

Regardless of FIRECAMP policies, the following Burns require urgent transfer:

Third degree (full thickness burns to skin)

- May be white, leathery or charred appearance
- Swelling
- Underlying tissue is damaged
- May or may not have pain

Fourth degree (full thickness burns to skin; not universally used term)

- Burns extend through skin and muscle, sometimes into bone

Inhalation (airway burns)

- Difficulty breathing and/or swallowing
- Hoarseness

- Stridor
- Wheezing
- Soot/singed hairs
- May or may not exhibit facial burns

MANAGEMENT

- The highest priority is to stop the burn process and secure and maintain the airway
- Place the patient in a recovery position.
    - Elevate HOB at least 30degrees while assessing pt.
    - Chin lift or jaw thrust maneuver
    - Nasal Pharyngeal (NP) or Oral Pharyngeal (OP) airway
- Provision of supplemental oxygen is crucial to patients with smoke inhalation due to possible carbon monoxide poisoning. Start with 100% O2 by a non-rebreathing mask (NRBM)
    - If the patient has altered mental status. Assist ventilations with a bag valve mask (BVM), if necessary.
- Cool burned skin with room temperature saline, do not apply ice to burned tissues.
- Cover burns with dry, sterile dressing, if irrigation is discontinued.
- Elevate burned extremities.
- Place IV and administer pain management medications if needed.

Advanced Life Support:

If airway obstruction, or impending airway obstruction, and other measures are unsuccessful, early airway management is vital due to rapid development of laryngeal and tracheal edema from the fire smoke and heat. Maintain a high index of suspicion.

    - Endotracheal intubation; or
    - Surgical cricothyroidotomy
- Facial burns can present special problems in securing an advanced airway device such as an endotracheal tube.
- If there is no appropriate clean, undamaged skin available to secure tape to, then consider tying the endotracheal tube to a tooth
    - Select a stable, undamaged, posterior molar.
    - Tie a heavy braided suture such as 0 silk to the tooth with several knots.
    - Tie an additional knot 2.0 cm from the tooth. Then tie the endotracheal tube to this knot.
    - Or use Kerlix gauze to protect the skin and tape ETT to that.
        - Advise having 1 person assigned to manage ETT from mispositioning
- Start with 100% O2 by a non-rebreathing mask (NRBM) if the patient has altered mental status. Assist ventilations with a BVM, if necessary.
- Administer initial fluid bolus LR (preferred) or 0.9% Normal Saline 250 ml IV/IO. Titrate to maintain Systolic BP > 90 mm Hg.
- For more serious burns, consider two IVs.
- Avoid placement of the catheter adjacent to burn if feasible

Smoke Inhalation

- Administer Albuterol 2-4 puffs, by metered dose inhaler (MDI) or nebulizer, if available, every15 minutes;
    - may repeat 3x. Repeat 2-4 puffs every 2 hours, as indicated.

OTHER/SPECIAL CONDITIONS-Transfer to higher level of care ASAP

Eye Burns

- For a chemical burn to the eye, irrigate with either LR or NS (with Morgan Lens device, if available):
    - Acid burn (crusty appearance): 30 minutes minimum, or until pain subsides
    - Alkali burn (soapy appearance): 60 minutes minimum, or until pain subsides

Electrical Burns

- Treat the entrance and exit wounds.
- Internal injuries are often severe and must be treated appropriately.
  Obtain 12-lead ECG and monitor cardiac rhythm and treat any dysrhythmia according to current American Heart Association (AHA) ACLS guidelines.

- Assess and treat fractures of bones and/or spine.

Circumferential Burns

- Burns can constrict the chest and restrict respiratory efforts.
- Burns can constrict the limbs and impair peripheral circulation.
  If chest constriction or impaired peripheral circulation occur, consider escharotomy after consulting on-line medical direction

Refer to CAL FIRE Burn Management – **ANNEX C**

Draft – CAL-MAT Fire Camp Burn Management

TO:	CAL-MAT medical providers
FROM:	Jesus I. Ramirez, MD CAL-MAT member and burn surgeon
DATE:	9/24/2020
SUBJECT:	DRAFT CAL-MAT Fire Camp Burn Management

PURPOSE: Recommend protocol for management of burn injuries

NOTE: We are currently limited by Cal-Fire burn policy and protocols but this can guide treatment if MedL asks you to provide initial or on-going care for a burn.

BACKGROUND: Burn injuries encountered during Fire Response are frequently referred to a burn center. In the past decade there have been such advances in burn care that the American Burn Association (ABA) now reports 92% of burns which come to medical attention may be successfully managed outside a hospital. The key to successful outpatient management is selection of appropriate patients. This protocol is intended to serve as a guide for the evaluation of burn injuries at fire camps and for the selection and management of patients that do not require referral to a burn center.

POLICY/PROCEDURE:

1. **EVALUATING BURN INJURY SEVERITY**
   a. Extent
      i. Extent is the primary determinant of physiologic derangement and thus the level of care
      ii. Extent (also called size) is measured as a percentage of a patient's total body surface area (TBSA)
         1. Only 2nd and 3rd degree burns are included in extent, not 1st degree.
         2. The "rule of nines" may be used to approximate extent in large burns.
         3. The patient's palm may be used to measure extent in small burns.
            a. The **patient's palm** (including fingers) is approximately **1-1.5%** of their TBSA
   b. Depth
      i. Depth (epidermis, dermis, or hypodermis—Figure 1) is the primary determinant of how a burn will heal.
      ii. If there is moist, living dermis, then a burn may heal as fully functional skin. If the dermis is too injured to regenerate new skin cell layers, then skin may heal by scarring—with long-term cosmetic and functional problems.
         1. **1st degree** burns do not damage the dermis. These burns completely **heal without scar**. They look dry and red, and they are very painful. Sunburn is a 1st degree burn.
         2. **2nd degree** burns partially damage the dermis. They **may or may not heal as a scar**. They look moist because living dermis is moist, and they are painful. They include burns with blisters. A 2nd degree burn is also called "partial thickness" burn.

These burns are the primary focus of outpatient management because they may fully heal with proper care and they are at risk of having a poor outcome from improper care.

3. **3rd degree** burns completely destroy the dermis. They **heal by scar**, not functional skin. They look dry and leathery.

c. Age – burns in children and the elderly carry special risks and require burn center consultation

2. SELECTING LEVEL OF CARE

a. Patients with extensive, life-threatening injuries should be managed according to the Advanced Burn Life Support (ABLS) Provider Course and immediately transferred to a burn center

b. Patients with less extensive injuries should be referred to a burn center if they meet criteria published by the American Burn Association (Appendix A).

c. Patients with less extensive injuries may be managed in the field, with consideration of the following risks. If these risks are present, then referral to a burn center should be considered.

i. **scar** – might the injury location lead to an unacceptable long-term cosmetic or functional outcome if a scar develops?

ii. **wound care** – might the patient be unable to keep a dressing in place and change it as needed?

iii. **Co-morbid conditions** – certain conditions (e.g. diabetes, steroid use, or concomitant injury) affect healing; this should be considered in selecting of level of care

iv. **pain & anxiety** – might the patient be unable to manage these in the field? They greatly decrease once a wound is covered with dressings, but return whenever dressings are changed.

3. MANAGING BURNS IN THE FIELD

a. **Cool** – immediately remove burning material and apply cool running water

b. **Cleanse** – gently clean the wound bed with tap water and mild soap

c. **Debride** – gently cut off all loose tissue and broken blisters up to the edge of healthy tissue. Fear not, the loose tissue is dead! Use clean tweezers and scissors (they need not be sterile). Intact blisters should be ruptured and debrided if there is risk of spontaneous rupture with daily activity (most blisters).

d. **Dress** – cover the clean wound with an antimicrobial, non-adherent dressing. Traditionally this has been done in layers that must be removed and replaced every day (see below). Recently all-inclusive dressings have become available that may be left in place for seven (7) days (see below).

i. All-inclusive dressings such as Mepilex® Ag and Aquacel® Ag are the dressing of choice for 2nd degree burns. They consist of self-adherent foam impregnated with silver. They are trimmed to fit the wound and secured in place by wrapping the injured body part with an elastic bandage. If the foam dressing cannot be kept in place because of the anatomic location of the wound, then layered dressing should be used instead. Foam dressings may be left in place for seven (7) days.

ii. Layered dressings consist of:

1. a topical antibacterial (preferably bacitracin ointment) covering the wound bed
    a. silver sulfadiazine is best used for deeper wounds, not those expected to heal, because it slows healing and may cause a permanent stain if exposed to sun
2. a non-adherent dressing (preferably petrolatum)
3. a dry gauze over the non-adherent dressing
4. tape or an elastic bandage holding the dry gauze in place
5. layered dressings must be changed once a day in order to maintain their antibacterial properties and prevent adherence; the wounds should be cleansed with tap water and gentle soap each time the dressings are changed.

iii. Small, superficial burns to the face do not keep a dressing well and they may be treated with frequent (at least five times a day) application of bacitracin ointment instead of dressings.

e. **Prescribe** – control of pain, anxiety, and pruritus is essential to outpatient management of burn injuries

i. *Pain* – this is best controlled with a combination of scheduled (around the clock) and breakthrough (as needed) medication. This regimen should include a non-steroidal anti-

inflammatory (NSAID). Breakthrough pain is best controlled with a combination drug that includes a short-acting narcotic. If this regimen does not adequately control pain, then addition of a long-acting narcotic (e.g. sustained-release morphine), an anti-epileptic (e.g. gabapentin), or an anti-depressant (e.g. amitriptyline or an SSRI) may be helpful.

ii. *Anxiety* – this is common with dressing changes; a low-dose anxiolytic taken 30-60 minutes before dressing changes is very useful

iii. *Pruritus* – this is very common and often more bothersome than pain; it is the result of histamine release from mast cells and also dry skin. Systemic histamine H-1 specific blockers (e.g. loratadine or cetirizine) are most effective. Itching continues for several weeks after the skin has grown back and petroleum-based moisturizers (e.g. Aquaphor) are very helpful then.

f. **Follow Up** -

i. *Dressing changes* – patients returning to work must be able to perform their own wound care until they are seen again. It may be helpful to have the patient demonstrate a dressing change.

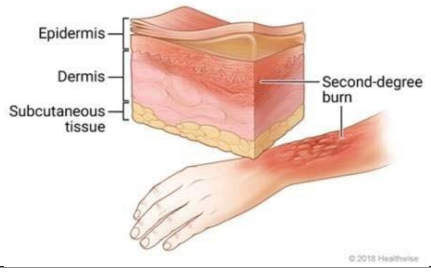
ii. *Frequency* – wounds should be examined weekly until they fully re-epithelialize.

iii. *Discharge* – if a burn heals in two weeks, then it probably will not scar. Patients may be released from medical care if their wound has healed two weeks after injury.

iv. *Delayed healing* – burns that have not healed in two weeks may require surgery and should be referred to a burn center.

v. *Infection* – all burn wounds are inflamed and distinguishing infection from normal inflammatory healing may be difficult. Most burns have a rim of hyperemia and this should be distinguished from cellulitis, which signals infection. Hyperemia is narrow (less than 2 cm) and follows the contour of the burn wound. Cellulitis extends further from the wound, often tracking proximally, and has a confluent, poorly defined border. Infection warrants referral to a burn center because it may lead to depth progression, scarring, and sepsis.

vi. *Consultation* – burn centers have providers on call who are willing to answer questions; if you're not sure what to do, call a burn center and ask for help!

FIGURE 1: Depth of injury into the dermis defines a 2nd degree (partial thickness) burn	

APPENDIX A: Burn center referral criteria

(Advanced Burn Life Support Provider Manual. American Burn Association. Chicago. 2011. 25-27.)

1. Partial thickness (2nd degree) burns greater than 10% total body surface area (TBSA).
2. Full thickness (3rd degree) burns.
3. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
4. Electrical burns, including lightning.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Burns with concomitant trauma (such as fractures).
9. Burns in children.
10. Burns in patients who will require special social, emotional or rehabilitative intervention.
    - **Inhalation** (airway burns)
        - Difficulty breathing and/or swallowing

- Hoarseness
- Stridor
- Wheezing
- Soot/singed hairs
- May or may not exhibit facial burns

SECTION 4

DERMATOLOGY

CHUCK WRIGHT, MD, HOWARD BACKER, MD, KEN GROSS MD, LESLIE MARK, MD-DERMATOLOGY

Refer to Patient Instructions and Patient Prescriptions: **ANNEX D:**

CAL-MAT Provider Protocol for Poison Ivy/Poison Oak

Revision/Version: 9/16/20, Rev 3 **Replaces:** 9/11/20

SUBJECT: CAL-MAT Fire Camp Poison Oak Treatment Algorithm

PURPOSE: Clarify the treatment algorithm for fire camp poison oak treatment

BACKGROUND: Poison Oak is commonly encountered during Fire Response. Symptoms include redness, itching, swelling. Symptoms start 4-96 hours after exposure and peak 1-14 days after exposure. Oil from Poison Oak (urushiol) can persist on clothes or equipment and cause new skin exposure if clothing, tools and other objects are not cleaned after contact. This protocol is to serve as a guide for treatment and return to work for clinicians providing treatment at fire camps.

POLICY/PROCEDURE:
PREVENTION:

- Clothing barrier between skin and the plant. Long sleeves, neck covering, socks etc.
- Pre-exposure creams--These are barrier preparations made of organoclay with demonstrated effectiveness.
    - Precontact gel (*Ivy X*) can prevent oil from the plant bonding with skin
    - Older products including IvyBlock and Oak-N-Ivy-Armor may not be available.

POST EXPOSURE:

- Rinse sap right away. Use cold water and bar or liquid soap (including Dawn, Palmolive etc. dish soap) Use of soap is inferior to better solvents.
- Use product washes/wipes that will remove urushiol oil from skin. If applied soon enough after exposure, these have the potential to decrease urushiol-induced allergic contact dermatitis.
    - Ivy X post contact skin cleanser
    - Wildland prevention wipes
    - Tecnu post-exposure scrub
    - Zanfel post exposure scrub (a mixture of alcohol soluble and anionic surfactants that binds to the urushiol antigen and renders it unable to induce an allergic reaction.)

TREATMENT OF POISON OAK RASH:
MILD- MODERATE: Erythema, minimal swelling, small vesicles

- Medium to High Potency Steroids: (see appendix A for complete list) BID up to 14 days to most affected areas ('hot spots') twice a day
    - Clobetasol propionate 0.05%
    - Betamethasone diproprionate 0.05%
    - Fluocinonide 0.05%
    - Triamcinolone acetonide 0.5% (moderate potency)
    - For face, axilla, groin (use hydrocortisone 1%--in addition to systemic steroids)
- Symptomatic treatment
    - Topical:
        - Caladryl Clear (preferred due to lack of diphenhydramine that can cause topical sensitivity)
        - Calamine Lotion

        - Caladryl
    - Cool compresses
    - Diphenhydramine 25-50mg or hydroxyzine 10 mg orally QHS for itching and sleep
    - The following are soothing but not usually possible in fire camp
        - Bath with 1 cup Aveeno oatmeal
        - 1:40 dilution of aluminum acetate (Domeboro, Burow's solution)

MODERATE-SEVERE: >10% body surface area, large areas of swelling, large blisters, facial or groin involvement

Note: Published data are lacking on the optimum regimen and dose of intramuscular corticosteroids for the treatment of poison ivy. There are no well-designed studies examining the proper dose and course of systemic corticosteroids for poison ivy dermatitis; however, extensive clinical experience suggests that rebound dermatitis occurs commonly if too short a course is used. There are no published studies comparing 14- and 21-day courses of prednisone in poison ivy/oak. Although oral administration of corticosteroids offers flexibility in daily dosing, intramuscular injection of corticosteroids is a treatment option for patients who cannot tolerate or comply with administration of oral corticosteroids.

Treatment: Systemic steroids in addition to topical steroids as above

- Oral regimen
    - 14-21days tapering dose
        - Example 15-day Prednisone taper:
            - Days 1-5 60mg QAM
            - Days 6-10 40mg QAM
            - Days 11-15 20mg QAM
        - Example 20-day Prednisone taper (Preferred):
            - Days: 1-5 60mg QAM
            - Days 6-10 40mg QAM
            - Days 11-15 QAM
            - Days 16-20
            - 10mg QAM
- Intramuscular:
  Note: Does not work faster than oral steroids. Contraindication IM regimen in the past 3 months. Oral burst may provide more rapid onset but is not necessary. Anyone under treatment should strongly consider pre-exposure gel (IvyX) before going to the fire line and post-exposure cleanser (Tecnu or Zanfel) when returning, if available
    - Triamcinalone 60mg (1mg/kg, 40mg-80mg) + (optional-prednisone 60mg x 3 day at initiation of therapy to obtain more rapid response)
    - Betamethasone 0.1mg/kg (Max 9mg) + (optional - prednisone 60mg x 3 days at initiation of therapy to obtain more rapid response)
    - **OR** a mixture of triamcinolone acetonide (1 mg/kg), a long-acting corticosteroid, and betamethasone (0.1 mg/kg), a short- to intermediate-acting corticosteroid

Recurrent rash:

- If symptoms return after initial treatment, consideration should be given to a second course of steroids. Discuss with the patient the risks and benefits associated with a second course of steroids. Consider 0.5mg/kg with a taper from that for 2 weeks or topical high-potency steroids if limited symptoms still present. No more than 2 steroid treatments should be given within 8 weeks unless extenuating circumstances exist and may need to be referred to tertiary care unless extenuating circumstances exist.
- There is limited data on the use of cyclosporine 200 mg/day to reduce recurrence and need for recurrent steroids for on-going seasonal exposure. There is insufficient evidence to recommend this at this time.

Return to Work: Discuss with patient and with Med L

- Consider demobilization from fire site
    - If swelling that prevents full flexion/extension of extremities
    - Facial swelling that impairs vision

- 40% or more of total body surface area affected
- Superimposed bacterial infection
- Progression of symptoms despite severe algorithm treatment

Comparison of Topical Steroid

Generic Name	Trade Name	Preparations Available
Ultrapotent		
Betamethasone dipropionate	Diprolene	0.05% cream or ointment
Clobetasol propionate	Temovate, Cormax	0.05% cream or ointment
Diflorasone diacetate	Psorcon	0.05% cream or ointment
Halobetasol propionate	Ultravate	0.05% cream or ointment
High Potency		
Amcinonide	Cyclocort	0.1% cream or ointment
Desoximetasone	Topicort	0.25% cream or ointment
Fluocinonide	Lidex	0.05% cream or ointment
Halcinonide	Halog	0.1% cream or ointment
Medium Potency		
Betamethasone valerate	Luxiq	0.1% cream or ointment, 0.12% foam
Fluocinolone acetonide	Synalar	0.025% cream or ointment
Fluticasone propionate	Cutivate	0.005% ointment or 0.05% cream
Hydrocortisone butyrate	Locoid	0.1% cream
Hydrocortisone valerate	Westcort	0.2% cream or ointment
Triamcinolone acetonide	Aristocort, Kenalog	0.1% cream or ointment
Low Potency		
Alclometasone dipropionate	Aclovate	0.05% cream or ointment
Clocortolone pivalate	Cloderm	0.1% cream
Desonide	DesOwen, Tridesilon	0.05% cream or ointment
Hydrocortisone acetate	Cortaid,	0.5% cream or ointment

Comparison of Systemic Steroid https://clincalc.com/Corticosteroids/?example

Comparison of systemic corticosteroid preparations

	Equivalent doses (mg)	Antiinflammatory activity relative to hydrocortisone*	Duration of action (hours)
Glucocorticoids			
Short acting			
Hydrocortisone (cortisol)	20	1	8 to 12
Cortisone acetate	25	0.8	8 to 12
Intermediate acting			
Prednisone	5	4	12 to 36
Prednisolone	5	4	12 to 36
Methylprednisolone	4	5	12 to 36
Triamcinolone	4	5	12 to 36
Long acting			
Dexamethasone	0.75	30	36 to 72
Betamethasone	0.6	30	36 to 72
Mineralocorticoids			
Fludrocortisone	Not used for an antiinflammatory effect¶. The typical dose of fludrocortisone for mineralocorticoid replacement is 0.1 to 0.2 mg.		12 to 36

The mineralocorticoid effect of commonly administered glucocorticoids may be estimated as follows:

- When given at replacement doses, triamcinolone, dexamethasone, and betamethasone have no clinically important mineralocorticoid activity.
- 20 mg hydrocortisone and 25 mg of cortisone acetate each provide a mineralocorticoid effect that is approximately equivalent to 0.1 mg fludrocortisone.
- Prednisone or prednisolone given at antiinflammatory doses ≥50 mg per day provide a mineralocorticoid effect that is approximately equivalent to 0.1 mg of fludrocortisone.

* Equivalent antiinflammatory dose shown is for oral or intravenous (IV) administration. Relative potency for intraarticular or intramuscular administration may vary considerably.
¶ The antiinflammatory potency is 10 to 15 times that of hydrocortisone; however, fludrocortisone is not used clinically as an antiinflammatory agent.

Data from:

1. *Schimmer BP, Funder JW. ACTH, Adrenal Steroids, and Pharmacology of the Adrenal Cortex. In: Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 12th ed, Brunton LL, Chabner BA, Knollmann BC (Eds), McGraw-Hill Education 2011.*
2. *Liu D, Ahmet A, Ward L, et al. A practical guide to the monitoring and management of the complications of systemic corticosteroid therapy. Allergy Asthma Clin Immunol 2013, 9:30.*

UpToDate

ATOPIC DERMATITIS

Leslie A. Mark, MD Dermatologist

Atopic dermatitis is a chronic intermittent itchy rash which can occur from head to toe but in adults it generally affects the face, neck, and antecubital/popliteal folds. **If this is a first episode, think contact dermatitis instead of atopic dermatitis.** Triggers include low humidity conditions (such as Santa Ana winds), stress, and contact with irritating chemicals such as hotel detergent in bed sheets, Ivory or Zest soap, and over-bathing.

Acute treatment strategies:

- Triamcinolone (TAC) ointment (ointment works faster than cream) twice daily sparingly and rub in well. **For face, axillae, and genital area/folds** recommend nothing stronger than 1 to 2% Hydrocortisone ointment or cream. Stronger steroids like TAC risk thinning the skin.
    - Lubricate with petroleum jelly or fragrance-free creams or lotions twice daily. Some eczema creams such as "Aveeno Eczema" contain Pramoxine which will help reduce itching.
    - People with Atopic Dermatitis get frequent infections in scratched/broken skin. Treat with topical antibiotic ointment such as Mupirocin (Bactroban) or Retapamulin (Altabax) which often covers these organisms. If skin lesions are improving with topical treatment, then oral antibiotics may not be necessary. If febrile or with a history of infection with MRSA, it is reasonable to start Doxycycline 100 mg twice daily for 7 days or Trimethoprim /sulfamethoxazole (such as Septra or Bactrim DS) one tablet twice daily for 7 days. Doxycycline and Septra/Bactrim are both photosensitizers so for the next 4 weeks protect the skin from sunburn with clothing and sunscreens: This is especially important for outdoor workers.

- To control intense itch, it may be helpful to use thin cloths soaked in tepid or cool water to hydrate the skin to allow for faster healing.
- Avoid over-bathing, hot water, and contact with chemicals such as fragranced lotions and Neosporin. A cool environment is helpful.
- Occasionally if atopic dermatitis is severe, a one-time systemic corticosteroid intramuscular injection such as TAC 40 to 60 mg deep IM can help. Another option is oral Prednisone for 5 days with breakfast dosing 60mg on days 1 and 2; 40 mg on days 3 to 4; and 20 mg on day 5; then stop.
- Antihistamines such as Benadryl 25-50 mg at bedtime may help with sleep but have no healing properties or anti-itching benefit.

Contact Dermatitis

Leslie A. Mark, MD-Dermatologist

- Contact dermatitis can be caused by allergens or irritants. Poison oak/ivy dermatitis is most frequent cause of **allergic** contact dermatitis in the outdoor/firefighting scenario.
- Other common sources of **allergic** contact dermatitis include other plants; neomycin in triple antibiotic ointment; metals such as nickel on equipment or clothing and/or jewelry; fragrances in soaps, cosmetics, or lotions; black or latex rubber (so use nitrile or vinyl not latex or rubber gloves); leather; wet epoxy; formaldehyde; resins in some wood (which may be airborne in a fire and cause facial rashes).
- The most common **irritants** causing contact dermatitis are soaps, detergents, cleansers, turpentine/solvents, peppers, acids, saliva, acetone, and sources of friction to the skin. Chronically wet feet can cause a foot rash which can be prevented by keeping the feet dry with frequent sock changes.
- Many other causes of contact dermatitis may be involved. Some detective work will usually sort out the cause, so ask questions to determine what type of contact has occurred. Remember that the causal exposure may have been hours to days before the rash began.
- Contact with the juice or skin of citrus such as lemon or lime in sunlight can cause blisters followed by streaky tan discoloration, typically on the hands.

Treatment:

- For skin reactions to allergens such as poison oak/ivy refer to the protocol discussed on page 7. The main treatment is to prevent further exposure to the allergen or irritant. Wash off any remaining substance with cool water and mild soap as soon as possible.
- Use appropriate protective gear such as: gloves, clothing, face shield, etc.
- Topical steroid ointments and creams are the first line of treatment: Triamcinolone cream or ointment sparingly twice daily for up to 2 weeks to thick skin areas, and up to 2% hydrocortisone cream or ointment for face, axillary folds, or genital areas.
- For severe itching or blisters consider systemic corticosteroids:
  - Intramuscular triamcinolone 40 to 60 mg deep in upper outer quadrant of buttock with 1 and 1/2 inch needle, once. OR
  - Prednisone by mouth daily with breakfast for 5 days, 60 mg day 1 and 2, 40 mg days 3 and 4, 20 mg day 5, then STOP.
  - Benadryl 25-50 mg at bedtime may promote sleep though it will not decrease the itching.

Acute Hives (Urticaria)

Leslie A. Mark, MD-Dermatologist

- **Urticaria** or Hives are large or small areas of itchy swelling (welts) which can occur anywhere on the skin. Any one hive will last less than 24 hours, but new hives continue to erupt in other areas. Finger pressure will blanch the hive. Always ask if the patient has had acute or chronic hives in the past; if the answer is yes, the usual cause is probably the current cause.

- One type of urticaria should be considered an **emergency: Hives on the lips, tongue, or inside the throat** which can impair breathing or swallowing (angioedema). This requires urgent treatment and transport to the emergency department.
- Hives have numerous causes: Foods, drugs, insect bites, and infections. "Physical urticaria" can be caused by heat, cold, pressure, and exercise among other causes. The most common causes in a field scenario might include antibiotics, pain relievers such as ibuprofen or codeine, new foods containing nuts or spices or shellfish, insect stings, and pollen.

Treatment – If angioedema or using sedative medications, recommend demobilization

- For severe hives or angioedema consider epinephrine via EpiPen or IM Epinephrine 0.3 to 0.5 mg (max dose of 0.01 mg/kg) into the mid outer thigh followed soon after by transport to the emergency department.
- Oral Antihistamines: Non-sedating as first line, such as Zyrtec (cetirizine) 10 mg daily over the counter or twice daily, Allegra (fexofenadine) 180 mg daily; or sedating type: Benadryl (diphenhydramine) 25 to 50 mg every 4 to 6 hours or a prescription for Atarax (hydroxyzine) 10 to 25 mg every 6 hours. Use until hives subside. Even non-sedating antihistamines may cause sedation so advise appropriate precautions against operating heavy machinery and avoidance of alcohol intake.
- Apply cool compresses and avoid hot showers and overheated conditions.
- Avoid the suspected trigger.
- For hives of moderate or greater severity, observe closely for worsening over a 24 hour period. Be especially vigilant for low blood pressure, fainting, dizziness, GI symptoms or respiratory symptoms which may indicate a need for emergent transport.

BLISTERS AND HOT SPOTS

Honda McFadden, RN, Dr. Leslie Mark and Dr. Ken Gross

Blisters and hot spots are one of the most common injuries encountered in a Fire Camp setting. Within hours, a small rub in your boots can turn into a painful blister. However, a few basic treatment and prevention strategies can relieve pain, promote healing and return firefighters to the line.

HOT SPOTS

Hot spots are sore, red areas of irritation that develop into blisters if allowed to progress. Identifying hot spots early to stop them from becoming blisters will save you miles of pain.

Treatment:

- If you catch a hot spot early on, you can easily stop it from becoming blister by covering it with a small piece of moleskin.
- For more irritated hot spots, cover them with a gel type dressing or use moleskin/molefoam. Whichever you use, make sure to prep the surrounding skin using an alcohol wipe for maximum adhesion. If you use moleskin, make sure to grab a donut-shaped piece or simply cut a small hole in the center of a rectangular piece.
- Position the moleskin so the hole is over the hot spot, making sure the adhesive surface isn't touching the irritated skin. This raises the area around the hot spot, preventing further rubbing. If necessary, you can secure the moleskin in place with medical tape.

Blisters
For Small Blisters

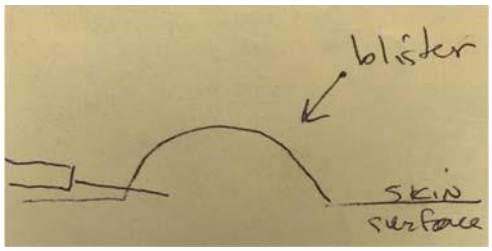
- If the blister is still intact, **do not** puncture or drain it. Instead, follow the same steps outlined above on treating serious hot spots by protecting it with a gel type dressing, molefoam or moleskin.
- If you're using moleskin, you may need to use several layers, as the moleskin doughnut needs to be higher than the blister to be effective.

For Large or Ruptured Blisters

Blisters can be large, painful and can become a detriment to firefighters effectively doing their job. Leaving large foot blisters intact can be a problem because it still makes walking difficult; putting a circle of padding (moleskin or other pads) can actually make the problem worse and may be neither comfortable nor maximally effective.

Recommendation:

- Gently clean the edge of the large blister with prep solution or alcohol.
- Use a 3-5ml syringe with 18-20 gauge needle and extract the fluid from the blister just above the blister base. This will allow the blister to flatten

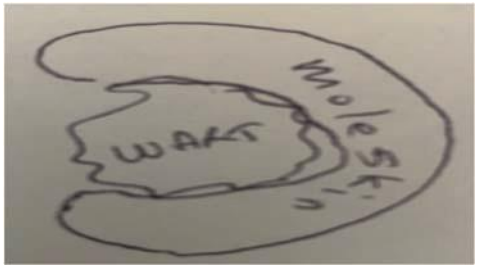


- Then cover with Spenco 2nd Skin hydrogel dressing (if available) and then place a larger piece of moleskin over that to hold it in place. If hydrogel unavailable, apply antibiotic ointment and cover the area with a non-adherent dressing or gel type dressing to prevent contaminants from entering the wound and to promote healing.
    - This will allow comfortable walking and immediate return to work
- You can also use moleskin/molefoam (if dressing unavailable) to protect the wound from further rubbing. Use a doughnut-shaped moleskin to raise up the area around the blister – remember to use enough layers to raise the moleskin above the height of the blisters with its dressing. Secure the moleskin in place with medical tape.Due to conditions associated with fire camp, recommend change dressings or Spenco daily and monitor for infection. Signs of infection include redness, swelling, increased pain, or a cloudy fluid under the dressing. If infection occurs, remove the dressing and allow the area to drain. Initiate oral antibiotics for cellulitis/abscess.

HM: Aug 2020 Contents edited from ***Adventure Equipped*** *https://www.adventuremedicalkits.com/blog/2016/09/prevent-treat-blisters-hiking*

Plantar warts are often chronic and are also a problem because when walking on them for long periods of time they become very painful. It's like walking with a stone in your shoe! The key to treatment is that the wart itself cannot be treated in the field but symptoms can be relieved with moleskin. However, it's crucial that the moleskin NOT encircle the plantar wart(s) like a donut. This can cause the wart and skin under the wart to protrude and worsens the situation.

The way to handle this is to cut a U shaped piece of moleskin to place around the wart and then at each dressing change (at least once daily) the U opening is rotated 90 degrees. This prevents the skin pouching and aggravation of the wart area. The firefighters can be given multiple U-shaped cut moleskin patches to take with them.



The same treatment strategy also works for painful foot callus.

Skin Infections

Review of Injury/Illness

Frequently encountered skin disorders in the austere environment include cellulitis (with or without lymphangitis) and fungal infection. Both cellulitis and fungal infections are often diagnosed as contact dermatitis but will worsen with steroid treatment. Cold and/or dry conditions may exacerbate risk of all skin conditions due to dry and cracked skin, resulting in breaks to the skin barrier. Hot and/or moist conditions may facilitate spread of skin irritants and fungal infections.

Forearm affected with cellulitis

Upper arm affected with lymphangitis

Condition	Signs/Sx	Management	Treatment

Cellulitis	• Skin redness (erythema), increased skin warmth, pain, tenderness
	• Redness usually spreads distal to proximal and can often be traced to a wound
	• May have fever or associated lymphadenopathy
	• Red streaks, often proximal to the wound
	• Fever (may or may not be present)
	• Associated lymphadenopathy
		• If a wound is present:
		  ○ Clean wound site with soap and water and irrigate.
		• Apply neomycin-free topical antibiotic ointment.
		  ○ Apply sterile, dry dressing.
		• Surrounding cellulitis should be marked on the skin surface with an indelible ink pen. This will allow the initial provider and follow-up providers to track the spread of the cellulitis.
		• Warm soaks for 20 minutes q1-2h may help with cellulitis resolution.
		• Elevate the affected extremity.
		  ○ If the hand or wrist is affected, splint for 24-48 hours.
		• Administer antibiotics according to local proto. col. Amoxicillin-Clavulanate is commonly used. Doxycycline can be
			• Amoxicillin 875 mg orally twice daily.
			• Cefadroxil 1 g orally daily.
			• Cephalexin 500 mg orally 4 times daily.
			• Clindamycin 450 mg orally 3 times daily.
			• Dicloxacillin 500 mg orally 4 times daily.
			• Doxycycline 100 mg orally twice daily.
			• Penicillin V potassium 500 mg orally every 6 hours.
			• Trimethoprim-sulfamethoxazole 1 to 2 double-strength tablets orally every 12 hours.

		added to the Amoxicillin if MRSA is suspected. ○ Administer IV antibiotics according to local protocol, if significant lymphangitis is present. Patient will require demobilization to higher level of care.	
Fungal Derm	• Maculopapular type rash with scaling plaques and erythema • Slow-spreading, clearly-defined rash with irregular or circumferential borders • Itching (pruritus) • Typically associated with a specific area of the body ○ Tinea cruris or "jock itch" (groin) ○ Tinea pedis or "athlete's feet" (feet) ○ Tinea capitis or "cradle cap" (scalp) ○ Tinea versicolor or "ringworm" (may be diffuse, particularly found on the arms, shoulders and torso) • Appears as areas of discolored skin that do not tan	If a wound is present: • Clean wound site with soap and water and irrigate. • Apply neomycin-free topical antibiotic ointment. • Apply sterile, dry dressing. Surrounding cellulitis should be marked on the skin surface with an indelible ink pen. • This will allow the initial provider and follow-up providers to track the spread of the cellulitis. Warm soaks for 20 minutes q1-2h may help with cellulitis resolution. Elevate the affected extremity. • If the hand or wrist is affected, splint for 24-48 hours. Administer antibiotics. Amoxicillin-Clavulanate is commonly used. Doxycycline can be added to the Amoxicillin if MRSA is suspected. • Administer IV antibiotics if significant lymphangitis	• Amoxicillin 875 mg orally twice daily. • Cefadroxil 1 g orally daily. • Cephalexin 500 mg orally 4 times daily. • Clindamycin 450 mg orally 3 times daily. • Dicloxacillin 500 mg orally 4 times daily. • Doxycycline 100 mg orally twice daily. • Penicillin V potassium 500 mg orally every 6 hours. • Trimethoprim-sulfamethoxazole 1 to 2 double-strength tablets orally every 12 hours.

Subcutaneous Abscesses

A subcutaneous abscess is a localized soft tissue infection, resulting in a collection of pus. Pain relief is often rapid, following minor surgical intervention. An abscess may form as a reaction to an embedded foreign body, an insect or spider bite, or from a non-traumatic event (e.g., occluded sebaceous glands, ingrown hairs, bacterial infiltration along the hair follicles, and an inversion of skin around a hair follicle or skin pore).

Signs and Symptoms

- Localized skin infection (surrounding cellulitis may or may not be present)
- Fluctuant, non-pulsatile mass (palpable movement of fluid [pus] beneath the skin)
  - A pulsatile mass is NOT an abscess (likely a vascular aneurysm).
  - DO NOT incise any pulsatile mass.
- Lymphangitis, lymphadenopathy (may or may not be present)
- Fever (may or may not be present)

Management

- Surrounding cellulitis should be marked on the skin surface with an indelible ink pen. This will allow the initial provider and follow-up providers to track the spread of the cellulitis.
- Warm soaks for 20 minutes q1-2h may help with cellulitis resolution.
- Administer pain management medication.

If cellulitis, lymphangitis, lymphadenopathy, and/or fever are present, administer oral abx as above or

- Initiate IV antibiotics (Cefazolin 1 to 2 g IV every 8 hours. Ceftriaxone 1 to 2 g IV every 24 hours, Clindamycin 600 to 900mg IV every 8 hours)

If the abscess is fluctuant and painful, perform Incision and Drainage (I&D).

- If the provider is not comfortable with performing an I&D, needle aspiration of the abscess may be performed.
    - Needle aspiration may offer pain relief and decrease the risk of a worsening infection. It is often inadequate for complete drainage and the abscess may reform.

Post-Procedural Wound Care

- Lightly pack the wound with iodoform gauze.
- Apply topical antibiotic ointment.
- Apply dry, sterile gauze.
- Patient should report back for evaluation within 24 hours or if pains worsens, redness increases, or red streaks and/or heavy drainage from wound develops.

Demobilization (transfer to higher level of care)

- Transfer any patient exhibiting systemic symptoms, e.g., fever or lymphangitis that does not respond to treatment
- Any abscess that does not respond to treatment or if an I&D needs to be performed that is beyond the capability of the staff at fire camp (e.g., large peri-rectal).
- Evacuation is not usually required for abscesses that respond to treatment.

Extended Care

- Improvement, with decreased pain and swelling, should be noted within 24 hours after an I&D.
- Continue to track the visible signs of infection with an indelible ink pen every 12-24 hours.
- Following an I&D, remove and replace the outer dressing and packing twice per day. As the wound heals, less packing material will be required to loosely pack the wound.

Management of Complications

- If the wound is packed too tightly, it may occlude drainage, causing swelling and pain.
- Remove the packing from the wound.
- Clean and irrigate the wound with Normal Saline or sterile water.
- Loosely repack the wound.

Athletes Foot (Tinea Pedis)

Kate Christenson, MD

Refer to **ANNEX F** *for Aftercare Handout for Athletes Foot*

Clinical Features

Tinea pedis may manifest as an interdigital, hyperkeratotic, or vesiculobullous eruption, and rarely as an ulcerative skin disorder. Interdigital tinea pedis is most common. Tinea pedis frequently is accompanied by involvement of the hands, nails or groin.

Treatment — Topical antifungal therapy is the treatment of choice for most patients. Systemic antifungal agents are primarily reserved for patients who fail topical therapy. CAL-MAT formulary typically includes clotrimazole cream and fluconazole tabs.

- Topical drugs effective for tinea pedis include azoles, allylamines, butenafine, ciclopirox, tolnaftate, and amorolfine (table 1).

DRUG	DOSE	HOW SUPPLIED
AZOLES		
Clotrimazole	Twice per day	▪ Cream 1% ▪ Ointment 1% ▪ Solution 1%
Econazole	Once per day (twice/day for candidiasis)	▪ Cream 1% ▪ Foam 1%
Efinaconazole◊	Once per day	▪ Solution 10%
Ketoconazole	Once per day	▪ Cream 1%
MiconazoleΔ	Twice per day	▪ Cream 2% ▪ Ointment 2% ▪ Solution 2% ▪ Lotion 2% ▪ Powder 2% ▪ Aerosol solution 2% ▪ Aerosol powder 2%
Oxiconazole	Once to twice per day	▪ Cream 1% ▪ Lotion 1%
Sertaconazole	Twice per day	▪ Cream 1% ▪ Solution 1%
Allylamines§		
Naftifine	Once per day (cream), twice per day (gel)	▪ Cream 1% ▪ Cream 2% ▪ Gel 1% ▪ Gel 2%
TerbinafineΔ	Once to twice per day	▪ Cream 1% ▪ Gel 1% ▪ Spray solution 1%
Benzylamine§		
ButenafineΔ	Once per day (twice per day for tinea pedis)	▪ Cream 1%
Polyene: Treats Candida infections only		
Nystatin	Two to three times per day	▪ Cream 100,000 units/gram ▪ Ointment 100,000 units/gram ▪ Powder 100,000 units/gram
Other		
Ciclopirox¥	Twice per day	▪ Cream 0.77% ▪ Gel 0.77% ▪ Suspension 0.77% ▪ Shampoo 1% ▪ Solution 8%

Tolnaftate Δ‡	Twice per day	▪ Cream 1%
		▪ Powder 1%
		▪ Aerosol
		  ○ Liquid 1%
		  ○ Powder 1%
		▪ Solution 1%

Preparations available in United States and some other countries.

- ¶ Azoles have activity against dermatophytes, tinea versicolor, and *Candida*. Sulconazole, oxiconazole, and luliconazole may be less effective for *Candida* infection than other azoles.
- Δ Available in over-the-counter (nonprescription) preparations in the United States and some other countries.
- ◊ Indicated for onychomycosis.
- § Can treat *Candida* in addition to dermatophytes and tinea versicolor but may be less effective than azoles and ciclopirox for *Candida* infection.
- ¥ Treats dermatophytes, tinea versicolor, and *Candida*.
- ‡ Does not treat *Candida*; less effective than other options for dermatophytes.

Topical antifungal treatment is generally applied once or twice daily and continued for four weeks. Shorter treatment courses may be effective; high cure rates have been obtained with terbinafine 1% cream applied to interdigital tinea pedis for one week.

Patients requiring oral antifungal therapy are usually treated with terbinafine, itraconazole, or fluconazole. Typical treatment regimens for adults include:

- Terbinafine: 250 mg per day for two weeks
- Itraconazole: 200 mg twice daily for one week
- Fluconazole: 150 mg once weekly for two to six weeks

In patients with hyperkeratotic tinea pedis consider combining antifungal treatment with a topical keratolytic, such as salicylic acid.

- Burow's (1% aluminum acetate or 5% aluminum subacetate) wet dressings, applied for 20 minutes two to three times per day, or placing gauze or cotton between toes may be helpful as an adjunctive measure for patients with vesiculation or maceration.
- Interventions that may help to reduce recurrences include use of desiccating foot powders, treatment of shoes with antifungal powder, and avoidance of occlusive footwear.

In patients with diabetes, the tinea may be more resistant to treatment. If an oral anti-fungal is used, it is vital to cross-check with the patient's other medications, as significant drug interactions can occur.

- For example, some oral hypoglycemic medications such as sulfonylurea agents metabolize by the same pathway as itraconazole.
    - These medications include tolbutamide, glibenclamide and glipizide. Therefore, if patients take these with itraconazole, plasma levels can rise, resulting in hypoglycemia.
- If the foot appears to have a bacterial superinfection, these antibiotics have appropriate coverage:
    - dicloxacillin, cephalexin, clindamycin, Augmentin, Bactrim. (see dose in Cellulitis table)

Sources: UpToDate; Leslie Mark, MD, Dermatologi

SECTION 5

Head, Eyes, Ears and Neck

EPISTAXIS

Common causes of epistaxis are nasal and/or facial trauma, nose picking, spontaneous nosebleed, and drying of nasal mucosa from environmental causes (such as arid conditions at high altitude and desert locations). Uncontrolled epistaxis may cause significant bleeding and airway obstruction. Anterior epistaxis is much more common than posterior epistaxis, (originating from the posterior nasopharynx) which can be particularly dangerous.
Bleeding can be significant in patients who are taking anti-coagulant medications, including aspirin.

Signs & Symptoms

Bleeding from one or both nares

May have nasal deformity, if associated with trauma

Presence or absence of

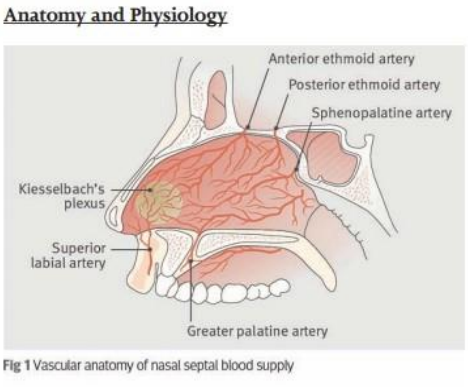


Fig 1 Vascular anatomy of nasal septal blood supply

Management of Anterior Nosebleed

- Have patient sit and lean forward to allow blood to drain outward from nose and not down the throat.
- Evaluate patient for current level of bleeding.
- If the bleeding has stopped:
  - DO NOT clear any clot.
  - Monitor for rebleed.
- Evacuation is usually not required for anterior epistaxis controlled with direct pressure or anterior packing.
- If the patient is bleeding:
  - Have the patient clear out any clots by blowing his/her nose.
  - Have the patient pinch his/her nostrils together firmly and continuously for 15 minutes.
    - In some instances, the provider must perform this maneuver for the patient.
    - Consider applying two spray doses of OTC oxymetazalone (Afrin®) nasal decongestant in each nostril, prior to applying pressure.
- If the patient continues to bleed after 15 minutes of continuous pressure: Apply anterior nasal tampon, packing or a nasal balloon catheter (Rhino Rocket) and consider transfer patient to higher level of care. Use a topical non-neomycin ointment to lubricate and prevent TSS.
  - The Rapid Rhino is inserted as follows:
  - Position the patient properly and pretreat with a topical anesthetic (eg, 2 percent lidocaine) and topical vasoconstrictor (eg, oxymetazoline). Proper patient positioning and pretreatment are discussed above. (See 'Physical examination' above.)
  - Soak the catheter in sterile water for 30 seconds. Do NOT use saline and do NOT apply lubricants or topical antibiotics, which impair the CMC fibers.
  - Insert the catheter by sliding it along the floor of the nasal cavity until the plastic proximal fabric ring lies within the nares.
  - Inflate the catheter with air only using a 20 mL syringe; stop inflating when the pilot cuff is round and firm. The appropriate amount of air varies with the size of the nasal cavity.
  - After 10 to 15 minutes, reassess the pilot cuff. Add air if it is no longer round and firm. Tape the pilot cuff to the patient's cheek.

- If bleeding appears to be significant, begin IV fluid resuscitation and transfer patient to higher level of care.
- May attempt to carefully remove anterior nasal packing after 4 hours.
- Monitor for development of fever.
- If anterior epistaxis was related to arid or high altitude conditions, apply neomycin-free antibiotic ointment or nasal saline spray for prophylaxis.

If blood causes obstruction or induces choking, secure and maintain airway. Provide advanced airway support and urgently transfer patient to higher level of care.

EYE DISORDERS

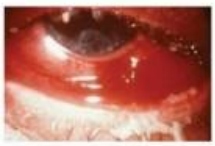
For foreign body, evert eye lid to evaluate if not seen on cornea

- Do not apply an eye patch for a foreign body.

Environmental conditions such as snow, wind, UV light, glare, fatigue, and lack of hygiene can all cause serious conditions. Only a few treatments for eye disorders are practical in an austere environment. These include protection, rest, eye lubrication, anesthetic drops, and antibiotics. Contact lenses exacerbate most issues.

Signs and Symptoms

Compare eyes to see if the problem affects both sides.

Condition	Signs and Symptoms	Treatment
Dry Eyes	• Red, painful, feel gritty • Both eyes usually affected • Long period of wearing contact lenses	• Use artificial tears. • Reduce time wearing contact lenses. • Wear sunglasses to protect eyes. • Antibiotic ointment may lubricate eyes and relieve pain.
Foreign Bodies	• Feels like something is in eye • Irritation, redness, tearing • Examine corners of eyes and under lids	• Irrigate eyes with clean water. • Remove the foreign body, if present.
Corneal Abrasion	• Feels like something is in eye • Irritation, redness, tearing • Examine corners of eyes and under lids • Persistent pain and irritation	• Remove the foreign body, if present. • Apply antibiotic ointment to the inner surface of the eyelid. • Patch the eye for 24 hours, then re-examine.
Penetrating Injury	• Obvious penetration • Assess for other injuries • Determine object depth, angle, if feasible.	• Stabilize object with tape, then surround the object with a cup to prevent jarring. • Patch other eye to prevent ocular movement. • Administer oral pain medications. • Administer oral antibiotics.
Corneal Inflammation/ Ulceration	• Red, painful eye • Photophobia • Watery, blurred vision • Cloudy cornea (with bacterial infection)	• Remove contacts, if worn. • Administer antibiotic drops or ointments. • Administer oral pain medications.
Conjunctivitis 	• Red, painful eye (cornea is not red) • Vision is not affected • Discharge of pus (most common with bacterial infection) • Watery discharge (most common with viral infection) • Itchy eye (allergies)	• Treat both eyes, as both will likely become infected. • Administer antibiotic drops or ointments for a minimum of 5 days. • Viral conjunctivitis will clear without treatment. • Administer antihistamine eye drops, if allergies are the likely cause. • If vision becomes affected, it is more serious.

Condition	Signs and Symptoms	Treatment
UV Keratitis ("Snow Blindness" or "Welder's Eye")	• Headache • Affects both eyes • Photophobia • Tearing • Delayed onset of severe pain after being in a high light environment • Face may be burnt (1st degree)	• Wear sunglasses to protect eyes. • Administer pain medication. ▫ Oral pain medication (for headache) ▫ Local anesthetic drops (**DO NOT** give the bottle to the patient.) • Antibiotic ointment may lubricate eyes and relieve pain.
Eyelid Infection 	• Stye ▫ A small boil arising from the eyelash follicle • Chalazion ▫ Infected gland in eyelid (may develop into an abscess or nodule which could affect vision)	• Apply a warm, damp towel to the affected area. • Administer antibiotic drops or ointments. • A chalazion may need surgery.
Chemical injury	• Red, irritable eye (following a chemical splash) • Vision may be impaired	• Immediately irrigate the eyes copiously with Normal Saline, if available, or clean water. ▫ Irrigate for a minimum of 30 minutes (acid) or until the pain and/or burning subsides. ▫ Irrigate for a minimum of 60 min (alkali) or until the pain and/or burning subsides. • Administer antibiotic drops or ointments. • Administer hourly applications of artificial tears. • Administer pain medication. ▫ Oral pain medication ▫ Local anesthetic drops (**DO NOT** give the bottle to the patient.)

Evacuation (transfer to higher level of care)

- Conduct urgent evacuation for perforated eye globe or a sudden loss of vision in a normal-appearing eye.
- For a complex lid laceration or hyphema (blood collecting in anterior chamber of the eye).
- Reduce exposure to the light by having patient wear sunglasses. Consider applying eye patch(es), if not detrimental to evacuation.

EAR INFECTIONS & ISSUES

Ear/Cerumen impaction: is occlusion of the external auditory canal (EAC), commonly caused by the accumulation of ear wax (cerum). Otitis externa is infection of the EAC. It is often caused by prolonged exposure to water (e.g., "swimmer's ear").

Signs and Symptoms

Ear Impaction
* EAC blocked with cerum
* Visible EAC may be inflamed with redness, warmth, swelling
* Patient may report decreased hearing, muffled sounds

Otitis Externa
* Pain from middle ear (primary symptom - may or may not be severe)
* Redness, warmth, swelling to external ear canal
* External ear and surrounding area may be tender
* EAC may be obstructed or constricted
* Purulent drainage (may or may not be present)

Otitis Media

- Otitis media is an infection of the middle ear, behind the eardrum. It is caused by a blockage of eustachian tube. A perforated tympanic membrane (TM) or "perforated ear drum" is a hole or tear in the TM. It may be caused by a history of infection, direct trauma (e.g., close proximity explosion), or after diving

Signs and symptoms

- Pain from middle ear (primary symptom - may be severe)
- No redness, swelling and tenderness to external ear and EAC
- Tympanic membrane (TM) is dull and may be seen bulging with fluid or pus

Perforated Eardrum

- TM may be punctured, torn, or absent on exam

Management

Ear Impaction

- Administer half-strength hydrogen peroxide drops to the EAC and have the patient lie on side with affected ear facing upwards for 20-30 minutes.
    - May need to use ear wax removal such as debrox, ceruminex, or liquid Dulcolax for a few days to soften, then re-irrigate.
- Begin ear irrigation with warm water, or warm water mixed with half-strength hydrogen peroxide, using a 30 ml syringe with a 16 gauge IV catheter.
- Ensure irrigation fluid is body temperature, as cold water will cause nausea, dizziness, and vertigo. Continually inspect the EAC with otoscope during irrigation.
    - Rely on irrigation, not instrumentation, to dislodge impaction.
- Repeat as necessary.

Otitis Externa

- Have the patient keep the affected ear dry.
- Administer Cortisporin® topical ear drops, 5-6 drops TID, until 48 hours after symptoms resolve; may place cotton ball in ear after application.
    - If Cortisporin® is not available, apply a few drops of vinegar mixed with alcohol (1:1) every 2-4 hours.
    - if condition worsens or persists, consider, azithromycin (Zithromax®) 500 mg PO x1 day, followed by 250 mg PO QD days 2-5

Otitis Media

- Consider one of the following oral antihistamines:
    - Loratadine (Claritin®) 10 mg PO qd, take on an empty stomach
    - Diphenhydramine (Benadryl®) 25-50 PO q6h, if operational situation permits (may cause drowsiness, sedation)
- Administer pain management medication such as ibuprofen 400-800mg po TID.
- If fever, general malaise, or severe pain is present, administer azithromycin (Zithromax®) 500 mg PO x1 day, followed by 250 mg PO QD days 2-5 or Amox-Clav 875mg po bid for 5-7days.

Perforated Eardrum

- Keep area clean and dry.
- Administer an antibiotic prophylaxis of azithromycin (Zithromax®) 500 mg PO x1 day, followed by 250 mg PO QD days 2-5.
- If caused by close proximity explosion or other trauma, evaluate for underlying or concomitant injury.

Transfer to higher level of care

- For any ear problem accompanied by AMS, ataxia, vomiting, or septicemia.
- For persistent fever, severe pain, or obvious swelling to the face or neck.
- For patients with no improvement after 48 hours of treatment.

Other/Special Considerations

- Perforated eardrum is possible if otitis media persists and internal swelling worsens. It is usually benign and patient often notes dramatic decrease in pain and ear pressure.

DENTISTRY

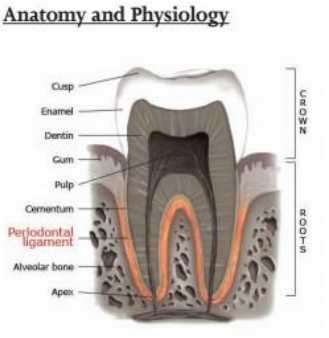
General Dental Care
Common dental injuries include fractured, dislocated, and avulsed teeth. Toothaches are also a commonly encountered disorder, and may be caused by pulpitis (dental caries), lost dental fillings, periodontal and apical abscesses, etc. Dental injuries suggest significant blunt force trauma to the head. In case of dental trauma, evaluate patient for associated serious injury. Rule out:

- Head injury, inquire for LOC
- Spinal injury, clear C-spine
- Associated facial injuries (e.g., mandible fracture, alveolar ridge fracture, orbital fracture, zygomatic fracture) Blood draining into throat may obstruct airway or induce choking. Swallowing blood may result in nausea and/or vomiting. Always be prepared to protect the patient's airway.
- Field suction is ideal, if available.
    - Early advanced airway management may be necessary in severe maxillofacial trauma.
    - If bleeding is present or anticipated with procedure and suction is unavailable, have the patient sit with head forward to prevent blood from draining into throat.

Alveolar Ridge Fracture This condition is a traumatic fracture of the alveolar ridge of the maxilla or mandible. It often involves multiple teeth. If fracture is not grossly obvious, check for stability by rocking the alveolar ridge anteriorly and posteriorly. Any movement indicates fracture.

Avulsed Tooth This condition is a result from direct trauma causing detachment of the tooth from the bone. The best chance of tooth survival is replacement within one hour. If the tooth is not replaced within 1 hour of injury, then the chances for tooth survival are very poor.

(Note location of periodontal ligaments. Careful handling of tooth helps preserve these ligaments. DO NOT scrub, rub, scale or otherwise roughly handle tooth prior to replacement. Handle tooth ONLY by the crown.)



Dislocated Tooth: This condition is caused by trauma to the mouth that results in the tooth being moved from its normal position, without complete avulsion. It is also known as a "luxated tooth" or "partial avulsion

Management

	Alveolar Ridge Fracture	Avulsed Tooth	Dislocated Tooth
Signs & Sx	Movement of the alveolar ridge, anteriorly or posteriorly Tooth dislocation or avulsion	Tooth completely detached from other structures -Empty socket -Can indicate a severe impact to the head Head injury, inquire for LOC Spinal injury, clear C-spine	Tooth is obviously dislocated from normal position, is loose and mobile • Can indicate a severe impact to the head • Head injury, inquire for LOC • Spinal injury, clear C-spine

Management	Administer pain management medications.	**Replace the tooth:** Handle the tooth ONLY by the crown. DO NOT scrub, rub, or remove any tissue from the tooth -Gently rinse the tooth with normal saline or potable water. -Place the tooth in normal saline, milk, or saliva prior to procedure. -Gently irrigate the empty socket with normal saline or potable water. -Use slow, steady pressure to reposition the tooth into the socket. -Have the patient stabilize the tooth by gently biting down on a gauze pad. -Secure the tooth.	Manually reposition tooth: -Use a finger to gently guide the tooth down and back while simultaneously repositioning the crown with another finger. -Have the patient stabilize the tooth by gently biting down on a gauze pad. -Secure the tooth.
Disposition	**Transfer to ER**	Evacuation is required	**Dental evaluation needed**

Antibiotics: For all dental cases, administer Augmentin 875/125 mg PO q12h preferred, or Clindamycin (Cleocin®) 450 mg PO q8h preferred until definitive care is reached.

SECTION 6

Extremes of Temperature

HEAT ILLNESS / STRESS

Howard Backer, MD

PHYSIOLOGY OF HEAT INJURIES

Tolerance to heat depends largely on physiologic factors, unlike cold environments where adaptive behaviors are more important. The major means of heat dissipation are radiation (while at rest) and evaporation of sweat (during exercise), both of which become minimal with air temperatures above 95°F (35°C) and high humidity.

Two major organs are involved in temperature regulation: the skin, where sweating and heat exchange take place; and the cardiovascular system, which must increase blood flow to shunt heat from the core to the surface, while meeting the metabolic demands of exercise. Cardiovascular status and conditioning are the major physiologic variables affecting the response to heat stress at all ages. Many chronic illnesses limit tolerance to heat and predispose to heat illness, including cardiovascular disease, diabetes, renal disease and extensive skin disorders or scarring that limits sweating.

In addition to environmental conditions and intensity of exercise, dehydration is the most important predisposing factor in heat illness. Dehydration also reduces exercise performance, decreases time to exhaustion, and increases internal heat load. Temperature and heart rate increase in direct proportion to the level of dehydration. Sweat is a hypotonic fluid containing sodium and chloride. Sweat rates commonly reach 1 liter (L) per hour or more, resulting in substantial fluid and sodium loss.

MINOR HEAT DISORDERS

- **Heat cramps** are painful muscle contractions following exercise. They begin an hour or more after stopping exercise and most often involve heavily used muscles in the calves, thighs, and abdomen. Rest and passive stretching of the muscle, supplemented by commercial rehydration solutions or water and salt, rapidly relieve symptoms. Water with a salty snack is sufficient. An oral salt solution can be made by adding one-fourth to one-half teaspoon of table salt (or two 1-gram salt tablets) to 1 L of water. To improve taste, add a few teaspoons of sugar and/or orange or lemon juice.
- **Heat syncope**—sudden fainting caused by vasodilation—occurs in unacclimatized people standing in the heat or after 15–20 minutes of exercise. Consciousness rapidly returns when the patient is supine. Rest, relief from heat, and oral rehydration are sufficient treatment.
- **Heat edema** is mild swelling of the hands and feet that occurs more frequent in women during the first few days of heat exposure. It resolves spontaneously and should not be treated with diuretics, which may delay heat acclimatization and cause dehydration.
- **Prickly heat** (miliaria or heat rash) manifests as small, red, raised itchy bumps on the skin caused by obstruction of the sweat ducts. It resolves spontaneously, aided by avoiding continued sweating and relief from heat. It is best prevented by wearing light, loose clothing and avoiding heavy, continuous sweating.

MAJOR HEAT DISORDERS

Heat Exhaustion

- Most people who experience acute collapse or other symptoms associated with exercise in the heat are suffering from heat exhaustion—the inability to continue exertion in the heat. The presumed cause of heat exhaustion is loss of fluid and electrolytes, but there are no objective markers to define the syndrome, which is a spectrum ranging from minor complaints to a vague boundary shared with heat stroke. Transient mental changes, such as irritability, confusion, or irrational behavior may be present in heat exhaustion, but major neurologic signs such as seizures or coma indicate heat stroke or profound hyponatremia. Body temperature may be normal or mildly to moderately elevated.

- Most cases can be treated with supine rest in the shade or other cool place and oral water or fluids containing glucose and salt; subsequently, spontaneous cooling occurs, and patients recover within hours. An oral solution for treating heat exhaustion can be made by adding one-fourth to one-half teaspoon of table salt (or two 1-gram salt tablets) to 1 L of water plus 4–6 teaspoons of sugar. To further improve taste, add one-quarter cup of orange juice or 2 teaspoons of lemon juice. Commercial sports-electrolyte drinks are also effective. Plain water plus salty snacks may be more palatable and equally effective. Subacute heat exhaustion may develop over several days and is often misdiagnosed as "summer flu" because of findings of weakness, fatigue, headache, dizziness, anorexia, nausea, vomiting, and diarrhea. Treatment is as described for acute heat exhaustion.

Exercise-Associated Hyponatremia

- **Symptoms** of heat exhaustion and early exercise-associated hyponatremia (low sodium [salt] levels in the blood) are similar. Hyponatremia can be distinguished from heat illnesses by persistent alteration of mental status without elevated body temperature, delayed onset of major neurologic symptoms (confusion, seizures, or coma), or deterioration up to 24 hours after cessation of exercise and removal from heat. Where medical care and laboratory are available, measure serum sodium to diagnose hyponatremia and guide treatment.
- **Hyponatremia** occurs in both endurance athletes and recreational hikers, likely due to replacement of fluids with excessive amounts of free water. Loss of sodium through sweat also contributes to hyponatremia. In the field setting, altered mental status with normal body temperature and a history of large volumes of water intake suggest hyponatremia. The vague and nonspecific symptoms are the same as those described for hyponatremia in other settings, including anorexia, nausea, emesis, headache, muscle weakness, lethargy, confusion, and seizures.
- **The recommendation** to force fluid intake during prolonged exercise and the attitude that "you can't drink too much" are major contributors to exercise-associated hyponatremia. Prevention includes drinking only enough to relieve thirst. During prolonged exercise (>12 hours) or heat exposure, supplemental sodium should be taken. Most sports-electrolyte drinks do not contain sufficient amounts of sodium to prevent hyponatremia; on the other hand, salt tablets often cause nausea and vomiting. For hikers, food is the most efficient vehicle for salt replacement. Trail snacks should include not just sweets, but salty foods such as trail mix, crackers, and pretzels.
  Restrict fluid if hyponatremia is suspected (neurologic symptoms in the absence of hyperthermia or other diagnoses). In conscious patients who can tolerate oral intake, salty snacks may be given with sips of water or a solution of concentrated broth (2–4 bouillon cubes in 1/2 cup of water). Obtunded patients may require hyper-tonic saline.

Heat Stroke

- **Heat stroke** is an extreme medical emergency requiring aggressive cooling measures and hospitalization for support. Heat stroke is the only form of heat illness in which the mechanisms for thermal homeostasis have failed, and the body does not spontaneously restore the temperature to normal. As a result of uncontrolled fever and circulatory collapse, organ damage can occur in the brain, liver, kidneys, and heart. Damage is related to duration as well as peak elevation of body temperature.
- **The onset** of heat stroke may be acute or gradual. Acute (also known as exertional) heat stroke can affect healthy people exercising in the heat; it is characterized by collapse while exercising in the heat usually with profuse sweating. By contrast, gradual or non-exertional (sometimes referred to as classic or epidemic) heat stroke occurs among chronically ill individuals experiencing passive exposure to heat. Sufferers of classic heat stroke tend not to perspire. Both types exhibit altered mental status and markedly elevated body temperature.
- **Early symptoms** are similar to those of heat exhaustion, with confusion or change in personality, loss of coordination, dizziness, headache, and nausea that progress to more severe symptoms. A presumptive diagnosis of heat stroke is made in the field when people have elevation of body temperature (hyperpyrexia) and marked alteration of mental status, including delirium, convulsions, and coma. Body temperatures in excess of 106°F (41°C) can occur in heat stroke; even without a thermometer, people will feel hot to the touch. If a thermometer is available, a rectal temperature is the safest and most reliable way to check the temperature of someone who may have heat stroke; an axillary temperature may give a reasonable estimation.

In the field, immediately institute cooling measures by these methods:

- Maintain the airway if victim is unconscious.
- Move to the shade or a cool place out of the sun.
- Use evaporative cooling: remove excess clothing to maximize skin exposure, spray tepid water on the skin, and maintain air movement over the body by fanning. Alternatively, place cool or cold wet towels over the body and fan to promote evaporation.
- Apply ice or cold packs to the neck, axillae, groin, and as much of the body as possible. Vigorously massage the skin to limit constriction of blood vessels and prevent shivering, which will increase body temperature.
- Immerse the person in cool or cold water, such as a nearby pool or natural body of water or bath—an ice bath cools fastest. Always attend and hold the person while in the water.
- Encourage rehydration for those able to take oral fluids.

- Heat stroke is life threatening, with many complications occurring in the first 24–48 hours, including liver or kidney damage and abnormal bleeding. Most victims have significant dehydration, and many require hospital intensive care management to replace fluid losses. If evacuation to a hospital is delayed, monitor closely for several hours for temperature swings.

Prevention of Heat Disorders

Heat Acclimatization

Heat acclimatization is a process of physiologic adaptation that occurs in residents of, and visitors to, hot environments. Increased sweating with less salt content, and decreased energy expenditure with lower rise in body temperature for a given workload, is the result. Only partial adaptation occurs from passive exposure to heat.

Fluid & Electrolyte Replacement

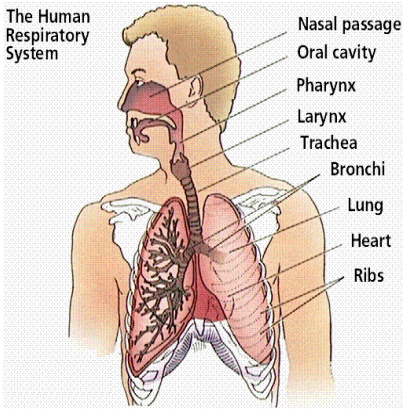
During exertion, fluid intake improves performance and decreases the likelihood of illness. Reliance on thirst alone is not sufficient to prevent mild dehydration but forcing a person who is not thirsty to drink water creates the potential danger of hyponatremia. During mild to moderate exertion, electrolyte replacement offers no advantage over plain water. For those exercising many hours in heat, however, salt replacement is recommended. Eating salty snacks or lightly salting mealtime food or fluids is the most efficient way to replace salt losses. Salt tablets swallowed whole may cause gastrointestinal irritation and vomiting; they may be better tolerated if dissolved in 1 L of water. Urine volume and color are a reasonable means to monitor fluid needs.

SECTION 7

Respiratory Conditions

ASHA DEVEREAUX, MD, MPH-PULMONARY MEDICINE

For firefighters or personnel with any significant cutaneous burns, it should be noted that inhalational lung injury occurs in 1/5 of all burn victims and 2/3 if facial burns are present. Lung injury accounts for the majority of fire-related deaths and mortality in burn cases increases from 4% to 30% if inhalational injury is present. Manifestations of lung injury may be delayed; therefore, all of these patients should be immediately sent to a tertiary care center with burn capabilities.



For those personnel presenting to the basecamp medical clinic with cough or nasal symptoms, a small study from Canada in 2008 showed that up to 65% of woodland firefighters will experience respiratory symptoms due to inhalation of particulate matter. This will result in hoarseness, irritant rhinitis, and/or large airway cough or wheezing symptoms due to the direct inflammatory effects of smoke on the respiratory mucosa.

- This is important to note when considering testing for COVID-19. *Refer to the EMSA guidelines for COVID Testing* – **ANNEX A:**

RHINITIS (IRRITANT AND ALLERGIC)

Rhinitis is inflammation and swelling of the mucous membrane of the nose, characterized by a runny nose and stuffiness and usually caused by the common cold or a seasonal allergy. Colds and allergies are the most common causes of **rhinitis**.

- Symptoms of **rhinitis** include a runny nose, sneezing, and stuffiness. However, increasingly evident is that smoke and particulate matter from wildfires are now a cause of similar symptoms resulting in:
  - Cough-dry and wet
  - Eye irritation
  - Sneezing
  - Sore throat

Treatment:

The management of allergic rhinitis symptoms is similar to irritant rhinitis except you may wish to add systemic antihistamines for allergic symptoms.

Saline nasal sprays. Use an over-the-counter nasal saline spray (NeilMed or homemade saltwater solution (with distilled water) to flush the nose of irritants and help thin the mucus and soothe the membranes in the nose.

Corticosteroid nasal sprays

Corticosteroid medications help prevent and treat inflammation associated with both allergic and some types of nonallergic rhinitis. OTC corticosteroid nasal sprays, such as:

- budesonide (Rhinocort)
- fluticasone propionate (Flonase) or
- triamcinolone (Nasacort) at
  - 2 sprays each nostril bid instilled in the anterior nares is effective.

- Possible side effects include nasal dryness, nosebleeds, headaches and throat dryness. Prescription-only corticosteroid nasal sprays include beclomethasone (Qnasal), ciclesonide (Omnaris), fluticasone furoate (Veramyst), and mometasone (Nasonex) are also available and dosed similarly.

Antihistamine nasal sprays.

- Prescription antihistamine sprays such as azelastine (Astelin, Astepro) and olopatadine hydrochloride (Patanase) can be added to nasal steroids to help stabilize rhinitis symptoms.
    - Dosage for each: 1-2 spray each nostril up to bid prn.
- While oral antihistamines don't seem to help nonallergic rhinitis, nasal sprays containing an antihistamine may reduce symptoms of nonallergic rhinitis.
- The prescription drug ipratropium bromide 0.3% or 0.6% (Atrovent) is available as a nasal spray and can be helpful for rhinorrhea especially in non-allergic rhinitis.
    - Side effects may include nosebleeds and drying of the inside of the nose.

Decongestants.

Side effects include high blood pressure, heart pounding (palpitations) and restlessness; therefore: should not be used for fire-fighters due to an added risk for heat illness.
Examples include pseudoephedrine-containing drugs (Sudafed) and phenylephrine (Afrin, Neo-Synephrine).

Over-the-counter oral antihistamines

- Such as diphenhydramine (Benadryl), cetirizine (Zyrtec), levocetirizine, fexofenadine(Allegra) and loratadine(Claritin), typically don't work for nonallergic rhinitis as they do for allergic rhinitis.

REACTIVE AIRWAYS: COUGH/WHEEZING

Cough, hoarseness, and wheezing are usually a manifestation of airway inflammation (infection or irritant exposure) and can result in **bronchospasm** and **asthma exacerbation**.

- Following exposure to the particulate matter in fire smoke, there is a resultant inflammatory cascade triggered in the airways as well as an elevation of inflammatory mediators in the blood stream.
    - This also leads to a chest burning symptom that is alleviated by steroids.
- If fire response is during flu season, concomitant influenza diagnosis and management strategies will need to be considered.

Treatment:

For isolated hoarseness without respiratory difficulty:

- Use a nasal steroid 1-2sprays each nostril and/or inhaled corticosteroid 1-2 puffs daily.

For mild cough and wheezing:

- Albuterol via MDI or breath actuation:
    - 2puffs via aerochamber/spacer q 4-6h as needed.
        - Ok to add an inhaled steroid if the patient is using albuterol > 2x/day

For moderate symptoms:

- Inhaled corticosteroid (ICS):
    - 1-2 puffs inhaled via spacer bid (rinse following use) in addition to albuterol therapy as above.
- Combined ICS/LABA (long-acting bronchodilator), such as
    - Symbicort (80 or 160mcg) 2 puffs q12h can be used as prn.

For severe symptoms (i.e. difficulty completing a sentence): initiate

- Nebulizer treatment with albuterol solution 2.5mg in 3 ml NS with or without ipratropium solution (0.5mg solution).
- Provide a steroid burst with either Medrol dose pack or prednisone 20-40mg and plan to remove the member from fire-response duties.
- Tiotropium (Spiriva) 1.25mcg-2 sprays inhaled once/day can be added.

Prevention:

No respirator is fully protective and should be considered as a secondary means of protection from airborne toxins.

- Disposable respirators are commonly used in health care.

    - These can filter particulate material. N=not oil proof, 95= 95% efficient at filtering particles w/diameter 0.3mc.
- It is important to understand fit, limitations, and proper care of the respirator.
    - Respirators can compromise vision, communication and motor skills. Increased resistance to breathing and increased dead space ventilation occurs. Respirators do decrease maximum workloads tolerable.

Wildland firefighting
Wildland firefighters are not likely to experience the extreme acute chemical exposures that structural firefighters may have. However, they are still chronically exposed to a multitude of contaminants that are products of combustion of natural materials, including carbon monoxides, sulfur dioxides, particulate matter of variable composition, aldehydes, and polyaromatic hydrocarbons (PAHs). They may also be exposed to substances such as lead or herbicides which may have been deposited on foliage. Ground dust and naturally occurring silica or asbestos may also be a hazard. Coupled with the effects of chemicals used as fire-retardants, gasoline and other fuels used for intentional burning, the range of exposure of wildland firefighters may be more diverse.

Studies of wildland firefighters noted significant cross-season increases in eye irritation and wheezing symptoms correlated with the fire-fighting activities. Studies have also observed a decline in average FEV1 and FVC cross-seasonally. Self-contained breathing apparatuses used by structural firefighters have not been feasible in the wildland fire environment. Existing air-purifying respirators have been recommended for exposure control in combination with continuous CO monitoring that can activate an alarm when a threshold level is exceeded.

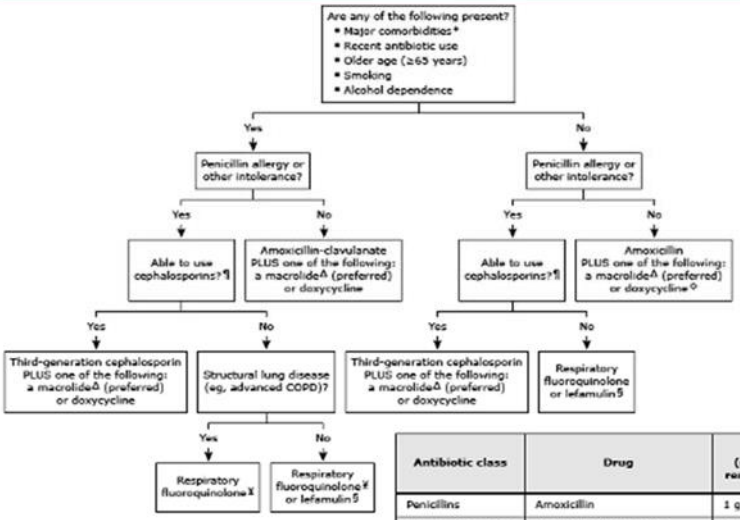
Influenza

Because fire season frequently coincides with influenza season in California, it is recommended to initiate vaccination protocols at Fire Camp per the Med-L.
If a member presents with flu-like symptoms (nasal congestion, myalgias, sore throat, cough), offer a rapid-flu test and initiate appropriate available antiviral drug (oseltamivir 75mg po bid x 5 days or Xofluza -baloxivir 80mg as a single dose). Monitor for influenza activity at the camp and in the community.

Bacterial Pneumonia/Bronchitis-requires Demobilization
- Cough (may or may not yield green, brown, or blood-tinged sputum), chills, pleuritic chest pain
- Fever, Resting HR > 90 bpm, RR > 18, nausea, headache and diminished appetite
- Start oxygen at 2 L/minute via nasal cannula. Increase to maintain SpO2 of > 92%, as necessary.
- Administer fever management medication.
- To relieve severe coughing or difficulty breathing, administer one of the following, as needed:
    - Albuterol (Ventolin®) MDI 2 puffs q4h prn
    - Albuterol + ipratropium via separate inhalers or via duo-neb q 6h

Initiate Antibiotic therapy-see chart below

Community-acquired pneumonia: Empiric outpatient antibiotic selection in adults*



Antibiotic class	Drug	Oral dosing (may need adjustment for renal or hepatic dysfunction)
Penicillins	Amoxicillin	1 g three times daily
Extended-spectrum beta-lactams	Amoxicillin-clavulanate	2000 mg (extended release) twice daily
	Cefpodoxime (3rd generation)	200 mg twice daily
	Cefditoren (3rd generation)	400 mg twice daily
Macrolides	Azithromycin	500 mg on first day then 250 mg daily
	Clarithromycin	500 mg twice daily or 1g (extended release) once daily
Tetracyclines	Doxycycline	100 mg twice daily
Respiratory fluoroquinolones	Levofloxacin	750 mg once daily
	Moxifloxacin	400 mg once daily
	Gemifloxacin	320 mg once daily
Pleuromutilin	Lefamulin	600 mg twice daily

For all patients, empiric regimens are designed to target:

- *Streptococcus pneumoniae* (most common bacterial CAP pathogen)
- Atypical pathogens (eg, *Legionella* spp, *Mycoplasma pneumoniae*, *Chlamydia pneumoniae*)

Coverage is expanded in those with comorbidities, older age, or recent antibiotic use to include or better treat:

- Beta-lactamase-producing *Haemophilus influenzae*
- *Moraxella catarrhalis*
- Methicillin-susceptible *Staphylococcus aureus*

For patients with structural lung disease (eg, advanced COPD), coverage is further expanded to include Enterobacteriaceae, such as *Escherichia coli* and *Klebsiella* spp.

CAP: community-acquired pneumonia; COPD: chronic obstructive pulmonary disease; IgE: immunoglobulin E.

* Major comorbidities include but are not limited to chronic heart, renal, or liver disease, diabetes mellitus, asplenia, and immunosuppression.

¶ Patients with mild non-IgE-mediated reactions (eg, maculopapular rash) to penicillin or known cephalosporin tolerance can generally use later-generation cephalosporins safely. Patients with IgE-mediated reactions (hives, angioedema, anaphylaxis) or severe delayed reactions should generally use other agents. Refer to the UpToDate text on penicillin hypersensitivity reactions for detail.

Δ Reasons to avoid macrolides include baseline prolonged QTc interval or risk for QTc prolongation (eg, hypokalemia, hypomagnesemia, clinically significant bradycardia, or use of other QT-prolonging agents).

◇ Our approach differs from the American Thoracic Society and Infectious Diseases Society of America, which recommend monotherapy with amoxicillin, doxycycline, or a macrolide (in areas where macrolide resistance is low) as options for patients without comorbidities or risk factors for drug-resistant *S. pneumoniae*. By contrast, we prefer to treat all patients with a regimen that treats most strains of drug-resistant *S. pneumoniae* and atypical pathogens for all patients because the potential to reduce morbidity is high and the downside of a short course of therapy for most patients is low. Refer to the UpToDate text for detail.

§ Lefamulin is a newer agent that is active against most CAP pathogens including *S. pneumoniae*, *H. influenzae*, *M. catarrhalis*, *S. aureus*, and atypical pathogens. Although lefamulin lacks activity against Enterobacteriaceae (eg, *Klebsiella* spp and *E. coli*) and thus is not appropriate for patients with structural lung disease, its more targeted spectrum makes it less disruptive to the microbiome. Clinical experience with lefamulin is limited, and it is not recommended in moderate to severe hepatic dysfunction, pregnancy, breastfeeding, known long QT syndrome, or with concomitant QT-prolonging agents. There are drug interactions with CYP3A4 and P-gp inducers and substrates; in addition, lefamulin tablets are contraindicated with QT-prolonging CYP3A4 substrates. Refer to the Lexicomp drug monograph and UpToDate text for detail.

¥ Omadacycline is another newer agent that is active against most CAP pathogens, including Enterobacteriaceae. It is a potential alternative for patients who cannot tolerate beta-lactams (or other agents) and want to avoid fluoroquinolones. However, because its oral pharmacokinetics are not yet well established, we do not use this agent routinely in outpatients.

UpToDate®

Demobilize for any infectious respiratory illness or persistent wheezing not fully controlled by bronchodilators via MDI at standard intervals.

- Consider need for COVID-19 testing.

Other/Special Considerations

- Team members in close contact with influenza patients should be administered appropriate antiviral medication, if available.
- In the presence of a widespread outbreak of influenza, administer an appropriate antiviral medication as prophylaxis after consulting with local public health authority.
- If symptoms of sinusitis are present, particularly green or yellow nasal discharge, treat with antibiotics.

SECTION 8

Gastrointestinal Conditions

VIRAL GASTROENTERITIS

Adapted from UpToDate (Norovirus by Miguel G O'Ryan, MD accessed 8.21.20) for CAL-MAT-Fire Missions by Asha Devereaux, MD, MPH, Chuck Wright, MD, and Chris Devereaux, MD-Gastroenterology

Note: Norovirus and other intestinal viruses are highly infectious and easily spread through contact with common objects. These patients should use separate facilities and be removed from a camp as soon as possible.

Burden of disease

Norovirus is the most common viral cause of epidemic gastroenteritis worldwide, but recommendations below will apply to all viral gastroenteritis. Worldwide, about one out of every five cases of acute gastroenteritis (inflammation of the stomach or intestines) that leads to diarrhea and vomiting is caused by norovirus Norovirus affects persons of all age groups.

Seasonality

- Norovirus infection can be acquired at any time of year, with perhaps a peak noted in winter.

Transmission

- Person-to-person transmission of norovirus occurs via the fecal-oral route. Spread of norovirus infection can also occur via airborne droplets of vomitus containing viral particles, fomite contamination, or consumption of contaminated food and water. Norovirus transmission occurs more frequently among symptomatic patients than asymptomatic shedders, and nosocomial transmission is common. A small inoculum (<100 viral particles) is required for transmission.
- Norovirus shedding in stool is maximal over the first 24 to 48 hours after onset of illness; the mean duration of viral shedding is four weeks after onset of illness.
- Foods commonly linked to outbreaks include leafy greens, fresh fruits, and shellfish, including oysters.

Shelter Set-up:

Infection Control

- COVID 19 can present with nausea & diarrhea in addition to respiratory symptoms. Patients with suspected COVID-19 should be sheltered separately.
- **Hand** washing stations should be outside all entry and exit points. Bathrooms will need to be separated for each isolation tent/location use and should not be used by general population or staff**.**

Symptomatic infection: Incubation period and duration

- The incubation period is generally 24 to 48 hours (range 12 to 72 hours).
- Onset of symptoms is typically abrupt, and typically last for 48 to 72 hours with rapid recovery.

Typical clinical features

- Nausea and vomiting (non-bloody, non-bilious). Vomiting is often more prominent than diarrhea.
- Watery diarrhea (non-bloody). If diarrhea is present, it is generally moderate (approximately four to eight stools over a period of 24 hours). Stools lack mucous, and fecal leukocytes are not seen.
- Abdominal pain.
- Generalized myalgias, malaise, and headache are prominent. In general, patients are uncomfortable but usually do not appear severely ill, although severe dehydration can occur.
- Fever occurs in approximately half of cases.

Clinical suspicion and presumptive diagnosis—

- The possibility of norovirus infection should be suspected in all patients with acute onset of vomiting and/or watery diarrhea
- The diagnosis of norovirus is usually presumptive in such patients; the likelihood of norovirus is higher in the setting of an outbreak or during the winter months in temperate regions.
- Confirming the diagnosis with stool testing is generally not necessary.
    - Identifying the etiology may be helpful for public health purposes during outbreaks of gastroenteritis. Multi-pathogen molecular tests for gastrointestinal pathogens are becoming

more widely available and norovirus can be identified on these tests. However, because of the frequency of asymptomatic norovirus shedding, molecular diagnosis of norovirus does not necessarily confirm that the symptoms are due to norovirus.

Prevention and control:

Contact precautions, hand hygiene, and environmental cleaning.

- In congregate settings, use of contact precautions is warranted for patients with vomiting and/or diarrhea.
- Norovirus is not killed by alcohol; therefore, hand hygiene for caretakers of patients with gastroenteritis should consist of washing hands with soap and water rather than use of alcohol-based hand disinfection.
- Norovirus is not eliminated by disinfection with standard cleaning agents. Contaminated surfaces should be disinfected with bleach (5 to 25 tablespoons of household bleach per gallon of water) or other disinfectant approved by the EPA.
- Individuals who clean clinical care areas that are heavily contaminated with stool or vomitus should wear protective equipment (mask, gloves, and gown).
- Healthcare workers who have symptoms consistent with norovirus should be excluded from work until 48 to 72 hours after symptom resolution.
- Infants and children should be excluded from child care centers until stools are contained in a diaper or when toilet-trained children no longer have accidents using the toilet, and when stool frequency becomes no more than two stools above that child's normal frequency, even if the stools remain loose.
- Individuals with norovirus infection should not prepare food for others until at least two days after resolution of symptoms.

Treatment:

Fluid maintenance and repletion

- For adults presenting with acute viral gastroenteritis without signs of volume depletion, adequate volume can be maintained with sports drinks and broths.
- Soft drinks and fruit juices that are high in sugar content should be avoided but can be diluted if oral hydrations solution are unavailable.
- For adults presenting with mild to moderate volume depletion oral rehydration solutions may be superior to sports drinks in maintaining electrolyte balance along with hydration.
- For patients with severe hypovolemia, or an inability to tolerate oral rehydration, repletion with intravenous normal saline or Ringer's lactate is required.

Diet

- In adults with acute viral gastroenteritis, patients should be encouraged to eat as tolerated. Smaller meals may be less likely to induce vomiting than larger ones. Bland, low-residue foods may also be better tolerated than others. For healthy adults with acute viral gastroenteritis without signs of dehydration, sport drinks, diluted fruit juices, and other flavored soft drinks augmented with saltine crackers and broths or soups can meet the fluid and salt needs in almost all cases. Broiled starches/cereals (potatoes, noodles, rice, wheat, and oat) with some salt are excellent foods to consider. In addition, crackers, bananas, yogurt, soups, and boiled vegetables can also be consumed. Cow milk can exacerbate diarrhea and should be used with caution.

Probiotics

- The value of oral probiotics in acute viral gastroenteritis is not well established, and further research is needed to determine the optimal type, dose, and regimen of probiotics before they are recommended for routine use.

Pharmacotherapy

- In general, viral gastroenteritis is an acute and self-limited disease that does not require pharmacologic therapy. Adequate fluid repletion is the mainstay of treatment of acute viral gastroenteritis. When indicated for viral gastroenteritis, an antimotility agent may be added to decrease fluid losses; however, these agents may mask the amount of fluid lost, since fluid may pool in the intestine.

Antiemetics

For patients who cannot tolerate oral rehydration due to excessive vomiting, treat with an antiemetic

- Odansetron: Oral, IV, IM: 4 mg as a single dose q 8h prn) as needed for one to two days to facilitate oral fluid repletion. Ondansetron has a good safety profile & causes minimal sedation.

- Prochloperazine (black box warning for elderly): *Oral* (tablet): 5 to 10 mg 3 to 4 times/day; usual maximum: 40 mg/day; *IM (as edisylate):* 5 to 10 mg every 3 to 4 hours; maximum dose: 40 mg/day *IM (as mesylate):* 5 to 10 mg 2 to 3 times/day; usual maximum: 40 mg/day *IV (as edisylate):* 2.5 to 10 mg; maximum: 10 mg/dose or 40 mg/day; may repeat dose every 3 to 4 hours as needed

Antibiotics

- In adults who clearly have acute viral gastroenteritis (e.g., outbreak with known etiology), empiric use of antibiotics is not recommended.

Disposition

Most individuals with acute viral gastroenteritis can be managed in the outpatient setting; however, in fire camp, demobilization will likely occur. Inform Med-L immediately. Potential indications for transfer to a hospital include:

- Volume depletion/dehydration
- Intractable vomiting and/or severe abdominal pain
- Excessive bloody stool or rectal bleeding
- Age 65 or older with signs of hypovolemia
- Comorbidities (eg, diabetes mellitus, immunocompromised)
- Pregnancy

CONSTIPATION

Constipation is common issue during deployment due to failure to maintain adequate hydration.

Prevention

It is encouraged that all personnel utilize daily stool softeners during the duration of the mission. Effective regimens

- **Miralax 1 capful (17gm)** administered with the meal prior to sleep and dose adjustment to achieve a daily bowel movement after awakening.
- **Colace 100mg-** administered with the meal prior to sleep and dose adjustment to achieve a daily bowel movement after awakening

Treatment

- For acute constipation, use a stimulant laxative as needed
- Dulcolax
    - Usual Adult Dose for Constipation:
        - 5 to 15 mg (1 to 3 tablets) orally once a day as needed or
        - 10 mg (1 suppository) rectally once a day as needed or
        - 10 mg rectal liquid once a day as needed.

Patient Instructions

To use the rectal suppository:

- Remove the wrapper from the suppository. Avoid handling the suppository too long or it will melt in your hands. If the suppository is soft, you may hold it under cool running water or refrigerate it for a few minutes.
- Lie on your left side with your right knee up toward your chest. Gently insert the suppository into your rectum about 1 inch, pointed tip first.
- Stay lying down for a few minutes. The suppository will melt quickly and you should feel little or no discomfort while holding it in.
- Do not use more than one rectal suppository per day.

SECTION 9

Orthopedic & Wound Management

FINGERS/HAND

Several common hand disorders may be encountered in the field are paronychia, felon, and herpetic whitlow.

- Paronychia is an inflammation of the skin surrounding the eponychium, or tissue fold, of the nail plate.
- Felon is an inflammation of the distal fat pad, located on the volar (or palmar) aspect of the digits.
- Herpetic Whitlow (digital herpes simplex, herpes of the finger or hand) is a contagious herpes simplex virus infection.

	Paronychia	Felon	Herpetic Whitlow
Signs/Sx	Erythema and swelling (typically on the side margins of the nailfold) -Pain and tenderness -Yellowish, pus-filled blister, with surrounding inflammation (advanced cases) -Purulent drainage, if paronychia opens spontaneously	Pain, tenderness, and mild swelling of the distal fat pad Erythema May form into an abscess (a pus-filled blister)	-Pain and tenderness -Localized erythema and itching (pruritus) -Fluid or pus-filled blisters, usually occurring in groups or clusters -May occur anywhere on the digit, not limited to nail fold area
Management	Soak in warm water for 20 minutes, 4-5 times a day. -Elevate extremity for pain or swelling, as needed. -If well-formed, swollen and fluctuant: Gently separate and lift nailfold from nail plate. In advanced cases, lifting the nailfold will allow the evacuation of pus. The procedure may need to be performed under digital nerve block anesthesia. After drainage, continue warm water soaks for 20 minutes, 4-5 times a day. Cover affected areas with dry, sterile dressing or bandages. If abscessed: Gently “un-roof” pus-filled blister, or make small incision through the epidermis, and evacuate the pus. Avoid other incisions, unless otherwise instructed by on-line medical direction.	Same as Paronychia	This condition is usually self-limiting, resolving in 1-3 weeks. It is often recurrent; first occurrence is usually the worst. Avoid touching or scratching, as it is highly contagious to self and others. It easily spreads to other parts of the fingers, hand, eyes and body. Cover lesions or affected areas with dry, sterile dressing or bandages. Wash hands thoroughly after touching any lesions or affected areas. A secondary bacterial infection may develop.

	-After drainage, continue warm water soaks for 20 minutes, 4-5 times a day. -Cover affected areas with dry, sterile dressing or bandages. Consider antibiotics.		
Disposition	May require demobilization if pain or I/D required.	If patient presents with felon-like lesion and had been working with a high-pressure line (e.g., grease gun, grease line, hydraulic line) suspect injection of substance into digit. May cause widespread injection of substance into digit and hand. This is a surgical emergency that needs debridement and open irrigation in an operating room. Priority evacuation is required to avoid loss of digit or hand.	Demobilization depends on degree of incapacitation.

Hand Injuries

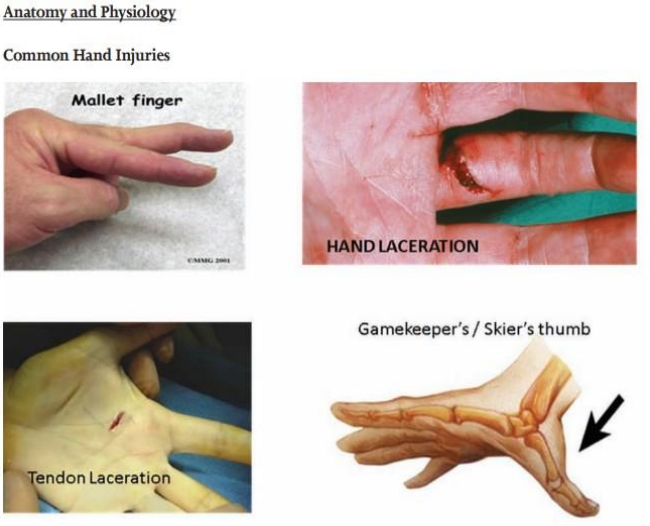
When examining any hand injury, always examine uninjured hand/digit and compare findings with injured hand or digit.

Mallet Finger is an avulsion of the extensor digitorum communis (EDC) tendon of the distal phalanx (DP), caused by blunt impact or sharp trauma. Pt. cannot extend DP.

Collateral Ligament Injury ("Game Keeper's Thumb" or "Skier's Thumb") is a torn collateral ligament, usually the ulnar collateral ligament (UCL) of the thumb, due to hyperextension of the digit. Pain, swelling, ecchymosis on injured side

Tendon lacerations are usually caused by penetrating trauma where the patient is unable to flex or extend the digit or wrist. A laceration may be visible when the hand is examined in the position it was held at time of injury.

Muscle tears and lacerations are usually caused by penetrating trauma, infrequently by blunt trauma. Thenar and hypothenar muscle lacerations are most significant



Management

Perform focused exam, including neurosensory, motor and vascular functions on all hand injuries, and then splint according to injury. Prepare to demobilize patient or transfer to higher level of care. Evacuation is usually not required for uncomplicated mallet finger.

Mallet Finger

- Splint with DP in extension, applied from just distal of proximal interphalangeal joint (PIPJ).

Collateral Ligament Injury

- Focused exam:
  - Thumb:
    - Exam with thumb completely flexed. Look for increased laxity of joint on injured side
    - Have patient push against your hand with thumb flexed. Look for increased pain on injured side
  - Digit: Have patient push against hand with injured digit. Look for increased pain and laxity of joint on injured side.
- Splint thumb in a spica cast where thumb is immobilized by a splint running the length of the forearm.

Tendon Laceration

- Splint extensor injuries in extension.
  - Finger: Splint all fingers and wrist in extension.
  - Thumb: Splint thumb in extension and wrist neutral.
- Splint flexor injuries in flexion.
  - Finger: Splint all fingers in flexion.
  - Thumb: Splint thumb in flexion and wrist neutral.
- Administer pain management medication.

Muscle Tears and Lacerations

- **Administer antibiotics for all open wounds.**

Follow-up

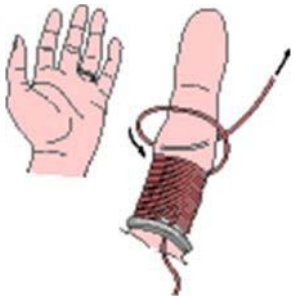
- Patients with mallet finger injury should follow up with team or personal physician upon return from an austere environment.

Other/Special Considerations

Immediately remove rings if swelling proximal or distal to ring. First try lubricant/soap. If unsuccessful, may try string method (see below), if unsuccessful, cut ring off.

Ring Removal: String Trick

Removing a Stuck Ring



1 Pass an end of fine string or dental floss under the ring. With the other end, begin tightly wrapping the string around the finger. Ensure that the string is wrapped evenly and smoothly past the lower knuckle.

2 With the end that was passed unde the ring, begin unwrapping the string the same direction. The ring should m over the string as the string is unwrapped. If the ring cannot be removed, unwrap the string and immediately seek urgent care.

https://www.youtube.com/watch?v=DrDROoJAF4I

Content reference: Harvard Health Publishing; Harvard Medical School https://www.health.harvard.edu/staying-healthy/emergencies-and-first-aid-removing-a-stuck-ring

FOOT CARE
Ingrown Toenails

(Dr. Chuck Wright and Dr. Howard Backer)

Definition: When the lateral margin of a nail, nearly always the big toe, digs into the skin causing erythema, pain, and swelling.

Cause: Usually from tight shoes and walking, causing the nail to be compressed against the skin. Incorrect trimming of the nail contributes. Some genetic nail formations predispose to this. Trauma to the toe can be a factor.

Aggravating conditions: Often, patients will round out the nail as it feels good to get the part of the nail out that is digging in the skin. But this frequently leaves a small point of nail at the edge, which pokes into the skin, making the problem worse.	

Treatment:

For mild conditions with some erythema and swelling – place cotton under the edge of the toenail that is digging in the skin or use dental floss to lift it up. This will not work if you cannot see the free the distal corner of the nail. Have the patient soak in warm water with/without Epson salts for 10-20 minutes three times a day. Topical antibiotics such as bacitracin or mupirocin (Bactroban) might be helpful for secondary infections. A recent study of 54 patients showed that oral antibiotics were no more effective than topical. Have the patient use shoes with a wide toe area or sandals.

Another option instead of cotton or dental floss is to make a gutter splint using iv tubing and splitting it lengthwise and putting it under the nail. The splint is then taped in place.

Once significant swelling has occurred, it is usually impossible to resolve the inflammation without removing the offending edge of the nail.

Another option instead of cotton or dental floss is to make a gutter splint using iv tubing and splitting it lengthwise and putting it under the nail. The splint is then taped in place.

1. Perform a digital block with 1% lidocaine <u>without</u> epinephrine. Even if one side of the nail is involved, it is best to numb the entire toe.
2. Use a straight or curved mosquito clamp to get under the edge of nail and lever the entire length of the lateral one fourth of the nail from under the cuticle.
3. Use scissors to remove one fourth to one third of the nail, including the proximal nail from under the eponychium.
4. Apply a non-stick gauze dressing.
5. Advise warm soaks as above.
6. Patient instructions include keeping the lateral cuticle pushed back as the nail grows back and making sure the corner is trimmed without a point. Regrowth will take at least 6 weeks.
7. The inflammation and swelling will resolve quickly and the patient may be able to resume activity within 1-2 days.

TRAUMA-GENERAL

Management of a major trauma requires the rescuer to consider many factors at once. Initial response and patient assessment are as follows:

Scene Safety

- Ensure safety of rescuers, non-injured members, and casualties.
- Assess scene for potential hazards (e.g., avalanches, falling rocks, dangerous animals)
- DO NOT let sense of urgency create an unsafe environment.

Triage (ACLS protocol)

- Airway: If patient is unresponsive, determine if patient is breathing by looking, listening, and feeling for air movement near mouth

Breathing

- If patient is not breathing, initiate ventilation through bag valve mask (BVM), or advanced airway. Administer supplemental oxygen, as needed.
- All open and/or sucking chest wounds should be treated by immediately applying an occlusive dressing to cover the defect.
    - Monitor for development of tension pneumothorax. Treat as needed.
    - In a patient with progressive respiratory distress after chest trauma:
        - Release the dressing in an open and/or sucking chest wound.
        - Decompress with needle thoracostomy.
        - Suspect needle clotting, if air is not expelled under pressure.
        - Be prepared to perform multiple needle decompression to resolve tension pneumothorax.

Circulation

- Control all sources of hemorrhage.
- Administer initial fluid bolus 0.9% Normal Saline or LR 250 ml IV/IO, up to a maximum total infusion of 2,000 ml. Titrate to maintain Systolic BP > 90 mm Hg.

Cervical Spine Immobilization

- Suspect C-spine injury if the MOI exerts a great force on the on the body or if there is soft-tissue damage to the head, neck, or face area due to trauma.
    - Patient needs to be immobilized using a backboard, c-collar, and/or other stabilization device

Environmental Control

- Patients who suffer a traumatic injury are extremely susceptible to hypothermia, especially when blood is lost. Hypothermia prevention should be a top priority.

Comprehensive patient survey-while awaiting transport to Trauma Center

- Perform a GCS evaluation
- Assess for neurologic abnormalities.
- Palpate scalp very closely for tenderness, depressions, and lacerations
- Thoroughly evaluate the body –
    - Palpate entire body, assessing for injury.
    - Check skin color, sweating, and perfusion.
    - Examine respiratory efforts.
    - Obtain vital signs and pulse oximetry, if available.
    - Measure core body temperature.

Other/Special Considerations

Hypothermia Prevention after Traumatic Injury

- Hypothermia often complicates the management of a patient with a traumatic injury, leading to decreased survival rates. Aggressive hypothermia prevention should be performed when any of the following conditions exist:
    - A patient suffers a traumatic injury
    - Ambient temperature
    - Any time Aeromedical evacuation is used
- Prevention Measures
    - Control bleeding as soon as possible.
    - Minimize exposure to the elements.

- Keep clothes and gear on or with patient, if possible.
  - Only strip clothes and protective gear from patient when necessary and for a minimal amount of time.
  - Replace wet clothing with dry as soon as possible.
- Keep the patient warm.
  - Actively and often dry any fluids from patient (e.g., blood, IV fluid, sweat, rain).
  - Wrap patient in rescue blanket, if available.
  - Put hypothermia prevention cap on patient's head to prevent heat loss, if available.
  - For fluid resuscitation, use fluid warming devices or pre-warmed fluids, if available
  - If core body temperature drops below the patient's normal body temperature, initiate active re-warming measures.
  - Wrap patient in multiple blankets with heat sources placed at the neck, armpits, groin, and at the palms of the hands. Always have clothing or material between the heat source and the skin, as hypothermic skin burns easily at low temperatures

FRACTURES

Management of a major trauma requires the rescuer to consider many factors at once. Initial response and patient assessment are as follows:

Scene Safety

- Ensure safety of rescuers, non-injured members, and casualties.
- Assess scene for potential hazards (e.g., avalanches, falling rocks, dangerous animals)
- DO NOT let sense of urgency create an unsafe environment.

Triage (ACLS protocol)

- Airway: If patient is unresponsive, determine if patient is breathing by looking, listening, and feeling for air movement near mouth

Breathing

- If patient is not breathing, initiate ventilation through bag valve mask (BVM), or advanced airway. Administer supplemental oxygen, as needed.
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  - Patient needs to be immobilized using a backboard, c-collar, and/or other stabilization device

Environmental Control

- Patients who suffer a traumatic injury are extremely susceptible to hypothermia, especially when blood is lost. Hypothermia prevention should be a top priority.

Comprehensive patient survey-while awaiting transport to Trauma Center

- Perform a GCS evaluation
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- Check skin color, sweating, and perfusion.
- Examine respiratory efforts.
- Obtain vital signs and pulse oximetry, if available.
- Measure core body temperature.

Other/Special Considerations

Hypothermia Prevention after Traumatic Injury

- Hypothermia often complicates the management of a patient with a traumatic injury, leading to decreased survival rates. Aggressive hypothermia prevention should be performed when any of the following conditions exist:
  - A patient suffers a traumatic injury
  - Ambient temperature
  - Any time Aeromedical evacuation is used
- Prevention Measures
  - Control bleeding as soon as possible.
  - Minimize exposure to the elements.
  - Keep clothes and gear on or with patient, if possible.
    - Only strip clothes and protective gear from patient when necessary and for a minimal amount of time.
    - Replace wet clothing with dry as soon as possible.
  - Keep the patient warm.
    - Actively and often dry any fluids from patient (e.g., blood, IV fluid, sweat, rain).
    - Wrap patient in rescue blanket, if available.
    - Put hypothermia prevention cap on patient's head to prevent heat loss, if available.
    - For fluid resuscitation, use fluid warming devices or pre-warmed fluids, if available
    - If core body temperature drops below the patient's normal body temperature, initiate active re-warming measures.
    - Wrap patient in multiple blankets with heat sources placed at the neck, armpits, groin, and at the palms of the hands. Always have clothing or material between the heat source and the skin, as hypothermic skin burns easily at low temperatures

How to Tape an Injured Ankle

1. Gather your materials

- You will need 1 1/2" athletic tape, quick-drying tape adhesive, two 2" x 2" non-adhesive pads (to prevent blistering), and pre-wrap.

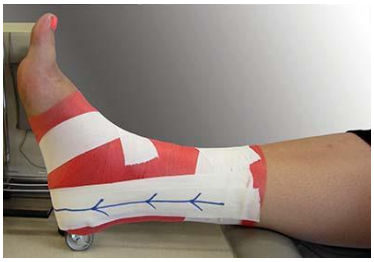
2. Prepare and pre-wrap the ankle.

Place one pad over the front of the ankle and the other over the back of the ankle. These pads will help prevent blisters. Then cover the foot and ankle with pre-wrap, starting from the arch of the foot and going up to the bottom of the calf muscle. Use the spray adhesive to help secure the pre-wrap. Apply the spray adhesive according to the manufacturer's instructions, and only apply as high as the pre-wrap will be placed.	

3. Place two anchors of athletic tape at either end of the pre-wrap.

4. Add "stirrups" of athletic tape.

Create one stirrup that starts on the inside of the ankle, goes under the heel, and attaches to the other side of the anchor of athletic tape. Add two more stirrups of athletic tape over the same area so you have 3 total.



5. Close up all areas of pre-wrap.

6. Create a figure 8 with the tape.

Starting on the inside, wrap the tape around the lower leg, then cross over the top of the ankle and continue to wrap under the arch.

7. Tape around the heel for a "heel lock."

You can alternate either inside or outside, but make sure to do two "heel locks" for each side.

8. Complete another figure 8.

9. Close up any open areas of tape.

If you continue to experience pain or other problems with your ankle, make an appointment with a foot and ankle orthopedic surgeon in your area.

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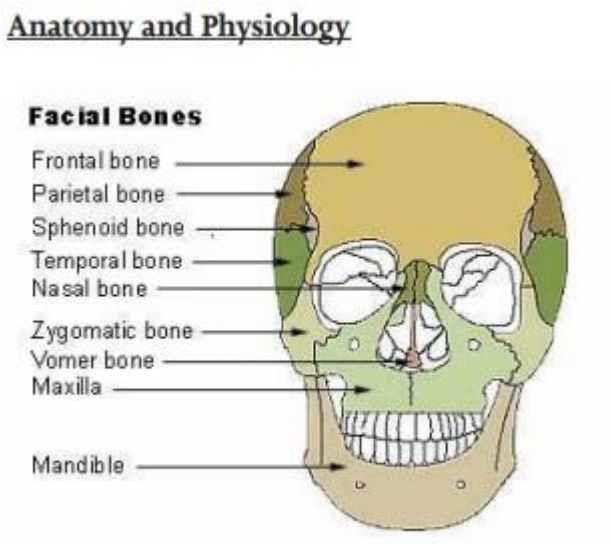
Facial Fractures

Facial fractures most frequently occur as a result of blunt force impact or penetrating trauma. Because of the mechanism of injury, all victims of face and head injuries should be assumed to have a brain or spinal injury, until proven otherwise. Arrange immediate transport to a higher level of care.



Signs and Symptoms
Orbital fracture

- Pain, tenderness, swelling, and bruising
- Peri-orbital (usually infraorbital) ecchymosis
- Extraocular motion (EOM) (may or may not be impaired, particularly with upward gaze)
- Impaired facial sensation, paresthesia/anesthesia to the orbit, cheek, maxilla and teeth (if nerve entrapment is present)
- Eye may extrude forward due to swelling of surrounding orbital tissue
- Hyphema

Management

- Secure and maintain airway.
  - Chin lift or jaw thrust maneuver
  - NP or OP airway
- Immobilize spine, if indicated.
  - If spinal injury is not suspected, have the patient sit up in a comfortable position so that his/her head is elevated at least 30-45 degrees.
- Apply cold/ice pack.

Orbital/Zygoma:

- Keep head elevated.
- Use cold/ice packs for pain and swelling, as needed.
- Nasal: Check for active bleeding
- Maxilla: Monitor and maintain airway. Assist ventilations with a bag valve mask (BVM), if necessary.
- Mandible: Stabilize fracture with a Barton's Dressing. Dressing must be quick-release.

Orbital:

- Examine for hyphema, or blood in the anterior chamber, of the eye.
- Evaluate and document visual acuity using small eye (Snelling) chart.
- Perform exam for EOM:
  - Have patient follow movement of finger while tracing an "H" in front of patient's field of view.
  - Observe the bilateral movement of the eyes. Document any lag in the affected eye.
  - A lag in motion, particularly with upward gaze, may indicate an entrapped extraocular ligament.
  - If eye movements are symmetrical bilaterally, the exam is normal; document as EOMI (extraocular movement intact).
- Test for bilateral facial sensation.
- Facial sensation may be impaired if nerve entrapment is present. This may include paresthesia or anesthesia to the orbit, cheek, maxilla, and teeth.
  - Significant swelling without fracture may also cause decreased or loss of sensation.
  - Check the maxilla and teeth to confirm anesthesia or paresthesia. These structures are more resistant to decreased sensation due to swelling.

Nasal:

- Inspect for septal hematoma.

Zygoma:

- Palpate zygomatic region for depression and/or deformities.
- Test for bilateral facial sensation.

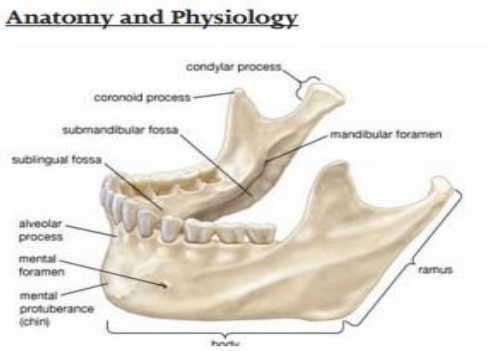
Maxilla:

- When fractured, the maxilla is often mobile on exam.

- If front teeth are intact and not loose, grasp and try to move maxilla forward. If no movement, significant fracture may not be present
- If front teeth move with alveolar ridge, it is probably a Le Forte Type I fracture.
- If front teeth move with anterior maxilla and nose, it is probably a Le Forte Type II fracture.
- If entire face below the eyebrows moves forward, it is probably a Le Forte Type III fracture.

Mandible:

- Check teeth for normal occlusion (bite); malocclusion suggests fracture.
  - If teeth are intact and not loose, perform tongue blade test:
    - Have patient bite a tongue blade on left and the right side of mandible.
    - If patient can break or leave teeth marks on tongue blade, the mandible is probably intact.
- Examine the external ear canal and the tympanic membrane for bleeding.
  - A fracture to the epicondyle of the mandible should be suspected if:
    - Bleeding is present in the ear canal
    - Blood is seen behind the tympanic membrane (may also indicate a basilar skull fracture)
    - Ecchymosis of the ventral floor of the ear canal is present
  - A small wound on the ventral floor of the ear canal indicates a possible open fracture. Administer antibiotics per local protocol.
- Perform injury-specific procedures-Mandible dislocation



Mandible

Mandible dislocation is a rare condition that can result from a traumatic or non-traumatic injury. Acute anterior, dislocations are the most common and result from extreme jaw opening (e.g., vomiting, seizure, muscle spasm, yawning, dystonic reaction)

Physical Exam

- Conduct and document a thorough exam of the head and neck, including the nervous system
  - Inspect for gingival lacerations, which may indicate open fracture.
  - Perform the “tongue blade test” to evaluate for mandible fracture.
  - DO NOT attempt reduction for any mandible fractures.
- Palpate the temporal mandibular joint (TMJ) for abnormalities.
  - Anterior dislocations result in a palpable depression at the TMJ.
  - Unilateral dislocations result in the deviation of the jaw away from the side of the dislocation.

Signs and Symptoms

- Uni- or bilateral pain at the TMJ
- Difficulty speaking or swallowing
- Malocclusion of teeth

Procedure

- Administer pain management medication.
- Assess for mandible or other facial fracture before attempting reduction.
- DO NOT attempt reduction for any mandible fractures.
- Position the patient sitting facing the provider.
- Using both hands, place thumbs on the patient’s inferior molars, as posteriorly as possible. (Pad thumbs to protect from biting.)
- Wrap remaining fingers around and under both sides of the mandible.

- Using both thumbs, apply downward and backward pressure on the mandible while slowly opening the mouth.
- With successful reduction, the mandible should move posteriorly and be able to close with reduced pain.

DISLOCATIONS

Three different joints of each finger or toe can become dislocated. The most commonly dislocated is the Proximal Interphalangeal Joint (PIP), followed by the Distal Interphalangeal Joint (DIP), followed by the Metacarpophalangeal Joint (MCP). The vast majority of these injuries are dorsal dislocations.

If deformed finger, attempt reduction, but first carefully document the direction of the deformity to guide further treatment.

Anatomy and Physiology

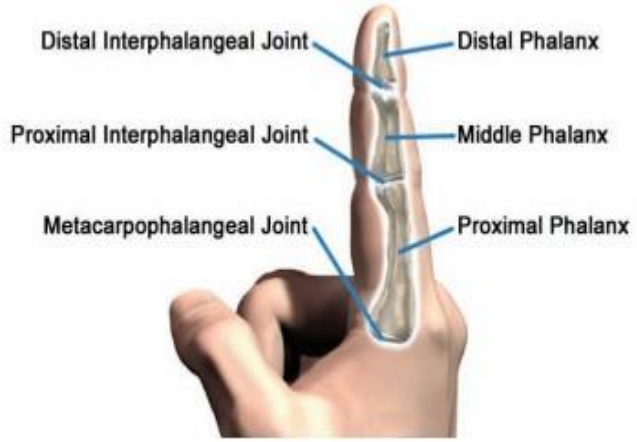
- A dislocated digit joint is usually obvious and easy to diagnose.
- The finger appears crooked and often bends at an abnormal angle.
- Specifically, the distal bone of the joint will be moved dorsal to its normal position

Signs and Symptoms

- Severe pain
- Unwillingness to move affected joint
- Significant swelling around the affected joint
- Crooked, deformity

Procedure

- Administer pain management medication.
- All joints proximal to the injured joint should be flexed, including the wrist.
- Grip the distal bone of the affected joint firmly.
- First the distal bone should be hyperextended.
- Then the base of the distal bone is pushed into flexion, maintaining contact with the proximal bone head.
- The joint usually reduces easily with a palpable and audible click.



Post-procedural Care

- For PIP and DIP dislocations, tape the injured finger to an adjacent finger ("buddy taping") to prevent hyperextension. Early motion is allowed.
- For MCP dislocations, apply a dorsal-volar splint, holding the joint at 90 degrees of flexion.

Extended Care

- Maintain splinting or taping until definitive medical care is reached.

Patella

A dislocated patella (kneecap) is often due to a twisting injury or a fall. When dislocated, the patella is abnormally shifted to the lateral aspect of the knee.

Physical Exam

If no other major knee deformity, assess for knee dislocation.
Check and record distal pulses and sensation, as neurovascular injury is possible.

Symptoms

Rapid swelling
Difficulty with knee flexion
Acute anterior knee pain

Procedure

- Document neurovascular status pre- and post-reduction.
- If a neurovascular injury is suspected:
  - DO NOT reduce without on-line medical direction.
  - Splint and evacuate the injury.
- Slowly straighten the knee.
- Apply gentle pressure to the lateral inferior aspect of the patella.
- Attempt to push it back up onto the distal femoral articular groove.
- Splint the joint in full extension.

Post-procedural Care

- Apply ice/cold pack for pain and swelling.
- Maintain splint and extension until definitive care is reached.
- Weight-bearing activity is allowed with the joint in a full extension splint.

Shoulder

The shoulder is the most commonly dislocated joint among adults. The head of the humerus is dislocated anteriorly and inferiorly in greater than 90% of injuries. The dislocation commonly occurs with arm wrenched back in the throwing position, especially if previous history of dislocation. Posterior dislocations commonly occur after a seizure.

Physical Exam

Visual exam:

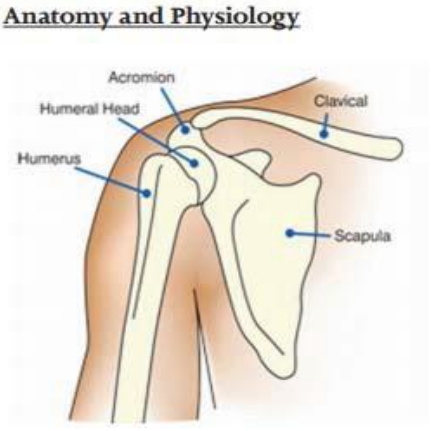
- Abnormally shaped shoulder
- Loss of deltoid contour

Physical exam:

- Humeral head palpable anteriorly
- Check and record distal pulses and sensation, as neurovascular injury is possible.

Signs and Symptoms

- Severe pain
- Deformed shoulder, loss of contour
- Unable to internally rotate arm (unable to touch the uninjured shoulder)



- Document neurovascular status pre- and post-reduction.
- If a neurovascular injury is suspected:
    - DO NOT reduce without on-line medical direction.
    - Splint and evacuate the injury.
- Administer pain management medication.
- The key to reduction is a slow and steady application of the technique with adequate pain medication and muscle relaxation. There are many techniques to reduce an anterior shoulder dislocation; this is the most common technique:
    - The patient should be lying on his/her back.
    - Wrap a towel or blanket around the patient's chest; have an assistant use it to apply counter traction.
    - Pull the arm, bent to a right angle at the elbow, steadily out to the side.
    - Apply axial traction to the arm. This may take 5-15 minutes.
    - Gently rotate the arm internally and externally while applying traction (baseball throwing position).
- With a successful reduction, the patient should experience an immediate decrease in pain.
- Have the patient touch the uninjured shoulder to confirm reduction.
- Apply a swath and sling.
- If unable to reduce the dislocation, apply a swath and sling, maintain pain control, and evacuate.

Post-procedural Care

- Document the patient's neurovascular status, as the axillary nerve is commonly injured.
- Maintain sling and swath until definitive care is reached.

Evacuation (transfer to a higher level of care)

- Conduct urgent evacuation for a suspected neurovascular injury.

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The simplest method is to have the patient supine and try to get him or her to relax as much as possible. The shoulder should then be externally rotated maximally with the elbow at the side and flexed at 90 degrees. Pressure can then be applied anteriorly to the humeral head, until reduction is achieved.

WOUND CARE

Wound Prep and Irrigation

The most common complication in wound management is infection. Contamination of the wound with foreign material or pathogenic bacteria from the patient's own skin greatly increases the risk of infection. Retained foreign bodies, such as glass fragments, small chips of rock or wood fragments on the surfaces of tissues, also increase the risk of complications. Prepping and irrigation of the wound significantly decrease these risks.

Indications

- If no life-threatening injury or condition requiring rapid evacuation exists, all wounds encountered in an austere environment should be prepped and irrigated.
    - This is critical for dirty or grossly contaminated wounds and all wounds incurred in a river, lake, or marine environment.
- For superficial wounds wound prep may be performed carefully without local anesthesia.
- Any significant laceration that may have dirt or foreign body will need local anesthesia for adequate cleansing.
- If the wound is to be sutured or stapled by an ALS provider, wound prep and irrigation should be performed after the administration of local anesthesia.

Procedure

Wound Prep

- Prepare the skin with dilute povidone-iodine solution, soap and water, or other disinfectant.
    - If these are not available, almost any mild, non-perfumed soap will work, as will regular water.

- If normal saline, sterile water or clean tap water is not available the water should be disinfected with iodine or chlorine or water brought to a boil. Allow the water to cool before using.
- DO NOT use alcohol, hydrogen peroxide, or other disinfecting agents, as they will further injure the exposed tissues.
- Scrub the skin immediately surrounding the wound, working outward several inches.
- DO NOT SCRUB THE EXPOSED TISSUE OF THE WOUND ITSELF, as this will further damage the injured tissues and any exposed vessels.
- Rinse away all traces of disinfectant with Normal Saline or water.

If wound is being prepared for closure with sutures or staples:

- Prepare the skin with povidone-iodine solution, soap and water, or other disinfectant.
- Provide local anesthesia prior to performing wound prep and irrigation.

Wound Irrigation

- Wound irrigation is best performed utilizing pressure.
    - Due to the potential risk of dislodging a blood clot and resulting hemorrhage, DO NOT IRRIGATE NECK WOUNDS. Gently wash away surgical scrub or soap with normal saline or disinfected water without pressure.
    - Irrigate skin and subcutaneous tissue ONLY. Be especially alert if the wound extends into the muscle layer.
- Use a 30 ml syringe with a 16 or 18 g catheter and splash shield
    - A 16 or 18 g needle may also be used, but be sure to securely attach it to the syringe so it does not dislodge when irrigation begins.
- Draw the irrigation solution into the syringe.
    - Normal Saline is the preferred solution, but water that has been disinfected and boiled can be used.
    - Allow water to cool before using.
- Hold the syringe a couple inches away from the wound, at approximately a 45degree angle, and flush the wound with the solution.
- Apply enough pressure to the syringe that the irrigation fluid comes out in a vigorous stream.
- Be sure to lay gauze sponges, towels, or other absorbent material around the area (but not near the wound) to catch the runoff.
- Forceps or hemostats may be used to further expose the wound for irrigation. Remove any easily-removed foreign bodies.
- The wound should be prepped and irrigated until clean.
    - For clean, wounds, a minimum of 100 ml of irrigation solution should be used.
    - For contaminated wounds, a minimum of 250 ml of irrigation solution should be used.
    - Continue irrigation until all foreign bodies, clotted blood, and loose tissue fragments have been removed.
- If wound is being prepared for closure with sutures or staples\
    - Prepare the skin with povidone-iodine solution, soap and water, or other disinfectant.
    - Provide local anesthesia prior to performing wound prep and irrigation.

Laceration Closure

Indications

- Wound closure is specifically indicated in the following circumstances:
    - A delay to definitive treatment of more than 6 hours
    - Wound is relatively clean and tidy, or can be rendered so
    - Important structures (e.g., tendons, joints, bones) are exposed and need skin coverage
    - To control bleeding
- Field closure of other appropriate wounds is advised for field operations lasting 6 hours or longer

Procedure

- Evaluate and document neurosensory, motor, and vascular functions.
- Ascertain tetanus immunization status.
    - Administer anti-tetanus prophylaxis (Tdap), if indicated and available.
- Administer prophylactic antibiotics, if indicated.
- Inform patient of needed procedure.

- Prepare the skin with povidone-iodine solution, soap and water, or other disinfectant.
- Provide local anesthesia.
- Perform wound prep and irrigation.
- Repeat motor function exam, assessing for ROM and strength.
    - If tendons are visible in the hand or foot
        - Have patient demonstrate the position of the hand or foot at the time of injury.
    - Repeat irrigation in this position
    - Observe the tendon while moving through ROM.
    - Look for laceration or other injury not obvious upon examination
    - Disturbing or manipulating the tendon is not necessary.
- Repeat irrigation.
- Identify tissue structures, skin alignment, and lines of tension.
- Place holding sutures for a large wound.
    - The suture holds skin in loose approximation.
    - It may be removed, if needed, as repair reaches one of the holding sutures.
- Begin the closure of wound with sutures.
- Approximate tissues as closely as possible to original position, using as few evenly-spaced sutures as possible.
    - Wound should not be closed so tightly that it cannot drain.
    - DO NOT leave big gaps of exposed tissue between sutures.
- Clean the wound with Normal Saline.
- Apply topical neomycin-free antibiotic ointment.
- Dress with non-adherent, light petrolatum-based dressing.
- Cover with dry, sterile dressing.
    - Bandage further for anatomic location, as needed.
    - Facial and scalp wounds do not generally require a bandage, unless
        - Significant swelling is present or likely to occur (apply pressure dressing).
        - Significant bleeding was present.
- Re-assess neurosensory, motor, and vascular functions.

Guidelines for Suturing Lacerations By ALS Personnel

Wound Location	Type of Suture	Suture Material	Suture Size	Needle Size
Scalp	Simple Loop	Polypropylene or Nylon	4-0 or 3-0	PS-2 or equivalent
Face and Neck	Simple Loop	Polypropylene or Nylon	6-0 or 5-0	P-3 or equivalent
Lips	Simple Loop	Polypropylene, Nylon, or Silk	6-0 or 5-0	P-3 or equivalent
Intraoral	Simple Loop	Plain Gut or Silk	5-0 or 4-0	P-3 or equivalent
Hand (Palmar)	Simple Loop	Polypropylene or Nylon	5-0	P-3 or equivalent
Hand (Dorsal)	Simple Loop	Polypropylene or Nylon	5-0	PS-2 or equivalent
Torso	Vertical Mattress	Polypropylene or Nylon	4-0 or 3-0	PS-2 or equivalent
Lower Extremity	Vertical Mattress	Polypropylene or Nylon	4-0 or 3-0	PS-2 or equivalent

Evacuation

Urgent	Patients with life-threatening underlying or concomitant injury, or significant loss of blood Patients that becomes septic or condition rapidly deteriorates for any reason
Priority	Patients with wounds closed to control bleeding or with significant vascular compromise
Routine	Patients with an open fracture, joint injury, tendon injury or grossly contaminated wound, decreased ROM or sensation; or if signs of infection develop in follow-up
Convenience	Other patients with extensive muscle involvement
Not required	Minor wounds without evidence of sensory, motor or vascular compromise

Extended Care

- Advise the patient to keep the wound clean and dry for 48 hours.
  - The patient may shower daily after 48 hours.
  - NO swimming or water activities until 24 hours after suture removal.
- Re-assess neurosensory, motor and vascular functions for any changes in digital and extremity wounds.
- Reconfirm the absence of other injuries.

Management of Complications

- DO NOT close wounds that cannot be rendered clean by prep and irrigation.
  - Dress with lightly saline-soaked or dry, sterile dressing.
  - Conduct priority evacuation.
- Infection is most common (e.g., cellulitis, purulent drainage, lymphangitis, fever).
  - Administer antibiotics according to local protocol.
  - Conduct routine evacuation.
- Loss of motor function or sensation
  - Apply a splint, if not previously done.
  - Conduct routine evacuation

Other/Special Considerations

Puncture, gunshot, and stab wounds

- 9 -1-1 or ALS unit on site for evacuation
- DO NOT close these wounds.
- Open fractures, joint space involvement, and bone, cartilage, or tendon lacerations
  - Apply a splint, if not previously done.
  - Administer antibiotics according to local protocol.

Animal bites

- DO NOT close primate and human bites.

- Administer antibiotics according to local protocol.
    - First choice is often Augmentin 875mg BID
- Consider need for rabies prophylaxis.

Follow-up

- Perform wound check and dressing change 12-24 hours after procedure and then again in 24-48 hours, unless bleeding or foul-smelling drainage appears.
- The patient should follow-up with a personal or team physician or return immediately if signs and symptoms of infection develop (e.g., redness, swelling, pus, red streaks, fever and/or general malaise), if there is loss of sensation or movement, or a cold, pale digit/extremity.
- Have patient seek suture removal, as follows:
    - Face and neck: 5 days
    - Other wounds not under tension: 7-10 days
    - Wounds under tension (over joints): 10-14 days
    - Suture removal can be performed in field during prolonged operations.
- For best healing and cosmetic results, advise patient to:
    - Avoid exposing wound to sunlight for the next 6 months
    - Keep the wound taped for 2 weeks
        - Not practical for hair-bearing wounds (e.g., scalp)

HM: Aug 2020: Content excerpted from: AEMS Field Guide

SECTION 10

Environmental Issues

ENVENOMATION

Arthropods

- The most significant envenomation is from a black widow spider. Only the female is dangerous, identified by the red spot (usually hourglass-shaped) on its abdomen.
- The brown recluse spider is a nondescript spider with a brown/purplish violin-shaped figure on its back. This spider can be found generally in the Southern United States but has been identified as far north as Wisconsin.
- Minor envenomation are from bees, wasps, hornets, and scorpions. The only poisonous scorpion species is the Bark Scorpion, indigenous to Arizona. Antivenin is only used for severe envenomation.

Signs and Symptoms

Black Widow Spider

- Mild prick sensation followed by severe muscle cramps and pain
- Pain progresses to chest, back, abdomen, and extremities
- Occasionally decreased blood pressure, respiratory distress, paralysis, and seizures
- Rarely fatal

Brown Recluse (Fiddleback) spider (onset of symptoms up to 12 hours after envenomation)

- Usually painless
- Ulcerative necrotic wound, in severe form
- Rare systemic reaction may occur (1-2 days after envenomation)
- Rarely fatal

Scorpions

- Significant localized pain and edema
- Little to no systemic effects
- May cause anaphylaxis or milder allergic reactions

Bees

- Familiar injury, localized pain, erythema and swelling (may be severe)
- May develop malaise, nausea, vomiting, fever
- May cause anaphylaxis or milder allergic reactions

Management

Black widow spider, brown recluse spider, and scorpion bites

- Administer pain management medications.
- Apply ice/cold packs.
- Monitor for development of systemic symptoms and/or anaphylaxis.

Bee stings

- Scrape away stinger.
- Apply ice/cold packs.
- Apply baking soda to help ease discomfort.
    - Mix 1/4 of a cup of aluminum-free **baking soda** with 1 to 2 teaspoons of water together, and then apply the paste to the area that was **stung**. Reapply every 15 minutes or so. It's believed that **baking soda** can **help** neutralize the acidity of the **sting** and mitigate inflammation.
- Consider oral antihistamines for systemic symptoms.

Evacuation (transfer to a higher level of care)

- Urgent evacuation is required for envenomation's exhibiting systemic symptoms.
- Evacuation is not required for envenomation, limited to localized symptoms that respond to treatment.

Maintain supportive and symptom-based treatment.
Monitor wound site for tissue necrosis and advancing infection.

Reptiles

- **Snake bites** can cause damage to body tissue at the location of the bite and, if venomous, can cause both local tissue injury and systemic reactions. A snakebite, whether from a venomous or non-venomous snake, may cause severe fright reactions (e.g., nausea, tachycardia, diaphoresis), which may be difficult to distinguish from systemic manifestations of envenomation.
- **Non -venomous** snakebites cause only local injury, usually pain and 2-4 rows of scratches from the snake's upper jaw at the bite site (horseshoe-shaped tooth marks).
- **Venomous** snakebites cause local tissue damage and possible systemic injury. 20-30% of venomous snakebites result in no envenomation (dry bite). It is important for Austere medical providers to be familiar with the identification, range, and habits of indigenous venomous reptiles.
- **Gila "Monster"** Lizards are also known for bites with a vise-like grip that delivers poison through its saliva. It is the only venomous lizard species found in the United States (southwestern).

Signs and Symptoms

- Characteristic fang marks often present; may be in association with other teeth marks; may appear as single puncture.
    - "U" or horseshoe-shaped bite pattern may suggest non-venomous snake bite
- Pain, tenderness, redness, swelling rapidly develop at site and may worsen progressively
- Venom may be neurotoxin, hemotoxin or both.
    - Neurologic symptoms suggest systemic neurotoxin absorption
    - Coagulopathies indicate probable hemotoxin absorption and may be indicated by persistent bleeding from fang marks, venipuncture sites, gingival tissue, or gastrointestinal tract

Crotalid Envenomation (Rattlesnakes, Copperheads and Water Moccasins)

- Pain, tenderness, redness, swelling rapidly develop at site and progressing up the extremity within the next several hours
- Neurotoxic and hemotoxic
    - Systemic reaction possible
    - Bleeding and ecchymosis may occur at sites distant from bite, indicating coagulopathy from hemotoxins

Elapid Envenomation (Coral Snakes)

- Primarily neurotoxic
    - Local signs of envenomation (e.g., pain, swelling, redness, ecchymosis) may be minimal
    - Onset of systemic symptoms (e.g., numbness, muscle paralysis, headache, other neurologic symptoms) may be delayed by several hours
    - The absence of immediate symptoms is NOT evidence of a harmless bite.

Heloderma Envenomation (Gila "Monster" Lizards)

- Neurotoxic
- Pain, tenderness (can last for weeks), redness, swelling rapidly develop at site and may worsen progressively
- Dizziness and generalized weakness
- Rarely fatal

Degree of Envenomation Present	
Envenomation	**Characteristics**
None	Fang marks, but no local or systemic reactions
Minimal	Fang marks, local swelling and pain, but no systemic reactions
Moderate	Fang marks, swelling progressing beyond bite site, systemic symptoms present (e.g., nausea, vomiting, parasthesias, or hypotension)
Severe	Fang marks, marked swelling of entire extremity, subcutaneous ecchymosis, severe symptoms, coagulopathy

Management
General

→ DO NOT make incisions. → DO NOT use suction by mouth or device. → DO NOT use constricting bands or tourniquets. → DO NOT apply electrical shocks. → DO NOT use cold or ice. → DO NOT use alcohol or aspirin.

The best first aid tool for symptomatic envenomation is to transport to the nearest emergency department.

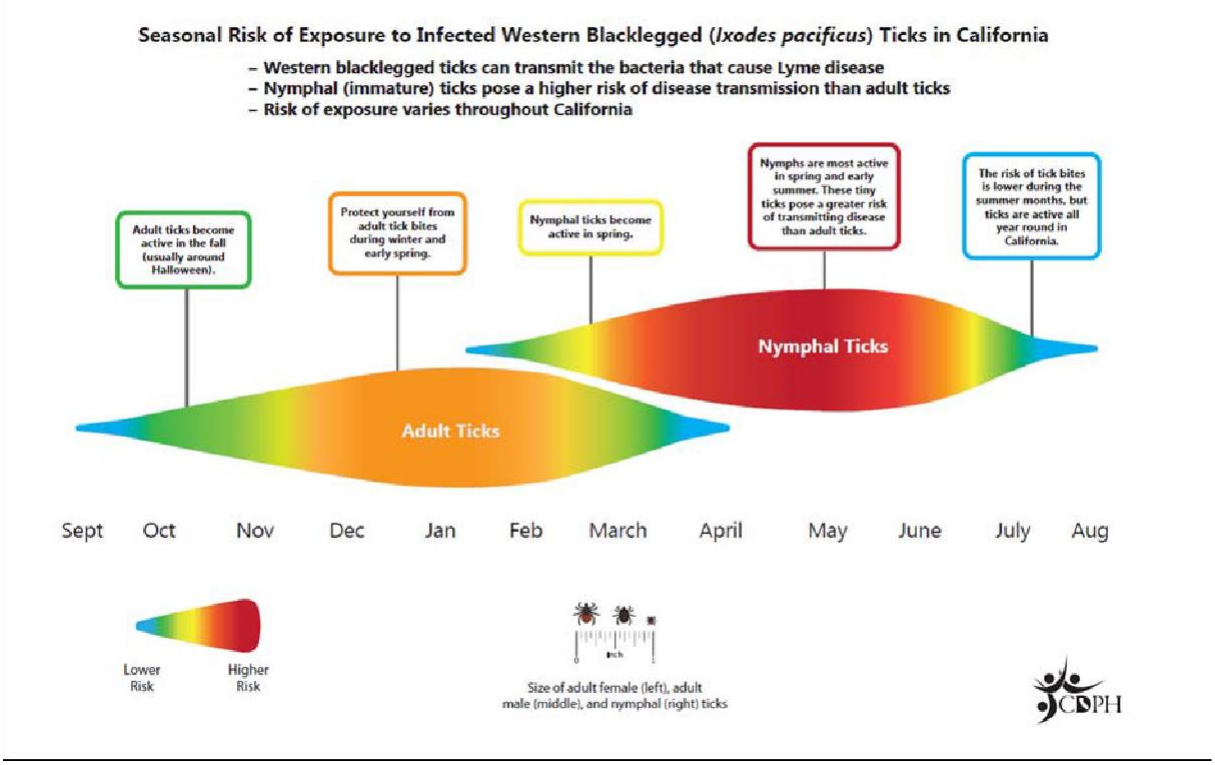
- Field use of antivenin is NOT currently recommended.
- Rapid evacuation is the key to successful treatment.
- Assess ABCs, provide cardiopulmonary support as needed ACLS.
- Obtain description or identification of snake or lizard, or photograph the snake or lizard using a cell phone or camera, if possible.
- Note patient's blood type on patient's chart, if known.
- Swab bite site with moistened gauze sponges or irrigate with normal saline (or clean water) to remove any venom on skin.
- Remove any retained teeth, fangs with forceps.
- If elapid (Coral Snake) bite: Apply compression bandage starting at the bite and wrapping along the length of the arm or leg and back again to the bite.
- DO NOT apply compression bandage for Crotalid or Heloderma species bites.
- Splint extremity bites and keep the extremity in a neutral position, level with the heart.
- It is better to have the victim slowly walk out to a road if that will be faster than summoning a helicopter.

- If the patient is in respiratory distress from venom-induced paralysis, administer atropine 0.5-1.0 mg IV/IO.
    - If patient improves within 3-10 minutes, continue atropine 0.5 – 1.0 mg IV/IO q2-3h and neostigmine 0.5-2.0 mg by slow IV/IO, over 4 minutes. Repeat as needed, up to total maximum dose of 5.0 mg.
- Administer antibiotics ONLY for extended scene care of a necrotic snakebite wound according to local protocol.

VECTOR-BORNE ILLNESSES

This protocol concerns common vector-borne illnesses that occur in the United States.
Key Issues:

- Tick removal
- Any febrile illness with rash – isolate and evacuate
- Identification of Lyme rash or symptoms
- Use of effective insect repellants for mosquitos and ticks



Epidemiology of vector-borne illnesses:

Disease	Organism	Type	Vector(s)
Lyme Disease	Borrelia Burgdorffei	Spirochete Bacteria	Deer tick (Ixodes scapilaris) Western black-legged tick (Ixodes pacificus)
Rocky Mountain Spotted Fever (RMSF)	Rickettsia Rickettsii	Spirochete Bacteria	Rocky Mountain wood tick (Dermacentor andersoni) American dog tick (Dermacentor variabilis) Other species have also been linked
Colorado Tick Fever	Colorado Tick Fever Virus (CTFV)	Virus	Rocky mountain wood tick (Dermacentor andersoni)
Tick Paralysis	None, only tick-borne illness not caused by a pathogenic organism	N/A	Rocky Mountain wood tick (Dermacentor andersoni) American dog tick (Dermacentor variabilis) Many other species have also been linked
Giardia	Giardia lamblia	Flagellate Protozoan	Beavers, deer, rodents, cattle, sheep, dogs, and cats Transmitted via contaminated water source
West Nile Virus (WNV)	West Nile Virus	Flavivirus	Mosquitoes (birds are alternate hosts)

Lyme Disease

- Lyme Disease is a multi-stage illness.
- The tick may have to be attached ≥ 24 hours before transmitting infection. The longer the tick is attached, the greater the chance of infection.
- Onset of symptoms: Average 7-10 days after exposure (range 3-32 days).

Rocky Mountain Spotted Fever

- Onset of symptoms: Average 2-14 days after exposure; the more rapid onset indicates a greater severity in illness.
- Most common in the southeastern-south central United States

Colorado Tick Fever

- Onset of symptoms: Average 3-6 days after exposure (range 0-14 days)

Tick Paralysis

- This condition is the only tick-borne illness that is not caused by a pathogenic organism.
- Onset of symptoms: Average 5-6 days, after female tick attaches to human host
- Diagnosis confirmed if the patient rapidly improves after tick removal.

Giardia

- In the United States, this condition is most commonly transmitted to humans via contaminated water sources.
- Onset of symptoms: Average 1-3 weeks after exposure; typical onset is sub-acute, slow and subtle, although an abrupt onset is also possible.
- Symptoms may wax and wane over course of illness

West Nile Virus

- Onset of symptoms: Average 3-6 days after exposure (range 0-14 days).
- Symptoms are typically mild and persist for a few days to several weeks.
- WNV should always be considered in persons with unexplained encephalitis and meningitis, particularly if patient age is > 45 years.

Signs and Symptoms

Lyme Disease

STAGE 1

- Erythema migraines (bulls-eye rash) (20-50% of patients)
- An expanding, ring shaped, erythematous rash
- Borders typically flat
- Central red macule or papule, partially clearing over time
- Outer borders remain bright red
- Central lesion may be intensely red and indurated, vesicular or necrotic
- Many variations to pattern, including multiple rings
- Average Size: 6” in diameter (15 cm)
- Average Range: 1-27” (3-68 cm)
- Fades 28 days without treatment (range 1-14 weeks) or within a few days with antibiotic treatment

Other Symptoms (usually mild)

- Headache
- Fever
- Chills
- Regional lymphadenopathy
- Fatigue, malaise
- Neck stiffness
- Arthralgia, myalgia

STAGE 2 (Onset a few days or weeks after bite)

- Multiple smaller annular lesions may develop (20-50% of patients)
    - May occur anywhere EXCEPT palms or soles
    - Less common: Malar rash
    - Rare: Urticaria
- Low grade, intermittent fever
- Tender regional adenopathy associated with erythema migrans
- Generalized adenopathy
- Splenomegaly (LUQ of ABD)

Other symptoms

- Meningeal irritation: Stiff neck with decreased flexion (difficulty touching chin to chest)
- Mild encephalopathy (e.g., drowsiness, insomnia, memory disturbances, mood swings, dizziness,
- decreased balance and clumsiness)

- Dysesthesia of the scalp
- Musculoskeletal (e.g., arthralgia; migratory pain in tendons, bursae and bones; generalized stiffness; severe cramping pain, particularly in the calves, thighs and back)
- Hepatitis-like symptoms with diffuse abdominal pain
- Conjunctivitis (10-15% of patients)
- Neurologic (e.g., headache, facial nerve palsy, stiff neck, one-sided paralysis)
- Cardiac: AV block, complete heart block (4-10% of patients)
- Arthritis (60% of untreated patients)

Rocky Mountain Spotted Fever

- Fever > 102° F (39° C)
- Chills
- Headache
- Myalgia
- Rash (Completely absent in 10-15% of patients [“Spotless Fever”])
    - Rash often absent on initial presentation
    - Develops first on wrists, hands, ankles, and feet
    - Spreads outward to cover most of body, INCLUDING palms and soles
    - Lesions are initially small (2.0-5.0 mm) pink macules that blanch with pressure
    - After 2-3 days, lesions become fixed and darker red, papular, and ultimately petechial in appearance
    - Hemorrhagic lesions may form large areas of ecchymosis

Other symptoms

- ABD pain, nausea, vomiting, diarrhea
- Confusion/disorientation, altered mental status, coma
- Conjunctivitis
- Peripheral edema
- Seizures possible during initial phase, rarely persist
- Cough, chest pain, dyspnea, URI-like symptoms
- In most fulminant form, vascular collapse and death may occur within 3-6 days of onset

Colorado Tick Fever

- Abrupt onset fever
    - Fever typically biphasic or “saddleback” (50% of patients)
    - 2-3 days of fever, followed by 1-2 days of remission, then an additional 2-3 days of fever
- Rash (frequently absent; macular or maculopapular rash in 5-12% of patients)

Other symptoms

- ABD pain, nausea, vomiting, diarrhea
- Anorexia
- Ocular pain (e.g., photophobia)

Tick Paralysis

(Rare in humans and usually occurs in children under the age of 10, mostly girls)

- Restlessness, Irritability, Neurological (progressive symptoms)
- Loss of coordination, ataxia
- Hand and feet paralysis
- Ascending, symmetrical and flaccid paralysis (24-48 hours, after symptom onset)
- Loss of deep tendon reflexes (DTR)
- May be followed by general weakness, with bulbar and respiratory paralysis
- Facial paralysis (associated with ticks found behind the ear)

Giardia

- Fever
- Nausea and vomiting infrequent EXCEPT during initial onset
- Early satiety
- Stools become mushy and malodorous
- No blood or pus in stools
- Watery diarrhea, alternating with soft stools and even constipation

- Middle and upper ABD cramping, intense acid indigestion, sulfurous belching, malodorous flatus, bowel distention
- May develop into a chronic condition with malabsorption and resulting weight loss
- Abrupt onset form is associated with explosive, watery diarrhea, abdominal cramps, malodorous flatus, vomiting, fever and malaise for 3-4 days, then transitions to more common, sub-acute syndrome.

West Nile Virus (WNV) (80% of patients are asymptomatic)

- Fever, headache, body aches (flu-like)
- Nausea, vomiting
- Lymphadenopathy
- Rash
    - May be maculopapular or morbilliform, involving the neck, trunk, arms, or legs
- Severe neuroinvasive WNV (develops in 0.5% of patients, with a median age of > 45) (Symptoms may last for weeks, and neurologic effects may be permanent.)
- High fever
- Headache
- Neck stiffness, muscle weakness, ataxia
- Confusion/disorientation, altered mental status, coma
- Convulsions
- Numbness, paralysis, tremors
- Vision loss, diplopia

Management

Lyme Disease

- Remove the tick by grasping closely to the skin surface with tweezers, forceps or hemostat and pull out with steady, gentle pressure.
    - Do not use petroleum jelly, fingernail polish, a hot match, heat, gasoline, oil, alcohol, etc., as this may force the tick to regurgitate pathogens and/or toxins into wound.
    - If the tick's head is still embedded in the skin, remove it with a needle, as you would a splinter.
- Watch the bite site with soap and water.
- Administer antibiotics according to local protocol.
- Consider prophylaxis following tick bite:
    - Doxycycline 200 mg PO x1 dose, following removal of the tick.

Rocky Mountain Spotted Fever

- Remove the tick by grasping closely to the skin surface with tweezers, forceps or hemostat and pull out with steady, gentle pressure.
    - Do not use petroleum jelly, fingernail polish, a hot match, heat, gasoline, oil, alcohol, etc., as this may force the tick to regurgitate pathogens and/or toxins into wound.
    - If the tick's head is still embedded in the skin, remove it with a needle, as you would a splinter.
- Watch the bite site with soap and water.
- Administer antibiotics according to local protocol.
    - Continue antibiotics for 48 hours, after patient becomes afebrile.
    - The patient must have a minimum antibiotics course of 5-7 days.

Colorado Tick Fever

- Remove the tick by grasping closely to the skin surface with tweezers, forceps or hemostat and pull out with steady, gentle pressure.
    - Do not use petroleum jelly, fingernail polish, a hot match, heat, gasoline, oil, alcohol, etc., as this may force the tick to regurgitate pathogens and/or toxins into wound.
    - If the tick's head is still embedded in the skin, remove it with a needle, as you would a splinter.
- Watch the bite site with soap and water.
- No specific treatment available. Provide supportive, symptom-based treatment.
    - Administer antibiotics according to local protocol.

Tick Paralysis

- Remove the tick by grasping closely to the skin surface with tweezers, forceps or hemostat and pull out with steady, gentle pressure.
    - Do not use petroleum jelly, fingernail polish, a hot match, heat, gasoline, oil, alcohol, etc., as this may force the tick to regurgitate pathogens and/or toxins into wound.

    - If the tick's head is still embedded in the skin, remove it with a needle, as you would a splinter.
- Watch the bite site with soap and water.
- The patient's condition should improve within a few hours following tick removal. Treatment is otherwise supportive and symptom-based.

Giardia

- Three classes of drugs are currently in use. (No drug is effective in all cases.)
    - Nitromidazoles (metronidazole, tinidazole)
    - Nitrofuran derivatives (furazolidone)
    - Acridine compounds (quinacrine)
- Treat initially with metronidazole 250 mg PO tid for 7-10 days.
    - If possible, delay treatment in pregnant females until after delivery, due to risks to the fetus associated with all three drug classes. Contact on-line medical direction for further guidance.

West Nile Virus

- No specific treatment is available
- Provide supportive, symptom-based treatment.

Evacuation (transfer to a higher level of care)

- Conduct priority evacuation required for patients with neurologic symptoms and/or suspected encephalitis.
- Conduct routine evacuation for West Nile Virus in patients > 45 years.
- Conduct convenience evacuation for patients with Giardia, Lyme Disease, RMSF, and Colorado Tick Fever.
- Evacuation is usually not necessary for mild cases of West Nile Virus or Tick Paralysis that resolves with treatment.

Extended Care

- Continue antibiotics as directed.
- Monitor for worsening symptoms.

Follow-up

- All patients that are not evacuated should see their team or personal physician upon return from an austere environment.

Other/Special Considerations

Mosquitoes (bite prevention)

- Clothing
    - Long shirts, pants, and socks; tuck pants in socks or boots.
    - Tightly woven fabrics are best (e.g., nylon)
    - Looser fitting clothing makes it difficult for mosquitoes to bite through the clothing to the skin
    - Meshed screen hats (covers face and neck) and gloves are useful in areas with significant mosquito populations.
    - Exposed skin should be protected by insect repellent.
        - DEET is the primary insect repellent used in the United States.
        - Concentrations vary from 5-35%.
        - 20% DEET is generally effective for most areas.
        - Use 30-35% DEET for adults in areas with malaria risk.
        - For children, use a concentration of 10% or less.
        - Avoid DEET-containing repellents for infants < 6 months.
        - DO NOT use sunscreens containing DEET.
            - Sunscreens need to be applied more frequently than DEET.
            - When using both a sunscreen and DEET, first apply the sunscreen, then wait 30 minutes before applying DEET.
        - Other repellents for use on exposed skin may be effective in repelling mosquitoes, but do not afford a similar duration of protection
    - Permethrin is a natural compound with insect repellent properties that may last for weeks with proper application. It is used to treat clothing, bedding, and mosquito netting. It has NOT been approved for direct use on skin.

Chiggers (Eutrombicula alfreddugesi)

- Although they do not carry vector-borne disease, its bites may be extensive in number and induce an allergic reaction.
    - Symptoms include:
        - Pruritus, often highly intense
        - Small, hemorrhagic petechiae, usually accompanied by intense erythema, within 24 hours after onset
        - May develop blisters, purplish skin discoloration, swelling of feet and ankles
    - Treatment is symptom-based.
        - Topical antipruritic agents, such as 1% phenol in calamine lotion
        - Topical corticosteroid cream (hydrocortisone 1%)
        - Oral antihistamines
    - Evacuation is usually not required.

SECTION 11

Base Camp Isolation Tent Operations

(Dr. Chuck Wright)

The normal layout for a Fire Camp is 5 tents: 1 for medical, 1 for overflow patients, 1 for isolation, and 2 for Cal-Mat people to sleep.

The isolation tent has evolved in this era of COVID. In the past we used to keep people overnight for a few days until they were feeling better. This mainly applied to patients with nausea and vomiting and to limit the possibility of infecting others, usually due to Norovirus.

Now, with Covid, the isolation tent is to put people who have failed the outdoor screening for temperature or symptoms. Once in the isolation tent, the provider makes an assessment as to the risk of COVID and a determination as to whether COVID testing is indicated.

The isolation tent is a place to examine patients and to hold them for a short period (less than 24 hours) to get test results or to send them out for testing and/or demobilize.

The isolation tent needs to have ALL the supplies to examine the patient as you do not want to leave the tent until after your exam is done. Items needed in the tent are:

PPE – gowns, masks, gloves, face shields, trashcan, hand sanitizer. This is all usually right outside the entrance to the tent.
Exam equipment – stethoscope, flashlight, tongue blades, pulse oximeter, bp cuff, thermometer, clip board, patient exam forms, pens. None of these items should leave the tent as they are considered contaminated once inside.

Patient equipment – Cot, blankets, bottled water, gastroenteritis snacks (applesauce, crackers, bananas, etc.) emesis basin, overhead light, electrical extension to plug in phone.

COVID testing items should be kept outside the tent and brought in one at a time for each patient so that they do not get contaminated. If the testing is sent out, you will need a cooler and some ice.

A handwashing station and a bathroom (porta-potty) need to be identified for the isolation patient and caution tape needs to be put around them so that no one else uses them.

One technique that has worked well for me, is to arrange with the MED-L to isolate people overnight in a hotel room if they have mild symptoms. I have had firefighters come in with nausea and vomiting only, cough only, fatigue only, sore throat only, etc. and I wanted to see if it was smoke exposure or exhaustion. I evaluate them the next day and the majority by then are asymptomatic and can return to the line. No need to do COVID testing and get everyone excited. Of course, if they have more symptoms or associated symptoms (loss of smell or taste, short of breath, etc.) then I test right away.

SECTION 12

Self-Care During & After Deployment

CAL-MAT PACKING LIST

Since we vary in disciplines, what may be essential to one group may not necessarily apply to the other. Some of you may have missed the presentations on “Ready” and “Go” bags in our earlier meetings, and we will revisit this once again in an upcoming meeting. Please keep in mind that you should not pack more than you can physically carry, as we will not always have the luxury of using wheels.

Essential Items: Recommended for a two-week deployment

__Cal-Mat Trousers x2 __Cal-Mat T-Shirt x3 __Socks x7 __Underwear x7 __Bra __Wool Cap x1 __Rain Gear x1 __T-Shirt/Tank Top x4 __Sweat Suit with Hoodie x1 __Jeans x1 __Shorts x1 __Long Sleeve Shirt x1 __Gloves Work (Leather) __MRE x3	__Multi-Purpose Soap __Detergent __Fabric Softener x1pkg __Towel x2 __Wash Cloth/Loofah x2 __Lotion x1 __Baby Wipes __Deodorant __Sunscreen x1 __Lip Balm __Mosquito Repellent x1 __Foot Powder x1 __Toilet Paper x1 __Trash Bags Lg/Sm __Duct Tape	__Personal First Aid Kit x1 __Life Straw x1 __All Weather Lantern x1 __Flashlight x1 __Multi Plug Extension Cord __Multi Tool __Batteries for Devices __Rope __Tile GPS Tracking Device __Sleeping Bag x1 __Protective Eyewear x1 __Flask for Water x1 __Padlock

Optional Items:

__Sleeping Pad x1 __Inflatable Pillow x1 __Pajamas x1 __Extra Belt x1 __Duct Tape x1 __Water Proof Inner Bags __Fire Blanket x1 __Ziploc Bags __Rubber Bands __Personal Survival Kit __Twist Ties __Bungee Cords	__Shampoo and Conditioner __She Wee (F) __Urinal (M) __Head Bands __Dry Shampoo __Hair Products __Hand Sanitizer __Hand and Foot Warmers __Safety Pins __Tent	**Medical Personnel:** __Mini Med Kit __Pulse Oximeter __Loupes __Trauma Shears __B/P Cuff __Otoscope __N95 __Hemostat __Stethoscope

Essential Items: Recommend for initial travel to destination via airline

__Cal-Mat T-Shirt x1 __Underwear x1 __Socks x1 __Shorts x1 __T-Shirt x1 __Sleeping Mask x1 __Gloves x1pr __Poncho x1 __Toiletries x1 Bag __Cal-Mat Jacket or Hoodie __Patches for Uniform __Flip Flops x1	__Cal-Mat ID __Driver's License __Copies of Medical License __Medication Card __Emergency Contact Info __Reusable Utensils __Note Pad __Pen/Pencil __Snacks/Protein Bars	__Head Lamp __USB Cables 15ft/3ft __Device Chargers __Portable Solar Charger __Tracker __Sunglasses __Extra Glasses __Ear Plugs __Kleenex __Sewing Kit __Hand Towel __Sharpie

Optional Items: Medical Personnel

__Nitrile Gloves __Nasacort __Electrolyte Tablets __OTC Pain Relief __Pen Light	__Medical Tape __Antihistamine Cream __Steroid Cream __OTC Antihistamine	__Bacitracin __Alcohol Swabs __Bandages __Saline Eye Drops	

Disclaimer: Please note all items noted in this document are recommendations only as CAL-MAT does not endorse any specific product.

Provider Suggestions

HOW TO COPE WITH STRESS & BUILD RESILIENCE DURING THE COVID-19 PANDEMIC

Providing care to others during the COVID-19 pandemic can lead to stress, anxiety, fear, and other strong emotions. How you cope with these emotions can affect your well-being, the care you give to others while doing your job, and the well-being of the people you care about outside of work. During this pandemic, it is critical that you recognize what stress looks like, take steps to build your resilience and cope with stress, and know where to go if you need help.

Recognize the symptoms of stress you may be experiencing.

- Feeling irritation, anger, or denial
- Feeling uncertain, nervous, or anxious
- Feeling helpless or powerless
- Lacking motivation
- Feeling tired, overwhelmed, or burned out
- Feeling sad or depressed
- Having trouble sleeping
- Having trouble concentrating

Know about stress-related disorders, compassion fatigue, and burnout:

Experiencing or witnessing life threatening or traumatic events impacts everyone differently. In some circumstances, the distress can be managed successfully to reduce associated negative health and behavioral outcomes. In other cases, some people may experience clinically significant distress or impairment, such as acute stress disorder, post-traumatic stress disorder (PTSD)external icon, or secondary traumatic stress (also known as vicarious traumatization). Compassion fatigue and burnout may also result from chronic workplace stress and exposure to traumatic events during the COVID-19 pandemic.

Tips to cope and enhance your resilience.

- Communicate with your coworkers, team leader, and employees about job stress.
    - Talk openly about how the pandemic is affecting your work.
    - Identify factors that cause stress and work together to identify solutions.
    - Ask about how to access mental health resources in your workplace.
- Remind yourself that everyone is in an unusual situation with limited resources.
- Identify and accept those things which you do not have control over.
- Recognize that you are performing a crucial role in fighting this pandemic and that you are doing the best you can with the resources available.
- Increase your sense of control by keeping a consistent daily routine when possible — ideally one that is similar to your schedule before the pandemic.
    - Try to get adequate sleep.
    - Make time to eat healthy meals.
    - Take breaks during your shift to rest, stretch, or check in with supportive colleagues, coworkers, friends and family.
- When away from work, get exercise when you can. Spend time outdoors either being physically activity or relaxing. Do things you enjoy during non-work hours.
- Take breaks from watching, reading, or listening to news stories, including social media. Hearing about the pandemic repeatedly can be upsetting and mentally exhausting, especially since you work with people directly affected by the virus.

- If you feel you may be misusing alcohol or other drugs (including prescriptions), ask for help.
- Engage in mindfulness techniques , such as breathing exercises and meditation.
- If you are being treated for a mental health condition, continue with your treatment and talk to your provider if you experience new or worsening symptoms.

Know where to go if you need help.

If you're concerned that you or someone in your household may harm themselves or someone else:

- National Suicide Prevention Lifeline
    - Toll-free number 1-800-273-TALK (1-800-273-8255)
    - The online Lifeline Crisis is free and confidential. You'll be connected to a skilled, trained counselor in your area.
- National Domestic Violence Hotline
    - Call 1-800-799-7233 and TTY 1-800-787-3224

If you feel overwhelmed with emotions like sadness, depression, or anxiety:

- Disaster Distress Helpline
    - Call 1-800-985-5990 or text TalkWithUs to 66746

If you need to find treatment or mental health providers in your area:

- Substance Abuse and Mental Health Services Administration (SAMHSA) Find Treatment

If you want more information on coping with stress and building resilience:

- CDC Coronavirus (COVID-19) Stress and Coping
- NIOSH Safety and Health Information for Healthcare Workers
- Substance Abuse and Mental Health Services Administration (SAMHSA) Disaster Preparedness
- The Joint Commission Quick Safety: Developing resilience to combat nurse burnout

Reference: www.cdc.gov

SECTION 13

Shelter Deployment-What to Expect

Shelter medicine is challenging but very rewarding. Evacuees have lost or may lose much of what they have on this Earth so, caring for this subset of the population is unique.

CAL-MAT can be deployed to provide Shelter Support for 2 reasons:

- To set up, staff, direct & provide care at a shelter's Medical Aid Station
- To set up, staff and provide care for a shelter's Special Needs Population

How Much Help is Needed?
There are many agencies that might set up and oversee operational aspects of an evacuee shelter during a disaster. Once a shelter designates a need for medical support of any kind, EMSA sends a strike team to determine actual need and then deciphers the right mix of CAL-MAT team members to deploy. When the disaster is large enough, many shelters are set up and several CAL-MAT teams are requested.

What components make up an evacuee shelter?
Shelter locations can be as varied as the number of communities they serve. Existing structures such as churches, fairgrounds, schools, city buildings, theaters can all be converted into shelter space. Each one will be different in its own way. There will be specific areas set up for various purposes: to cook and serve food, sleeping dorms, bathroom and personal hygiene areas, community support services, small "stores" where donated items can be dispensed, day activity areas, medical aid station and isolation areas. Some shelters are designated as small or large animal refuges.

What is the difference between regular Shelter Support and Special Needs Shelter Support?
The medical aid station at a General Evacuee Shelter is there to provide clinic-type support for minor medical problems, injuries, and providing medicine and/or writing prescriptions for lost medications. Clinical staffing mix is usually a PA or NP, RNs, Medics and EMTs. There is limited ability to handle more sophisticated problems. So, EMS is utilized for transport to an ED if needed. This area is usually staffed 24 hours a day to address any problems that might arise.

Special Needs Shelters are requested when the medical needs of the evacuee shelter outstrip the ability of their clinic-type medical aid station to serve their clients. As you might imagine, it's not just healthy people that are displaced when disaster strikes. People with chronic medical conditions that are managed well in their own home setting with their usual support around them, can destabilize in a shelter environment. Add the stressors of communal living, increased mobility concerns & smoke-filled environment and you can see how this population would be at special risk for exacerbation of their problems.

EMSA has deployed multi-disciplinary CAL-MAT teams to set up and manage care for this fragile evacuee population. Once at the site, leaders will interface with shelter administrators to determine which clients at their shelter have been identified as needing more help than they can provide. CAL-MAT staff will perform a needs assessment on these individuals to determine if their needs can be met at the level of care a Special Needs Shelter can provide.

Once identified, these clients will be transported from the general shelter to the accommodations set up for them in the Special Needs Shelter (SNS) and will be cared for there until they can return home or their needs outstrip the capability of the SNS and they require EMS transport.

How is a Special Needs Shelter set up?

This shelter has many of the same concerns of a general shelter. There must be designated areas for: (this list is not inclusive)

Sleeping dorms	Isolation ability	Restrooms	Showers/personal hygiene
Oxygen	Medical supply storage	Medications storage/med prep	Communications
Security	Equipment storage	Cache staging	Food storage/serving
Staff berthing	Separate shower area for staff	Patient assessment	Medical documentation & record management
Technology	Charging stations	General assistance	Behavioral health needs

What do daily operations at the Special Needs Shelter look like?
After determining what the initial patient load will be, there will be lots of activity to set up and prepare to receive patients.

- Medical support team/ logistics staff will oversee the unloading of equipment and areas like those listed above will be set up.
- Patient care areas will be marked off with adequate space between cots.
- Privacy curtains will be wheeled in.
- The main supply cache will be set up.
- The medical station will be populated with tables, chairs, supply and med storage and prep areas, documentation area, forms cache etc.
- Plans and procedures will be made for isolation areas if needed and capacity to surge will be assessed.
- An evacuation plan will be devised.
- Much labeling and sign-making will take place.
- A communications board will be displayed in the medical aid station to share all necessary operational information and contacts.

It is amazing, how many components of this type of organization are required for success. Be knowledgeable of your direct reporting hierarchy and emergency contact numbers. ***Note:** special consideration will be given to COVID awareness.

Team leaders will determine which skill mix is required for care. Day shift and Night shift teams will be assigned. Patient care assignments will be made for each shift, based on factors such as acuity, isolation needs, frequency of treatments/ meds, neediness of patient and family. Division of labor will be determined based on skill mix: MD, RN, medic/EMT. You will be provided a mentor if this is your first deployment in this setting.

Once the operational area has been set up, it is a good idea to perform a trial run walk through to ensure that the set up will be effective. Note that this set up will be in a state of constant re-improvement and change until the optimal conditions have been reached.

Now you are on shift
The medical command of the Special Needs Shelter will be a physician. When this leader is not on duty, an alternate lead will be assigned to make decisions and criteria will be set to contact/wake lead staff, if indicated.

Patient assignments will be made for the oncoming shift. Walking rounds will be led by the off-going shift and take place with all representatives of all staff areas so that each component of the operation will be aware of the status and potential needs of the population.

Typical issues experienced by Special Needs population:

Respiratory (O2 dependent, med nebs, smoke exposure, mech ventilation/trachs, pneumonia, asthma, CA)	**Diabetes** (frequent BS testing, insulin treatment, associated organ function)	**Renal Failure** (HTN, peritoneal dialysis, transport for dialysis treatments)
Cardiac failure (meds, diet concerns re: over load, fluid intake, monitoring)	**Psychiatric** (PTSD exacerbations, stress reactions, acting out, lonely/depressed persons)	**Infectious concerns** (MRSA in wounds/trach/tubes, GI outbreak/Norovirus, URI outbreak, flu outbreak, COVID-19, parasites). Isolate and plan for hygiene and food in these areas.
Skin issues (worsened by thin cot mattresses, incontinence, need for turning)	**Orthopedic** (arthritis, recent fractures/sprains, decreased ROM, chronic pain) injuries from evacuation from incident.	**Neurological** (CVA, TBI, congenital)
Immunosuppressed (CA, HIV, transplant patients, autoimmune disorders)	**Mobility issues** (hoyer lift, 2 man assist, WC, obesity, blind patients in a new environment)	**Prescriptions** (determining prescribed meds, getting prescriptions filled/picked up.
Medical equipment (specific needs such as g-tube feeding, colostomy bags, etc.)		

Self-Care
As you might imagine, when any group of people are thrust together suddenly in a disaster setting, personality conflicts will arise. You will be under more stress than usual and will not agree with all decisions that are made. It is key to keep communication factual, neutral and respectful. Everyone will have their own idea about how things should run but knowing your command structure and who you can go to with concerns is essential.

You are a proven professional, but you will be working long hours, using your brain power and muscle power to adapt and overcome many, many times a day. Serving others is no doubt, rewarding, but it can also drain your own reserves. Do not undercut the effect this takes on you. Take time to rest, eat and renew yourself when you can. Support others who appear to be weary. Realize that everyone on your team is there because they want to be of help.

Demobilization
Once all your special need patients have be dispatched home or another appropriate location, everyone on the team will clean up and pack up the supplies and equipment at the direction of the medical support team. A souvenir photo will be taken of the team that worked so hard toward this common goal.
HM 08.26.2020

ANNEX A:

California Emergency Medical Services Authority
& California Department of Forestry and Fire Protection Protocol for
SARSCoV-2 Coronavirus Testing at Incident Base Camps
Rev. 10-6-2020
Effective: 10/7/2020

GOALS:

1. To rapidly identify SARS CoV-2 Coronavirus (COVID-19) positive personnel at California Department of Forestry and Fire Protection (CAL FIRE) Incident Base Camps (IBC)

2. To allow as many personnel to continue safely working and prevent further infection of COVID-19 among incident personnel

PRINCIPLES:

1. The COVID-19 testing program contained herein, is administered by the Emergency Medical Services Authority (EMSA) California Medical Assistance Team (CAL-MAT), and in coordination with the CAL FIRE Emergency Medical Services (EMS) Program. EMSA is contracted through an Interagency Agreement (IAA) to provide medical services to CAL FIRE incidents with a CAL-MAT.

2. COVID-19 testing will be available at the incident CAL-MAT location and will include antigen tests (*Abbott Binex Now*) and may include a molecular (*Abbott ID Now*) tests

3. Following the direction of the IC or designee, the incident Medical Unit Leader (MEDL) will coordinate testing with the CAL-MAT team

4. This process/protocol is only applicable when a CAL-MAT has been deployed by IAA to support a CAL FIRE managed incident

5. In coordination with the Incident Commander (IC), or their designee, the CAL-MAT Medical Director or the CAL FIRE EMS Medical Consultant may choose to authorize additional testing on a case by case basis and/or operational need

6. The testing program will be coordinated with local/county public health agencies

7. COVID-19 testing may be revoked at any time by the Medical Director of EMSA or CAL FIRE Medical

COVID-19 TEST SPECIFICS:

1. There are currently two COVID-19 tests available for IBC sites, the Antigen Test (*Abbott Binex Now*) and the Molecular (*Abbott ID Now*) tests. Due to the nationwide shortage of available molecular tests and testing machines, the CAL-MAT may not be able to provide both types of COVID-19 tests

2. Antigen testing is useful to confirm positive cases, but a negative antigen test does not rule out the possibility of infection
3. All negative antigen tests are considered a “presumptive negative.”
4. Symptomatic individuals with a “presumptive negative” antigen test shall be additionally tested with the molecular test, if available. If a molecular test is not available, the MEDL should contact local county health to ascertain Polymerase Chain Reaction (PCR) testing availability.
5. A positive antigen test is considered a “true” positive and shall be assumed an individual is infected with COVID-19.

TESTING CRITERIA:

Testing is limited ***only*** to those individuals who meet testing criteria**.** Criteria for testing is as follows:

1. Personnel showing signs and/or symptoms of COVID-19, determined to be at risk of infection
2. Personnel identified as to have had prolonged exposure to a known COVID-19 positive incident personnel. This is defined as sharing lodging (same room), or riding in same enclosed vehicle

PROTOCOL FOR IDENTIFIED POSSIBLE COVID-19 INFECTED INCIDENT PERSONNEL:

Possible COVID-19 Positive Incident Personnel:
If personnel on the incident develop COVID-19 symptoms, they shall:

- Immediately isolate themselves and don a surgical mask, and
- Notify their incident supervisor

INCIDENT SUPERVISORS:
If an individual under supervision on the incident reports and/or shows any signs of COVID-19, they shall:

- Notify the MEDL
- Follow CAL FIRE or home agency notification policy(ies) and/or protocol(s)
- Ensure the symptomatic individual is isolated and dons a surgical mask

MEDL:

- Shall notify the Logistic Section Chief (LSC) and the Safety Officer (SOF)
- Shall coordinate with the CAL-MAT and determine whether the individual needs testing and/or proceed with further medical evaluation **
- Ensure notification to IC or designee is made and protocol is followed per local county health when positive testing results occur
- If molecular testing is unavailable at the Incident Base, ascertain availability of PCR testing through local county health
- Notify the IC or designee and CAL FIRE EMS Program Deputy Chief and Medical Consultant of any COVID-19 positive personnel

CAL-MAT:

- Ensure coordination with MEDL and IC or their designee for all possible COVID-19 related infected incident personnel
- Ensure a copy of the California Department of Public Health issued "Clinical and Public Health Laboratory License" is displayed in the testing area
- Ensure notifications to MEDL or IC designated contact occurs prior to notifying local county health of any positive COVID-19 test result(s).
- Notify the MEDL or IC designee, of all testing results and/or if a proposed isolation/quarantine is recommended

LSC, SOF and LOFR:

- Ensure proper notifications are made to IC or the designated contact

IC:

- Ensure IMT LSC, SOF, LOFR and MEDL understand COVID-19 protocol(s) and reporting chain
- Ensure the CAL-MAT is briefed on IMT process/protocol for possible exposure/infection protocol(s)
- Ensure isolation and release/demobilization of incident personnel is completed
- Ensure proper notifications are made

If there is a medical condition that is felt to be an immediate or emergency complaint, proceed immediately to the incident CAL-MAT location for treatment and evaluation, and the CAL-MAT personnel will notify the MEDL

TESTING PROCESS/PROTOCOL FOR SYMPTOMATIC PERSONNEL:
If testing is determined necessary by both the IC or designee and the CAL-MAT and the patient agrees, ensure the following:

1. All personnel identified for COVID-19 testing shall be isolated and don a surgical mask
2. Ensure tested incident personnel receive the appropriate testing fact sheets:
    a. Antigen Testing: “Fact Sheet for Patients: BinaxNOW™ COVID-19 Ag Card” and/or
    b. Molecular Testing: “Fact Sheet for Patients: ID NOW COVID-19”
3. The CAL-MAT will document the testing on the appropriate form:
    a. “SARS-CoV-2 (COVID-19) Antigen Test Results Notification Form”, and/or
    b. “SARS-CoV-2 (COVID-19) Molecular Test Results Notification Form”, and
    c. All required county/local public heath reporting form(s)
4. The CAL MAT will ensure all patient care records and/or documentation is kept in secure location

Signs and Symptoms of COVID-19

Positive Antigen Testing

If the incident personnel tested has a positive antigen test result:

1. The COVID-19 positive incident personnel must continue to isolate themselves per the standard COVID-19 guidelines, and will be released and demobilized from the incident
2. The process for releasing/demobilizing COVID-19 positive incident personnel from an incident shall be determined by the IC or their designee
3. The COVID-19 positive incident personnel shall receive a copy of their test result on the antigen testing results form
4. A copy of the notification form and any required county/local public health form(s) shall be given to the tested incident personnel for record retention and for notification to their CAL FIRE Unit or Home Agency Representative
5. All COVID-19 positive incident personnel shall follow their departmental or home agency reporting policy(ies) and/or protocol(s) related to COVID-19/Exposure/Infectious Disease, et. al. CAL FIRE personnel must immediately notify their home Unit of any positive test result
6. All originals will be kept with the CAL-MAT Patient Care Record
7. The CAL-MAT shall also provide copies to the MEDL

“Presumptive Negative” Antigen Testing

1. If the tested incident personnel have a negative antigen test result, but the symptoms are concerning for possible COVID-19 infection by the CAL-MAT physician, notification will be made to the MEDL, and molecular testing will proceed, if available
2. The symptomatic incident personnel will be removed from assignment and remain isolated and be retested with an antigen, molecular or PCR test within 24 hours
3. If molecular tests are unavailable at the IBC, the MEDL will contact local county health to ascertain availability of molecular testing. If molecular testing is available, the MEDL, in coordination with the CAL-MAT will ensure isolation protocol is maintained
4. Tested incident personnel shall remain isolated
5. Tested incident personnel shall receive all fact sheets and copies of testing forms
6. The IC or designee will coordinate to release and demobilize the symptomatic “presumptive negative” incident personnel
7. All originals will be kept with the CAL-MAT Patient Care Record
8. All demobilized “presumptive negative” personnel shall be given all COVID related test results and directed to follow all CAL FIRE or home agency notification guidelines, policy (ies), and/or protocols related to COVID-19/Exposure/Infectious Disease, et. al.

9. The CAL-MAT shall also provide copies to the MEDL

Positive Molecular Test Results

1. Positive molecular test results shall follow the procedure for positive antigen test results above.
2. The IC or designee will coordinate with the CAL-MAT to ensure local county public health laboratory notification and documentation requirements are met
3. The IC or designee will coordinate to release and demobilize the COVID-19 positive incident personnel and submit required documentation per CAL FIRE guidelines, policy (ies), and/or protocol(s)
4. All demobilized personnel shall be given all COVID related test results and directed to follow all CAL FIRE OR home agency notification guidelines, policy (ies), and/or protocols related to COVID-19/Exposure/Infectious Disease, et. al. CAL FIRE employees must immediately notify their home Unit of any positive test result
5. The MEDL with coordinate with the IC or designee and CAL-MAT to perform contact tracing to identify exposed incident personnel

Negative Molecular Test Results

1. A copy of the notification form and any required county/local public health form(s) shall be given to the tested incident personnel for record retention and for notification to their CAL FIRE Unit or Home Agency Representative
2. All originals will be kept with the CAL-MAT Patient Care Record
3. The CAL-MAT shall provide copies to the MEDL
4. Symptomatic incident personnel who test negative should be released and demobilized per local county health guidelines/orders
5. Release and demobilization will occur using the IMT/ICS process

EXPOSURE TO SYMPTOMATIC PERSONNEL WITH POSITIVE COVID-19 TEST RESULTS

If an incident personnel tests positive, contract tracing shall be initiated by the IC Designee to identify close contact personnel. Close contact personnel are defined as:

1. Any incident personnel sharing lodging accommodations (sharing same room only) with the COVID-19 positive incident personnel
2. Anyone who rode in an enclosed vehicle with the COVID-19 positive incident personnel

Individuals considered “close contacts” shall be removed from current assignment, isolated, and tested using the antigen test.

Any “close contact” identified incident personnel that tests negative shall receive the molecular test. If both the antigen and molecular tests are negative, the exposed incident personnel may return to their assignment per the IC or designee. The test-negative personnel, if still assigned to incident, shall continue to wear a surgical mask where appropriate and return for a repeat an antigen test in 72 hours. If the third test is negative, the personnel should continue self-monitoring and return for evaluation if COVID-19 related signs or symptoms present.

If a close contact identified incident personnel is released/demobilized from incident prior to the repeat testing being performed, the IC or designee will notify the CAL FIRE Unit or Home Agency Representative regarding follow-up testing.

Remember to ensure personnel anonymity during any communications with staff and limit the communication to the fact of potential exposure without describing specific health information or other private information

MOLECULAR TESTING UNAVAILABLE OR RESULTS OF SYMPTOMATIC PERSONNEL UNKNOWN

If molecular testing is unavailable on the incident and cannot be obtained expediently through local county public health, the CAL-MAT will coordinate with the IC or designee to determine if exposed incident personnel should be released and demobilized from the incident to their CAL FIRE Unit or Home Agency.

The IC or designee may choose to release and demobilize the resource or coordinate with stakeholder(s) to facilitate replacement personnel.

If operational considerations do not allow for release and demobilization of the exposed incident personnel, the IC, or their designee, shall consult with both the CAL FIRE EMS Program Deputy Chief and the EMS Medical Consultant prior to local county public health once testing results are known regarding the management of exposed incident personnel still assigned to the incident.

NON-INFECTIOUS/SUSPECTED FIRELINE RELATED SYMPTOMS

Symptoms typical of fireline activity or smoke exposure (mild sore/dry throat, fatigue, headache), or possible non-infectious origin identified by the CAL-MAT shall ensure:

1. The MEDL is notified of a possible illness and identified for further monitoring by CAL-MAT
2. The incident personnel will be under self-isolated and re-evaluated in 24 hours for clearance or further testing as deemed appropriate by CAL-MAT and the MEDL
3. The MEDL will notify the LSC and SOF of monitored incident personnel
4. For those that return to CAL-MAT with resolved symptoms, once re-evaluation occurs, CAL-MAT will make a recommendation for disposition of incident personnel and provide to the IC or designee for review
5. During re-evaluation, if the symptoms persist or worsen, CAL-MAT will initiate testing in coordination with the IC or designee and follow the "Symptomatic Personnel" protocol above.
6. If release and demobilization of incident personnel is determined, the IC or designee will make proper notifications to all identified stakeholders
7. Copies of patient care records shall be given to the incident personnel for record retention and for notification per their employer guidelines, policy (ies), protocol(s), and/or local public health officer orders

LOCAL NOTIFICATION PROTOCOL:

If molecular testing is available at the incident, CAL-MAT shall work in conjunction with the IC or designee to determine notification process/protocol for possible positive test results to local county public health.

If no molecular tests are available at the incident site, the IC or designee shall contact local public health to:

1. Notify local public health of antigen testing in lieu of molecular testing,
2. Discuss availability of PCR testing and once submitted, the expected time frame for results
3. The possibility of expedited or priority PCR testing for the incident
4. Set up process/protocol for submitting PCR test samples and obtaining results, and
5. Determine notification process/protocol of possible positive tests and/or other relevant issues

The IC or designee shall notify the county/local public health department and coordinate with the MEDL and CAL-MAT to provide all required paperwork regarding testing.

REFUSAL OF TESTING:

1. If an incident personnel shows signs and/or symptoms of COVID-19 refuses testing, the CAL-MAT shall notify the MEDL. Symptomatic personnel should be demobilized as per the IC or designee.
2. If those incident personnel identified as “close contacts” refuse testing, CAL-MAT shall notify the MEDL for determination of the incident personnel by the IC or their designee. If operationally feasible, the safest option to prevent possible spread at the Incident Base is to demobilize affected personnel.

10/13/2020

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GLOSSARY:

ANTIGEN TESTING	Abbott Binex Now
CAL FIRE	California Department of Forestry and Fire Protection
CAL-MAT	California Medical Assistance Team
COVID-19	SARS-CoV-2 Coronavirus
EMS	Emergency Medical Services
EMSA	California Emergency Medical Services Authority
IAA	Interagency Agreement
IBC	Incident Base Camp
IC	Incident Commander
IMT	Incident Management Team
MEDL	Incident Medical Unit Leader
MOLECULAR TESTING	Abbott ID Now
PCR	Polymerase Chain Reaction Test
SOF	Incident Safety Officer

CAL-MAT SARS-CoV-2 (COVID-19) Antigen Testing Patient Log Sheet

	Test Kit		Patient Name/Result		
Date	Lot #	Expiration	(Circle One)		Personnel Initials
				POSITIVE NEGATIVE	
				POSITIVE NEGATIVE	
				POSITIVE NEGATIVE	
				POSITIVE NEGATIVE	
				POSITIVE NEGATIVE	
				POSITIVE NEGATIVE	
				POSITIVE NEGATIVE NEGATIVE	

SARS CoV-2 (COVID-19) ANTIGEN TEST RESULTS NOTIFICATION FORM

Date of Test:_____

Name:	**DOB:**	**Phone:**
Home Unit Or Agency:	**Residence Address:**	
Incident Name & Number:	**County and/or State of Residence:**	

You were tested today for the SARS-CoV-2 (COVID-19) antigen using the BinaxNOW™ COVID-19 Ag Card ™ System authorized under an Food and Drug Administration (FDA) Emergency Use Authorization (EUA). Antigen tests are designed to detect proteins from the virus that causes COVID-19 in respiratory specimens, for example nasal swabs. The results of your test today and the necessary actions to follow are below:

☐ **POSITIVE:**

You have tested positive for the SARS-CoV-2 antigen, you are considered infected with COVID-19. By law, your results will be communicated to the County Health Officer. Arrangements for you to be released from the incident and demobilize from the incident will be made. You are considered infectious to other people and are remain in isolation and when you arrive home to remain in isolation. Please avoid contact with other people (minimum of six (6) feet and always wear face masks when in the same room or outdoors within six (6) feet of others including household members).

Isolation will end when:

1. At least 10 days have passed since the first test and there has been no fever and improving symptoms for at least 24 hours, or
2. 10 days from the date of your test if you have no symptoms (see test date above)

You are also responsible for notifying your CAL FIRE Unit, home agency and/or local county health of your test results, per employer policy(ies), protocol(s) guidelines, and/or local public health officer orders.

☐ **NEGATIVE:**

You have tested negative for the SARS-CoV-2 antigen that causes COVID-19. This result is not definitive, a "presumptive negative" and does not rule out COVID-19. You may need to get a different type of test called a molecular or polymerase chain reaction (PCR) test. Instructions will be given on how to obtain the molecular or PCR test. Please ensure that you take precautions including wearing a surgical mask and maintain a six (6) foot distance from anyone else around you. If you are having any signs or symptoms that are consistent with a COVID-19 infection, you may be monitored and re-tested. This may result in release and demobilization from the incident for return to your CAL FIRE Unit or home agency for isolation. Should you be demobilized, you are to follow CAL FIRE, home agency policy(ies), protocol(s), guidelines, and/or local public health officer orders

CAL-MAT Physician / NP / Provider **Signature**

FDA Disclaimers:
This test has not been FDA cleared or approved. This test has been authorized by FDA under an EUA for use by authorized laboratories. This test has been authorized only for detection of proteins from SARS-CoV-2, not for any other viruses or pathogens, and, this test is only authorized for the duration of the declaration that circumstances exist justifying the authorization or emergency use of in vitro diagnostics for detection and/or diagnosis of COVID-19 under Section 564(b)(1) of the Act, 21 U.S.C. § 360bbb-3(b)(1), unless the authorization is terminated or revoked sooner.

REV. 09-23-20

SARS CoV-2 (COVID-19) MOLECULAR TEST RESULTS NOTIFICATION FORM

Date of Test:_____

Name:	**DOB:**	**Phone:**
Home Unit Or Agency:	**Residence Address:**	
Incident Name & Number:	**County and/or State of Residence:**	

You were tested today for the SARS-CoV-2 (COVID-19) antigen using the Abbott ID Now Molecular Assay System authorized under the Food and Drug Administration (FDA) Emergency Use Authorization (EUA). Molecular tests are designed to detect proteins from the virus that causes COVID-19 in respiratory specimens, for example nasal swabs. The results of your test today and the necessary actions to follow are below:

☐ **POSITIVE:**
You have tested positive for the SARS-CoV-2 and are considered infected with COVID-19.
By law, your results will be communicated to the County Health Officer. Arrangements for you to be released from the incident and leave the incident base camp will be made. You are considered infectious to other people and are required to **stay home in isolation**. Please avoid contact with other people (minimum of six (6) feet and always wear face masks when in the same room or outdoors within six (6) feet of others, including household members). Isolation will end when:

3. At least 10 days have passed since the first test and there has been no fever and improving symptoms for at least 24 hours, or
4. 10 days from the date of your test if you have no symptoms (see test date above)

You are also responsible for notifying your CAL FIRE Unit, home agency and/or local county health of your test results, per employer policy(ies), protocol(s) guidelines, and/or local public health officer orders.

☐ **NEGATIVE:**
You have tested negative for the SARS-CoV-2 virus that causes COVID-19. The negative result may be a false negative, particularly if you were tested soon after exposure. You may need repeat testing within 72 hours. You will be notified if additional testing needs performed. Please ensure precautions are taken, including wearing a surgical mask and maintaining a
six (6) foot distance from anyone else around you. If you show any signs or symptoms that are consistent with a COVID-19 infection, you may be monitored and re-tested. This may result in release and demobilization from the incident for return to your CAL FIRE Unit or home agency for isolation. Should you be demobilized, you are to follow CAL FIRE, home agency policy(ies), protocol(s), guidelines, and/or local public health officer orders.

You are also responsible for notifying your CAL FIRE Unit, home agency and/or local county health of your test results, per employer policy(ies), protocol(s) guidelines, and/or local public health officer orders.

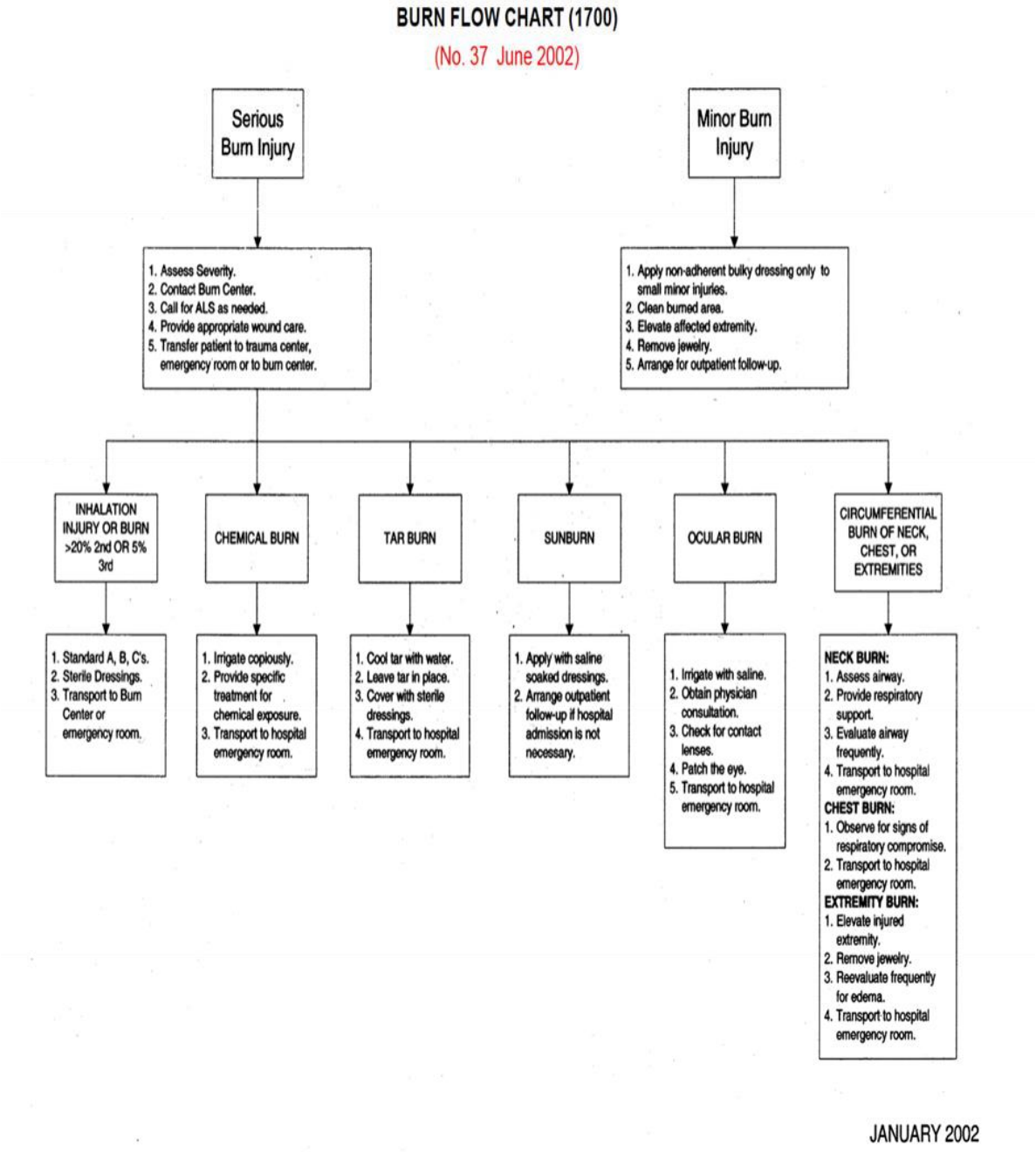
CAL-MAT Physician / NP / Provider **Signature**

FDA Disclaimers:
This test has not been FDA cleared or approved. This test has been authorized by FDA under an EUA for use by authorized laboratories. This test has been authorized only for detection of proteins from SARS-CoV-2, not for any other viruses or pathogens, and, this test is only authorized for the duration of the declaration that circumstances exist justifying the authorization or emergency use of in vitro diagnostics for detection and/or diagnosis of COVID-19 under Section 564(b)(1) of the Act, 21 U.S.C. § 360bbb-3(b)(1), unless the authorization is terminated or revoked sooner.
REV. 09-23-20

EMERGENCY MEDICAL SERVICES AUTHORITY
SARS-CoV-2 (COVID-19) Molecular Abbott ID Now Testing Patient Log Sheet

	Test Kit		Patient Name/Result		
Date	**Lot #**	**Expiration**	**(Circle One)**		**Personnel Initials**
				POSITIVE	
				NEGATIVE	
				POSITIVE	
				NEGATIVE	
				POSITIVE	
				NEGATIVE	
				POSITIVE	
				NEGATIVE	
				POSITIVE	
				NEGATIVE	
				POSITIVE	
				NEGATIVE	
				NEGATIVE	
				NEGATIVE	

ANNEX B:
CAL FIRE Burn Management



The Incident Commander at his/her discretion may have any burn evaluated at a burn center. In their experience, the ICs universally send every burn to a burn center.

A burn sustained on fire lines tends to be direct exposure to flame or hot gases. Most burn patients will be transported directly by Emergency Medical Services (EMS) ground transportation, or air ambulance from the fire line rather than returning to base camp. At this time, most burn patients will be required to

have an evaluation at a burn facility due to protocols in place prior to CAL-MAT/CAL FIRE contract. Below is the protocol in place by CAL FIRE.

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.

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.

GUIDELINES FOR THE TREATMENT OF MINOR BURNS

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.

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

MINOR BURN PATIENTS	

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

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 (8100p800); see Definitions of Burn Care Facilities, and California Burn Centers. 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.

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 chux, and
- Four pieces of 3 x 8 Telfa (non-adherent dressing).

CDF DEFINITIONS OF BURN CARE FACILITIES

Burn Center	An area within a hospital designated primarily for the treatment of burn patients and staffed by a burn team. Customarily referred to by hospital personnel as a "Burn Unit" and commonly referred to by the public as a "Burn Center." These terms have the same meanings for all practical purposes. Burn centers have facilities to handle unstable burn cases. [See Emergency Command Center Procedures Handbook, Chapter 8100, ECC Operational Procedures Ready Reference (Procedure No. 26)] The burn centers selected must provide <u>all</u> of the following services: • Beds designated as a burn unit. • Burn team on staff. • Burn surgeon on staff.
Trauma Center	An emergency department meeting specific, additional, requirements set forth by the State Department of Health Services to provide extensive emergency treatment for victims of trauma and/or significant injuries. Trauma centers have complete facilities to handle unstable burn cases.

Emergency Department	The state licenses three types of emergency departments: comprehensive, basic, and standby. Comprehensive and basic emergency departments both have 24-hour physician coverage with certain support services. Both comprehensive and basic emergency departments have the facilities to stabilize a burn case. Standby emergency departments have a physician on call. **A standby emergency department would be unlikely to have the facilities to stabilize a serious burn case.**

ANNEX C: Patient Aftercare Instructions Handouts

Patient Instructions for Poison Oak/Ivy

Poison Oak and Poison Ivy is a common problem when fighting forest fires. Contact with this plant causes skin redness, itching, and swelling. The skin can then be raised up forming water filled boils and weeping. Symptoms start between 4-96 hours after exposure and peak at 1-14 days after exposure. New lesions can develop up to 21 days after contact making people think they got it again when it is still part of the initial contact.

The oil from Poison Oak and Ivy (a compound called urushiol) can stick to clothes and cause a new infection if clothing, tools, and other items are not cleaned after contact. Only the oil from the plant is contagious and the fluid weeping from an ivy/oak blister is not contagious. Without treatment, the rash goes away in 1-2 weeks. A complication of the skin lesions from ivy/oak is a bacterial skin infection.

Prevention: Create a barrier between you and the plant. Clothing is the first barrier. A precontact gel such as IvyX can prevent the oil from the plant from bonding to your skin. Handle exposed clothing carefully and wash right away.

When in Contact with Oak/Ivy: Rinse the sap right away with cold water . Hot water may spread the oil. Then use soap to wash the oil away. Tecnu's Outdoor Skin Cleanser is formulated to remove Poison Ivy oil if you have it. Dawn Dish Soap also works well. Be sure to wash well under nails as the oil can build up there. Poison ivy dermatitis is not contagious and cannot be passed from person to person. Clothes should be washed with detergent and bleach. Equipment is likely to be contaminated with the sap that can cause additional exposure; wash with isopropyl alcohol or soapy water--if alcohol is not available.

Treatment: Sooth the itch. Take a cold bath, use cool compresses, apply Calamine lotion, and use Aveeno oatmeal bath treatment. Benadryl (diphenhydramine) 25 mg will help you sleep. Topical steroid creams, unless very potent, are of limited value. Avoid antihistamine creams or lotions, anesthetic creams containing benzocaine, or antibiotic creams containing neomycin or bacitracin to the skin. If your blisters have started to pop, cover the oozing areas and keep them clean. Products with aluminum acetate (examples include Burrow's solution and Domeboro) are soothing and help remove crusts.

Steroids: Severe cases, especially those involving the face and genitals, can be treated with steroids. Oral steroids such as Prednisone are used for 14-21 days. Shorter than that and there is a risk of a rebound of the skin rash. Injectable steroids are generally reserved for patients who can't take oral steroids. The injectable steroids do not work any faster than the oral steroids.
If you have any questions, please let us know. We hope your deployment goes well and that your poison oak/ivy clears up quickly

Patient Prescription & Instructions for Poison Oak/Ivy

Prednisone 20mg pills

Patient: _____

Date:_____

Take by mouth, **with food** for 14 days as follows:
3 tabs with breakfast on day 1,2,3,4,5
2 tabs with breakfast on day 6,7,8,9,10
1 tab each day with breakfast on day 11,12,13,14
Total of 29 pills

Take Benadryl 25mg at night to help with sleep.

Use plain Calamine, Caladryl, or Caladryl Clear lotion on the skin.
Pramoxine lotions are also safe and effective.

Use Domeburo soaks or Burrows solution on the open lesions.

Avoid antihistamine creams or lotions, anesthetic creams containing benzocaine, or antibiotic creams containing neomycin or bacitracin to the skin.
If the lesions are looking purulent or infected, please check with your doctor.

*NOTE: Steroids such as Prednisone can decrease your immunity and make you more susceptible to infections such as COVID 19. Please take appropriate precautions such as isolation and medical follow-up.

Prescriber:_____

Aftercare Handout for Athletes Foot

Aftercare Handout for Athletes Foot

1. Start with good foot hygiene: Fungus loves moisture so keep feet dry by drying well after bathing-- a hair blow dryer set on cool or warm works better than a towel alone. Carry a clean, dry pair of extra socks into the field when deployed, as moist feet are susceptible to infection.
2. Socks should have copper fiber or silver fiber: look for these as "antimicrobial," copper, or silver socks, found in Walmart and many stores, as well as online. Many styles and colors are available, and the antifungal properties do not wash out. They are inexpensive, readily available, and don't require a prescription.
3. Continue the treatment you received for 4 weeks at least (the turnover time of surface skin cells). If buying the cream yourself, look for terbinafine cream, sold over the counter as Lamisil. Rub twice daily into the entire sole and all toe webs (spaces) until the cream disappears into the skin.
4. Ongoing prevention is very important as the fungus is everywhere: on the floor, in our shoes, in non-antimicrobial socks. Just use the antimicrobial socks every day and the terbinifine cream once a week once your four week treatment is complete. For diabetics the fungus loves to recur, so treat daily long term.
5. If the toe webs are macerated (moist with broken skin) a bacterial infection may be present. Plain vinegar or prescription metronidazole (gel or cream) will treat the bacteria. Be sure to do steps 1, 2 and 3 to treat the underlying fungus as well.
6. If the feet give off a bad smell, another bacterium called Corynebacterium is usually responsible. Sometimes it appears as small round peeling places covering up to half the sole. Treatment with topical benzoyl peroxide gel 2.5% to 10% (which is used for acne) or prescription clindamycin gel will rapidly resolve this condition. Note that benzoyl peroxide will bleach fabrics and carpeting, so be careful to wear old or white socks while using this.
7. Carry a clean, dry pair of extra socks into the field when deployed, as moist feet are susceptible to infection.

Patient Instructions for Use of Moleskin

Moleskin Use for Blisters-Patient Education
Moleskin is a thin but heavy cotton fabric. It's soft on one side and has a sticky adhesive backing on the other. It's often applied to the inside of shoes to improve fit or make them more comfortable. You can also use it to protect a blister from irritation.

How do I use it on a blister?
Moleskin is very durable, which makes it a good option for protecting blisters in high-friction areas, including your feet.
If you've ever applied a bandage to a blister on the back of your heel, you probably noticed that it came off shortly after you put on shoes. Moleskin tends to stay in place better than traditional bandages. It's also thicker, which adds more support and cushioning.

To use moleskin for blisters, follow these steps:
- Gently clean and dry the area around the blister
- Cut a piece of moleskin that's about 3/4-inch larger than your blister.
- Fold the non-adhesive sides together.
- Cut a half-circle out of the moleskin.
    - The half-circle should be roughly half the size of your blister.
    - When you unfold it, you should have one blister-sized hole in the center of the moleskin.
- Remove the backing from the adhesive side and place the moleskin over your blister, aligning your blister with the hole you made.
    - If your blister sticks out above the moleskin, cut and apply a second layer to make the moleskin thicker.
- For very large blisters, consider using moleskin with a thick foam backing, which you can also find on Amazon.
- Keeping your blister surrounded by padding helps to reduce friction and irritation. It also helps to protect the blister from popping, which is usually painful and increases your risk of infection

How do I use it to prevent a blister?
If you're breaking in a new pair of shoes or planning to walk or run for a long period of time, you can also place some moleskin on areas that tend to develop blisters. This protects the skin underneath from friction, which causes blisters.
You can also individually wrap your toes in moleskin to prevent them from rubbing against each other.
As an alternative, you can also apply moleskin directly to the inside of your shoes. This is particularly useful if your shoes have an uncomfortable seam or narrow heel that tends to dig into your skin.

What not to do
Make sure you don't put moleskin directly over a blister. The strong adhesive on the back can easily rip off the top of your blister (known as the roof) when you remove it. A blister's roof protects it from developing an infection.

The bottom line
Moleskin is an effective way to protect existing blisters and prevent new ones from forming. You can even apply it to the inside of your shoes if they tend to rub against your skin in certain places. Just make sure you don't place it directly over a blister, which can damage the roof of the blister.
From healthline.com

ANNEX D:
Formulary

ALLERGIC			
Medication name	**Dose**	**Route**	**Location**
Aerochamber for MDI			Drawer 3
Albuterol		MDI	Drawer 2 & drug box
Albuterol	solution	neb	Drawer 2
Allegra (12 hour tabs)	60 mg	PO	Drawer 2
Atrovent		MDI	Drawer 2
Cetirizine	10 mg	PO	Drawer 2
Decadron	1mg/ml	PO solution	Drawer 2
Decadron	10mg	Injectable	Drawer 1
Diphenhydramine	25 mg	PO	Rack
Diphenhydramine	50 mg	Injectable	Drug Box
Epinephrine	1mg/ml	Injectable	Drawer 1
Hydrocortisone cream	1%	topical	Drawer 4
Loratadine	10 mg	PO	Drawer 2
Prednisone	5 mg	PO	Drawer 2
Prednisone	10 mg	PO	Drawer 2
Prednisone	20 mg	PO	Drawer 2
Symbicort		MDI	Drawer 2
Triamcinolone	40mg/1ml	Injectable	Drawer 1

ANTIBIOTIC			
Medication name	**Dose**	**Route**	**Location**
Augmentin	875/125mg	PO	Drawer 2
Azithromycin	250 mg	PO	Drawer 2
Bacitracin ointment		Topical	Drawer 4
Bactrim	400/80mg	PO	Drawer 2

Cefazolin	1 gm	Injectable	Drawer 1
Ceftriaxone	1 gm	Injectable	Drawer 1
Cephalexin	500 mg	PO	Drawer 2
Ciprofloxacin	500 mg	PO	Drawer 2
Doxycycline	50 mg	PO	Drawer 2
Polysporin ointment		Topical	Drawer 4
Silvadene cream		Topical	Drawer 1
CARDIAC/ VASCULAR			
Medication name	**Dose**	**Route**	**Location**
Digoxin	0.5 mg	Injectable	Drug box
Dopamine drip		IV	Drawer 4
Hydrochlorothiazide	80 mg	PO	Drawer 2
Lasix	40mg	Injectable	Drawer 1
Lasix	1oomg	Inejctable	Drug Box
Metoprolol	100mg	PO	Drawer 2
Nitroglycerin	0.4 mg	SL	Drug box
Propranolol	1mg/ml	Injectable	Drug box
COUGH/ COLD			
Medication name	**Dose**	**Route**	**Location**
Chloroseptic lozenge		PO	Rack
Cough drops		PO	Rack
Dextromethoraphan/Guafanisin	Elixer	PO	Drawer 2
Oxymetozaline Nasal decongestant		Spray	Drawer 3
Phenylephrine	10 mg	PO	Drawer 2
DERMATOLOGIC			
Medication name	**Dose**	**Route**	**Location**
Bacitracin		Topical	Drawer 4
Body Glide for chafing		Topical	Bins
Foot powder (non-medicated)		Topical	Bins

Fluconazole	100mg	PO	Drawer 2
Gold Bond Power		Topical	Bins
Hydrocortisone	1%	Topical	Drawer 4
Insect repellant		Topical	Bins
Moleskin padded dressing	3in x 36 in		Rack
Polysporin ointment		Topical	Drawer 4
Polysporin ointment		Topical	Drawer 4
Prednisone	5 mg	PO	Drawer 2
Prednisone	10 mg	PO	Drawer 2
Prednisone	20 mg	PO	Drawer 2
Sting swab		Topical	Rack
Sunscreen		Topical	Bins
Tolnaftate antifungal cream		Topical	Rack
Triamcinolone	0.1%	Topical	Drawer 4
Vaseline gauze 3 in x 9 in		Topical	Rack
GASTROINTESTINAL			
Medication name	**Dose**	**Route**	**Location**
Bisocodyl	5 mg	PO	Drawer 1
Calcium Carbonate antacid		Chew	Rack
Docusate	100mg	PO	Drawer 2
Loperamide	2mg	PO	Drawer 2
Pepto Bismol		Chews	Rack
Pepto Bismol		Liquid	Drawer 2
Zofran	4mg	ODT	Drawer 1 & drug box
Zofran	4mg	Injectable	Drug box
HYPO/ HYPERGLYCEMIA			
Medication name	**Dose**	**Route**	**Location**
D50	25 gms	Injectable	Drug Box
Glucagon	1 mg	Injectable	Drawer 1

Glucose (oral)	15 gm?	PO	Drawer 1 & 2
Insta-glucose gel		PO	Drawer 1 & drug box
Insulin Humulin N		Injectable	Refrigerator
Insulin Humulin R		Injectable	Refrigerator
INFESTATION			
Medication name	**Dose**	**Route**	**Location**
Nix (Permethrin crème rinse)	Lice Tx	Topical	Drawer 3
INTRAVENOUS SOLUTIONS			
Medication name	**Dose**	**Route**	**Location**
D5W	500ml	Injectable	Red Crash cart
Lactated Ringers	1000ml	Injectable	Supply box
IRRIGATION			
Medication name	**Dose**	**Route**	**Location**
Normal saline for irrigation		Topical	Supply box
OPTHALMIC			
Medication name	**Dose**	**Route**	**Location**
Diclofenac solution	0.1%	Opth gtt	Drawer 1
Erythromycin ointment		Opth gtt	Drawer 1
Flourascein opth dye strips		Opth	Red crash cart
Gentamycin solution	0.3%	Opth gtt	Drawer 1
Purified water for opth eyewash		Opth gtt	Drawer 3
Sulfa solution	10%	Opth gtt	Drawer 1
Sensitive eyes irrigation fluid		Opth gtt	Drawer 2
Tetracaine solution	0.5%	Opth gtt	Drawer 1
Visine solution		Opth gtt	Drawer 1
OTIC/ ENT			
Medication name	**Dose**	**Route**	**Location**
Carbamide wax removal	6.5%	Otic gtt	Drawer 1
Fluticasone nasal spray	50mg	Spray	Drawer 3

Neomycin/Polymixin B solution		Otic gtt	Drawer 1
Saline nasal spray		Spray	Drawer 2
PAIN			
Medication name	**Dose**	**Route**	**Location**
Acetamenophen	325mg	PO	Drawer 2
ASA	325 mg	PO	Drawer 2
Benzocaine oral solution		Topical	Drawer 1
Cold pack	Chemical	Topical	Rack
Ketamine	0.4mg/ml	Injectable	Drug box
Ketolorac	30 mg	Injectable	Drawer 1
Ketolorac	60 mg	Injectable	Drug box
Lidocaine (plain) for local anesth	1%	Injectable	Drawer 3
Lidocaine (w/ epi) for local anesth	1%	Injectable	Drawer 3
Lidocaine viscous		Topical	Drawer 2
Menthol 6.5% muscle rub		Topical	Rack
POISON OAK			
Medication name	**Dose**	**Route**	**Location**
Cala-Gel (anti-itch)		Topical	Bins
Diphenhydramine gel		Topical	Bins
Ivy Cleanse (removes uruschiol oil)		Topical	Bins
Ivy X Orange (pre-exposure gel)		Topical	Bins
Ivy X Yellow (post-exposure gel)		Topical	Bins
Technu (removes uruschiol oil)		Topical	Bins
PSYCHIATRIC			
Medication name	**Dose**	**Route**	**Location**
Haldol	1mg	PO	Drawer 2
REFRIGERATOR			
Medication name	**Dose**	**Route**	**Location**
Insulin Humulin N		Injectable	Refrigerator

Insulin Humulin R		Injectable	Refrigerator
Tetanus/Diptheria Toxoid	0.5ml	Injectable	Refrigerator
RESPIRATORY			
Medication name	**Dose**	**Route**	**Location**
Aerochamber for MDI			Drawer 3
Albuterol		MDI	Drawer 2
Albuterol neb solution		Inhalation	Drawer 2
Atrovent		MDI	Drawer 2
Fluticasone nasal spray	50mg	Spray	Drawer 3
Prednisone	5mg	PO	Drawer 2
Prednisone	10mg	PO	Drawer 2
Prednisone	20mg	PO	Drawer 2
Symbicort		MDI	Drawer 2
RESUSCITATIVE			
Medication name	**Dose**	**Route**	**Location**
Adenosine	12 mg	Injectable	Drug box
Amiodarone	100mg/3ml	Injectable	Drug box
Atropine	1mg	Injectable	Drug box
Calcium Chloride	10%	Injectable	Drug box
CAT (Combat Application Tourniq)			Red crash cart
Epinephrine	1:10,000	Injectable	Drug box
Etomidate	20mg	Injectable	Drug box
Lidocaine	2%	Injectable	Drug box
Narcan		Injectable	Drug box
Nitroglycerin solution		IV gtt	Drug box
Quick clot topical dressing		Topical	Rack top shelf
Sodium Bicarbonate	44 meq	Injectable	Drug box
Vecuronium	10mg vial	Injectable	Drug box

OTHER			
Medication name	**Dose**	**Route**	**Location**
Activated Charcoal		PO	Drawer 4
Sodium Thiosulfate (cyanide poisoning antidote)	12.5gm/50ml	Injectable	Drug box
Urine dipstick chemstrip		Voided specimen	Red crash cart
Urine drug screen test		Voided specimen	Drawer 4

hbm 7-21-202

ANNEX E:

CAL-MAT COVID-19 Isolation, Symptom Management, Notification, and Return to Work

TO:	CAL-MAT Members
FROM:	Dave Duncan, MD Director Howard Backer, MD CAL-MAT Medical Director
DATE:	July 25, 2020

Revision/Version: Revised 7/25/20 (rev 6)	**Replaces:** July 19, 2020

SUBJECT: CAL-MAT COVID-19 Isolation, symptom management, notification, and return to work

PURPOSE:
Management of CAL-MAT members who develop symptoms of illness while on deployment

Summary and New information

- Guidance for management of healthcare workers (HCWs) who are exposed to COVID 19 or become symptomatic or test positive without symptoms (updated by CDC 7/17/20)
- Notification made to EMSA Medical Director and to HR via automated reporting form
- CAL-MAT unit leader should be notified but no medical information unless consent
- Workers Compensation management by HR
- Determination of exposure risk for health care workers and their work colleagues and return to work based on CDC guidance
- Procedure for RTW or demobilization

Purpose

Protecting the health and safety of our personnel is a top priority. To support this goal, EMSA has adopted the CDC guidelines for infection control and the use of Personal Protection Equipment (PPE) when treating COVID-19 patients. Additionally, EMSA works diligently to assure an adequate supply of recommended PPE and that infection control and PPE training occurs at each treatment site EMSA supports with CAL-MAT members.

EMSA recognizes that there is still a possibility that a CAL-MAT member will contract COVID-19 while supporting the response. Moreover, due to the unusual nature of response teams in the field, there is a high probability that co-workers will be exposed when a colleague develops symptoms and becomes a Person under Investigation (PUI) or tests positive for COVID19.

The following protocols apply to all deployed personnel.

Policy/Procedure

A. **Pre-deployment**
   1. Routine pre-deployment COVID 19 testing is not required or recommended.
   2. No pre-deployment physical exam is required for CAL-MAT members. They are expected to self-select with informed knowledge of work conditions and job description

B. **Development of clinical symptoms during COVID**
   1. Any member who develops a temperature higher than 100 F or has symptoms of cough, shortness of breath, fever, chills, muscle pain, sore throat, or new loss of taste or smell must report their illness to the Team Lead and isolate themselves in their hotel room.

C. **Testing**

1. COVID testing will be conducted on-site, when available. If on-site testing is unavailable, testing will be arranged with the closest County testing site or other test site. The isolated member may be tested at a nearby ED if the need for further medical evaluation is indicated.

D. **Isolation**

1. The decision to continue isolation and further testing of the member for COVID 19 shall be made by the on-site Medical Officer, if available, or by the CAL-MAT or EMSAuthority Medical Director.
2. While isolated, staff must record and report temperature twice a day and any change in symptoms via phone to the CAL-MAT Team lead or provider on-call.
3. The medical provider on-call will evaluate symptoms at least once daily.
4. Logistics will arrange to have meals and any needed medications delivered.

E. **Notification**

1. The MST Director/Team Lead shall notify the CAL-MAT medical director and EMSA HR of any occupational infection or injury. This is be done using a form stack report, which automatically forwards the completed form.
2. Initial reporting form: https://EMSADMS.formstack.com/forms/exposure_report
3. Follow-Up reporting form: https://EMSADMS.formstack.com/forms/exposure_report_copy
4. When a CAL-MAT member is taken off shift for illness or injury, the Unit Leader (if known) should be informed; no waiver is required as long as specific medical information is not shared. The member may provide medical information (e.g., COVID test results or specific diagnosis) to the Unit Leader if they choose.

F. **Worker's Compensation**

1. CAL-MAT members are eligible to receive Worker's Compensation insurance while employed by the State.
2. Once the Team Lead completes the forms above, EMSA HR will take the following action in compliance with Worker's Compensation rules:
    a. Facilitate referral to an occupational health provider if needed
    b. Send the e3301 to the employee and will follow up with the employee to receive it.
    c. Coordinate emergency paid sick leave with both the employee and with State Compensation Insurance Fund (SCIF) in accordance with workers comp policies.
    d. Work with the employee on time sheet submittal upon demobilization or when the SCIF medical provider releases the employee to return to work.
3. Any CAL-MAT member isolated while supporting the EMSA COVID-19 response will receive 8 hours of pay daily until cleared from isolation.
4. CAL-MAT members should not be demobilized while in isolation or being treated for illness. If they do not plan to continue their deployment, members should be demobilized when they are no longer ill and the isolation period is completed.
5. If a member has demobilized and wishes to quarantine for 14 days to avoid potential exposure of family or other household members, they may use the State program to quarantine in a hotel. This program can be accessed at https://covid19.ca.gov/hotel-rooms-for-california-healthcare-workers/
6. If a member has demobilized and subsequently develops symptoms within the quarantine period, they should notify their site leader who will notify HR through the report of illness and assist to arrange testing, if the CAL-MAT member is still near the site.
    a. If the member has left to return home, the member should arrange testing locally. This may be done through the state occupational medicine provider network.
    b. If the test is positive, the member is eligible for workers compensation during the period of illness and subsequent isolation.

G. **Return to Work or Demobilization**

1. If the test comes back negative and the symptoms continue to diminish, the individual may return to work 2 days after all symptoms have resolved, consistent with the diagnosis and judgment of the site Chief Medical Officer, or the CAL-MAT Program Medical Director. If

symptoms have not resolved, or there remains high concern for COVID, the member should be retested at least 24 hours after the first test.

2. If the test comes back positive, the member should have the option to remain isolated in a hotel through the health care worker isolation program or to self-isolate at home.
3. EMSA will arrange transport home, to a hospital for evaluation, or to another isolation facility.
    a. All team members who had close, prolonged contact without PPE (See CDC definitions) with the positive member within two days of symptom onset should quarantine and receive testing. CDC guidelines also allows potentially exposed asymptomatic HCWs to continue work in settings of HCW shortage.
4. The team members who had contact while wearing PPE or contact that does not meet the definition of "close and prolonged", may continue working with appropriate PPE following CDC PPE/infection control protocols, unless they develop symptoms. They must continue to take precautions, including face mask use and social distancing around their colleagues and the public.
5. All potentially exposed members must (as should all members) wear a facemask at all times outside of the patient care area and maintain appropriate social distancing from their colleagues for 14 days. According to the State Public Health Officer Order, facemasks may be removed when eating, exercising, or not in proximity to others, but social distancing must be maintained.
6. Employees should not be released back to work without notifying HR. This is an important step so that HR has this information for the State Compensation Insurance Fund and possibly DGS
7. All employees need a medical release from the CAL-MAT Program Medical Director or the Chief Medical Officer on site whether they:
    a. Return to the mission site (whether after testing negative or positive), or
    b. Demobilize from site and from mission

A work release template is available on-line (Sharepoint: *Documents/CAL-MAT Medical/Policy Procedures/RTW release*)

8. The medical release that allows the employee to return to work will be forwarded by email to HR so that the file can be documented accordingly.

H. **Preventing cross-exposure among CAL-MAT members**

1. During the COVID 19 response, CAL-MAT members provide healthcare in a high-risk infectious environment. Many infections are asymptomatic or can be spread for 2 days prior to symptoms.
2. To avoid spreading possible infection to colleagues, CAL-MAT members must follow public infection control recommendations when outside of a health facility.
3. This includes wearing a surgical or cloth mask when appropriate social distancing is not possible. This is especially important when multiple members are riding in the same vehicle or when socializing after work.
4. Changing out of work clothes and performing frequent hand hygiene are other important measures.

Resources, Links, and Attachments (below)

Supporting CDC Guidance

Determination of exposure risk for health care personnel

https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html

Return to Work Criteria for HCP with Suspected or Confirmed COVID-19

https://www.cdc.gov/coronavirus/2019-ncov/hcp/return-to-work.html

Strategies to Mitigate Healthcare Personnel Staffing Shortages

https://www.cdc.gov/coronavirus/2019-ncov/hcp/mitigating-staff-shortages.html

Determination of exposure risk for health care personnel

This guidance applies to HCP with potential exposure in a healthcare setting to patients, visitors, or other HCP with confirmed COVID-19. Exposures can also be from a person under investigation (PUI) who is awaiting testing. Work restrictions described in this guidance might be applied to HCP exposed to a PUI if test results for the PUI are not expected to return within 48 to 72 hours. Therefore, a record of HCP exposed to PUIs should be maintained. If test results will be delayed more than 72 hours or the patient is positive for COVID-19, then the work restrictions described in this document should be applied.

Exposure	Personal Protective Equipment Used	Work Restrictions
HCP who had prolonged[1] close contact[2] with a patient, visitor, or HCP with confirmed COVID-19[3]	● HCP not wearing a respirator or facemask[4] ● HCP not wearing eye protection ● HCP not wearing all recommended PPE (i.e., gown, gloves, eye protection, respirator) while performing an aerosol-generating procedure	● Exclude from work for 14 days after last exposure[5] ● Advise HCP to monitor themselves for fever or symptoms consistent with COVID-19[6] ● Any HCP who develop fever or symptoms consistent with COVID-19[6] should immediately contact their established point of contact (e.g., occupational health program) to arrange for medical evaluation and testing.
HCP other than those with exposure risk described above	● N/A	● No work restrictions ● Follow all recommended infection prevention and control practices, including wearing a facemask for source control while at work, monitoring themselves for fever or symptoms consistent with COVID-19[6] and not reporting to work when ill, and undergoing active screening for fever or symptoms consistent with COVID-19[6] at the beginning of their shift. ● Any HCP who develop fever or symptoms consistent with COVID-19[6] should immediately self-isolate and contact their established point of contact (e.g., occupational health program) to arrange for medical evaluation and testing.

HCP=healthcare personnel

1. Data are insufficient to precisely define the duration of time that constitutes a prolonged exposure. Until more is known about transmission risks, it is reasonable to consider an exposure of 15 minutes or more as prolonged. However, **any duration** should be considered prolonged if the exposure occurred during performance of an aerosol generating procedure.
2. Data are limited for the definition of close contact. For this guidance it is defined as: a) being within 6 feet of a person with confirmed COVID-19 or b) having unprotected direct contact with infectious secretions or excretions of the person with confirmed COVID-19.
3. Determining the time period when the patient, visitor, or HCP with confirmed COVID-19 could have been infectious:
    a. For individuals with confirmed COVID-19 who developed symptoms, consider the exposure window to be 2 days before symptom onset through the time period when the individual meets criteria for discontinuation of Transmission-Based Precautions
    b. For individuals with confirmed COVID-19 who never developed symptoms, determining the infectious period can be challenging. In these situations, collecting information about when the asymptomatic individual with COVID-19 may have been exposed could help inform the period when they were infectious.
        1. In general, individuals with COVID-19 should be considered potentially infectious beginning 2 days after their exposure until they meet criteria for discontinuing Transmission-Based Precautions.

2. If the date of exposure cannot be determined, although the infectious period could be longer, it is reasonable to use a starting point of 2 dayspdf icon prior to the positive test through the time period when the individual meets criteria for discontinuation of Transmission-Based Precautions for contact tracing.

4. While respirators confer a higher level of protection than facemasks and are recommended when caring for patients with COVID-19, facemasks still confer some level of protection to HCP, which was factored into this risk assessment. Cloth face coverings are not considered PPE because their capability to protect HCP is unknown.
5. If staffing shortages occur, it might not be possible to exclude exposed HCP from work. For additional information and considerations refer to Strategies to Mitigating HCP Staffing Shortages.

*For the purpose of this guidance, fever is defined as subjective fever (feeling feverish) or a measured temperature of 100.0ºF (37.8ºC) or higher. Note that fever may be intermittent or may not be present in some people, such as those who are elderly, immunocompromised, or taking certain fever-reducing medications (e.g., nonsteroidal anti-inflammatory drugs [NSAIDS]).

Return to Work Criteria for HCP with Suspected or Confirmed COVID-19

HCP with symptoms of COVID-19 should be prioritized for viral testing with approved nucleic acid or antigen detection assays. When a clinician decides that testing a person for SARS CoV-2 is indicated, negative results from at least one FDA Emergency Use Authorized COVID-19 molecular viral assay for detection of SARS-CoV-2 RNA indicates that the person most likely does not have an active SARS-CoV-2 infection at the time the sample was collected. A second test for SARS-CoV-2 RNA may be performed at the discretion of the evaluating healthcare provider, particularly when a higher level of clinical suspicion for SARS-CoV-2 infection exists. For HCP who were suspected of having COVID-19 and had it ruled out, either with at least one negative test or a clinical decision that COVID-19 is not suspected and testing is not indicated, then return to work decisions should be based on their other suspected or confirmed diagnoses.

Decisions about return to work for HCP with SARS-CoV-2 infection should be made in the context of local circumstances. In general, a symptom-based strategy should be used as described below. The time period used depends on the HCP's severity of illness and if they are severely immunocompromised.[1]

A test-based strategy is no longer recommended (except as noted below) because, in the majority of cases, it results in excluding from work HCP who continue to shed detectable SARS-CoV-2 RNA but are no longer infectious.

Symptom-based strategy for determining when HCP can return to work.

HCP with mild to moderate illness who are not severely immunocompromised:

- At least 10 days have passed *since symptoms first appeared* **and**
- At least 24 hours have passed *since last* fever without the use of fever-reducing medications **and**
- Symptoms (e.g., cough, shortness of breath) have improved

Note: HCP who are **not severely immunocompromised**[1] and were **asymptomatic** throughout their infection may return to work when at least 10 days have passed since the date of their first positive viral diagnostic test.

Test-Based Strategy for Determining when HCP Can Return to Work.

In some instances, a test-based strategy could be considered to allow HCP to return to work earlier than if the symptom-based strategy were used. However, as described in the Decision Memo, many individuals will have prolonged viral shedding, limiting the utility of this approach. A test-based strategy could also be considered for some HCP (e.g., those who are severely immunocompromised[1]) in consultation with local infectious diseases experts if concerns exist for the HCP being infectious for more than 20 days.

The criteria for the test-based strategy are:

HCP who are symptomatic:

- Resolution of fever without the use of fever-reducing medications **and**
- Improvement in symptoms (e.g., cough, shortness of breath), **and**
- Results are negative from at least two consecutive respiratory specimens collected ≥24 hours apart (total of two negative specimens) tested using an FDA-authorized molecular viral assay to detect SARS-CoV-2 RNA. See Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for 2019 Novel Coronavirus (2019-nCoV).

HCP who are not symptomatic:

- Results are negative from at least two consecutive respiratory specimens collected ≥24 hours apart (total of two negative specimens) tested using an FDA-authorized molecular viral assay to

detect SARS-CoV-2 RNA. See Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for 2019 Novel Coronavirus (2019-nCoV).

If HCP are tested and found to be infected with SARS-CoV-2, they should be excluded from work until they meet all Return to Work Criteria Prioritizing HCP with suspected COVID-19 for testing, as testing results will impact when they may return to work and for which patients they might be permitted to provide care.

Return to Work Practices and Work Restrictions

After returning to work, HCP should:

- Wear a facemask for source control at all times while in the healthcare facility until all symptoms are completely resolved or at baseline. A facemask instead of a cloth face covering should be used by these HCP for source control during this time period while in the facility. After this time period, these HCP should revert to their facility policy regarding universal source control during the pandemic.
    - A facemask for source control does not replace the need to wear an N95 or higher-level respirator (or other recommended PPE) when indicated, including when caring for patients with suspected or confirmed COVID-19.
- Self-monitor for symptoms, and seek re-evaluation from occupational health if respiratory symptoms recur or worsen

Strategies to Mitigate Healthcare Personnel Staffing Shortages

While not ideal, in situations of critical staffing shortages some facilities have conferred with the local public health authorities and allowed HCWs with suspected or confirmed COVID-19 to return to work earlier than indicated in the recommended return to work strategies. This has been determined on a case-by-case basis, and facilities have considered duty restrictions, such as only permitting infected HCWs to care for patients with COVID-19 or limiting them to non-patient care activities.
(See Return to Work Diagram)

Asymptomatic HCP with a recognized COVID-19 exposure might be permitted to work in a crisis capacity strategy to address staffing shortages if they wear a facemask for source control for 14 days after the exposure. This time period is based on the current incubation period for COVID-19 which is 14 days. Developing plans to allow asymptomatic HCP who have had an unprotected exposure to SARS-CoV-2 (the virus that causes COVID-19) but are not known to be infected to continue to work.

- These HCP should still report temperature and absence of symptoms each day before starting work. These HCP should wear a facemask (for source control) while at work for 14 days (this is the time period during which exposed HCP might develop symptoms, i.e., the current incubation period for the virus) after the exposure event. A facemask instead of a cloth face covering should be used by these HCP for source control during this time period while in the facility. After this time period, these HCP should revert to their facility policy regarding universal source control during the pandemic.
    - A facemask for source control does not replace the need to wear an N95 or higher-level respirator (or other PPE) when indicated, including for the care of patients with suspected or confirmed COVID-19.
- If HCP develop even mild symptoms consistent with COVID-19, they must cease patient care activities and notify their supervisor or occupational health services prior to leaving work. These individuals should be prioritized for testing.

ANNEX F:
CAL-MAT Code of Conduct

Appendix C

TO:	CAL-MAT Members
FROM:	Craig Johnson DMS Division Chief
DATE:	9/9/2020
Revision/Version: Revised **09/09/20**	**Replaces: 07/22/20**

SUBJECT: California Medical Assistance Team (CAL-MAT) Code of Conduct

PURPOSE: Establish parameters of conduct for members when deployed.

Summary and New information

< Describes acceptable and unacceptable behavior of CAL-MAT members when deployed, in uniform, or otherwise representing the CAL-MAT Program or the State of California.

Background:

Serving on CAL-MAT carries great responsibility and demands professionalism at all times. This Code of Conduct sets forth the minimum expectations of behavior for CAL-MAT members.

Policy/Procedure

1. When activated by EMSA to deploy to a mission supported by CAL MAT, you are a temporary State employee hired under at-will status subject to applicable state collective bargaining agreements.
2. As a CAL-MAT member, you represent the State of California.
   a. Appropriate behavior, on and off shift, is expected of all members.
3. If activated, notify your Unit Leader.
4. While deployed, wearing of the CAL-MAT uniform is required. The uniform includes: a. ID badge.
   a. CAL-MAT T-shirt (tucked in).
   b. Khaki 5.11 pants.
   c. Black or khaki belt
   d. Black or tan boots (steel or composite toe are preferred) – Not supplied; this is an individual purchase item
   e. Sports-type shoes may be authorized for certain missions, as deemed appropriate by EMSA and the Team Leader
   f. EMSA cap (optional, depending on assignment and supply levels).
   g. Exceptions will be granted when uniforms (or uniform items) are not available for distribution. We request khaki colored pants and navy tee shirt with black or tan boots.
5. No disclosure of deployment location or mission specifics is allowed without EMSA approval. Immediate family members should be provided with general contact information.

6. No social media posts related to your deployment are allowed unless approved by the onsite Team Leader.
7. No photos may be released unless approved by the on-site Team Leader.
8. If taking photos of yourself, NO patients are allowed to appear in the photos, remove your ID badge, ensure pictures are tasteful and represent you and CAL-MAT favorably.
9. All questions from the media or requests for interviews should be referred to the MST or your Team Leader.
10. If this is your first deployment, let your Team Leader know.
11. Follow the Chain of Command while deployed; know the organizational structure of your particular deployment. CAL-MAT utilizes the Incident Command System (ICS); members should be familiar with ICS 100, 200, and 700.
12. Do not take a clinical assignment outside of the scope of practice allowed by your license or certification.
13. Professional license standards apply, but specific waivers and emergency orders may allow modified scope of practice or regulatory exemptions.
14. Treat all members on the mission with professionalism and respect. Report any difficulties with other personnel to your team leader.
15. State and legal standards apply for workplace discrimination and harassment based on protected characteristics such as race, ethnicity, and sexual orientation.
16. All members work as a collaborative team to provide the best possible medical care given the situation and resources available.
17. Inappropriate, offensive, or profane language, is not allowed.
18. Members must be honest and not cheat or steal under any circumstances. These situations will not be tolerated and will lead to immediate demobilization.
19. CAL-MAT members may be asked to perform tasks not directly related to their mission assignment, such as:
    a. Assisting with the set-up and tear down of the CAL-MAT Base of Operations (bring work gloves).
20. If you become injured or ill, report it immediately to the site Team Leader - **DO NOT** work if you are sick or injured. Notify your Unit Leader as soon as practicably possible.
21. Know and use the Buddy System at all times.
22. Do not leave the Base of Operations (BoO) unless granted permission by the Incident Team Leader.
23. Deployed staff shall not leave the worksite without team leader approval. When leaving, let your Team Leader, or designee, know where you are going, when you will be back, and who authorized your departure.
24. Have self-awareness of your surroundings. Do not go into restricted areas unless specifically approved to do so by the appropriate authorities and Team Leader.
25. Prescription medications or any other substances that alter judgment or ability to function while working are prohibited at all times.
26. The use of State vehicles shall provide for the transportation needs required by employees in the performance of their duties. The use of a State vehicle for other than State business is prohibited. An employee shall not operate a State vehicle except as authorized by EMSA and in compliance with the California Code of Regulations, Title 2, Section 599.800.

27. Smoking and vaping shall occur only in areas designated by the Team Lead and Safety Officer.
28. Alcohol:
    a. Alcohol consumption is prohibited within 12 hours of a scheduled shift.
    b. Alcohol purchase and consumption are prohibited while in uniform and/or in a marked vehicle.
    c. Driving a state-owned or state rented vehicle after having consumed any amount of alcohol is cause for demobilization and removal from the program.
    d. Arriving on shift with evidence of alcohol consumption warrants disciplinary action, potential demobilization, and removal from the program.
    e. Alcohol consumption **is not permitted** on Fire Base Camp missions or other deployments requiring members to reside at the CAL-MAT Base of Operations.
29. Off Duty: It is the expectation that members will get enough rest and sleep during their time off to perform their duties and responsibilities safely while on shift. To ensure effective shift turnover and operations, day staff should not be at the Base of Operations (BoO) during the hours of 10 PM to 5 AM. Respectively, it is the expectation night shift should not be at the BoO from 10 AM to 5 PM. Exceptions may be made for specific circumstances and mission requirements.
30. Staff shall adhere to all EMSA leadership approved incident-specific policies and directives as determined by the MST Director or Team Leader.

_____
Printed Name

_____ _____
Signature Date

ANNEX G:

California Labor Code for Emergency Responders

LABOR CODE - LAB

DIVISION 2. EMPLOYMENT REGULATION AND SUPERVISION [200 - 2699.5] *(Division 2 enacted by Stats. 1937, Ch. 90.)*

PART 1. COMPENSATION [200 - 452] *(Part 1 enacted by Stats. 1937, Ch. 90.)*

CHAPTER 1. Payment of Wages [200 - 273] *(Chapter 1 enacted by Stats. 1937, Ch. 90.)*

ARTICLE 1. General Occupations [200 - 244] *(Article 1 enacted by Stats. 1937, Ch. 90.)*

230.3.

(a) An employer shall not discharge or in any manner discriminate against an employee for taking time off to perform emergency duty as a volunteer firefighter, a reserve peace officer, or emergency rescue personnel.

(b) An employee who is discharged, threatened with discharge, demoted, suspended, or in any other manner discriminated against in the terms and conditions of employment by his or her employer because the employee has taken time off to perform emergency duty as a volunteer firefighter, a reserve peace officer, or emergency rescue personnel shall be entitled to reinstatement and reimbursement for lost wages and work benefits caused by the acts of the employer. Any employer who willfully refuses to rehire, promote, or otherwise restore an employee or former employee who has been determined to be eligible for rehiring or promotion by a grievance procedure, arbitration, or hearing authorized by law, is guilty of a misdemeanor.

(c) (1) Subdivisions (a) and (b) of this section shall not apply to any public safety agency or provider of emergency medical services if, as determined by the employer, the employee's absence would hinder the availability of public safety or emergency medical services.

(2) An employee who is a health care provider shall notify his or her employer at the time the employee becomes designated as emergency rescue personnel and when the employee is notified that he or she will be deployed as a result of that designation.

(d) (1) For purposes of this section, "volunteer firefighter" shall have the same meaning as the term "volunteer" in Section 50952 of the Government Code.

(2) For purposes of this section, "emergency rescue personnel" means any person who is an officer, employee, or member of a fire department or fire protection or firefighting agency of the federal government, the State of California, a city, county, city and county, district, or other public or municipal corporation or political subdivision of this state, or of a sheriff's department, police department, or a private fire department, or of a disaster medical response entity sponsored or requested by this state, whether that person is a volunteer or partly paid or fully paid, while he or she is actually engaged in providing emergency services as defined by Section 1799.107 of the Health and Safety Code.

(3) For purposes of this section, "health care provider" means any person licensed or certified pursuant to Division 2 (commencing with Section 500) of the Business and Professions Code, or licensed pursuant to the Osteopathic Initiative Act, or the Chiropractic Initiative Act.

ANNEX H:

Fire Camp Deployment: Expectations and Responsibilities for Medical Staff

TO	CAL-MAT Personnel Deployed to Cal-FIRE Base Camp
FROM	Howard Backer, CAL-MAT Medical Director San Diego CAL-MAT Team
SUBJECT	Fire Medical Camp Orientation
DATE	Revision 10/3/2020 (Replaces 9/18/20)

Thank you for volunteering to be part of a team to support firefighters who are working in a very dangerous environment. Most providers find the experience very rewarding. The challenges are both personal and professional. You will be living and working in an austere environment that is very different from your usual life and medical practice. Fire Camps are often located in a large park or fairground located in a forest setting or small town.

This document will answer most questions. Please read carefully and save electronically to bring with you.

If you have questions concerning this deployment or general questions about CAL-MAT, please contact EMSA at cal.mat@emsa.ca.gov

MD, NP, PA's who have questions about the medical aspects of the mission, contact Howard Backer MD, at howard.backer@emsa.ca.gov

Before you get the call to deploy

- Pack your go-bag (this is the term for the suitcase/large duffel bag that will contain the items you need for the next 1-2 weeks). Start with the packing list below as a guide and modify it based on your own needs.

  See list at end of this document. (**Appendix A**)

- Prepare a day bag (backpack to carry essentials you will use during travel and during your assigned shift)
- Print emergency information on an index card and kept on your person **at all times** in the right front cargo pant pocket or other pocket:
  - Your name
  - Your date of birth
  - Emergency contact information
  - Allergies
  - Major medical problems
  - Current medications
- Do not pack any drones or flying devices. All airspace at the incident is restricted. They are also a danger to firefighting aircraft operations.
- Do not pack anything flammable. All incendiary devices are prohibited at the Incident Base.
- Do not bring any alcohol or illegal drugs to the incident Base.

Possession of any of these may result in your removal from the incident. Refer to the CAL-MAT Code of Conduct (Appendix C) for expectations of all CAL-MAT personnel.

Training

CAL-MAT members are expected to be familiar with ICS. To prepare for this mission and better understand how you fit into this disaster response and the disaster response system supporting the

response, review ICS courses on-line. There are both video and print versions available that can rapidly be surveyed. ICS 100, 200, 700, 800, in that order, are most appropriate.

If you access the SharePoint folder prior to deployment, you can review some of the current treatment protocols.

When you get the call to deploy

You might have only a few hours to prepare, or you might have until the next day.

The EMSA Travel Coordinator will call you to make arrangements to get you to Fire Base Camp. If it is fairly close, you might travel by private vehicle or a car might be rented for you. If you need to travel by air, EMSA will purchase your ticket and send it to you via email. In either case, please answer all the phone calls you receive during this time period, because it might be the travel coordinator asking when you can be ready, how far you are from an airport, etc. Generally, leaving your car in a lot at the airport is not preferred due to cost reimbursement. Please ask the EMSA travel coordinator for direction.

Each Fire Camp deployment is different. You might drive directly to the base camp. You might fly to Sacramento and either rent a car to drive to EMSA Station 1 in Rancho Cordova or be picked up and driven there to await your fellow team members. Being flexible is key.

If needed for your employer, you will be provided with a copy of your deployment orders and California Labor Protection Letter (CLPL).

The day of deployment

Wear your CAL-MAT uniform during travel to and from deployment. (See equipment list, Appendix A for details) If you do not have a uniform yet, please wear a navy-blue shirt and khaki pants.

You may be directed to EMSA headquarters or warehouse (Station 1 or 4) in Rancho Cordova to meet other members of your team and then caravan to Fire Camp together.

You will fill out EMSA paperwork there, have a photo taken, receive a CAL-MAT ID, and uniforms. This ID badge is to be worn at all times when you are in uniform. You might be asked to help load medical supplies into the trailer.

When more than one Fire Incident Base Camp is active, sometimes personnel from one Incident Base Camp is sent to work with another team at a different location. Just because your initial deployment order notes that you will be part of a team at one Incident Base Camp does not necessarily mean that is where you will end up.

COVID Precautions

All EMSA/CAL-MAT staff members are required to wear face masks at EMSA headquarters and warehouse, when traveling with other personnel, and everywhere in Fire Camp. Full PPE will be available for evaluating persons with symptoms suspicious of COVID-19.

Arrival and Set-Up at Fire Camp

Note: Your experience will be different if you are replacing a staff member at an existing medical unit.

Once at Incident Base, the mission leader (the MST) will interface with the Medical Unit Leader (MEDL) on scene to determine the location of the medical aid station and specifics about the fire and medical needs of the camp.

The CAL-MAT caravan will go to the chosen site to set up. Many times, the California Conservation Corps members will have already set up the large tents used for the Medical Aid Station and sleeping dorms for the CAL-MAT team. Sometimes these tents are not in the optimal location and orientation; any request to move these tents is made through the MEDL.

Once the Medical Aid Station tent is in the designated location, our team will unload the supplies from the trailer. For most Incident Base Camps, we use the same setup inside the Medical Aid Station, which has

been proven to work well for patient flow and treatment and make it easier for redeployed staff to rapidly acclimate mid-mission to a new base camp. Please take direction from the experienced team members with regard to location of supplies and equipment inside the tent. When the tent is set up, CAL-MAT is fully operational and will begin seeing anyone who presents for medical care or supplies.

There are areas at the Incident Base Camp that are off limits and may be roped off. Examples of this include inmate sleeping areas, CCC areas, and communications areas. Do not roam in these areas without explicit permission.

CAL-MAT members are expected to be in uniform except when going to and from the showers, exercising, and downtime/sleeping in your tent. CAL-MAT members should always wear their ID badge when moving about camp and working.

Sleeping Arrangements

Some CAL-MAT deployments may house you in a hotel room, but this is not usually the case in a fire Incident Base camp. You may be housed in a trailer, but often, it will be a large shared tent with little privacy. Due to the fluid nature of Incident Base camp and equipment available, this also means that specific sleeping arrangements noted in your deployment orders might not be available. Both trailers and tents have ventilation systems with heating and usually air conditioning.

Bring your own sleeping bag, pillow, and pad to use on a cot (or the ground for a night or two, since the final sleeping arrangements may not be ready upon your arrival to a new camp). You may bring a personal tent, if available or preferred, but coordinate the set-up location with the MST.

Sleeping situations will usually be co-ed, whether they are large group tents with canvas cots or sleeping trailers with berths. For this reason, sleeping attire should be modest, such as shorts and a t-shirt. Since quarters are shared, you should also bring a sleep mask and earplugs. Personal flashlight or headlamp is recommended for nighttime movements.

When you leave the sleeping area for your shift, please bring your day pack with all items you will need so that you do not need to return to the sleeping area and disturb the off-going shift team members.

Fire camps should be safe environments, but we suggest that CAL-MAT members use the buddy system when leaving the Medical Aid Station at night. In addition, please let the team leader on duty know where you are going.

Meals

Hot breakfast and dinner are served from a large kitchen trailer in a common area. The dining area is often under large tarps set up with tables and chairs. CAL-MAT members must be in uniform in dining areas, even off shift.

The cook staff is often Department of Corrections and Rehabilitation (CDCR) inmates. If this is the case, there will be Correctional Officers present when inmates are present. It is acceptable to exchange courteous greetings with the inmates but do not engage them in conversation. They have been instructed not to do so and this will get them in trouble. Do not engage in any “favors” if asked by the CDCR inmates. Please notify a CDCR officer if this occurs.

The MST will usually arrange for bagged lunches to be delivered to the Medical Aid Station or picked up at a central station by a team member. There is usually a choice of meat or vegetarian lunches.

Dietary preferences other than vegetarian may not be possible. Let us know before deployment if you have any serious food allergies or dietary restrictions and notify your MST when deployed to see what accommodations may be able to be made.

Showers

Fire camp usually provides large trailers (gender specific) with private hot showers. Extra-large paper towels and soap are provided, but you should bring shower sandals, your own towel, soap and shampoo. Your MST will inform you of the hours of operations.

There will also be trailers with mirrors and sinks for shaving, fixing hair, and brushing teeth.

Laundry

Laundry services are provided at each base camp. Bring a laundry bag for transporting laundry to and from the laundry trailer. Laundry should be dropped off before or after your shift and are available that evening or the next day. The MST will inform you of the hours of operation for laundry services.

Going off Site

Most fire base camps are far from local conveniences such as stores, gas stations and restaurants. If you are missing essential items, please notify the MST and they can make arraignments to secure those items.

Operations

EMSA will assign a medical team lead (MD, NP or PA). The medical team lead may not be the highest-level medical provider.

The team will be broken up into day and night shifts. When deployed, all team members work 7 days a week, at least 12 hours per shift. There will usually be some overlap of shifts for report/handoff and training.

Even though a team member is on "off duty" status, there is a chance that they will be called to "on duty" status for unusual circumstances like a large surge in patients or urgent event. Therefore, all CAL-MAT members must always remain fit for duty.

The logistics team member will have a new sign in sheet on the logistics desk each day. Make sure you sign-in and out each day and keep track of your hours worked. Your timecard data must match the sign-in sheets. Additional hours need to be approved by the MST. (This does not pertain to on call hours for physicians).

The logistics team members are responsible for many things, including ordering of needed supplies. Communication of dwindling supplies or missing supplies should be communicated to facilitate reorder. Notify the MST if there is a need for supplies not on the standard list, then the medical team lead should discuss with Dr. Backer. Items not on the standard list must also be approved for purchase by operations.

Work Expectations for all team members:

- Help with the unloading and loading of equipment and supplies.
- Lift up to 35lbs during daily operations
- Know how to operate all available equipment in your scope of practice
- Know the contents of all equipment packs in Medical Aid Station
- Know the supplies available for treatment and dispensing
- Know specifics of medical paperwork required for each fire group
- Know the circumstances that require notification of the CAL FIRE Medical Leader (Med L) and who should reach out to contact.
- Perform duties related to inventory control (i.e. keep track of supplies issued, completing required forms, notify logistics of supplies needed or running low)
- Perform data entry related to supply cache
- Complete Patient Care Records (PCR) with all required data entered.
- Keep the Medical Aid Station and equipment clean (cleaning of the tent and equipment throughout the day and after each patient encounter)

The consumption, possession or purchase of alcohol and or recreational drugs is not permitted on or off duty at Fire Incident Base Camp.

Work hours and On-call providers

CAL-MAT team members are paid “door to door” for your deployment, with your start time as the time you leave your house on the first day.

A CAL-MAT work shift is generally 12-13 hours. The busiest times are mornings and evenings when firefighters are in the camp, with slow periods during the day. If there ~~are patients~~ during the evening, you may be asked to work additional hours.

Document all hours worked. If you bill for more than 15 hours in one day, it will count as 2 days of deployment. This may only be an issue if you do frequent deployments, because you are limited to 60 days per year of CAL-MAT deployment as a temporary state employee--unless there is an emergency exemption (as has been done for COVID response).

Nights are usually covered by an RN and Paramedic/EMT. Nights are usually very slow. Depending on staffing, we may arrange a remote on-call physician, so that the physician or provider that covered the day can sleep at night. The on-call telemedicine physician will answer questions and do telemedicine consultations; however, if a patient needs to be examined, the RN will notify the onsite physician. If a physician or other staff member is asked to come in off shift for patient care, they will be compensated. Physicians should refer to the ***on-call policy/procedure*** **(Appendix B)**.

Medical Care in the Fire Camp

If you are comfortable with acute care, you will be comfortable providing care in the Fire Camp. The volume is low and generally, the acuity is low. Each medical professional brings their clinical expertise to the mission. You are working in a team whose skills will complement one another.

Physicians should not hesitate to consult with other members of your team or with the CAL-MAT or CAL FIRE medical directors (contact information below).

CAL FIRE is still adjusting to having medical capability stationed within Fire Camps. Not all problems are directed to the medical tent. They also have EMS on the fire lines and protocols for managing some problems.

Fire Camp personnel may present to the Medical Aid Station for 2 reasons:

1) To receive medical evaluation and treatment

2) To request self-care supplies (e.g., sunscreen, moleskin, ibuprofen, antifungal meds, body glide, Gold Bond powder, antihistamines, body wipes, anti-itch meds, poison oak pre or post treatment)

COVID protocol: Every person who presents to the medical aid station for supplies or medical care will be logged on the screening form, have their temperature taken and screening questions asked. If the screening is positive (taking into consideration of Fireline exposure symptoms), the patient is directed to have a seat outside the isolation tent for further evaluation. If it is determined the patient needs to be tested for COVID the MST will contact the MEDL prior to any testing being completed. COVID testing may be available at the CAL-MAT clinic—either antigen testing or molecular testing. Please refer to the CAL FIRE/CAL-MAT testing protocol.

Common complaints include blisters, skin rashes, lacerations, sprains, foreign bodies, pulled muscles, poison oak exposure, dehydration, and symptoms related to smoke exposure. More serious injuries or illness may occur, including allergic reactions, rhabdomyolysis, syncope, serious heat illness, pulmonary, cardiac or neurological problems.

Most of the severe injuries and medical conditions that occur on the fire line will be evacuated by medics or helicopter and will go directly to a hospital. In the case that medics cannot reach the patient or weather

conditions prevent helicopter arrival, patients with more severe complaints will be brought to the Medical Aid Station.

Serious problems will usually require transfer from the medical camp by ground or air EMS to an appropriate emergency department. This should be coordinated through CAL FIRE MEDL.

There is an isolation tent for infectious patients, but it should only be considered ~~like~~ an observation unit for short stays under 24 hours.

The physician on-site provides any required oversight to mid-level providers (NP, PA).

The medical and pharmaceutical cache is designed to treat the common problems as well as provide emergency care. Let your MST know of any additional or replacement items needed. Resupply occurs daily from EMSA warehouse. Suggestions to the CAL-MAT Medical Director for additions or deletions from the medical cache are appreciated.

Operational Structure

CAL-MAT staffs and operates medical stations in Fire Camps under contract between CAL FIRE and EMSA. CAL FIRE has authority over the ~~Fire Camp~~ fire base camp operation and determines when a medical camp is needed and when it will demobilize. EMSA is responsible for the CAL-MAT program, CAL-MAT volunteers, and for the care provided in the medical unit.

The CAL-MAT operation includes a Mission Support Team (MST), which may be only one person. Their role is to handle the logistical and operational aspects of the medical station and to support the medical team. The MST coordinates with the EMSA Department Operations Center (DOC) and interfaces with the CAL FIRE administrative staff to coordinate the operations within the Incident Base.

The medical lead and the MST coordinate on issues related to operation of the clinic. The MST will usually be the most experienced CAL-MAT person with some medical background. The team lead will be the main connection to the MEDL. Both the medical lead and MST are responsible to the MEDL for issues within camp and treatment plans, as well as to EMSA for internal medical site operation and medical care.

Care Coordination and Problems

The CAL FIRE Medical Leader (MEDL) is the CAL-MAT contact for all medical issues (not how to provide specific medical care).

The MST and medical team lead will consult with the MEDL to determine how often he/she wants to be notified for an injury, or complaint of a CAL FIRE employee. There is currently considerable variation on how they will want to interface with our medical unit.

The MEDL needs to be notified if any personnel that receive an evaluation from CAL-MAT cannot return to work at 100% of their prior ability. Examples may include patients that are issued any medications that may cause drowsiness, splint/crutches and illnesses that require isolation.

All burns of any severity (even a minor burn) that occurs to any staff from any agency **must be reported to the MEDL while the patient is still in the medical aid station.**

Some burns may need to be evaluated at the burn center per CAL FIRE policy even if they are minor. The evaluation can sometimes be arranged at the burn center as an outpatient with an appointment the next day as an option. Your opinion on this will be highly considered when the MEDL discusses with the incident commander.

Initial contact with the local health department will be made by the Base Incident Commander (IC) or designee. All local Health Department contact should be coordinated with the IC or their designee.

Inform the MST of any issues with the incident personnel on site, including the MEDL, or with general policies/procedures of care provided. They will work with the EMSA Fire Mission Lead to resolve these issues.

If this does not provide satisfactory resolution, and there are issues involving the MEDL or incident management team from CAL FIRE, the medical Team Lead should notify the CAL FIRE EMS Medical Director. If there are any issues regarding appropriate care of a patient, please contact either Medical Director below.

CAL-MAT Medical Director: Howard Backer, MD

howard.backer@emsa.ca.gov

Mobile phone (510) 219-8681

or CAL FIRE EMS Medical Director: Brett Rosen, MD

Brett.rosen@fire.ca.gov

Mobile phone (916) 215-8751

Teamwork and Communication

We are at Fire Camp to help support the response to a disaster. We represent CAL-MAT and EMSA, as well as CAL FIRE. They have high expectations and standards, which we meet with the utmost professionalism.

Good communication, respect for other team members, flexibility, and teamwork are imperative to the successful completion of the CAL-MAT mission. Sharing the workload and the ability to problem-solve are elements of a highly functioning team.

Many of the policies and procedures are available on a shared drive. There is a CAL-MAT medical folder that can be accessed from your personal device when connected to WiFi.

https://caemsa.sharepoint.com/:f:/t/covid/Ehm1_vtZb3pFp3paindRJd4BEB4RSudA0a2WILDZdilGzw?e=V79MkF
If problems accessing the CAL-MAT Medical folder through this link,
Contact Jesus Ochoa Cell: (916) 203-0814

Sharing knowledge with each other not only enhances our ability to maintain excellence in the care but is a very good team-bonding activity. The MST or medical lead should arrange an agreeable time during each day for team members to teach topics that relate to medical care in the austere setting. The first training session should be on equipment operation, supply location and team coordination for patient resuscitation scenario prior to arrival of ALS arrival transport.

Paperwork

Note the date and time you leave your house for deployment and return home.

Sign in and out for each shift you work at Fire Camp.

Enter the hours you work each day on your timecard, which should also have information specific to your job code and Fire Camp. Your logistics person can provide instruction on how to complete your timecard. (See **Work Hours** above)

A patient care report must be completed for each patient presenting for evaluation and treatment. Fire agency, branch, division and resource number are key bits of information needed for patient follow up as well as reimbursement. The reverse side of the PCR is used to document nursing care & supplies and meds used/dispensed.

Records are now paper, but CAL-MAT is working to develop an EMR.

Each Fire Camp staff member who receives supplies or treatment items must have a supply form completed in order for EMSA to get reimbursed. The patient or strike team leader must sign the bottom of this form to acknowledge receipt and you must complete the top portion of the form indicating agency, resource number, and how many firemen are using the supplies provided.

Occupational forms must be completed on patients working for most agencies.

Any supplies used for treatment, even minor items, must be accounted for. If we do not record all supplies used, we are not reimbursed by CAL FIRE. EMSA does not have a separate budget for providing this care.

Demobilization

Let the MST know your demobilization date, if it is prior to the demobilization of the medical aid station. This allows time to secure a replacement for your position. If any personal emergencies arise please inform the MST, they will coordinate with the DOC and travel to make appropriate arraignment.

The travel coordinator will arrange transportation back home.

CAL FIRE will give the order to demobilize the entire Medical Aid Station at a specific date and time.

If you are on-site when the camp is demobilized, each team member required to help pack up supplies and put them in the EMSA trailer under direction from the assigned MST lead

You will be asked to send a text to the team leader to answer some demobilization questions.

On the last day of your deployment you will log “door to door” hours on your time sheet. When you have returned home, send a text to your mission leader to identify the clock out time for your timecard and confirm that you arrived home safely.

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Appendix A

CAL-MAT Uniform Requirements and Personal Gear Recommendations

(More detailed list available, on request.)

CAL-MAT will provide each member with two sets of uniforms that consist of

Shirt: 2 CAL-MAT logo t-shirts or polo-style shirts

Pants: Khaki 5.11 Stryker Pants

Belt: Black Utility or Black Basket Weave, in widths of 1.5" or 1.75"

Hat: CAL-MAT logo cap

You are responsible to provide the following personal items

Above uniform items, if previously supplied for another mission.

Shoes: bring sturdy but comfortable footwear for clinical care during long shifts and that can navigate uneven dirt terrain in the austere Fire Camp setting.

Work gloves for moving equipment, erecting and breaking down camp

Outerwear for cold or wet weather (may be available through CAL-MAT), preferably a solid colored navy-blue sweatshirt or jacket.

Please do not wear other logo items.

Personal items

- Extra uniforms, socks, underwear, in sealable bags
- Sandals to wear in the shower
- Towel
- Personal toiletries, medications, extra pair of eye glasses
- Ear plugs and eye cover for sleeping
- Medical history documentation and emergency contact information on an index card kept in a pocket at al times
- Copies or original identification, licenses, certificates
- Credit cards/cash
- Sunglasses, sunscreen, insect repellant
- Flashlight with batteries or head lamp
- Portable power bank in case power is not established upon arrival.
- Stethoscope and other personal medical gear (although other equipment and PPE are supplied on site)
- Mesh laundry bag
- Leisure (books, i-pad, etc.)
- Sleeping bag, sleeping pad, inflatable pillow
- Personal tent (optional)
- Snacks or MRE in case food service is not yet operating when you first arrive

Appendix B

SUBJECT: On-call providers for medical site in Cal-Fire base camp

PURPOSE: Policy and protocol for on-call providers to support clinical field sites

See full policy/procedure dated 9/15/20

Background

EMSA uses CAL-MAT staff to provide clinical care for fire camps under contract with Cal-Fire. The current contract allows for a provide to cover a site remotely that is staffed with medics, RNs and potentially a mid-level. Section A2: "…If a Medical Doctor is not on-site, then one will be available by phone for the on-site advanced practitioner…."

Policy/Procedure

- An on-call physician may be used to support a CAL-MAT medical station within a Cal-Fire base camp.
- The decision to use a remote on-call physician provider will be based on the clinical needs at the site and the staff available for the site.
- A remote physician may support a team led by another physician who is working 12 hours or more and needs back-up coverage at night, or to support a mid-level or an RN.
- The on-call physician may be working nights at another site or taking call from home.
- Remote coverage to cover nights for another provider on site can be done via telephone.
- If there is no provider on-site, back-up is best provided by telehealth.
- Telehealth must meet minimal requirements for privacy and security, but during the declared COVID emergency, any communication platform can be used—although some are recommended over others (see attachment).
- On-call provisions must meet Human Resources rules and contractual requirements of various employee groups.
- https://www.calhr.ca.gov/labor-relations/Pages/Unit-16-Physicians-Dentists-and-Podiatrists.aspx

Protocol

The CAL-MAT Personnel Chief or the CAL-MAT Medical Director may determine the need for an on-call provider.

If a physician is not available on-site, an on-call schedule will be set up by CAL-MAT personnel.

A physician or mid-level provider at a site may request an on-call provider for the overnight hours through their MST lead, if desired.

The on-call doctor would be consulted if the RN and/or paramedic covering the night shift simply wanted advice or wanted to confirm a management plan for a patient.

The provider on-site would be woken up to see any patient who presented to the medical site and, at the discretion of the RN or paramedic staffing the tent at night, needed an evaluation and examination by the provider.

According to HR and contractual rules:

Physicians are not paid overtime.

A provider who is working the night shift at a CAL-MAT site would be paid for their regular night hours worked and would not receive additional compensation for taking call from another site.

A provider at a site who worked during the day and evening would be compensated for an additional 4 hours if awakened to see a patient during the night. The compensation would be the same if additional patients were seen within that 4-hour period. For additional patients seen within 4 hours of the usual shift time, those hours before the usual shift would be compensated.

An off-site provider who is not deployed on a CAL-MAT mission but is taking call remotely to support a CAL-MAT site will be compensated 1.25 hours for being on-call.

If the provider is called during the night, they will be compensated 4 hours for calls within that block of time.

If the remote provider takes call for more than 7 days in a row, they would be paid for 8 hours for taking night call.

Nurse Practitioners and Physician Assistants may receive overtime if they are called back during the night to see a patient after working the day/evening.

ANNEX I:

Fire Camp Mission Check List

Pre-Deployment

- Pack a "go-bag" (suitcase/large duffle bag that will contain all items needed for 2 weeks)
  - At least one set of civilian clothing
  - Enough non-perishable food/water to sustain for 72 hours
  - Pack like you are camping – i.e., sleeping bag, towels, etc.
    - Fire Camps are austere conditions, you will not be in a hotel
- Pack a "day-bag" (backpack to carry essentials needed for travel and assigned shifts)
  - DO NOT pack Leatherman type tool or scissors/trauma sheers, etc., if traveling by air - must go in checked baggage
  - Ensure to always have work gloves
- Laminate (or place in a baggie) an index card to be kept in your rear left pocket with:
  - Name
  - Date of Birth
  - Emergency Contact Information
  - Allergies (medications and food)
  - Major Medical Problems
  - Current Medications

Activated to Deploy to a Fire Camp Mission

- EMSA RPU coordinates the assembly of all CAL-MAT Teams to be deployed and assigns the Team Leader.
- EMSA Travel Coordinator will be contacting you to make travel arrangements
  - Answer any calls coming from the (916) area code
- Notify your employer regarding your activation and will be deployed for up to 2 weeks (or whatever your deployment is scheduled for)
  - You will receive an activation letter/orders which you will email to your employer.
    - You are covered under the California Labor Code when activated by the State as an Emergency Rescue Personnel
    - You will be paid by the State of CA and **do not** have to take PTO from your job
    - You are covered for work comp by the State of CA

Day of Deployment

- Be flexible, sometimes things change rapidly
- Always travel in CAL-MAT uniform,
  - black or tan boots, CAL-MAT tee shirt, khaki pants, black or tan belt, CAL-MAT ID card
- If you have not been issued a uniform or ID, you will receive during the onboarding process
  - If no uniform, travel in navy blue shirt, khaki pants and boots (easier to wear boots than pack them)

Arrival and Set Up of Fire Camp

- The MST (Mission Support Team) usually an EMSA staff member, and the CAL-MAT Team Leader will interface with CalFire leaders on scene to determine location of the medical aid station and specifics about the fire and medical needs of the camp
- The CalFire Medical Leader (Med L) is the CAL-MAT contact for all things medical.
  - The Team Leader is the liaison for CAL-MAT – no other team members should be contacting the Med L on their own
- Everyone helps to unload the supplies from the trailer and set up the medical aid station (tent)
  - Must wear work gloves
- Take direction from experienced team members and MST regard to location of supplies and equipment inside the tent

- Most fire camp mission tents are set up the same way, it has proven to work
- During the COVID-19 pandemic the medical aid station will have a screening table set up at least 6 feet from the tent entrance. EVERYONE is screened before letting them in the tent.

Operations

Any BURN of any severity (even the mildest appearing burn) that occurs to any fire camp staff for any agency must be reported to the MED L while the patient is still in the medical aid station.

Fire camp personnel may present to the Medical Aid Station for 2 reasons:

1. To receive a medical evaluation and treatment
2. To request self-care supplies like, sunscreen, lip balm, moleskin, ibuprofen, eye drops/wash, etc.

- Team Leader will conduct at least one briefing/day
  - The Team Lead will report out on medical operations on the scheduled Department operations Center (DOC) calls. Logistics will be reported out by the assigned MST.
- 24/7 coverage for the medical aid tent
  - Team members will be working 12 hour shifts for the duration of the deployment
  - Even if a team member is "off duty" there is a chance they will be called to "on duty" status for unusual circumstances like large influx of patients or an urgent event.
- CAL-MAT uses the "buddy" system.
  - If you are not assigned a buddy let the MST lead know so one can be assigned to you.
  - If your buddy demobilizes, let the MST lead know and one will be assigned to you.
  - Your buddy will know where you are at all times and vice versa.
  - No CAL-MAT member should be walking around camp alone unless it is to use the BR, but your buddy will know that

Sleeping Arrangements

- Sleeping situations will be co-ed and could be either:
  - Large group tents on canvas cots
  - Sleeping trailers with individual berths
    - Both will have ventilation systems with heating and cooling
  - Some situations you may be able to erect your own individual tent, but don't count on it and remember you will have no ventilation systems
- Dress accordingly for sleeping arrangements described above and you may have to make a trek to the outhouse (port-o-pottie) so ensure you have a headlamp
- When you leave your sleeping quarters for your shift take everything you will be needing for the day with you.
  - The day/night shift will be sleeping in that area

Showers, Laundry Service and Meals

- Fire camps will provide large trailers with hot showers.
  - May not get there right away so ensure you have brought "baby wipes" for wipe down showers
  - There may be large paper towels for drying self, but don't count on it
  - Check with logistics for hours of operation and try to schedule your time around the time the fire crews are returning to camp to take their much needed showers
  - Trailers outfitted with water (sometimes hot), mirrors and sinks are available
- Laundry services are available at most fire camps
  - Remember to bring a mesh laundry bag with your name
  - Label all your clothing (initials with sharpie on tags)
  - Drop off laundry in a mesh bag in am and return in pm or next day to pick up
- Meals are provided at the camp – it has been said if you leave fire camp hungry you did something wrong

- Hot breakfast and dinner are served from a large kitchen trailer in a common area
- The cooks will be wearing orange jumpsuits – they are inmates for the Department of Corrections.
  - Multiple prison guards are with them
  - Do not engage in conservation with the inmates – it is forbidden for them to do so
  - You may exchange courteous greetings
- Bagged lunches are available
  - There is usually a choice of meat or vegetarian
- Don't always count on the fire camp having "special dietary needs" capability.
  - You can usually get vegetarian items but not much protein so plan for that

Paperwork

- Enter the hours you work each day on your timecard.
- Ensure you have been instructed on how to fill the timecard out, if you haven't, contact the MST lead
- Sign in and out for each shift you work at fire camp
- A Patient Care Record (PCR) must be completed for each person presenting for evaluation and treatment.
  - Be vigilant in completing all sections of this form
    - Fire agency, branch, division and resource number
- The reverse side of the PCR is used to document nursing care, supplies and meds used/dispensed
- Any supplies used must be accounted for – everything has a charge to include the disposable bedsheet/pillowcase
  - For medical treatment
  - For self-care supplies passed out
- Work comp forms must be completed on patients working for certain agencies (ex. CalFire)

Demobilization

- Advise your Team Leader what your demobilization date will be. They will advise the he logistics team leader or MST lead.
- CalFire will give the date and time the Medical Aid Station is to be demobilized
- Teamwork is essential to pack up all supplies into the EMSA trailer.
  - Take direction from the logistics team leader or MST lead on how and where supplies go in the trailer
  - Again, must wear your work gloves
- When your travel orders have been arranged you will receive direction via email