



Healthcare System Emergency Response Plan

# Burn Surge Annex

Version 1, June 2022

**Contact Information:**

**NWHRN Duty Officer: 425-988-2897**

**University of Washington Regional Burn Center: 1-877-520-7575**

**Western Region Burn Coordination Center: 1-866-364-8824**

## Record of Changes

Version No.	Description of Change	Date Entered	Posted By
1.	Plan development and review by partner agencies	2022	Vicki L. Sakata, MD Marissa Cummings, MPH

### Acknowledgements and Disclaimer:

A special thank you to the Western Region Burn Disaster Consortium (WRBDC) and partners from University of Utah Health, Western Region Alliance for Pediatric Emergency Management, Intermountain Primary Children's Hospital, Utah Department of Health, National Pediatric Disaster Coalition, Utah Hospital Association, and in particular Annette Newman (Matherly) and Mindy Colling for their efforts in developing and compiling this information for use by all healthcare coalitions and their partners.

## Table of Contents

Record of Changes	2
Introduction: Overview and Background	4
Purpose	4
Scope	5
Planning Assumptions	5
Concept of Operations	5
A. Activation of the Annex	5
B. Notification and Warning	6
i. Inter-State Activation and Notifications	6
C. Command, Control, and Coordination	9
i. Coalition	9
ii. Intra and Inter-state Coordination	9
D. Roles and Responsibilities	9
Resources Logistics	12
E. Burn Resource Requests	12
F. Space	12
G. Staff	12
H. Supplies	13
I. Burn Care Training Resources	13
Operations - Medical Care	13
J. Triage and Treatment	13
K. Patient Tracking (WATrac)	16
L. Transportation	16
M. Burn Patient Transfer Decision	16
Special Considerations	17
N. Rural Clinical Care Strategies	17
O. Behavioral Health	17
P. Pediatric	18
Q. Combined Injury	18
R. Crisis Standards of Care (CSC)	18
Deactivation and Recovery	19
S. Demobilization	19
T. Recovery	19
Training and Exercise	19
Authorities and Maintenance	19
Definitions and Acronyms	21
Appendices	22
NWHRN Appendices	22
External Resource Appendices	22
Appendix 1: Hospital Burn Management Algorithm	23
Appendix 2: Burn Injury Guidelines for Care, Second Edition	25
Appendix 3: Burn Resource Table	33
Appendix 4: Transfer Decision Flowchart & Triage Tables	37
Appendix 5: Hospital Burn Patient Transfer Checklist	38
Appendix 6: Helping Children and Adolescents During Disaster	40

## **Introduction: Overview and Background**

A surge in burn injury patients requires a significant amount of coordination and collaboration to provide the best care possible. A burn mass casualty incident (BMCI) is defined as an incident where capacity and capability may significantly overwhelm a local response, thus necessitating coalition, state, and/or federal coordination.

The University of Washington Regional Burn Center at Harborview (UWRBC) provides burn expertise not only for Washington State, but for the northern section of the American Burn Association's (ABA) Western Burn Region (**See Figure 1**), and therefore is a key partner in the development and maintenance of burn specific plans, including this Annex. In the event of a burn disaster or emergency, all hospitals, including those that are not necessarily burn centers, may receive critically injured patients and must have individual plans in place to identify, stabilize and coordinate care. The unique needs of critically injured burn patients make it necessary to integrate special considerations with regard to disaster preparedness, response, and recovery planning.

This Burn Surge Annex is intended to be flexible to fit the needs of the response to a BMCI. It contains guidelines for burn surge response in the Northwest Healthcare Response Network (NWHRN) service area, including a concept of operations, roles and responsibilities, and special considerations. Appendices provide resources to assist individual facilities in the development of individual burn surge plans, including staff training and augmentation, supplies and equipment, and clinical considerations including information for scarce resource planning.

This Annex is compatible with federal, state, and local emergency response plans and promotes the coordination of an efficient and effective response by utilizing the concepts outlined in the National Incident Management System and establishes common goals, strategies, and terminology consistent with other regional and local plans.

## **Purpose**

The purpose of this Annex is twofold: 1) to provide healthcare with the information and tools necessary to develop internal burn surge response plans per the burn capabilities within their facility, and 2) to provide a concept of operations to support a coordinated regional surge response within the NWHRN service area in the event of a BMCI. The goal of this Annex is to ensure the highest standard of care possible for the greatest number of patients.

Specifically, the purpose of this Annex is to:

- Ensure that all inpatient hospital facilities will be prepared to care for burn patients to the best of their capability and have burn disaster plans to accommodate burn surge.
- Provide clinical resources, especially for those facilities not routinely caring for burn patients.
- Provide burn-specific coordination information needed to inform response between healthcare and all stakeholders who are vital for a successful burn response, which includes but is not limited to public health, healthcare agencies, the local/state Disaster Medical Coordination Centers (DMCCs), the Washington Medical Coordination Center (WMCC), emergency management, and any state and federal partners.
- Provide burn-specific information for safe patient transfer and tracking, specifically addressing unique aspects of burn patients (e.g., burn degree severity, triage, pediatric patient care, and the management of an unaccompanied minor).

- Provide information for scarce resource planning, such as addressing staffing resources and specialized supplies.
- Define roles and responsibilities for healthcare, the NWHRN, Local Health Jurisdictions (LHJs), local response agencies (including local DMCCs, the State DMCC, and the WMCC), emergency management, state and federal partners in a burn surge response.
- Describe procedures for communications and coordination among public health, emergency management, healthcare agencies, and other local, state, and federal partners during a burn surge response.

## Scope

This document is an appendix to the NWHRN’s overall Healthcare Emergency Response Plan, which should be referred to for healthcare response concepts ([See Appendix A](#)). This Annex is intended to be used in conjunction with other planning documents and not as a stand-alone plan. The Burn Surge Annex is applicable for BMCI events necessitating local and/or regional healthcare response coordination among partners within jurisdictions encompassed by the NWHRN.

This plan will utilize existing command and coordination structures and communication protocols and may be used to support existing and future burn plans developed and/or distributed by Washington State and the University of Washington Regional Burn Center at Harborview.

## Planning Assumptions

All planning assumptions outlined in the NWHRN Healthcare Emergency Response Plan apply to this Annex. Specific assumptions to this Burn Surge Annex are as follows:

- All healthcare facilities providing emergency care may receive critically injured burn patients and should be able to provide initial assessment and stabilization.
- Definitive care of critical burns is extremely resource-intensive and when possible, given the situation requires specialized staff, expert advice, and critical care transportation assets.
- Severe burn patients often become clinically unstable within 24 hours of injury, complicating transfer plans after this time frame.
- Federal resources (e.g., ambulance contracts, National Disaster Medical Systems (NDMS) teams), may potentially be available to assist but cannot be relied upon to mobilize and deploy for the first 72 hours at minimum. Therefore, in the case of an overwhelming BMCI, it may be necessary to implement contingency mitigation strategies for burn triage, stabilization, and transfer in order to do the greatest good for the greatest number of patients.

## Concept of Operations

### A. Activation of the Annex

- This Annex may be activated during any known or anticipated BMCI that warrants coordination between one or more healthcare organizations and other emergency response partners. This activation may occur concurrently with the activation of other plans within and/or outside the area.
- A request for activation of this Annex may originate from any local healthcare organization, local and/or state Disaster Medical Coordination Center (DMCC)/WMCC, Local Health Jurisdictions (LHJ), or emergency management agency, as well as the healthcare coalition. Activation of this Annex should be done in consultation and communication with UWRBC at Harborview.

## B. Notification and Warning

- Partner emergency coordination operations (including UWRBC) may activate prior to or following the activation of this Annex. The NWHRN Healthcare Emergency Coordination Center (HECC) will operate in coordination with any other activated local/regional/state coordination centers.
- The HECC will activate prior to or concurrently with the activation of this Annex.
- Following an incident, the local EMS agencies responding will notify the local DMCC, who will then notify the NWHRN and local area hospitals receiving patients.
- The NWHRN will be responsible for notifying coalition healthcare facilities, LHJs and local emergency operations centers (EOCs), DOH preparedness duty officer, and emergency management.
- At any point when patients are identified that need specialty burn center care, EMS, DMCCs/WMCC, and/or hospital facilities should contact the UWRBC via the Transfer center at **1-877-520-7575**.
- Following notification of the incident by the local DMCC, UWRBC, or other partners, the NWHRN and the LHJs will identify the appropriate partners to further notify and recommend the activation of other organizations and agencies as appropriate.
- If the Annex is only activated to support operations in one county, NWHRN and the activated LHJ will communicate with the WA State DOH regarding the situation and the potential need for wider activation.
- In the event of a mass casualty incident when the local DMCC is activated, the DMCC will notify the NWHRN duty officer and local receiving hospitals.
- If the event requires intra-state patient movement, NWHRN will coordinate with WA State DOH to notify the state DMCC/WMCC to assist with coordination.
- Please refer to **Figure 2** to see the detailed burn incident notification flowchart.

### i. Inter-State Activation and Notifications

When a burn surge beyond coalition and/or state capacity is anticipated, the state DMCC/WMCC, UWRBC, or coalition will communicate with DOH.

The Western Region Burn Coordination Center (WRBCC) is an asset that can be activated by the WA State DOH if inter-state burn care assistance is needed. The WRBCC can help to offload care and support the transfer of burn patients in a BMCI when UWRBC at Harborview is overwhelmed. This occurs by accessing Burn Physicians and Coordinators who are on-call and who can give basic consultation via telemedicine up to and including helping connect other burn centers as possible transfer options. Activating the WRBCC will initiate a burn bed census for all Western Region Burn Disaster Consortium (WRBDC) service area to identify possible patient transfer destinations. The Western Region Burn Disaster Consortium consists of 13 states (**See Figure 1**). The [WRBCC Burn Mass Casualty Incident Operations Plan](#) provides more details on the assistance that can be provided at the regional level. The WRBCC 24/7 Hotline is **1-866-364-8824**. For more information on the Burn Incident Notification process, please see **Figure 2** for the Burn Incident Notification Flowsheet.

**Figure 1: Western Region Burn Disaster Consortium**

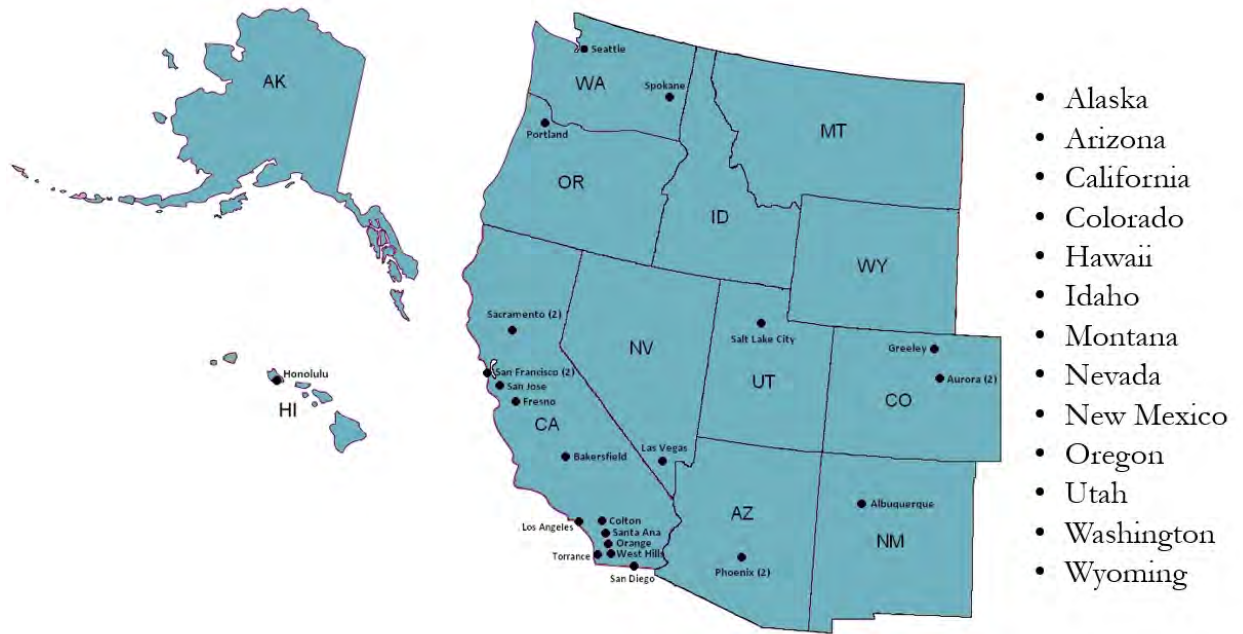
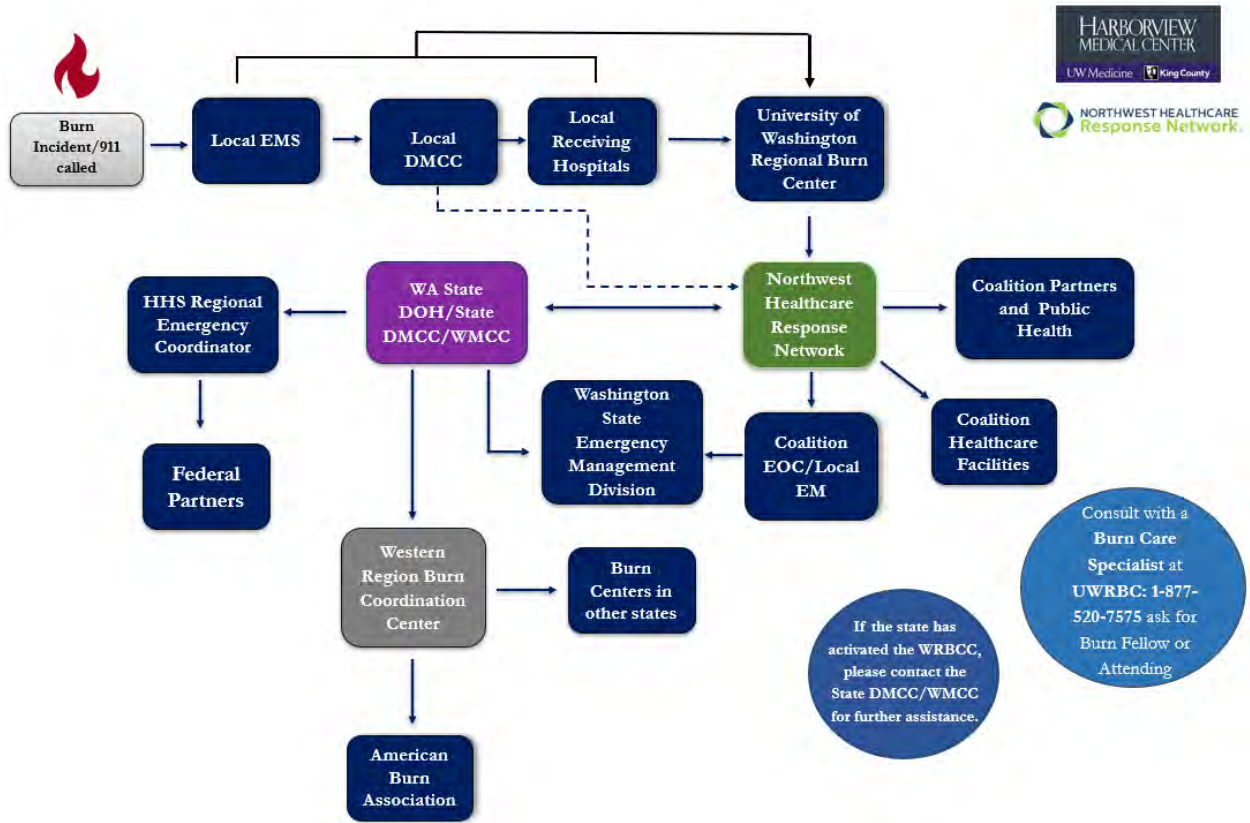


Figure 2: Burn Incident Notification Flowchart





## C. Command, Control, and Coordination

### i. Coalition

- When the NWHRN HECC is activated for a burn event, this Annex will simultaneously be activated to support the NWHRN response and coordination for the incident. Please refer to the NWHRN HECC Emergency Response Plan (See [Appendix A](#)).
- Essential Elements of Information (EEI), Indicators, and Triggers:
  - Essential Elements of Information: The use of situational awareness to inform a common operating picture for healthcare during an incident or event that requires targeted and strategic data and information gathering from healthcare organizations, LHJs, vendors (situation dependent), and other partners. Questions developed for data and information gathering are based on key decisions that may have to be addressed during an incident or event and will identify clear triggers and indicators that will inform these decisions.
  - Information considered critical for a burn event would include but not be limited to the number and ages of injured patients, percent burn and triage categories, specialty burn transport criteria, relevant comorbidities, specific specialty patient needs, in particular pediatric patients, burn-specific staff or supplies, etc.
- For more information on EEI, please refer to [Appendix B](#), the NWHRN Situational Awareness Annex.

### ii. Intra and Inter-state Coordination

- To meet the goal of the best possible patient outcomes after a burn mass casualty incident, the state DMCC and/or WMCC will help coordinate intra-state patient transfer and resource sharing. If inter-state or federal assistance is required DOH will assess and determine further needs including the activation of the WRBCC in collaboration with UWRBC at Harborview. If activated, the WRBCC will work with the state DMCC and/or WMCC to help facilitate appropriate transfer to out-of-state burn beds for definitive care.
- NWHRN will support coordination and communication between all stakeholders in the event of intra and/or inter-state activation for patient movement.

## D. Roles and Responsibilities

### A. Primary Organization:

#### a. Northwest Healthcare Response Network:

- Support mutual aid coordination and resource sharing requests.
- If necessary, initiate and coordinate patient tracking in WATrac to monitor patient location as they are distributed from the incident.
- Coordinate information collecting and distribution with local, state, and federal partners.
- Assist with distribution of specialty burn surge resources, planning tools, and triage protocols needed to assist coalition partner planning.

#### b. Local Health Jurisdictions (Public Health):

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Activate LHJ plans as indicated and provide public health assistance including but not limited to coordination of information, requesting

additional jurisdictional assistance, and communicating with other stakeholders per response plans.

- Support and coordinate mutual aid requests as needed.

c. Local DMCC:

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Notify UWRBC of any significant burn event to coordinate triage and patient distribution.
- Notify NWHRN Duty Officer (425-988-2897) for situational awareness.
- Assist with EEI and situational awareness as needed to support coordinated response.
- Triage/prioritize patient movement to specialty centers with assistance from UWRBC subject matter experts (SME).

d. Emergency Management Agencies:

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Activate as appropriate and implement local plans as indicated given the situation at hand.
- Support local resource requests and the procurement of resources, as well as support mutual aid if needed.

e. Non-Burn Designated Center Hospitals:

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Have and maintain a burn surge disaster plan, which should include initial stabilization, consultation, and transfer protocols for burn patients.
- Supply EEI and situational awareness as needed to support coordinated response.
- Provide patient care to the best of the facility's capabilities prior to transferring patients to a higher level of care if needed.

f. University of Washington Regional Burn Center at Harborview (UWRBC):

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Have, maintain, and activate a burn mass casualty incident burn surge plan that coordinates intra and inter-state care for burn patients.
- Provide and maintain clinical guidelines for the triage, stabilization, and transfer protocols for burn patients.
- Supply EEI and situational awareness as needed to support coordinated response including communication with the state DMCC/WMCC and WRBCC as the situation warrants.
- Support non-burn center facilities providing care for burn patients in the region via telephone/telemedicine as able given the situation at hand. Initiate and/or coordinate requests for specialized supplies such as tissue bank products, and graft equipment with appropriate stakeholders.

g. Emergency Medical Services:

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Have and maintain burn transportation protocols which should include stabilization, consultation, and transfer protocols for burn patients.
- Rescue, transport, and distribute casualties to appropriate local facilities in accordance with established protocols.
- Supply EEI and situational awareness as needed to support coordinated response.

**B. Supporting Organizations:**

a. State DMCC/WMCC:

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Support intra and inter-state patient movement and coordination when requested providing coordination between healthcare facilities as well as external out-of-state partners, including but not limited to NDMS, federal partners, WRBCC, etc.
- Ensure the appropriate clinical information is relayed between the referring and receiving facilities during the transfer process.

b. Washington State Department of Health (DOH)/Washington State Emergency Management Division (EMD):

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Support local jurisdictions with state-level coordination and requests for assistance.
- Support and coordinate state-to-state transfer of resources.
- Make requests for burn care assets including dressings and other materials from outside resources such as the Strategic National Stockpile (SNS) if local resource requests are not fulfilling resource needs.
- Liaise between local, state, and federal resources to provide situational awareness and coordinate response efforts.
- Contact the WRBDC and request activation of the WRBCC if necessary.

c. Western Region Burn Coordination Center (WRBCC):

- Serve as the point of contact for the ABA system.
- Conduct bed polling and request assistance from neighboring ABA regions as needed.
- Assist UWRBC and state DMCC/WMCC in determining appropriate patient destinations and transportation.
- Assist with the inter-state tracking of patient movement including arrival to destination centers.
- Provide additional assistance for specialized supplies upon request.
- Support the local burn center with additional resources should the burn center not be able to support all patient care and/or telephone/telemedicine services.

- d. Health & Human Services/Assistant Secretary for Preparedness and Response
  - Coordinate with DOH when a response exceeds local and state resources.
  - Coordinate federal-level resources, requests, and any national resource stockpiles.
  - Coordinate state and military partners to support regional medical and non-medical response with resources, personnel, and coordination.
  - Provide federal support to local and state activities as requested under the National Response Framework, including supplies, staff, and transportation assistance through the Federal Coordination Center appointed to the State for the incident.
  - Coordinate approved use of the National Disaster Medical System.

## Resources Logistics

### E. Burn Resource Requests

- Requests for burn-specific supplies will follow local resource request procedures either through the NWHRN and/or local jurisdiction as outlined in the NWHRN Emergency Response Plan (See [Appendix A](#)).

### F. Space

- UWRBC provides burn expertise not only for Washington state but for the northern section of the American Burn Association's Western Burn Region. The UWRBC has 18 designated ICU and 23 designated acute care burn beds. However, every healthcare facility should have the capabilities and plans to identify, triage, and stabilize a burn patient.

### G. Staff

- Facilities should have an established protocol to utilize staff to support burn patients.
- Provide burn training for staff and plans to utilize and allocate burn-trained staff. Specifically, Level II & III Trauma Centers should consider having a cohort of providers trained in the ABA Advanced Burn Life Support (ABLS) and ACS Disaster Management Emergency Preparedness (DMEP).
  - For more information on burn nurse training, please refer to the [Burn Nurse Competencies](#) document.
- Implement just-in-time (JIT) training resources for burn care, including:
  - [Project ECHO Burn and Soft Tissue Injury Education Series](#)
  - Prolonged care of the burn patient in a non-burn facility following a Mass Casualty Incident, [E-learning modules](#) (requires [login](#) – see below) and pages 44-60 of the [WRBDC Burn Mass Casualty Operations Plan](#).
  - [Understanding Burn Care](#) – burn care made simple
- Implement internal staff augmentation procedures (See [Appendix C Staffing Scarce Resource Card](#)).
- Provide basic burn training opportunities for interested trauma surgeons and nurses – See below for additional training resources.
- The Fred Hutchinson Cancer Care Center in Seattle, Washington is classified as a [Radiation Injury Treatment Network \(RITN\)](#) medical center and may have staff from this facility qualified to assist and support an increase in burn patients.

## H. Supplies

- All facilities should ensure that they are aware of and have access to the supplies and equipment necessary for the treatment of a burn patient, as found in the [WRBDC Burn Mass Casualty Operations Plan](#): Wound Care Supply Guideline for Burns (pg. 43) and the Pediatric Equipment and Supplies list (pg. 61). Please note that these lists are not exhaustive and are meant to be a supplement to standard supply cart items and personal protective equipment a facility would typically provide.
- If additional resources are needed, please refer to [Appendix A](#) for Resource Requesting procedures

## I. Burn Care Training Resources

During a BMCI, non-burn center facilities need to have a basic understanding of stabilization and initial care of burn patients. Included in this annex are a collection of training resources and E-Learning modules. The [E-Learning modules](#) and quick reference guides include an initial assessment and management, patient care during 0 – 48 and 48 – 96 hour intervals, and transport and transport of patients (guidelines found in the [WRBDC Burn Mass Casualty Operations Plan](#), pg. 44 – 60). If JIT training is required, the Burn Crisis Standards of Care Guidelines, Hospital Burn Management Algorithm (See [Appendix 1](#)), Burn Injury Guidelines for Care Second Edition (See [Appendix 2](#)), and the Burn Resource Table (See [Appendix 3](#)) can be used. Additional resources are found in the Burn Resources Table in the Appendix of this document.

### **E-Learning Module Note:**

Please be aware that accessing these E-learning modules requires creating an account with the University of Utah Crisis Standards of Care. This is a free resource but encourage your critical staff to register early and become familiar with the resources before an event occurs. Attempting to access these resources during an emergency without registering proactively will cause a significant delay in access.

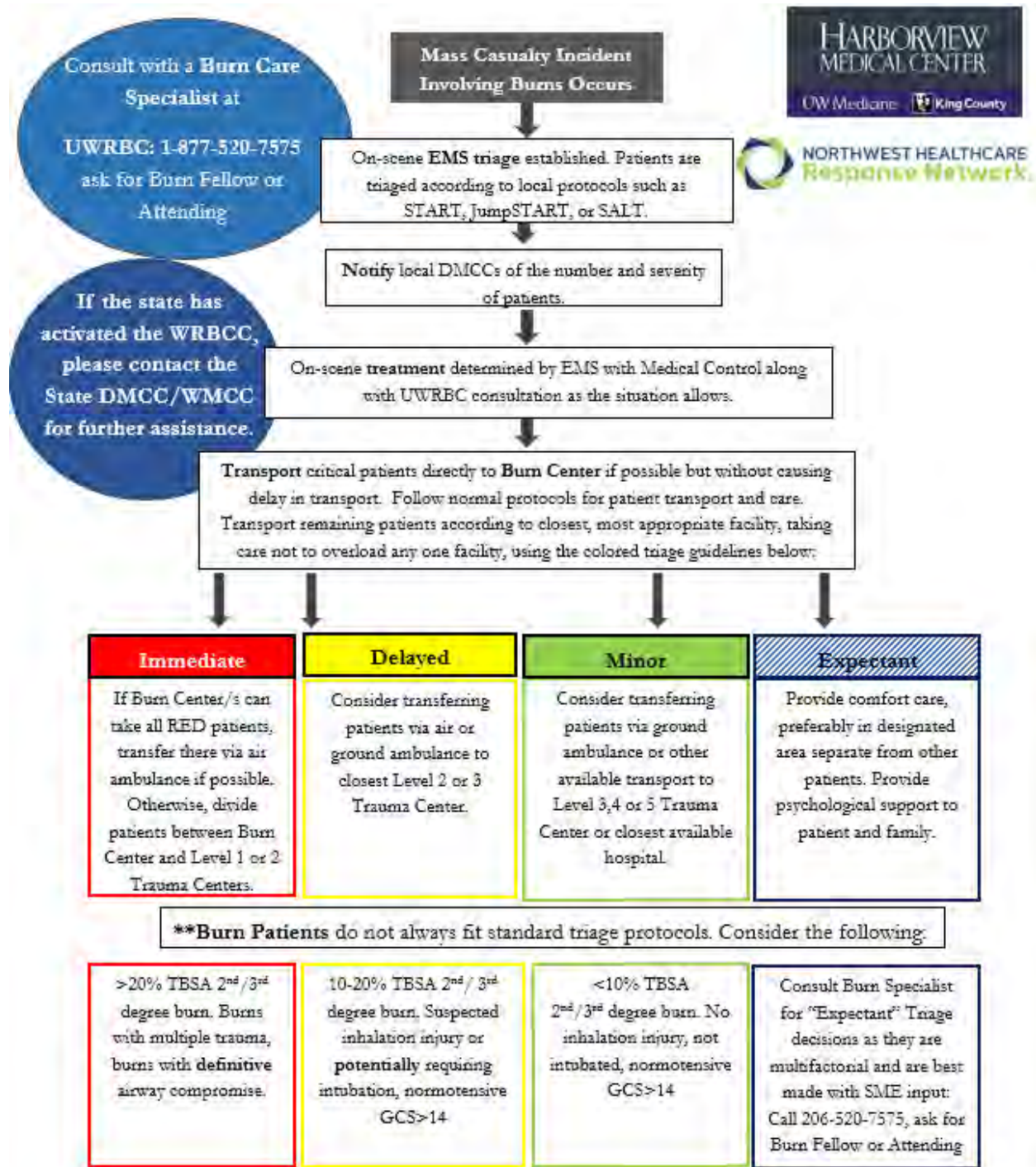
## Operations - Medical Care

### J. Triage and Treatment

Facilities receiving burn patients will immediately begin triage and treatment according to local protocols. For more information on EMS Triage for initial on-scene triage, please refer to the EMS Burn Triage Flowchart (**Figure 4**). For more information on Hospital Triage following patient arrival from EMS transport, please refer to the Hospital Burn Patient Triage Flowchart (**Figure 5**). Additionally, there are multiple resources available for burn care triage and treatment, which can be found in [Appendix 3](#).

Phone consultation with UWRBC is available by calling **1-877-520-7575**. Photo transmission of burn injuries is available through the burn phone consultation service and aids in providing SME input for triage and treatment plans. UWRBC has telehealth capabilities that can be activated if emergency credentialing at referral facilities can be granted in a timely manner. Streamlining telehealth capabilities in Washington State is an ongoing process and as more information is available this Annex will be updated.

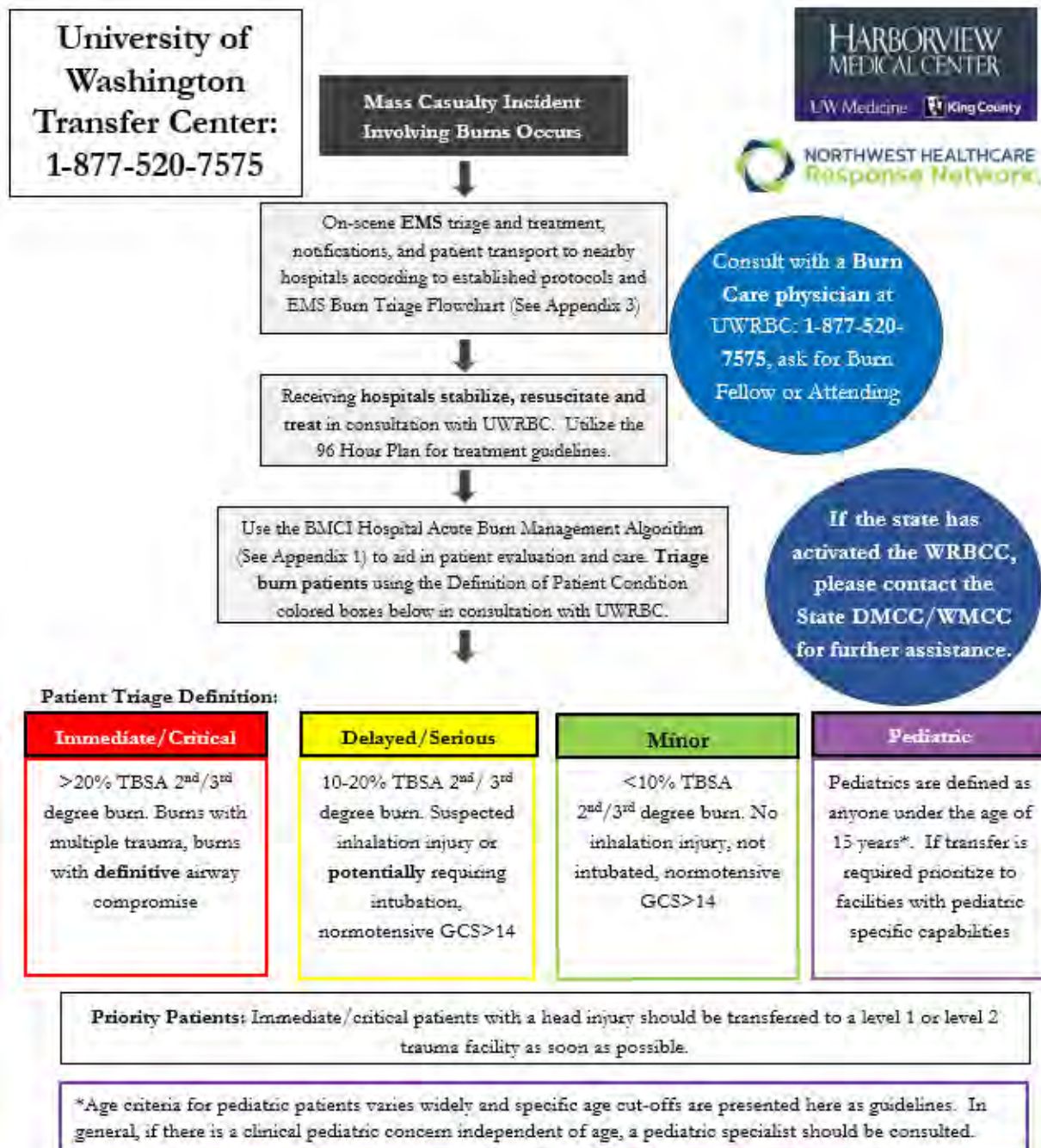
Figure 4: EMS Burn Triage Flowchart



\*Adapted from Western Region Burn Disaster Consortium, University of Utah Health, Utah Department of Health, and the Utah Hospital Association.



Figure 5: Hospital Burn Patient Triage Flowchart



Adapted from Western Region Burn Disaster Consortium. University of Utah Health, Utah Department of Health, and the Utah Hospital Association.



## **K. Patient Tracking (WATrac)**

Following a mass casualty incident, burn patients will be tracked to their final hospital destination via WATrac or a paper-based method per NWHRN Patient Tracking Appendix (See [Appendix D](#)).

Pediatric patients require special consideration, especially if they are unaccompanied minors. See [NWHRN Pediatric Toolkit](#), Attachment Section 3 “Pediatric Security”, regarding Pediatric Tracking and unaccompanied minors including forms and procedures if the burn patient is less than 18 years old. If an unaccompanied minor is transferred between facilities, it is crucial that a [Child Identification Survey](#) is completed and kept on record. A copy of this form should accompany the child at all times and the child should have a designated escort at the facility and/or during a transfer to another facility. If medical attention is needed appropriate medical transfer to a facility with pediatric capabilities should be arranged, when possible, given the situation at hand.

## **L. Transportation**

Facilities should have proper procedures in place to transport patients safely to appropriate facilities. In the event that a local and/or state DMCC and/or WMCC has been activated, transport control will follow established procedures as outlined in the NWHRN Patient Movement Plan (See [Appendix E](#)). Incident Command on scene will communicate with the appropriate DMCC to coordinate vehicles and patient destinations.

If local transport resources have been exhausted including local transport surge plans and MOUs, and/or if patients need to be transported outside of the region/state, transport requests should be made to the state via the local emergency management process.

## **M. Burn Patient Transfer Decision**

The decision to transfer a patient to another facility for definitive care is complex and relies on consideration of several factors to determine which patient is transported to each facility and when. Facilities should follow their local transfer protocols first, prior to immediately reaching out to UWRBC at Harborview. The Burn Patient Transfer Decision Flowchart (See [Appendix 4](#)), developed by the WRBDC and its partners, may support guiding non-burn hospitals in transport decision-making, in collaboration with a Burn Physician from either UWRBC at Harborview or the WRBCC. If the patients require transfer that cannot be managed by routine protocols, then the state DMCC and/or WMCC will assist, in coordination with all other stakeholders including WRBCC, in determining the appropriate patient destination.

Below are ABA Burn Center Referral guidelines. However, it is understood that in an overwhelming incident a burn-specific facility may not be readily available, and burn patients may need to be cared for at non-burn center hospitals and therefore these criteria will need to be revised given the situation at hand. It is recommended that patients be transferred to the highest level of care when possible.

### **Burn Center Referral Criteria**

(Access the American Burn Association’s document online [here](#)):

1. Partial-thickness burns greater than 10% TBSA.
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Full-thickness (third-degree) burns in any age group.
4. Electrical burns, including lightning injury.
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. Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary for such situations and should be in concert with the regional medical control plan and triage protocols.
9. Pediatric burn victims in a hospital without qualified personnel or equipment.
10. Burn injury in a patient who will require special social, emotional, or rehabilitative intervention. For more information on rehabilitation intervention for burn patients, please refer to [Appendix 3](#).

### **Patient Transfer Checklist and Coordination**

Use the *Burn Patient Transfer Checklist* included in [Appendix 5](#) to prepare, package and transport patients who have been identified for transfer to a Burn or Trauma Center

### **Special Considerations**

The following section contains considerations for special populations and special situations, including rural health considerations, behavioral health concerns, pediatric patients, combined injuries, and crisis standards of care.

### **N. Rural Clinical Care Strategies**

Rural community healthcare providers face unique challenges when preparing and responding to any type of medical surge. Their capacity to provide definitive care for critically injured patients is limited. Therefore, it is important that they:

- Maintain awareness of the NWHRN Coalition Burn Surge Annex.
- Have and maintain a burn surge disaster plan, which should include stabilization, consultation, and transfer protocols for burn patients utilizing the training resources and plans referenced above.
- Maximize existing real-time telehealth-based provider support for consultation.
- Provide staff with burn-specific just-in-time training and education resources that provide key considerations in burn care.

For more information and resources on triage and treatment, please refer to [Appendix 3](#).

### **O. Behavioral Health**

Given the nature and scope of a BMCI, it is to be expected that a number of those who witnessed, were injured in, or responded to the event will experience some mental trauma in relation to the incident. Burn survivors most at risk for PTSD are those with a history of anxiety disorders (generalized anxiety, panic disorder) or depression. Burn survivors who have a history of traumatic events and past PTSD are also at risk of developing PTSD from the current burn injury ([Wiechman, 2017](#)).

Pediatric patients and their families require specific mental health/behavioral care. Please see the NWHRN Pediatric Surge Annex Toolkit, Section 6, which can be accessed [here](#), or [Appendix F: Behavioral Health Scarce Resource Card](#) for more NWHRN-specific information. For general mental health resources following a burn event, please refer to [Appendix 3](#).

## **P. Pediatric**

Included in all disaster planning is the need to plan for the pediatric patient. The UWRBC does include beds to support pediatric burn patients, however, as in all disasters these specialty services may be overwhelmed, and individual facilities may need to care for the pediatric patient for an extended period of time. The WRBCC has pediatric resources ([Appendix 3](#)), as well as resources to support children and adolescents during a disaster ([Appendix 6](#)). The [Western Region Burn Mass Casualty Operations Plan](#) includes several pediatric resources:

- Pediatric burn patient considerations (pg. 17)
- Pediatric Rule of Nines for calculation of total burn surface area (pg. 47)
- Pediatric Planning Recommendations (pg. 60)
- Pediatric Equipment and Supplies (pg. 61)
- Pediatric Psychological First Aid (pg. 65)

Additionally, the NWHRN has developed a full coalition Pediatric Surge Annex and has multiple tools to assist facilities in developing their own internal response plans.

The NWHRN Pediatric Surge Annex Toolkit can be accessed [here](#).

## **Q. Combined Injury**

Combine injury (i.e., burns with trauma or radiation or chemical injury) markedly increases mortality, and these patients may be better served at trauma and other centers depending on the severity of the injury. Local trauma protocols should be implemented and when SME input or transfer is needed local referral and consultation patterns should be implemented. In a large event requiring transfer and consultation coordination please refer to the [Operations section](#).

## **R. Crisis Standards of Care (CSC)**

In the event of an overwhelming surge, after all mitigation strategies have been exhausted, Washington State recognizes that crisis standards of care (CSC) may need to be implemented.

Washington State has adopted and will use the Ethical Framework developed by NASEM which stresses the importance of an ethically grounded system to guide decision-making in a crisis standard of care situation. *The Washington State CSC Guidance Framework is currently being updated and the final version will be referenced in this Annex when available.*

The University of Utah has developed very useful [clinical resources](#) specific to the care of burn patients. Their website is open access but does require registration and approval for use and therefore it is highly recommended that clinicians set up an account and familiarize themselves with the content during planning. Unless otherwise noted, the Washington State CSC Guidelines, with regards to indicators, triggers, activation, and CSC Concept of Operations supersedes the University of Utah CSC Guidance.

## **Deactivation and Recovery**

### **S. Demobilization**

Throughout the Annex activation, the HECC, in consultation with applicable partners, will determine the appropriate conditions required to partially or fully demobilize and deactivate the Annex. Demobilization indicators may include:

- The burn surge healthcare impact from the incident is at a low level sufficient for ending response coordination.
- Partner agencies have deactivated any EOC/ECC and/or emergency response plans.
- The threat of a reoccurrence of the BMCI incident or similar events is sufficiently low to not require response coordination.

The HECC, in consultation with any applicable partners, will communicate the deactivation of the Annex to the same partners that received the activation notice. Annex deactivation will likely be communicated by, at a minimum, email or WATrac alerting tools.

Depending on the severity or scope of the incident, the NWHRN will lead and/or participate in an after-action process. If the NWHRN leads an after-action process, results will be communicated and distributed to partners following the completion of the after-action report.

### **T. Recovery**

After demobilization and during recovery, the following activities should be completed:

- Return any borrowed assets (i.e., equipment, staff, etc.).
- Debrief participating local, regional, state, and/or federal partners with after-action reports, discuss improvement plans, and create a coordinated approach to incorporating recommendations into future planning.
- Communications concerning payment and reimbursement for the response.
- Communication of any operational activities that need to be revised or continued.

### **Training and Exercise**

Training on roles and responsibilities for all relevant partner agencies will occur following the adoption of the finalized Burn Surge Annex. The NWHRN assesses yearly the training and exercise needs of all coalition partners using a capabilities assessment, which informs the goals and objectives for training and exercising in the years to come.

Exercises of portions of this Annex or attachments, including tabletops and functional exercises, will occur with healthcare organizations, LHJs, Disaster Clinical Advisory Committees (DCACs), and other relevant stakeholders. All trainings and exercises will involve post-event evaluations and/or After-Action Reports, which will include Improvement Plans addressing Core Capabilities.

### **Authorities and Maintenance**

#### **Review Process and Annex Update**

Sections of this Annex will be updated as needed based on the evolution of planning activities and partnerships or in coordination with Regional Improvement Plans after exercises or real-world incidents.

The Annex will be provided to the LHJs, healthcare organizations, and regional partners for review and input.

Following review, modifications will be made, and a copy will be provided to all regional partners. Healthcare organizations are expected to share the updated plan internally within their appropriate committees and with their leadership.

The NWHRN Board of Directors will be briefed when updates to this Annex are completed.

**Maintenance**

The Annex will be reviewed every three years or as needed following the process outlined above.

## **Definitions and Acronyms**

**AAR:** After Action Report  
**ABA:** American Burn Association  
**ACS-COT:** American College of Surgeons Committee on Trauma  
**ABLS:** Advanced Burn Life Support  
**ALS:** Advanced Life Support  
**ASPR:** Assistant Secretary for Preparedness and Response  
**BMCI:** Burn Mass Casualty Incident  
**CDC:** Centers for Disease Control and Prevention  
**CSC:** Crisis Standards of Care  
**DCAC:** Disaster Clinical Advisory Committee  
**DMCC:** Disaster Medical Coordination Center  
**DMEP:** Disaster Management Emergency Preparedness  
**DOH:** Washington State Department of Health  
**EI:** Essential Elements of Information  
**EMD:** Washington State Emergency Management Division  
**EMS:** Emergency Medical Services  
**EOC:** Emergency Operations Center  
**ESF-8:** Emergency Support Function #8 – Health & Medical  
**HCC:** Healthcare Coalition  
**HECC:** Healthcare Emergency Coordination Center  
**HHS:** Health & Human Services  
**HVA:** Hazard Vulnerability Index  
**JIT:** Just-In-Time Training  
**JRA:** Jurisdictional Risk Assessment  
**LHJ:** Local Health Jurisdiction  
**MOCC:** Medical Operations Coordination Center  
**NASEM:** National Academy of Science, Engineering, and Medicine  
**NDMS:** National Disaster Medical System  
**NWHRN:** Northwest Healthcare Response Network  
**PTSD:** Post-Traumatic Stress Disorder  
**RITN:** Radiation Injury Treatment Network  
**SME:** Subject Matter Expert  
**SNS:** Strategic National Stockpile  
**TBSA:** Total Body Surface Area  
**UWRBC:** University of Washington Regional Burn Center  
**WMCC:** Washington Medical Coordination Center  
**WRBCC:** Western Region Burn Coordination Center  
**WRBDC:** Western Region Burn Disaster Consortium

## Appendices

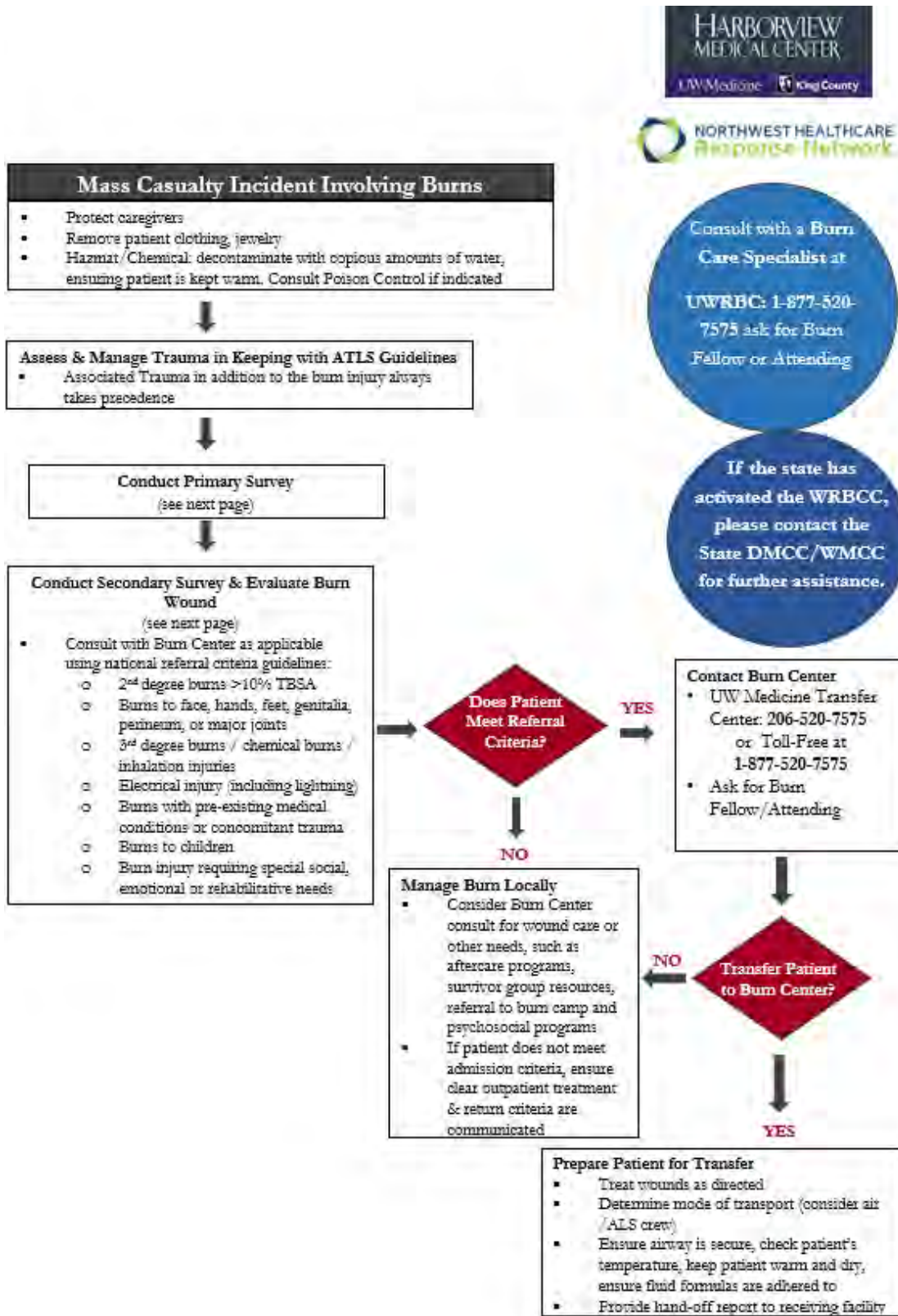
### NWHRN Appendices

- Appendix A: [NWHRN Healthcare Emergency Response Plan](#)
- Appendix B: [NWHRN Situational Awareness Annex](#)
- Appendix C: [Staffing Scarce Resource Card](#)
- Appendix D: [NWHRN Patient Tracking Appendix](#)
- Appendix E: [NWHRN Patient Movement Annex](#)
- Appendix F: [Behavioral Health Scarce Resource Card](#)

### External Resource Appendices

- Appendix 1: [Hospital Burn Management Algorithm](#)
- Appendix 2: [Burn Injury Guidelines for Care, 2<sup>nd</sup> Edition](#)
- Appendix 3: [Burn Resource Table](#)
- Appendix 4: [Transfer Decision Flowchart & Triage Tables](#)
- Appendix 5: [Burn Patient Transfer Checklist](#)
- Appendix 6: [Helping Children and Adolescents During Disaster](#)

# Appendix 1: Hospital Burn Management Algorithm



## BMCI Hospital Acute Burn Management Algorithm: Evaluation Considerations & Ongoing

PRIMARY SURVEY	SECONDARY SURVEY
<p><b>Airway</b></p> <ul style="list-style-type: none"> <li>100% O2 via NRB</li> <li>Pulse oximeter and ABG</li> <li>Consider airway involvement:                             <ul style="list-style-type: none"> <li>Early intubation typically with burns &gt;20% TBSA</li> <li>Upper airway edema may make intubation impossible as symptoms progress</li> <li>Secure ETT with ties passed around head; no tape (it does not stick to burned tissue)</li> <li>NG/OG should be inserted on all intubated patients</li> <li>Consider early intubation in patients with larger burns, burns to the head, those receiving large volumes of fluid resuscitation and in younger children</li> <li>Consider monitoring patients with a possible inhalation injury for 24 hours</li> </ul> </li> </ul> <p><b>Breathing</b></p> <ul style="list-style-type: none"> <li>Monitor chest expansion in circumferential torso burns</li> </ul> <p><b>Circulation</b></p> <ul style="list-style-type: none"> <li>Large bore IV or I/O (priority &gt;20% TBSA)</li> <li>Elevate burned extremities and ensure adequate pulses</li> <li>Administer IV fluid (LR) at <b>Initial Fluid Rate if burn &gt;20% TBSA</b>:                             <ul style="list-style-type: none"> <li>≤5 years: 125 mL/hr</li> <li>6-13 years: 250 mL/hr</li> <li>≥14 years: 500 mL/hr</li> </ul> </li> </ul> <p><b>Disability</b></p> <ul style="list-style-type: none"> <li>Monitor GCS – typically A&amp;O (awake, alert &amp; oriented)</li> </ul> <p><b>Environment</b></p> <ul style="list-style-type: none"> <li>Expose / keep warm &amp; dry</li> <li>Do not use wet dressings / blankets</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate wound &amp; calculate TBSA (use burn diagram and burn descriptions below) – consider consult with a Burn Center through use of telemedicine                             <ul style="list-style-type: none"> <li>Superficial (1<sup>st</sup> degree) burns are <u>not</u> included in the % TBSA</li> </ul> </li> <li>Check tetanus status</li> <li>Pain management – small, frequent doses with reassessment</li> <li>Calculate <b>Burn Fluid Resuscitation Rate</b> based on age, TBSA% and weight (LR is fluid of choice, but NS can be used if LR not available)-                             <ul style="list-style-type: none"> <li><b>Scald/Flame:</b> <ul style="list-style-type: none"> <li>Adults (≥14 yrs): 2 mL x kg x TBSA%</li> <li>Children (&lt;14 yrs): 3 mL x kg x TBSA%</li> <li>Infants/Children &lt;30kg: 3mL x kg x TBSA% <u>plus</u> D5LR at maintenance rate using 4/2/1 rule:                                     <ul style="list-style-type: none"> <li>&lt;10 kg – 4 mL/kg/hr</li> <li>10-20 kg – 40 mL + 2 mL/kg for every kg &gt;10 kg</li> <li>&gt;20 kg – 60 mL + 1 mL/kg for every kg ≥20kg</li> </ul> </li> </ul> </li> <li><b>Electrical/Deep Tissue:</b> <ul style="list-style-type: none"> <li>4 mL x kg x TBSA%</li> <li><b>Infuse total volume LR over 24 hours: ½ in first 8 hours</b> (for hourly rate, divide by 8), ½ next 16 hours</li> </ul> </li> </ul> </li> </ul>

**Management**

BURN WOUND EVALUATION		
<p><i>It is not always possible to know burn depths for days, as appearance may be deceiving and injury may deepen.</i></p>	<p><b>Depth of injury</b></p>	<p><b>Wound properties</b></p>
<p><b>Superficial (1st degree)</b> These wounds are not included in the % TBSA</p>	<p>Limited damage to epidermis, skin contact</p>	<ul style="list-style-type: none"> <li>Painful</li> <li>Red</li> <li>No blister formation immediately</li> </ul>
<p><b>Superficial/partial thickness (2nd degree)</b></p>	<p>Epidermis destroyed, minimal damage to superficial layers or dermis</p>	<ul style="list-style-type: none"> <li>Pink or red</li> <li>Moist</li> <li>Weepy</li> <li>Blanching</li> <li>Blisters</li> <li>Painful</li> </ul>
<p><b>Deeper (2nd degree)</b></p>	<p>Epidermis and dermis involved</p>	<ul style="list-style-type: none"> <li>May be red or pearly white</li> <li>Drier than superficial injury</li> <li>Painful</li> </ul>
<p><b>Full thickness (3rd degree)</b></p>	<p>All epidermis and dermis destroyed</p>	<ul style="list-style-type: none"> <li>White, cherry red, brown or black</li> <li>Hard and leathery</li> <li>Insensitive to pin prick</li> </ul>

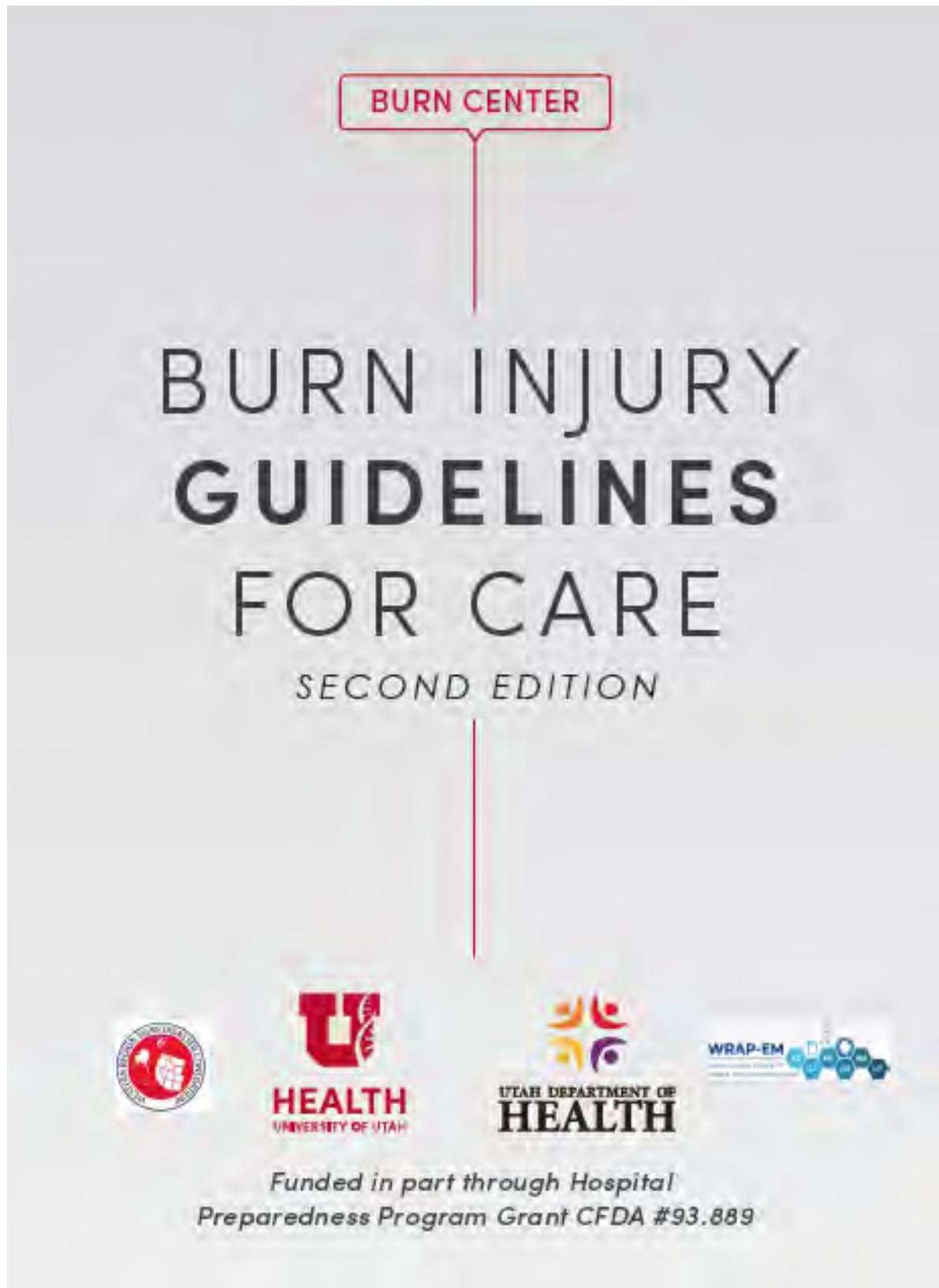
  

ONGOING BURN MANAGEMENT
<ul style="list-style-type: none"> <li>Continue trauma resuscitation and burn care in collaboration with Burn Center as needed</li> <li>Prophylactic antibiotics are <u>not</u> indicated for burns</li> <li>12 lead EKG for electrical injury</li> <li>Circumferential burns/electrical contact sites: hourly pulse checks to affected extremity</li> <li>Continue with fluid resuscitation – associated trauma or inhalation injuries may require additional fluid</li> <li>Monitor urine output – slowly adjust fluid based on target goals (below) &amp; clinical response                             <ul style="list-style-type: none"> <li><b>Scald/Flame:</b> <ul style="list-style-type: none"> <li>Adults = 0.5 mL/kg/hr (30-50 mL/hr) of urine</li> <li>Pediatrics = 1 mL/kg/hr of urine</li> </ul> </li> <li><b>Electrical injury/red pigment</b> (myoglobinuria)                                     <ul style="list-style-type: none"> <li>Adults = 75-100 mL/hr of urine</li> <li>Pediatrics = 2 mL/kg/hr of urine</li> </ul> </li> </ul> </li> </ul>





## Appendix 2: Burn Injury Guidelines for Care, Second Edition

*Note: this resource is also available as a pocket-sized PDF file for printing.*



## WOUND EVALUATION

<p><i>It is not always possible to know burn depths for days, as appearance may be deceiving and injury may deepen.</i></p>	<p><b>Depth of injury</b></p>	<p><b>Wound properties</b></p>
<p><b>Superficial (1st degree)</b> *These wounds are <u>not</u> included in the % TBSA</p>		<p>Limited damage to epidermis, skin contact</p> <ul style="list-style-type: none"> <li>• Painful</li> <li>• Red</li> <li>• No blister formation immediately</li> </ul>
 <p>Partial Thickness (2nd degree)</p>	<p>Epidermis destroyed, minimal damage to superficial layers or dermis</p>	<ul style="list-style-type: none"> <li>• Pink or red</li> <li>• Moist</li> <li>• Weepy</li> <li>• Blanching</li> <li>• Blisters</li> <li>• Painful</li> </ul>
 <p>Deeper (2nd degree)</p>	<p>Epidermis and dermis involved</p>	<ul style="list-style-type: none"> <li>• May be red or pearly white</li> <li>• Drier than superficial injury</li> <li>• Painful</li> </ul>
 <p>Full thickness (3rd degree)</p>	<p>All epidermis and dermis destroyed</p>	<ul style="list-style-type: none"> <li>• White, cherry red, brown or black</li> <li>• Hard and leathery</li> <li>• Insensitive to pin prick</li> </ul>

## PRIMARY SURVEY

### Airway and breathing

100% O<sub>2</sub> via non-rebreather. Watch breathing effort closely especially in circumferential torso burns, chest escharotomy if indicated. If intubation is necessary, ensure the ETT is secured well. NG/OG tube recommended for burns > 20% TBSA, if patient is intubated and per protocol.

### Circulation

- Circulatory compromise – indicated by progressive pain, pallor, pulselessness, paresthesia, paralysis and coolness of the extremities
- IV/IO line may be placed through burned skin if necessary. Secure in place with Kerlix or Coban, monitor for swelling.
- Consider oral re-hydration therapy in burns <15% TBSA
- Starting points for fluid resuscitation rates in the primary survey for burn TBSA >20%:

5 years or younger:            125 ml LR/NS/hr

6-13 years:                        250 ml LR/NS/hr

14 years or older:                500 ml LR/NS/hr

### Disability

Monitor GCS, AVPU – burn patients are typically alert and oriented, if deficits exist, consider CO, hx of anoxia, chemical exposure or traumatic injury.

### Exposure/environment

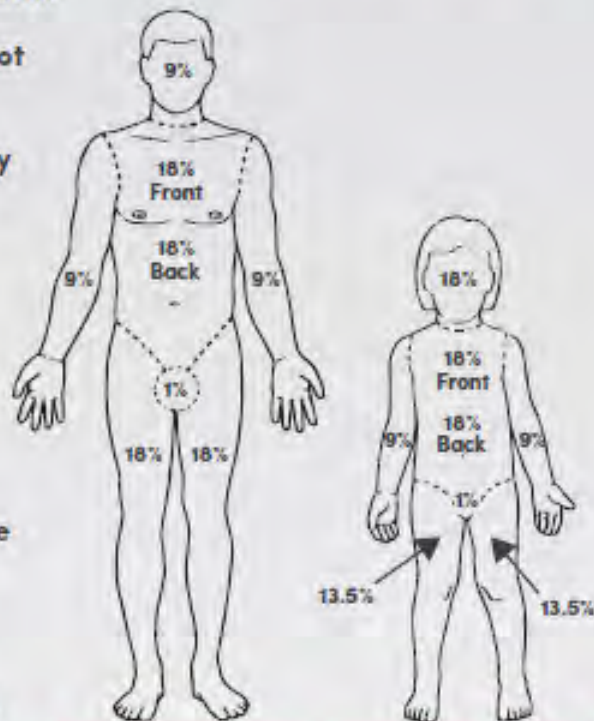
- Remove all clothing and jewelry
- Keep patient warm, covered and dry
- Do not use wet dressings or blankets

- Patients with burn injuries do not typically develop shock within 60 minutes from time of injury if left untreated, unless there are associated injuries or medical conditions in addition to the burn.

- Usually, burns do not bleed. If there is bleeding, there may be an associated injury.

- Patients with traumatic injuries or inhalation injuries may require additional fluid.

- Brush powdered chemicals off skin, then flush with copious amounts of fluid.



Wt. (lbs)	Wt. (kg)	% TBSA	ml/Hr for 1st 8 Hrs of care
11	5	10	12.5
11	5	20	25
11	5	30	37.5
11	5	40	50
11	5	50	62.5
11	5	60	75
11	5	70	87.5
11	5	80	100
11	5	90	112.5
11	5	100	125
22	10	10	25
22	10	20	50
22	10	30	75
22	10	40	100
22	10	50	125
22	10	60	150
22	10	70	175
22	10	80	200
22	10	90	225
22	10	100	250
33	15	10	37.5
33	15	20	75
33	15	30	112.5
33	15	40	150
33	15	50	187.5
33	15	60	225
33	15	70	262.5
33	15	80	300
33	15	90	337.5
33	15	100	375
44	20	10	50
44	20	20	100
44	20	30	150
44	20	40	200
44	20	50	250
44	20	60	300
44	20	70	350
44	20	80	400
44	20	90	450
44	20	100	500

**PEDIATRIC FLUID INFUSION RATE <30kg**

\*Fluid of choice LR (NS may be used if LR is unavailable)

Wt. (lbs)	Wt. (kg)	% TBSA	ml/Hr for 1st 8 Hrs of care
55.1	25	10	62.5
55.1	25	20	125
55.1	25	30	187.5
55.1	25	40	250
55.1	25	50	312.5
55.1	25	60	375
55.1	25	70	437.5
55.1	25	80	500
55.1	25	90	562.5
55.1	25	100	625
66	30	10	75
66	30	20	150
66	30	30	225
66	30	40	300
66	30	50	375
66	30	60	450
66	30	70	525
66	30	80	600
66	30	90	675
66	30	100	750

\*Fluid Charts are based on 4 ml/kg/hr rate and can be halved for the 2 ml adult requirement. Fluid formulas:

- Adults (14+yr): 2 mL x kg x TBSA%
- Children (<14 yrs): 3 mL x kg x TBSA%
- Infants/Children <30kg: 3 mL x kg x TBSA% plus D5LR at maintenance rate using 4/2/1 rule
- Electrical/deep tissue: 4 mL x kg x TBSA%

Wt. (lbs)	Wt. (kg)	% TBSA	ml/Hr for 1 <sup>st</sup> 8 Hrs of care
66	30	10	75
66	30	20	150
66	30	30	225
66	30	40	300
66	30	50	375
66	30	60	450
66	30	70	525
66	30	80	600
66	30	90	675
66	30	100	750
88	40	10	100
88	40	20	200
88	40	30	300
88	40	40	400
88	40	50	500
88	40	60	600
88	40	70	700
88	40	80	800
88	40	90	900
88	40	100	1000
110	50	10	125
110	50	20	250
110	50	30	375
110	50	40	500
110	50	50	625
110	50	60	750
110	50	70	875
110	50	80	1000
110	50	90	1125
110	50	100	1250
132	60	10	150
132	60	20	300
132	60	30	450
132	60	40	600
132	60	50	750
132	60	60	900
132	60	70	1050
132	60	80	1200
132	60	90	1350
132	60	100	1500
154	70	10	175
154	70	20	350
154	70	30	525
154	70	40	700
154	70	50	875
154	70	60	1050
154	70	70	1225
154	70	80	1400
154	70	90	1575
154	70	100	1750
176	80	10	200
176	80	20	400
176	80	30	600
176	80	40	800
176	80	50	1000
176	80	60	1200
176	80	70	1400
176	80	80	1600
176	80	90	1800
176	80	100	2000

**ADULT FLUID INFUSION RATE > 30kg**

\*Fluid of choice LR. DO NOT use dextrose containing fluids (NS may be used if LR is unavailable)

Wt. (lbs)	Wt. (kg)	% TBSA	ml/Hr for 1 <sup>st</sup> 8 Hrs of care
198	90	10	225
198	90	20	450
198	90	30	675
198	90	40	900
198	90	50	1125
198	90	60	1350
198	90	70	1575
198	90	80	1800
198	90	90	2025
198	90	100	2250
220	100	10	250
220	100	20	500
220	100	30	750
220	100	40	1000
220	100	50	1250
220	100	60	1500
220	100	70	1750
220	100	80	2000
220	100	90	2250
220	100	100	2500
242	110	10	275
242	110	20	550
242	110	30	825
242	110	40	1100
242	110	50	1375
242	110	60	1650
242	110	70	1925
242	110	80	2200
242	110	90	2475
242	110	100	2750
264	120	10	300
264	120	20	600
264	120	30	900
264	120	40	1200
264	120	50	1500
264	120	60	1800
264	120	70	2100
264	120	80	2400
264	120	90	2700
264	120	100	3000

Wt. (lbs)	Wt. (kg)	% TBSA	ml/Hr for 1 <sup>st</sup> 8 Hrs of care
287	130	10	325
287	130	20	650
287	130	30	975
287	130	40	1300
287	130	50	1625
287	130	60	1950
287	130	70	2275
287	130	80	2600
287	130	90	2925
287	130	100	3250
309	140	10	350
309	140	20	700
309	140	30	1050
309	140	40	1400
309	140	50	1750
309	140	60	2100
309	140	70	2450
309	140	80	2800
309	140	90	3150
309	140	100	3500
331	150	10	375
331	150	20	750
331	150	30	1125
331	150	40	1500
331	150	50	1875
331	150	60	2250
331	150	70	2625
331	150	80	3000
331	150	90	3375
331	150	100	3750
353	160	10	400
353	160	20	800
353	160	30	1200
353	160	40	1600
353	160	50	2000
353	160	60	2400
353	160	70	2800
353	160	80	3200
353	160	90	3600
353	160	100	4000
375	170	10	425
375	170	20	850
375	170	30	1275
375	170	40	1700
375	170	50	2125
375	170	60	2550
375	170	70	2975
375	170	80	3400
375	170	90	3825
375	170	100	4250
397	180	10	450
397	180	20	900
397	180	30	1350
397	180	40	1800
397	180	50	2250
397	180	60	2700
397	180	70	3150
397	180	80	3600
397	180	90	4050
397	180	100	4500

**ADULT FLUID INFUSION RATE >30kg**

*\*Fluid of choice LR. DO NOT use dextrose containing fluids (NS may be used if LR is unavailable)*

Wt. (lbs)	Wt. (kg)	% TBSA	ml/Hr for 1 <sup>st</sup> 8 Hrs of care
419	190	10	475
419	190	20	950
419	190	30	1425
419	190	40	1900
419	190	50	2375
419	190	60	2850
419	190	70	3325
419	190	80	3800
419	190	90	4275
419	190	100	4750
441	200	10	500
441	200	20	1000
441	200	30	1500
441	200	40	2000
441	200	50	2500
441	200	60	3000
441	200	70	3500
441	200	80	4000
441	200	90	4500
441	200	100	5000
463	210	10	525
463	210	20	1050
463	210	30	1575
463	210	40	2100
463	210	50	2625
463	210	60	3150
463	210	70	3675
463	210	80	4200
463	210	90	4725
463	210	100	5250
485	220	10	550
485	220	20	1100
485	220	30	1650
485	220	40	2200
485	220	50	2750
485	220	60	3300
485	220	70	3850
485	220	80	4400
485	220	90	4950
485	220	100	5500

## AMERICAN BURN ASSOCIATION CRITERIA FOR BURN CONSULTATION

- 2nd degree burns > 10% TBSA
- Burns to face, hands, feet, genitalia, perineum, major joints
- 3rd degree burns
- Chemical burns
- Inhalation injuries
- Electrical injury (lightning included)
- Burns accompanied by pre-existing conditions
- Burns accompanied by trauma, where burn injury poses greatest risk of morbidity or mortality
- Burns to children in hospitals without pediatric services
- Patients with special social, emotional or rehabilitative needs

**For provider resources, please visit:  
[crisisstandardsofcare.utah.edu](https://crisisstandardsofcare.utah.edu)**

**Information for nearest Burn Center:**



### Appendix 3: Burn Resource Table

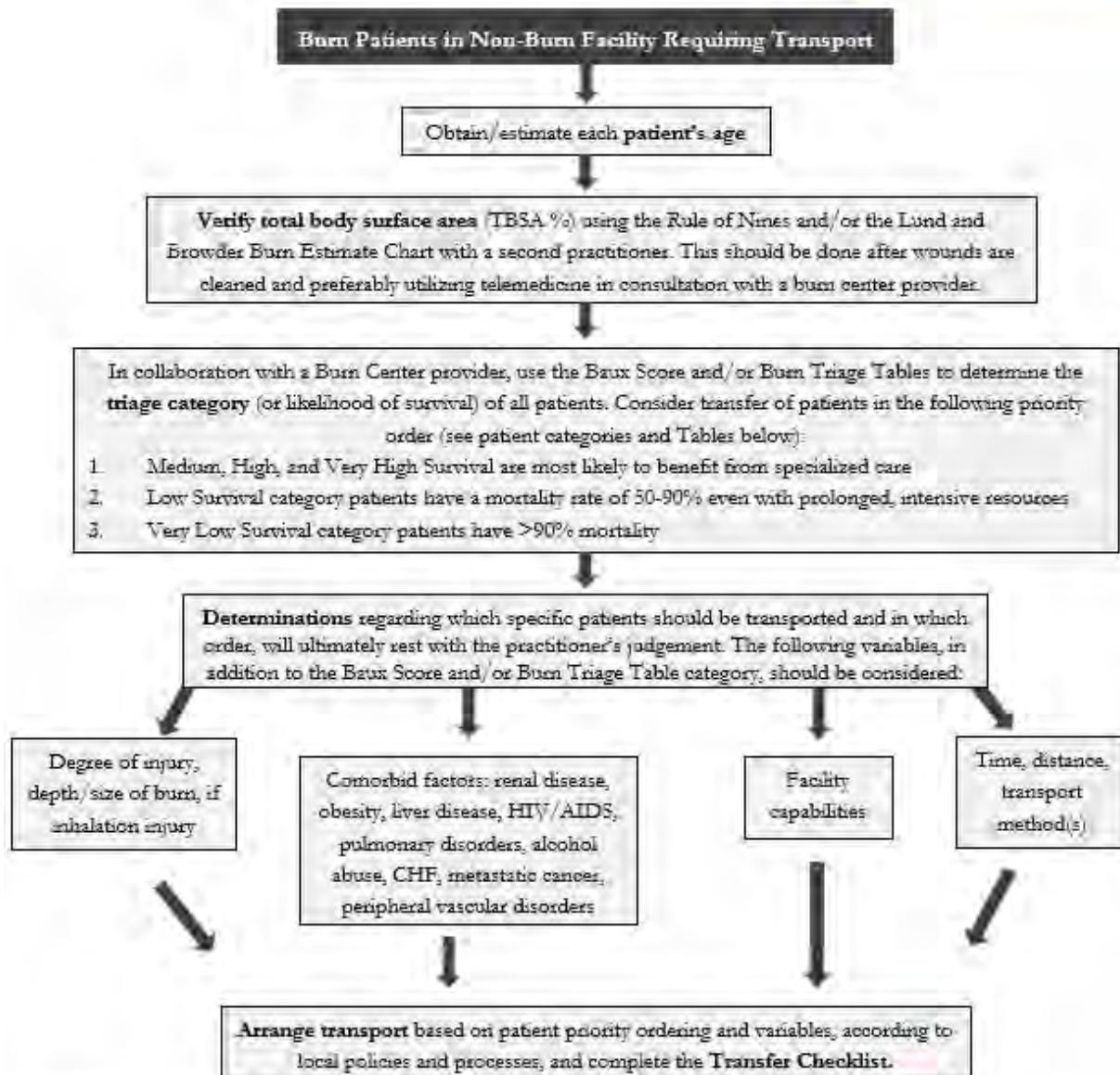
Burn Training/Resources	Source	Target Audience	Type	Weblink
<b>Hospital Clinical Resources</b>				
<b>Extensive Clinical Care &amp; Response Resources</b>	University of Utah Health	Response, Clinical	Guidance/ Videos	<a href="https://crisisstandardsofcare.utah.edu">https://crisisstandardsofcare.utah.edu</a>
<b>Burn Wound Care &amp; Outpatient Videos</b>	University of Utah Burn Center	Clinical	Videos	<a href="https://www.facebook.com/UofUBurnCenter/">https://www.facebook.com/UofUBurnCenter/</a>
<b>ABA Burn Center Referral Criteria</b>	American Burn Association	Response, Clinical	Guidance	<a href="http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.pdf">http://ameriburn.org/wp-content/uploads/2017/05/burncenterreferralcriteria.pdf</a>
<b>Burn E-learning</b>	OPEN Pediatrics	Clinical	Video	<a href="https://learn.openpediatrics.org/learn/global-search/burns">https://learn.openpediatrics.org/learn/global-search/burns</a>
<b>Burn Nurse Competencies</b>	American Burn Association	Clinical	Guidance	<a href="http://ameriburn.org/wp-content/uploads/2017/05/bnci-competency-document-february-2017-final.pdf">http://ameriburn.org/wp-content/uploads/2017/05/bnci-competency-document-february-2017-final.pdf</a>
<b>Burn Care for Children</b>	American Academy of Pediatrics	Clinical	Guidance	<a href="https://pedsinreview.aappublications.org/content/39/6/273">https://pedsinreview.aappublications.org/content/39/6/273</a>
<b>Burns 101 Initial Management</b>	UW Medicine	Clinical	Video	<a href="https://www.uwmedicine.org/provider-resource/videos/burns-101-initial-management">https://www.uwmedicine.org/provider-resource/videos/burns-101-initial-management</a>
<b>Burn Surge Video Series</b>	Minnesota Dept of Health	Clinical	Video	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/video.html">https://www.health.state.mn.us/communities/ep/surge/burn/video.html</a>
<b>Burn Surge Module 4: Advance Special Treatment Considerations</b>	Minnesota Dept of Health	Clinical	Video	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/module4advanced.html">https://www.health.state.mn.us/communities/ep/surge/burn/module4advanced.html</a>
<b>Determining Burn Depth</b>	Minnesota Dept of Health	Clinical	Guidance	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/burndepth.html">https://www.health.state.mn.us/communities/ep/surge/burn/burndepth.html</a>
<b>Determining Total Body Surface Area</b>	Minnesota Dept of Health	Clinical	Guidance	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/tbsa.html">https://www.health.state.mn.us/communities/ep/surge/burn/tbsa.html</a>
<b>96-Hour Care Guidelines for Pediatric Burns</b>	Illinois Dept of Public Health	Clinical	Guidance	<a href="https://www.luriechildrens.org/globalassets/documents/emsc/disaster/st-ate-plans/burncareguidelinesjune2017.pdf">https://www.luriechildrens.org/globalassets/documents/emsc/disaster/st-ate-plans/burncareguidelinesjune2017.pdf</a>

<b>Triage of Patients with Cutaneous Burns Only During Mass Casualty Incidents</b>	Minnesota Dept of Health	Clinical	Guidance	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/triageburns.html">https://www.health.state.mn.us/communities/ep/surge/burn/triageburns.html</a>
<b>Resources for the Optimal Care of the Burn Patient</b>	Committee on Trauma – American College of Surgeons	Clinical	Guidance	<a href="https://www.facs.org/-/media/files/quality-programs/trauma/vrc-resources/resources-for-optimal-care.ashx">https://www.facs.org/-/media/files/quality-programs/trauma/vrc-resources/resources-for-optimal-care.ashx</a>
<b>Clarification Document – Resources for the Optimal Care of the Burn Patient</b>	Committee on Trauma – American College of Surgeons	Clinical	Guidance	<a href="https://www.facs.org/-/media/files/quality-programs/trauma/vrc-resources/clarification_document.ashx">https://www.facs.org/-/media/files/quality-programs/trauma/vrc-resources/clarification_document.ashx</a>
<b>Pediatric Response Resources for Burn Surge Facilities</b>	Minnesota Dept of Health	Clinical	Guidance	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/pedsorders.pdf">https://www.health.state.mn.us/communities/ep/surge/burn/pedsorders.pdf</a>
<b>Management of severe thermal burns in the acute phase in adults and children</b>	Anesthesia Critical Care & Pain Medicine	Clinical	Guidance	<a href="https://www.sciencedirect.com/science/article/pii/S2352556820300382">https://www.sciencedirect.com/science/article/pii/S2352556820300382</a>
<b>Pediatric Burn Care</b>	State of Michigan	Clinical	Video	<a href="http://www.michiganburn.org/pediatric_burn_care.html">http://www.michiganburn.org/pediatric_burn_care.html</a>
<b>Pain and Sedation for Pediatric Burn Care</b>	State of Michigan	Clinical	Video	<a href="http://www.michiganburn.org/peds_pain_management.html">http://www.michiganburn.org/peds_pain_management.html</a>
<b>Pediatric Burn Resuscitation</b>	State of Michigan	Clinical	Guidance	<a href="http://www.michiganburn.org/images/PedsGuidelinesforBurnResuscitation.pdf">http://www.michiganburn.org/images/PedsGuidelinesforBurnResuscitation.pdf</a>
<b>The Rule of Nines and Lund-Browder Charts</b>	State of Michigan	Clinical	Guidance	<a href="http://www.michiganburn.org/images/Rule_9s_Lund_Browder.jpg">http://www.michiganburn.org/images/Rule_9s_Lund_Browder.jpg</a>
<b>Topic Collection: Burns (Extensive Resources &amp; Best Practices)</b>	ASPR TRACIE	Clinical	Guidance	<a href="https://asprtracie.hhs.gov/MasterSearch?qt=burns&amp;limit=20&amp;page=1">https://asprtracie.hhs.gov/MasterSearch?qt=burns&amp;limit=20&amp;page=1</a>
<b>Pre-Hospital Clinical Resources</b>				
<b>Pre-hospital Care for Burn Patients</b>	Integris Paul Silverstein Burn Center	Prehospital	Guidance	<a href="https://integrisok.com/locations/specialty-clinic/integris-burn-center/patients-and-visitors/pre-hospital-care-for-burn-patients">https://integrisok.com/locations/specialty-clinic/integris-burn-center/patients-and-visitors/pre-hospital-care-for-burn-patients</a>
<b>Rehabilitation and Follow-up Services</b>				
<b>Silver sulfadiazine (SSD) Dressing Video</b>	University of Utah	Clinical	Video	<a href="https://www.facebook.com/UofUBurnCenter/videos/665390664268144/">https://www.facebook.com/UofUBurnCenter/videos/665390664268144/</a>
<b>Baci/Non-adherent Dressing Video</b>	University of Utah	Clinical	Video	<a href="https://www.facebook.com/UofUBurnCenter/videos/198661721392769/">https://www.facebook.com/UofUBurnCenter/videos/198661721392769/</a>

<b>Mepilex Dressing Video</b>	University of Utah	Clinical	Video	<a href="https://www.facebook.com/UofUBurnCenter/videos/2849921651796060/">https://www.facebook.com/UofUBurnCenter/videos/2849921651796060/</a>
<b>Stat Wrap Video</b>	University of Utah	Clinical	Video	<a href="https://www.facebook.com/UofUBurnCenter/videos/240542243678122/">https://www.facebook.com/UofUBurnCenter/videos/240542243678122/</a>
<b>Blister Removal Video</b>	University of Utah	Clinical	Video	<a href="https://www.facebook.com/UofUBurnCenter/videos/967820496984347/">https://www.facebook.com/UofUBurnCenter/videos/967820496984347/</a>
<b>Emergency Management &amp; Response Resources</b>				
<b>Burn Mass Casualty Incident Operations Plan</b>	Western Region Burn Disaster Consortium	Response, Clinical	Guidance	<a href="https://crisisstandardsofcare.utah.edu/opendocs/WRBDC%20BMCI%20Operations%20Plan.pdf">https://crisisstandardsofcare.utah.edu/opendocs/WRBDC%20BMCI%20Operations%20Plan.pdf</a>
<b>Burn Surge Annex</b>	Ann & Robert H Lurie Children's Hospital of Chicago	Response, Clinical	Guidance	<a href="https://www.luriechildrens.org/en/emergency-medical-services-for-children/disaster/state-plans/burn-surge-annex/">https://www.luriechildrens.org/en/emergency-medical-services-for-children/disaster/state-plans/burn-surge-annex/</a>
<b>Extensive Pediatric Response Resources</b>	Western Regional Alliance for Pediatric Emergency Management	Response, Public, Clinical	Guidance, videos, disaster helpline	<a href="https://wrap-em.org/">https://wrap-em.org/</a>
<b>PsySTART</b>	Western Regional Alliance for Pediatric Emergency Management	Response, Clinical	Guidance	<a href="https://www.calhospitalprepare.org/sites/main/files/file-attachments/psystart_fact_sheet_wrapem_jit.pdf">https://www.calhospitalprepare.org/sites/main/files/file-attachments/psystart_fact_sheet_wrapem_jit.pdf</a>
<b>Healthcare Coalition Burn Surge Annex Template</b>	ASPR TRACIE	Response	Guidance	<a href="https://files.asprtracie.hhs.gov/documents/aspr-tracie-hcc-burn-surge-annex-template-final.pdf">https://files.asprtracie.hhs.gov/documents/aspr-tracie-hcc-burn-surge-annex-template-final.pdf</a>
<b>Pediatric Annex for Burn Surge</b>	State of Michigan	Response, Clinical	Guidance	<a href="http://www.michiganburn.org/images/content/PedAnnexVer5.pdf">http://www.michiganburn.org/images/content/PedAnnexVer5.pdf</a>
<b>Burn Triage and Treatment of Thermal Injuries in a Radiation Emergency</b>	Radiation Emergency Medical Management (REMM)	Response, Clinical	Guidance	<a href="https://www.remm.nlm.gov/burns.htm">https://www.remm.nlm.gov/burns.htm</a>
<b>Extensive Clinical Care &amp; Response Resources</b>	Western Region Burn Disaster Consortium	Response, Clinical	Guidance/ Videos	<a href="https://crisisstandardsofcare.utah.edu">https://crisisstandardsofcare.utah.edu</a>

<b>Strategies for Scarce Resource Situations</b>	Minnesota Dept of Health	Response	Guidance	<a href="https://www.health.state.mn.us/communities/ep/surge/burn/index.html">https://www.health.state.mn.us/communities/ep/surge/burn/index.html</a>
<b>Burn Prevention &amp; Safety Public Resources</b>				
<b>It Can Happen in a Flash</b>	National Scald Burn Campaign	Public	Guidance	<a href="http://flashsplash.org/">http://flashsplash.org/</a>
<b>COVID-19 Public Resources</b>	American Burn Association	Public	Guidance	<a href="http://ameriburn.org/public-resources/covid-19-public-resources/">http://ameriburn.org/public-resources/covid-19-public-resources/</a>
<b>Burn Prevention</b>	CDC	Public	Guidance	<a href="https://www.cdc.gov/safechild/burns/index.html">https://www.cdc.gov/safechild/burns/index.html</a>
<b>Burns Facts &amp; Prevention</b>	World Health Organization	Response	Guidance	<a href="https://www.who.int/news-room/fact-sheets/detail/burns">https://www.who.int/news-room/fact-sheets/detail/burns</a>
<b>Fire &amp; Burn Safety</b>	Children's Safety Network	Public	Guidance	<a href="https://www.childrensafetynetwork.org/injury-topics/fire-burn-safety">https://www.childrensafetynetwork.org/injury-topics/fire-burn-safety</a>
<b>Burn Survivor Public Resources</b>				
<b>Burn Survivor Resources</b>	American Burn Association	Public	Guidance	<a href="https://ameriburn.org/public-resources/burn-survivor-resources/">https://ameriburn.org/public-resources/burn-survivor-resources/</a>
<b>Burn Survivor &amp; Prevention Resources</b>	Alisa Ann Ruch Burn Foundation	Public	Guidance & Videos	<a href="https://www.aarbf.org/survivor-services/">https://www.aarbf.org/survivor-services/</a> <a href="https://www.aarbf.org/burn-prevention/">https://www.aarbf.org/burn-prevention/</a>
<b>Wildfire Preparedness Resources</b>	Alisa Ann Ruch Foundation	Public	Guidance & Videos	<a href="https://www.aarbf.org/wildfirepreparedness/">https://www.aarbf.org/wildfirepreparedness/</a>
<b>Extensive Resources for Burn Survivors</b>	Phoenix Society for Burn Survivors	Public	Guidance & Videos	<a href="https://www.phoenix-society.org/resources">https://www.phoenix-society.org/resources</a>
<b>Extensive Resources for Burn Survivors</b>	Arizona Burn Foundation	Public	Guidance & Videos	<a href="https://azburn.org/">https://azburn.org/</a>
<b>Trauma and Burn Series: What Parents Need to Know</b>	Children's National	Public	Guidance	<a href="https://childrensnational.org/news-and-events/video-gallery?series={9FDB9207-19A4-44A7-9C5C-E7DFCEB593E7}#Results">https://childrensnational.org/news-and-events/video-gallery?series={9FDB9207-19A4-44A7-9C5C-E7DFCEB593E7}#Results</a>
<b>Preparing Children After a Wildfire Damages Your Community</b>	The National Child Traumatic Stress Network	Public	Guidance	<a href="https://www.nctsn.org/resources/preparing-children-after-a-wildfire-damages-your-community">https://www.nctsn.org/resources/preparing-children-after-a-wildfire-damages-your-community</a>

## Appendix 4: Transfer Decision Flowchart & Triage Tables



\*Adapted from Western Region Burn Disaster Consortium, University of Utah Health, Utah Department of Health, and the Utah Hospital Association.



## Appendix 5: Hospital Burn Patient Transfer Checklist

\*This information was adapted from the WRBDC 96 Hour Plan - Transfer & Transport module, <https://crisisstandardsofcare.utah.edu>

Use the following checklist to prepare, package and transport patients who have been identified for transfer to a Burn or Trauma Center. Use the Hospital Burn Patient Transfer Flowchart to identify which patients should be transported and in which order.

### Patient Movement and Handover Communication

- Utilize standard transfer protocols to transfer patients based on burn severity and medical capabilities.
- Ensure receiving facility agrees to accept the patient.
- Consider the distance and time of transport when making transport decisions.
  - For a very high-risk, potentially unstable patient, shorter transport times will likely lead to better outcomes.
  - Consider air transport if ground transport would take longer than 60 minutes.
- Ensure patient(s) handoff communication paperwork has a unique identifier, pre-burn estimate of weight, estimation of % TBSA, and the name of accepting hospital and physician
  - This may be provided via triage tag, hospital cover sheet, summary sheet, or provider notes. Consider using the [BMCI Patient Medical Data Form](#).
- Ensure verbal report is given from referring physician to receiving physician
- Ensure essential elements of patient care are recorded on a standardized, pre-printed handoff form such as the [BMCI Patient Medical Data Form](#).
- Ensure verbal report is given to the transport team consisting of:
  - A summary of the patient's initial condition
  - Medical treatments and therapies administered
  - Patient's response to the medical care provided
- Package all medical records, lab results, and x-rays available at the time of transport, and send with the patient(s) to the receiving hospital
- Ensure any medical equipment accompanying the patient (IV pumps, ventilators, monitors, etc.) are noted on the patient chart by item, brand, facility-specific tracking number, service tag number, and serial number to assist in the return of items.
- Receive communication from the receiving facility verifying receipt of the patient(s)
  - Provide all necessary contact information for next of kin, state family reunification center, or others to receiving facility to ensure ongoing communication regarding transfer and new location of the patient.
  - Confirm transfer with the Western Region Burn Coordination Center, if activated.

### Patient care

- Ensure all patient(s) receive appropriate triage and stabilization within the capability and capacity of the facility
  - The primary goal is to minimize the risk of patient(s) deterioration during transport
- If advanced airway is required or anticipated, secure the airway prior to transferring the patient
- Ensure the Endotracheal Tube (ETI) is secure, avoid tape to burned skin using Twill tape instead.

- ❑ Elevate burned extremities where possible
- ❑ Do not use excessive pressure when handling wounds
  - Support burned extremities from underneath rather than gripping
  - Use the flat surface of hands/forearms rather than fingertips
- ❑ Measure patient temperature in preparation for transport and every 2 hours if possible
  - If < 36 c (96.8 F) minimize exposure time, warm transport vehicle, use heating blankets and warm IV fluids if available, and avoid cold surfaces
- ❑ Keep the patient warm and dry
  - Cover with two blankets or improvised cover such as plastic wrap/aluminum foil / plastic bag if unable to measure temperature during transport

## Appendix 6: Helping Children and Adolescents During Disaster



### BE CALM • PRACTICE THE HEALING COMMITMENTS • ASK FOR HELP

Considerations for attending to the emotional needs of children and adolescents during a disaster – Do's and Don'ts

#### Do

1. Protect children from:
  - Further harm.
  - Traumatic sights and sounds.
  - Onlookers and Media.
2. Be kind, but firm in directing children away from:
  - The event site.
  - Views of damage or destruction.
  - The proximity of injured survivors.
3. Keep children together with family and friends as feasible.
4. Identify children in acute distress:
  - They may tremble.
  - They may ramble.
  - They may become mute or distant.
  - They may cry loudly.
  - They may exhibit erratic behavior or rage.
  - They may sit completely still or frozen.
5. Be tolerant of difficult behavior and strong emotions.
6. Help children feel in control:
  - Let them choose meals, if possible.
  - Let them pick out clothes, if possible.
  - Let them make some decisions for themselves, when possible.

**NOTE:** As much as possible, stay with a child in acute distress until they are calm.

- Create a Sense of Safety.
- Be Hopeful.
- Be Friendly.
- Communicate Reassurance.
- Introduce another caregiver early on in case you must leave the child.

#### Do Not

1. Expect children to be brave or tough.
2. Force them to tell their stories or discuss the event before they are ready.
3. Probe for personal details.



4. Get angry if children show strong emotions.
5. Get upset if they begin:
  - Bed-wetting
  - Acting out
  - Thumb-sucking
6. Make promises that you cannot keep (e.g., “You will go home soon”).

**Do Not Tell Them:**

- “Everything will be OK.”
- “At least you survived.”
- What you think they should feel.
- How they should have acted.
- They are suffering for their personal behaviors or beliefs.
- Negative things about available help.

**Common Reactions for Children and Adolescents**

**1. Young Children (< 5 Years)**

- Reactions are strongly influenced by parents' reactions to the event.
- May return to behaviors common to being younger.

**2. Children Between 6 and 11 Years**

- Become quiet, even around familiar people (e.g., friends, family, and teachers).
- Have outbursts of anger.
- Develop unfounded fears.

**3. Adolescents**

- “Survivor’s Guilt” – feeling guilt about the event or about not preventing injury or death.
- Thoughts of revenge.

**For More Information Go To:**

<https://www.nimh.nih.gov/health/publications/trauma-listing>

<https://emergency.cdc.gov/coping/index.asp>

<http://www.samhsa.gov>: For Suicide Prevention and Disaster Distress helpline

