Tuolumne-Calaveras
Health Care and Safety Coalition (HCSC)
Burn Surge Annex

Initial Plan: _____ 2021 Revised:3/25/22

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1. Introduction

The need to care for multiple burned patients is a rarely encountered but foreseeable consequence of potential hazards facing healthcare organizations in the Tuolumne/Calaveras operational areas. Compounding the problem is the very limited resources for care of the burned patient not only locally, but nationwide. On a day-to-day basis in Tuolumne and Calaveras operational areas (referred to as Tuolumne/Calaveras through the remainder of this document), the UC Davis Medical Center (UCDMC) provides burn services for both adult and pediatrics. These resources can be rapidly challenged in a mass burn scenario and the Tuolumne/Calaveras Healthcare and Safety Coalition (referred to as "the coalition" through the remainder of this document) may provide support through:

1) facilitating internal resource sharing and resource requests to external partners;

2) information sharing among coalition members

1.1 Purpose

This annex to the Tuolumne/Calaveras Healthcare & Safety Coalition Health Emergency Preparedness and Response Plan (HEPReP) provides guidance to personnel supporting an incident in which the number and severity of burn injured patients in the Tuolumne/Calaveras area has severely challenged the coalition's member organizations. Other attachments or annexes to the HEPReP may be utilized in conjunction with this document. As with any component of the HEPReP, this tool is intended to provide guidance only and does not substitute for the experience of the personnel responsible for making decisions at the time of the incident.

1.2 Scope

This annex was developed during the 2020-2021 grant year to fulfil a requirement of the Hospital Preparedness Program (HPP). All coalition partners were invited to participate in the development of this annex. Participating agencies included:

- Adventist Health Sonora
- Mark Twain Medical Center
- Calaveras County Public Health
- Tuolumne County Public Health
- Tuolumne County EMS Agency
- Mountain Valley EMS Agency
- Region IV RDMHS
- American Legion Ambulance

Members of the HCSC are trained in the Incident Command System (ICS) and are encouraged to utilize ICS when responding to events such as a burn surge. This annex does not supersede the plans or authorities of HCSC member entities. Rather, the intent of this annex is to increase the preparedness of the coalition to respond to a burn surge event, in addition to documenting processes and procedures.

1.3 Overview/Background of HCC and Situation

The Tuolumne-Calaveras Health Care and Safety Coalition includes the jurisdictions of Tuolumne County and Calaveras County. Health Care Coalitions have existed in each county for a number of years. Core coalition member requirements were introduced in 2017 and one of the new requirements was the participation of at least two acute care hospitals. For this reason, Tuolumne County and Calaveras County combined coalitions in 2017 with Tuolumne County taking the role of the "Lead Coalition" and Calaveras County taking the role of "Subcommittee Coalition." While the combined Tuolumne-Calaveras Health Care and Safety Coalition plans, meets, trains, and exercises together, each county's subcommittee of the coalition continues to operate within their own jurisdictions with individual grant and fiscal responsibilities.

Tuolumne and Calaveras Counties are both rural jurisdictions in the central Sierra Nevada range of California. Calaveras County borders Tuolumne County to the north. with one acute care hospital each. In addition to the two hospitals and other healthcare organizations, the coalition includes safety, non-governmental, faith-based, and educational partners, among others. Neither Adventist Health Sonora nor Mark Twain Medical Center have burn units although both hospitals can provide Emergency Department services to burn patients.

Tuolumne and Calaveras Counties lie within the Medical Health Mutual Aid (MHMA) Region IV that includes the counties of Amador, Alpine, El Dorado, Nevada, Placer, Sacramento, San Joaquin, Stanislaus, and Yolo.

Tuolumne and Calaveras Counties both have large, forested regions; combined with the drought California has been experiencing these areas are at particularly high risk of wildfire. The rural nature of both counties also means there are increased fire risks not typically present in more urban areas, including wood stoves/fireplaces and power lines interacting with trees.

1.4 Assumptions

Various hazard etiologies are possible that could simultaneously generate large numbers of burn victims in both counties.

Victims of these incidents may sustain co-existent traumatic injuries (inhalation injury, blunt, penetrating, etc.).

Tuolumne/Calaveras Fire and EMS agencies would, in most foreseeable cases, be the lead agency for field response to an incident of this nature.

Existing burn beds in the State of California are limited and have restricted ability to surge at any given point.

Given that there are no burn centers in Tuolumne/Calaveras, in the event of a surge it is expected that non-burn centers would need to temporarily provide treatment and supportive care to some burn victims.

Based on historical evidence from other mass burn casualty incidents, many burn patients cared for at non-burn centers may be directly discharged from those facilities after initial treatment is completed.

The optimal final disposition for patients with serious burns is a recognized burn treatment center.

Transfers of burn patients from non-burn centers to burn centers will have to be coordinated at the jurisdictional (and potentially regional) level to prevent duplication of effort and to maximize efficiency of the process. This is in distinction to the everyday process in which individual facilities arrange transfer of their patients independently.

Severe burn patients often become very unstable clinically within 24 hours of injury, complicating transfer plans after this time frame.

State and Federal resources, though typically available to assist, cannot be relied upon to mobilize and deploy for the first 48-72 hours.

The success in executing any response plan is dependent upon the regular examination, revision, and training on the plan.

1.5 Definitions

A. **Mass (burn) casualty incident**: Any incident generating (burn) patients that severely challenges or exceeds the current capabilities of the healthcare resources in Tuolumne/Calaveras.

B. **MHOAC**: Medical Health Operational Area Coordinator

C. **RDHMC**: Regional Disaster Medical/Health Coordinator

D. **RDMHS**: Regional Disaster Medical/Health Specialist

E. **Triage decision table**: A tool developed by the American Burn Association that will be utilized by Tuolumne/Calaveras hospitals to facilitate triage decisions as to which patients should be transferred to a Burn Center or Trauma Center for definitive care (see **Attachment 1**).

F. **Burn Centers**: There are six recognized burn centers in Northern California: the Firefighters Burn Institute Regional Burn Center at UCDMC, the Shriners Hospital for Children (Pediatric Burn Center) in Sacramento, the Bothin Burn Center at St. Francis Memorial in San Francisco, the San Francisco General Hospital-Burn Unit, the Leon S. Peters Burn Center at Community Regional Medical Center in Fresno & the Santa Clara Valley MC Regional Burn Center in San Jose.

G. **Acute care facilities**: Trauma Centers within the region will be prioritized to receive burn patients once the capacity of the burn centers is reached. In a large incident, any acute care facility with a functioning ED may have some burn patients transported to them.

H. **Rehabilitation and Skilled Nursing Facilities**: The major contribution that rehabilitation and Skilled Nursing Facilities (SNFs) can make will be to facilitate rapid in-take of appropriate patients from acute care facilities to free up space in the hospitals. There may be select situations in which rehabilitation facilities will be able to accept recovering burn patients but this will require additional guidance, resources, and assistance (e.g. from Burn Centers).

I. **Community Health Centers (CHCs)**: The CHCs in the operation area may have walk-in patients but only the most minor of burns will be handled primarily in the CHCs. Though guidance for

outpatient management of burns can be provided by the Burn Centers, the treatment and follow up on any significant burn will be referred out by the CHCs.

J. **Western Regional Burn Disaster Consortium (WRBDC)**: Burn Centers located in the western region of the United States that have mutually agreed to collaborate on issues pertaining to communication, education, resources, and patient transfers during mass burn casualty incidents. Available bed locations are coordinated through a call center located at the Western Region Burn Disaster Hotline. The 24/7 contact number is 1-866-364-8824. Data provided on available beds includes the following:
    - Facility name
    - Bed type
    - POC

2. Concept of Operations

2.1 Activation

The most likely scenario will be a burn incident in which EMS recognizes that some burn patients will have to be transported to non-burn facilities due to the volume/number of patients involved. EMS will then declare an MCI and begin requesting additional resources, following the county of occurrence's MCI protocols:

Tuolumne (https://www.tuolumnecounty.ca.gov/DocumentCenter/View/16131/Policy-52000-MCI-Management)

Calaveras (https://www.mvemsa.org/policies/p900-county-specific-policies/515-928-40-amador-calaveras-mci-activation/file).

2.2 Notifications

Following the county of occurrence's MCI protocols, the MHOAC of said county will be notified upon declaration of MCI. The MHOAC will then notify the RDMHS. MHOAC or RDMHS, along with primary receiving hospital, will also begin notifying/coordinating with nearby Burn Centers.

If deemed necessary by the RDMHS or EMSA/CDPH, the Western Region Burn Disaster Consortium (WRBDC)'s Burn Mass Casualty Operations Plan will be utilized as a reference to aid in patient treatment/placement/preparation for transporting.

2.3 Roles and Responsibilities

The primary receiving hospital will attempt to treat/stabilize as many patients as possible.

NOTE: As burn patients may become unstable within the first 24 hours, early transfer is a priority. Bed assignments and transportation arrangements will ideally be completed within 12 hours of incident onset if feasible.

It is expected that during any Mass Burn Casualty Incident in Tuolumne/Calaveras counties the Burn Centers in northern California would serve as the primary referral centers for burn surge capacity per their individual facility protocols. When their capacities are exceeded, non-

burn trauma centers in the region will be expected to take burn patients. The primary hospital in the county of occurrence will provide strategic management guidance regarding placement of patients and clinical management guidelines for non-burn facilities.

Rehabilitation and outpatient follow up services: Depending on incident parameters and patient needs, rehabilitation and outpatient follow up services for burn patients will likely exceed current capabilities within Tuolumne/Calaveras.

Rehabilitation: There are no burn rehabilitation centers in Tuolumne/Calaveras. The best option available will be to arrange for services to be provided at a nearby Burn Center/Burn Rehab Center after treatment and discharge.

Outpatient services: In case the outpatient services for patients are limited, the HCSC can facilitate the development of clinical guidance by medical professionals from AHS & MTMC to be distributed to outpatient providers such as Rapid Care clinics or Indian Health Clinics. However, complicated burns requiring outpatient follow up will need to have any physical therapy, occupational therapy, and garment issues addressed separately.

2.4 Logistics

2.4.1 Mutual Aid

Tuolumne & Calaveras Counties have existing mutual aid agreements, allowing for easy sharing of EMS resources during an MCI. The HCSC will facilitate further mutual aid among the HCSC members (excluding EMS) as possible, specifically resource sharing.

No member facility will be expected to deplete their supplies, but each facility will be asked to spare as much as possible while maintaining operational capabilities.

If additional staffing is required by the primary receiving hospital, DHV/MRC volunteers will be activated.

2.4.2 Additional Resources

The MHOAC may, depending on incident parameters, initiate the process for requests for additional resources through the MHOAC system. This may include:

- Region IV assets: Burn beds and transportation assets; activation of MRC units outside of Tuolumne/Calaveras.
- Cal OES assets: Burn beds and transportation assets
- ASPR/National Disaster Medical System (NDMS):
    - Burn beds nationally
    - Additional equipment and supplies needed
    - Specialty related clinical management guidance (i.e. radiation or chemical burns, etc.)
    - Disaster Medical Assistance Teams (DMATs)

2.5 Special Considerations

2.5.1 Behavioral Health

Responding HCSC members (fire, EMS, law enforcement, hospital) can catalogue behavioral health needs anticipated in response to the incident and convey these to the MHOAC and/or the county of occurrence's Behavioral Health Department (as needed). Each county's Behavioral Health Department should make efforts to have counselors available to patients, witnesses (including response staff), and families of patients.

2.5.2 In-hospital deaths

It is anticipated that hospital deaths occurring in Tuolumne or Calaveras County from the burn incident will be handled by the county of occurrence's Coroner's Office for post-mortem processing. Individual facilities are expected to contact their Coroner's Office for individual cases. If the in-hospital deaths become excessive, the HCSC can assist with operational area-wide tracking of deaths (if requested), working with Tuolumne/Calaveras MHOAC to identify support needs for storage at the facilities, and petitioning for regulatory relief regarding storage of the deceased beyond 30 days (if Coroner's Office case load prevents timely removal from the healthcare facilities). Additionally, if the burn incident becomes a mass fatality incident, "Annex 13. Mass Fatality Plan" of the Tuolumne County HEPReP will be activated and followed as appropriate.

2.6 Operations – Medical Care

2.6.1 Triage

Disaster triage is a method of quickly identifying victims who have life-threatening injuries and who also have the best chance of survival. Identification of such victims serves to direct other rescuers and health care providers to these patients first when they arrive on the scene. The use of disaster triage involves a change of thinking from everyday care to:

- High intensity care should go to the sickest patient doing the greatest good for greatest number.
- Identify victims with best chance of survival for immediate intervention focusing care on those with serious and critical injuries but who are salvageable.
- Identify victims at extremes of care by sorting those who are lightly injured and those who are so severely injured that they will not survive.
- Immediate treatment to only those victims that procedure or intervention may make difference in survival.
- Altered standards of care based on resource availability.

Disaster triage must be dynamic and fluid in its execution. Primary triage is done at the scene by first responders; the triage category is assigned rapidly and is based on physiologic parameters and survivability. Secondary triage occurs typically at the facility where the patient is transported. The initial triage assignments may change and evolve as the patient's condition changes so reassessment is crucial. It is essential that medical personnel prioritize transport and treatment based on level of injury and available resources.

The Triage Decision Table developed by the American Burn Association can be utilized by Tuolumne/Calaveras EMS staff as well as hospital staff to facilitate triage decisions as to which patients should be transferred to a Burn Center or Trauma Center for definitive care.

2.6.2 Treatment

Transfers will be prioritized according to patient acuity. Burn specialty consultation may be obtained by the hospitals if they are temporarily caring for burn patients to ensure the best care possible; potential resources include telemedicine consulting with regional Burn Centers or WRBDC.

2.7 Transportation

Patients that need immediate transfer to a Burn Center will be transported via air ambulance if available. If unavailable, patient will be transported via ground ambulance. Most burn victims will not need immediate transfer and can instead be treated/stabilized at local hospitals, enabling more ambulances to stay in service in the operational area. Additional emergency transportation may be available from regional partners but will likely not arrive for several hours after the incident occurs. Non-emergent transportation (evacuation, large scale non-urgent patient transport, etc.) may be provided by the transit agency of the county of occurrence.

2.8 Reunification

2.8.1 The Hospital Family Reunification Center (HFRC)

It is recommended that all hospitals have a plan in place to manage a surge of concerned family members, guardians, and friends that may present following a disaster, especially if large numbers of unaccompanied pediatric patients could be involved in the event. This is recommended because the volume of family members presenting to the hospital looking for their loved ones will typically overwhelm hospital lobbies and other care areas and could adversely affect clinical operations. This place where families and others may gather is often called a Hospital Family Reunification Center (HFRC). The HFRC is meant to:

- Provide a private and secure place for families to gather, receive, and provide information regarding loved ones who may have been involved in the incident
- Provide a secure area for these families away from the media and curiosity seekers.
- Facilitate efficient information sharing among hospitals and other response partners to support family reunification.
- Identify and support the psychosocial, spiritual, informational, medical, and logistical needs of family members to the best of the hospital's ability.
- Coordinate death notifications, when necessary.

Hospitals should consider locations in their facility that are best suited to effectively and respectfully establish a family reunification center. Some considerations to keep in mind are:

- Locate the HFRC away from the hospital Emergency Department and media staging sites.
- Ensure there is sufficient space to accommodate many individuals.

    - Adequate space facilitates communication between designated hospital personnel and family members.
- Provide nearby access to smaller rooms that may be used for confidential discussions, notifications, and provision of other support.
    - Distraught family members may need additional space; alcoves or additional rooms may help both psychologically and with security.
- Ensure the space has an area for food and beverage.
- Ensure restrooms are easily accessible.
- Ensure the space is accessible to patients and family members with considerations for access and functional needs.
- Ensure access to the HFRC can be controlled and security can be maintained within the site.

2.8.2 The Family Reunification Site

Once identification and verification of a patient and family is complete, there should be a separate area to facilitate the actual reunification of the family and patient. The physical place where patients are reunited with their families and/or legal caregivers should be located away from the HFRC if possible. This is to permit the reunification to occur in a safe, well-controlled area located well away from the noise and distractions of the other areas. The family reunification site should allow for secure and simple departure from the hospital. Hospitals should also plan for reunification of patients who have been admitted to the hospital and for escorting of family members to other areas of the hospital.

Separation of the Family Reunification Site from the HFRC is also important to prevent creating additional trauma for families still waiting in the HFRC who are not yet reunited with their patient but who would otherwise be watching reunifications happening in front of them.

Families arriving at the hospital will be under a tremendous amount of stress and may have limited ability to process instructions or other information while they are looking for their patient. Therefore, staff members in the HFRC must have experience in helping people under stressful conditions. Hospital staffing may include, but are not limited to, the following departments:

- Security
- Social Work
- Nursing
- Chaplaincy
- Psychiatry or Psychology
- Pediatrics
- Family Medicine

The hospitals may also request support from non-hospital agencies such as Victim Witness or Behavioral Health.
Adventist Health Sonora has a draft Family Reunification Plan which includes a family reunification center procedure (includes a news media center checklist), set-up consideration checklist, contact list, phone operator call log, and a minor tracking form.

The Tuolumne County Sheriff's Office Mass Fatality Plan includes a Family Assistance Center section, which outlines roles and responsibilities, Family Assistance Center services, and activation of the center.

Mark Twain Medical Center does not have its own Family Reunification Plan; rather, they utilize the Calaveras County Patient Tracking and Reunification Plan. This plan includes patient tracking information, Family Reunification Task Force activation procedure, hospital switchboard procedure, a patient transportation summary worksheet, a patient destination worksheet, and an MCI patient directory.

Member organizations American Red Cross and Twain Harte Area CERT are both capable of assisting with family reunification services and will be asked to do so if time allows.

2.9 Deactivation and Recovery

Demobilization will proceed per MCI response plan(s) of the responding EMS agency and receiving hospital.

Reimbursement: Emergency burn care under mass casualty burn incident conditions can be expensive and incur costs not readily reimbursed by insurance and other payers. The HCSC may work with Tuolumne/Calaveras MHOAC to facilitate recuperation of costs incurred by member organizations. This assistance can include:

- Facilitate data collection from healthcare organizations regarding non-reimbursed costs to advocate for State and/or Federal reimbursement.
- Convey instructions (as provided by Tuolumne/Calaveras MHOAC) to facilities regarding funding eligibility and application/documentation procedures
- Facilitate submission

3. Appendices

3.1 Attachment 1: ABA Triage Decision Table

American Burn Association Triage Decision Table of Benefit-to-Resource Ratio of Patient Age & Total Burn Size

	Burn Size (%TBSA)									
Age/ years	0 – 10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91+%
0-1.99	High	High	Medium	Medium	Medium	Medium	Low	Low	Low	Expectant
2-4.99	Outpatient	High	High	Medium	Medium	Medium	Medium	Low	Low	Low
5-19.9	Outpatient	High	High	High	Medium	Medium	Medium	Medium	Medium	Low
20-29.9	Outpatient	High	High	High	Medium	Medium	Medium	Medium	Low	Low
30-39.9	Outpatient	High	High	Medium	Medium	Medium	Medium	Medium	Low	Low
40-49.9	Outpatient	High	High	Medium	Medium	Medium	Medium	Low	Low	Low
50-59.9	Outpatient	High	High	Medium	Medium	Medium	Low	Low	Expectant	Expectant
60-69.9	High	High	Medium	Medium	Medium	Low	Low	Low	Expectant	Expectant
70+	High	Medium	Medium	Low	Low	Expectant	Expectant	Expectant	Expectant	Expectant

Outpatient: Survival and good outcome expected without requiring initial admission.
High Benefit-Resource: Survival and good outcome expected (survival greater then / equal to 90%) with limited / short term initial admission and resource allocation (LOS less than or equal to 14 days, 1-2 surgical procedures).
Medium Benefit-Resource: Survival and good outcome likely (survival greater than 50%) with aggressive care and comprehensive resource allocation, including initial admission (greater than / equal to 14 days), resuscitation, multiple surgeries.
Low Benefit-Resource: Survival and good outcome less than 50% even with long-term, aggressive treatment and resource ratio allocation.
Expectant: Survival less than 10% even with unlimited, aggressive treatment.