THE STATE OF MICHIGAN

MULTI-CASUALTY BURN INCIDENT PLAN

Version
#19
Approved January 2013
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Introduction

The following Mass Casualty Incident (MCI) Burn Plan has been developed for Michigan in an effort to expand the ability to provide burn care, and to safeguard and prioritize the utilization of limited resources. The State of Michigan recognizes that no one state has the ability to meet the identified increased capacity needs of a significant incident involving large numbers of burn patients. This plan incorporates the utilization of “adjusted environments of care,” by planning for the provision of stabilizing care for burn patients in facilities that are not normally associated with providing definitive care to burn patients. The ability to standardize the care that will be provided in hospitals that do not provide definitive burn care has been agreed upon in an effort to safeguard critical resources and, ultimately, improve outcomes for patients.

This plan incorporates the use of burn stages to provide context for the scope of an incident, and should not be viewed as prescriptive. Given even the limited availability of definitive burn care at the national level, it is understood that even a “relatively minor” incident may indicate a need for accessing resources from one or more of the planning partners to ensure the best possible outcomes for patients. This document should be viewed as a guide for planning a coordinated response in a multi-casualty burn environment as defined by the burn stages outlined in this document.

This plan outlines the use of a long acting silver impregnated dressing, to treat burn patients. The identification of this type of dressing is meant to serve as a guide for health care partners. It is understood that the choice of which brand of product to use should and will be based on current practices. The choice to use a silver impregnated dressing for this type of MCI is critical to this plan’s success, because the use of this type of dressing significantly reduces the number of patient care hours needed per burn victim, and, reduces the need for specialty trained nursing care, both of which are critical elements to the success of any plan directed at increasing surge capacity. It not the intention of the document to suggest patient care practices at Michigan recognized burn centers.

This plan develops non-traditional burn care resources to provide surge capacity during a multi-casualty incident, and to protect those facilities with definitive burn care capacity from being overwhelmed through the use of offsite triage and stabilization. By developing this type of surge capacity we can maximize the use of our critical definitive care resources.

The purpose of this plan is to assist local jurisdictions and Regional Healthcare Coalitions (HCC) in planning for and providing a uniform coordinated response to a mass casualty burn incident when the incident has exceeded local resources.

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This plan has been designed as an adjunct to local preparedness efforts. It defines what constitutes a multi-casualty burn incident. It also provides guidance to each Regional HCC in providing a uniform assessment of their current capacity to care for burn patients and an assessment of burn surge capabilities.

This plan applies to all levels of government to include the local, regional, state and/or multi-state level. It provides guidance for:

- Uniform triage of burn patients
- Categorization of hospital resources
- Critical burn surge supplies based on regional population and projected surge capacity needs
- Staff and training readiness for patient care
- A communication model for the management of a multi-casualty burn incident.

In Michigan efforts are ongoing to coordinate the capacity to care for patients during a multi-casualty burn incident. The State of Michigan participates with the Great Lakes Healthcare Partnership (GLHP) who is working to adopt a similar organizational approach to managing the surge of burn patients from a MCI. Currently there are recognized standards of care specific to burn patients; however it would be optimal to have states adopt response structures capable of interfacing with one another in order to provide a coordinated response in a timely fashion. Absent that coordination, states may not be able to rely on meaningful support capable of mitigating critical care issues within the 72 hours post incident.

The extent of injury seen in burn patients involved in a MCI will vary in degree and criticality and, as such, the extent and intensity of care and resources required will vary significantly. This is critical in assessing existing burn capacity as it relates to the development of resources identified by any state. Michigan utilized the planning assumption of 60% of the ASPR Hospital Preparedness Program (HPP) benchmark of 50 patients per million populations will sustain a 30% Total Burn Surface Area (TBSA) injury (on average).¹

It is also understood that federal assets may not be readily available, and the need for both self-reliance and the assistance of the partners developed within the Great Lakes Healthcare Partnership (GLHP) to sustain the needs of patients for 72 hours. Within that timeframe, the GLHP that will be accessible, and that after 72 hours federal assistance will begin to become available.

Authority

The state and jurisdictional hospital preparedness cooperative agreement, as authorized by section 319C-1 of the Public Health Service (PHS) act, as amended by the Pandemic and All-Hazards Preparedness Act (PAHPA) (P.L. 109-417) and the Emergency Medical Services (EMS) & Trauma Systems Section under Part 209 of PA 368 of 1978.
Mass Casualty Burn Events
And
Burn Stages
Definition of a Mass-Casualty Burn Incident

For the purposes of this plan, qualitative factors that may cause a local jurisdiction to declare an emergency or disaster may include, but are not limited to mass casualties involving:

- Inhalation injuries
- Size, depth, and location of the burn area
- Chemical or radiological contamination/exposure
- Presence of other trauma related injuries which compound the intensity of care and resources required for ongoing patient care
- Casualty transport resources
- Co-existence of other major burn MCIs in other areas of the State or multi-state region.

Mass Casualty Incident Burn Stages

During a Burn Stage I incident, state burn centers and burn centers in neighboring states will manage as many patients who meet the Mass Casualty Burn Center Referral Criteria as available resources permit. Once it is recognized that the potential for the event to exceed local resources exists, then the regional Medical Control Center (MCC) and the local Emergency Operations Center (EOC), with the assistance of the State Burn Coordinating Center (SBCC), should begin to coordinate medical response efforts with the Community Health Emergency Coordination Center (CHECC) and the State Emergency Operations Center (SEOC) (Appendix N-Medical Communications Pathway during Emergency Response).

BSF’s will be utilized as needed to briefly care for and house other burn patients pending transfer to recognized burn centers. For Burn Stage I incidents, it is expected that all burn casualties will be transferred within 24-48 hours to burn centers in Michigan and neighboring states, if needed. If the existing burn center resources are exhausted, patients will be referred utilizing the process outlined in Burn Stage II.

During a Burn Stage II incident, state Burn Centers will manage as many patients as possible given the resources available for patients meeting the Mass Casualty Burn Center Referral Criteria. When Burn Center bed capacity has been exceeded, or transport is not feasible, Regional BSF’s may be utilized to provide care and to house patients. The SBCC, CHECC, and the SEOC will facilitate the coordination of other burn resources with the GLHP, as well as the National American Burn Association network of burn centers.
During a Burn Stage III incident, state Burn Centers will provide care for as many patients as they have resources to support care that meet the Mass Casualty Burn Center Referral Criteria. When Burn Center bed capacity has been exceeded or transport is not feasible, Regional BSF’s may be utilized to care for and house patients. The process for the transfer of patients out of state, utilizing our GLHP will begin, once all in state resources are exhausted. This process will be coordinated through established incident command structure.

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<th>Mass-Casualty Burn Stage (BS)</th>
<th>Definition</th>
<th>Plan</th>
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| Stage I                       | Any event in which local trauma/burn resources are overwhelmed with patients (example: 10-24 patients):  
  - Have ≥30% TBSA burn  
  - Meet Mass Casualty Burn Center Referral Criteria (see page 36)  
  - Qualitative or quantitative nature of injuries exceed local capacity to provide effective care | • Individual health care facilities will manage the plans.  
  • Regional MCC will coordinate the medical response and communicate with MDCH OPHP who then contacts SEOC. They will also notify the SBCC, provide consultation, and coordinate bed availability.  
  • State Burn Centers and burn centers in neighboring states in close proximity to the incident will manage as many patients as resources permit. Burn patients are defined at those casualties that meet Mass Casualty Burn Center Referral Criteria ([Appendix D](#))  
  • BSF’s may be utilized as needed to briefly care for patients until patients transfer to a recognized burn center | |
| Stage II                      | Any event in which regional trauma/burn resources are overwhelmed with patients (example: 25 – 100 patients):  
  - Have ≥ 30% TBSA burn  
  - Qualitative or Quantitative nature of injuries exceeds defined capacity of the region | • Individual health care facilities will manage plans.  
  • Regional MCC will coordinate medical response, CHECC and the SBCC activation.  
  • State Burn Centers and burn centers in neighboring states in close proximity to the incident will manage as many patients as resources permit. Burn patients are defined at those casualties that meet Mass Casualty Burn Center Referral Criteria ([Appendix D](#))  
  • BSF's may be utilized as needed to briefly care for patients until patients transfer to a recognized burn center  
  • If existing burn center resources are exhausted, patients will be referred utilizing process outlined in Burn Stage III | |
| Stage III                     | Any event in which state trauma/burn resources are overwhelmed with patients (example: > 100 patients or the potential to have > 100 patients exists):  
  - Have ≥ 30% TBSA burn  
  - Qualitative or quantitative nature of injuries exceeds defined capacity of the state | • Individual health care facilities will manage plans.  
  • Regional MCC will coordinate medical response, CHECC and the SBCC activation.  
  • CHECC in coordination with SEOC supports local MCC and EOC’s, respectively.  
  • SBCC assists BSFs and works with MCCs and CHECC to facilitate coordination of other burn resources with Great Lakes Healthcare Partnership & the national ABA network of burn centers  
  • State Burn Centers will manage as many patients as resources permit who meet Mass Casualty Burn Center Referral Criteria and assist near-by BSF’s as able  
  • If ABA is unavailable or transport is not feasible, Regional BSF’s will be utilized to house patients. BSF’s will care for and house patients until transport to a more distant burn center can be achieved (preferably within 72 hours). If needed, patients may be transferred to more distant BSFs in Michigan and neighboring states. | |

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Concept of Operations
Concept of Operations

In the event of a mass casualty burn incident, each of the eight Emergency Preparedness Regions should plan to provide initial treatment and stabilization for burn victims triaged as meeting the criteria for a burn referral to a burn center. Planning projections should be based on a population ratio of 50 casualties per million, or a minimum of 25 patients. This capacity planning should incorporate the development of non-traditional burn bed resources to include:

- Initial and ongoing training in burn triage
- Categorization of injuries
- Patient care
- Supply caches capable of supporting patient care for at least 72 hours

In order to successfully create an operational statewide plan, four basic premises must be uniformly understood and incorporated into each response plan for mass-casualty burn incidents. The four basic concepts of operational importance are:

1. Regional Medical Coordination Centers (MCCs) or Multi Agency Coordination Centers (MACS)
2. Creation of a State Burn Coordinating Center (SBCC)
3. Maximum utilization of the state’s six burn centers and
4. Establishment of Regional Burn Surge Facilities (BSFs)

These defined resources will provide each region's ability to coordinate the care and movement of burn patients during a mass casualty incident. Once the RMCC has determined the scope of the Burn Incident and the needs of the patients, they will contact the CHECC to provide pertinent information and seek assistance. This may include a request for support to coordinate the care and placement of the burn patients. Essential elements of information (EEI) may include:

- Number of patients impacted (may be an estimate)
- An EM Resource bed query was initiated
- Status of any communications from the local EOC’s about medical health needs (as available)
- The status of the RMCC activation indicating current staff and any other information which may be pertinent to the incident.

Upon notification the CHECC will evaluate incident based on information provided through local and regional partners and the potential to have statewide impact. At that time, the

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CHECC would most likely activate and proceed with further state level communications to the SEOC. The decision to activate the burn plan will be based on multiple factors including the number of patients impacted, severity of injuries and burn center bed availability. The CHECC will be in communication with the SBCC, who will assess the status of burn bed capacity statewide. After incident data has been reviewed, the CHECC would continue communications with the RMCC to discuss activation the State of Michigan MCI Burn Plan.

With plan activation, the CHECC and the SBCC will formalize communications. The SBCC will identify stages based on:

- **Burn Stage I**
  - Any event in which local trauma/burn resources are overwhelmed with patients (example: 10-24 patients)
- **Burn Stage II**
  - Any event in which regional trauma/burn resources are overwhelmed with patients (example: 25-100 patients)
- **Burn Stage III**
  - Any event in which state trauma/burn resources are overwhelmed with patients (example: Exceeds 100 patients)
- Location of Incident
- Medical Needs of the Patients
- Bed Availability
- Transport Time

Once the burn plan is activated, the decision to activate a Burn Surge Facility is based on criteria outlined in this plan. Below is a summary of some of the decision making that would be utilized by the CHECC and SBCC:

**During a Burn Stage I incident:**

- State burn centers and burn centers in neighboring states will manage as many patients who meet the Mass Casualty Burn Center Referral Criteria as available resources permit.
- BSF's will be utilized, as needed, to briefly care for and house other burn patients pending transfer to recognized burn centers.
- For Burn Stage I incidents, it is expected that all burn casualties will be transferred within 24-48 hours to burn centers in Michigan and neighboring states, if available and needed.
- If the existing burn center resources are exhausted, patients will be referred utilizing the process outlined in Burn Stage II.
During a **Burn Stage II** incident:

- State Burn Centers will manage as many patients as possible given the resources available for patients meeting the Mass Casualty Burn Center Referral Criteria.

- When Burn center bed capacity has been exceeded, or transport is not feasible, Regional BSF’s may be utilized to provide care and to house patients.

- Aside from those activities already initiated under **Burn Stage II**, the SBCC, CHECC, and the SEOC will facilitate the coordination of other burn resources with the GLHP, as well as the National American Burn Association network of burn centers.

Once the plan has been activated, the SBCC will be responsible for:

- Activating their internal response disaster team

- Notifying and coordinating with American Burn Association to identify Burn Centers outside Michigan capable of receiving patients

- Based on communication with the CHECC, activate BSF’s within Michigan.

- Coordinating the triage of all burn patients to in-state and neighboring State Burn Centers and, if necessary, to in-state and neighboring state BSF’s – sending and receiving

- Support BSF’s in the care of burn casualties during the initial 72 hours following the initial incident

- Provide nurses and surgeons to assist in the secondary triage of burn casualties at the BSF’s if necessary through telemedicine and/or on-site visits

- Coordinate, in conjunction with the MCC(s) and the CHECC, the triage, transfer, and tracking of burn casualties to out-of-state Burn Centers
Organization & Assignment of Responsibilities
Organization & Assignment of Responsibilities

Regional Medical Coordination Centers (MCC)
A Regional MCC (Appendix Q-Regional Medical Coordination Center) is activated when medical care coordination is needed in response to a real or potential mass casualty incident. This is outlined Tier 2 in the Medical Surge Capacity and Capability (MSCC) document, supported by the ASPR Healthcare Preparedness Program. The MCC functions on behalf of their regional HCC supporting Healthcare Organizations (HCO) and assists the local and state incident management system with medically related coordination and resource allocation. The core component of the MCC operation must remain consistent, recognizing regional variations exist based on resources and assets available.

The primary functions of the MCC are to support their HCO's and assist incident management officials with:

- Serving as a support to hospitals, local EOC’s, other Regional MCC’s and the CHECC. The SEOC is kept informed via the CHECC.
- Situational awareness of the HCO’s within the HCC
- Current availability of regional medical resources
- Coordination of requests and receipt of intra and extra-regional medical resources (EEI)
- Casualty transportation system (CTS)
- Serving as the primary mechanism for medical communications to the CHECC (ESF #8) consistent with Regional Operational Guidelines

State Burn Coordinating Center
MDCH OPHP has contracted with one healthcare facility to act as the SBCC. This facility is the University of Michigan Burn Center and is responsible for assisting the Regional MCC’s, CHECC and the SEOC in managing mass casualty burn incident in which the resources of any given region or the state are exceeded (Appendix K-SBCC Activation Communication Pathway). The SBCC must be an American College of Surgeons (ACS) certified hospital demonstrating expertise in the care of burn patients; as well as the ability to provide staff assistance to MCC’s from beyond their geographic region, the state, or other states involved with the management of a coordinated plan for mass casualty burn incidents.

In considering a facility for selection as the SBCC the following capabilities should be considered as criteria for designation:

- Around-the-clock on call coverage by a burn surgeon and burn disaster response support team
- Telemedicine capabilities


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• Interoperable communications that include Michigan Public Safety Communications System (800 MHz).
• ABA verification as a Burn Center
• Michigan Health Alert Network (MIHAN) participation
• Ability to serve in the role and continue to care for their patients (under catastrophic conditions)
• Rapid Web-publication capabilities

To further support Michigan’s planning for a Burn Mass Casualty Incident, the SBCC has duties outside of incident response including:

• Assist in the development of training protocols for personnel at designated BSF’s and Burn Centers

• Coordinate the maintenance and updating of burn related protocols at the BSF and Regional HCC

• Develop and maintain a process for recording burn casualty reports associated with a mass casualty incident in which they are activated

• Coordinate the rotation and updating of burn supply caches located within BSF’s or centrally located locations

• Coordinate the procurement of critical burn surgery supplies, such as skin Allograft and wound care products, and maintain a database of supply sources and contacts

• Working with suppliers outside the state and coordinating supply distribution to other in-state Burn Centers

• Demonstrate proficiency in the utilization of MIHAN as well as other web-based resources to facilitate distribution of documents, protocols and databases needed for Burn MCI preparedness

• Maintain documentation for potential reimbursement

• Assist with education, training and exercises as appropriate

• Act as a liaison with coordinating burn centers from other states including the GLHP, on an ongoing basis, in support of inter-state planning activities
Michigan Burn Centers
Michigan currently has six healthcare facilities recognized as burn centers (Appendix I - Michigan Burn Centers). They routinely accept burn referrals, and are able to provide definitive care for burn patients, as defined by the American College of Surgeons in the Resources for Optimal Care of the Injured Patient: 2006, Committee on Trauma Care (Appendix E - ACS Burn Unit Referral Criteria). These centers continue to serve their primary role during a Burn MCI, but will work in conjunction with the SBCC to manage the flow of burn surge patients to ensure the optimal use of the state’s definitive burn care capacity.

Regional Burn Surge Facilities (BSFs)
The 8 Regional Healthcare Coalitions, working with MDCH has established 11 hospitals to serve as a Regional BSFs within located throughout the eight Emergency Preparedness Regions. Each Emergency Preparedness Region who has an ACS Verified Burn Center identified one Regional BSF. The Regions without an ACS Verified Burn Center identified two Regional BSF’s. The identification of these BSF’s allowed for the development and education of the staff within the HCO, which may not typically treat burn patients beyond initial stabilization and transport, to provide care for initial 24-72 hours post incident.

Regional BSF’s are hospitals that can care for burn patients based on the three defined Burn Stage (BS) responses:

- **Burn Stage I**
  - Any event in which local trauma/burn resources are overwhelmed with patients (example: 10-24 patients)
- **Burn Stage II**
  - Any event in which regional trauma/burn resources are overwhelmed with patients (example: 25-100 patients)
- **Burn Stage III**
  - Any event in which state trauma/burn resources are overwhelmed with patients (example: Exceeds 100 patients)

Each Burn Stage has been created based on an analysis of existing burn resources either currently in existence within each healthcare preparedness region, or based on the enhancement of those resources as provided for within this plan.

Given the expectation that established state Burn Centers may initially be overwhelmed and transportation limited, Regional BSF’s should be responsible for the initial evaluation and stabilization of burn patients and preparation for transfer, if necessary, during the initial 72 hours. Regional BSF’s should have 24-hour coverage with ABLS-trained nurses and physicians. Patients treated and
discharged by regional BSF’s should be referred to a Burn Center for complications and any needed long-term follow-up.

**Regional BSF Basic Selection Criteria:**

- BSFs are preferably Level I or II trauma centers. Telemedicine capabilities are desirable.

- In absence of a Level I or II trauma center, BSF’s should, at a minimum, meet the general requirements of a Level III trauma center

- BSFs must have 24 hour nursing care for burn patients. Sufficient numbers of nurses and physicians should be ABLS-trained such that an ABLS-trained nurse or physician should (at a minimum) be able to lead the care provided to patients.

- Each BSF should have sufficient numbers of ABLS-trained physicians to be available in-house during a burn MCI.

- BSFs will function as the initial stabilization/evaluation/transport staging center with support of the region’s MCC and the CHECC if a mass burn casualty incident occurs.

In Michigan, it was noted that all 8 regions have at least one ACS verified Level I or II trauma center that was not a burn center, but would be best suited to provide this level and complexity of patient care. The goal is a multilateral increase in short-term capabilities across the regions, state, and ultimately throughout the GLHP.

Because it is expected that the BSFs will need to care for some burn patients during the initial 3 days while the ACS verified burn centers resources to care for all burn casualties. The BSF will receive distance consultation support from the State Burn Coordinating Center during this phase. It is expected that the SBCC will provide on-site burn consultation at the BSF for the secondary triage of burn casualties after the incident and as appropriate and able. All BSFs in the state should be prepared to receive burn casualties as triaged by the SBCC.
Patient Transport
**Patient Transport**

A critical element of this, or any healthcare response plan for mass casualty incidents, is the underlying assumption of the ability and availability of resources to transport patients to facilities that are able to provide optimal care based on the nature of the injuries. When planning for patient transport, it will also be very important to assure that there is enough redundancy to cover the multiple transports that will occur during a burn MCI.

In order to maximize the ability to provide patient transfer to optimize patient care, Michigan is creating Ambulance Strike Teams and other innovative casualty transport systems (CTS) mechanisms *(Appendix R- Resource Activation/Utilization Guidelines)*. In an event that is categorized as Burn Stage I, a local Emergency Operations Centers (EOC) can request deployment of one or more regional ambulance strike teams or utilize other CTS that are available, as provided within each of the Regional Healthcare Coalitions’ Operational Guidelines. If an incident is categorized as a Burn Stage II or Burn Stage III, then the coordination of a request for regional Ambulance Strike Teams should be considered through consultation between the incident’s MCC, CHECC, and the SEOC.

It is anticipated that any Burn Stage III incident and many Burn Stage II incidents could warrant activation of the National Disaster Medical System (NDMS). NDMS is a federal resource involving a nationwide network of civilian and military hospitals that may be mobilized to support major disasters and mass casualty incidents. NDMS uses military aircraft to transfer patients from the affected areas to distant locations across the nation. In addition, NDMS can deploy specialized Disaster Medical Assistance Teams (DMATs) to provide basic medical care within the area impacted by the disaster. The CHECC maintains primary responsibility to collaborate with the SEOC conducting on-going assessments for the need for NDMS. In the event the SEOC activates NDMS based on a request, the CHECC and SEOC will work with the regional MCCs and local EOCs, respectively, to promote an effective and timely response.

**Documentation of Casualties**

To utilize resources appropriately and keep from overwhelming the Burn Surge Facilities, careful documentation of all burn casualties is a priority. The following three forms will be utilized throughout the incident:

- Initial Burn Casualty Report Form *(Appendix B)*
- Follow-up Burn Casualty Report Form *(Appendix C)*
- Burn Surge Facility Casualty Census Form *(Appendix F)*

The SBCC monitors all incident documentation to assist in the development of an ongoing plan of care for the casualty as well as an after action report at the conclusion of the incident for lessons learned and corrective actions.
Patient Treatment Recommendations
Patient Treatment Recommendations within the BSF

A burn MCI will tax all impacted hospitals. Care is focused on initial stabilization to include:

- Airway, Breathing, Circulation (ABCs)
- Fluid resuscitation
- Pain management
- Wound care priority is to minimize patient pain, infection potential, and to decrease time demands on health care staff until definitive burn care is available. Wound care will typically be limited to the application of silver based long acting dressings. These types of dressings can be applied to burn wounds and left on without having to change them for 3 to 5 days. Burn wounds to the face will require more frequent daily dressings with Silver Sulfadiazine (Silvedene) or other antimicrobial preparation.

(For complete treatment recommendations, refer to Appendix A-Treatment Considerations: Regional Burn Surge Facility Responsibilities during a Burn Mass Casualty Incident)
Appendix A

Treatment Considerations: Regional Burn Surge Facility Responsibilities During a burn Mass Casualty Incident
Appendix A

Regional Burn Surge Facility Treatment Considerations: Responsibilities during a Burn Mass Casualty Incident

Provide Initial First Aid:
A. Stop the burning process
B. Use universal precautions
C. Remove clothing or jewelry
D. Cool any burns that are warm to touch with tepid water and then pat dry
E. Rinse liberally with water if chemicals suspected according to protocols, then dry.
F. Cover with clean DRY sheet or bedding to prevent hypothermia

Perform Primary Survey
A. Airway Maintenance with Cervical Spine Protection
   1. Chin lift/jaw thrust with cervical spine precautions as needed
   2. Assess for signs of airway injury such as hypoxia, facial burns, carbonaceous sputum, stridor, and nasal singe
   3. Assess for history of a closed space fire
   4. Insert an oral pharyngeal airway or endotracheal tube (ETT) in the unconscious patient (Intubate early)

B. Breathing and Ventilation:
   1. Assess for appropriate rate and depth of respirations with adequate air exchange.
   2. 100% (15L) FIO2 non-rebreather face mask or endotracheal intubation until ABG result:
      a. ABG with CO level is required for suspected inhalation injury
      b. CO levels are decreased by ½ every 40 minutes while on 100 % FIO2. CO level goal is <10 %
   3. Mechanical ventilation as needed.
   4. If extensive facial burns or greater than 40% TBSA, intubation for airway protection prior to expected facial swelling is indicated.
   5. Monitor pulse oximetry while checking CO level (as needed)
   6. Head of bed (HOB) elevated

C. Circulation with Hemorrhage Control:
   1. Vital Signs
      a. Heart rate
      b. Blood pressure
      c. Capillary refill
      d. Temperature
      e. Skin color of unburned skin
2. Cardiac monitoring as needed
   a. May be needed if there is an electrical injury, concurrent trauma or cardiac issues

3. Oral resuscitation can be used in the following patients:
   a. Patient is not intubated
   b. Injury is not an electrical injury
   c. No other injuries

4. Heplock IV (as needed) if taking adequate PO fluids

5. If patient is intubated
   a. Start maintenance fluids – large bore peripheral IV in non-burned, upper extremities
   b. Place a soft feeding tube. (preferably post-pyloric)

6. Pediatric patients with burns ≥10% TBSA require resuscitative fluids and maintenance fluids

7. Pediatric patients less than 30 kg require D5LR at maintenance rate if not taking adequate PO or are intubated. Pediatric calculation for maintenance fluid formula:
   a. For the first 10 kg of body weight: 4 mL per kg per hour
   b. For the second 10 kg of body weight: 2 mL per kg per hour
   c. For the remaining kg of body weight up to 30kg: 1ml per kg per hour.

8. Labs on admission and then as dictated by medical condition
   a. Arterial blood gas
   b. Carboxyhemoglobin (COHb) level, always add this to a blood gas
   c. Electrolyte panel
   d. CBC
   e. Cardiac panel for electrical injuries.
   f. EKG for electrical injury or cardiac history
   g. CXR if intubated, inhalation injury suspected or underlying pulmonary condition
   h. Tetanus prophylaxis unless given in the last 5 years

D. Disability:

1. Neurologic checks every 4-8 hours and prn.
   a. Goal is an alert and oriented patient.
   b. If altered neurological status consider the following:
      1. Associated injury
      2. CO poisoning
      3. Substance abuse
4. Hypoxia
5. Pre-existing medical condition

2. Determine level of consciousness. Consider using the “AVPU” method:
   a. A- Alert
   b. V- Responds to verbal stimuli
   c. P- Responds to painful stimuli
   d. U- Unresponsive

E. Exposure

1. Remove all clothing and jewelry

2. Initially place a clean, dry sheet over the wounds until a thorough cleaning is done

3. Keep patient normal thermic, especially during wound care. This may be accomplished by:
   a. Keeping patient covered
   b. Covering the patients head
   c. Warming the room
   d. Warming IV fluids
Secondary Patient Survey
Secondary Survey

A.  **History:**

1. Obtain circumstances of injury
2. Obtain medical history.
   - A – Allergies
   - M – Medications
   - P – Previous illness, past medical history
   - L – Last meal or fluid intake
   - E – Events/environment related to the injury

B.  **Complete Physical Examination:**

1. Head to toe exam
   - a. If eye involvement or facial burns, consult an Ophthalmologist

2. Determine extent/size of the burn by calculating the TBSA burn:
   - a. Rule of Nines
   - b. Lund-Browder chart
   - c. Rule of the Palm

4. Determine the depth of the burn
   - a. (DO NOT include Superficial (1st degree) burns when calculating TBSA.)
   - b. Superficial partial thickness (2\textsuperscript{nd} degree)
     - i. Involves the epidermis and a thin layer of dermis
     - ii. Red, blistered, moist, blanches
   - c. Deep partial thickness (2\textsuperscript{nd} degree)
     - i. Involves the entire epidermis and variable portion of the dermis
     - ii. Red, blistered and edematous
   - d. Full thickness (3\textsuperscript{rd} degree)
     - i. Involves the destruction of the entire epidermis and dermis
     - ii. White, brown, dry, leathery with possible coagulated vessels

C.  **Assess Need for Escharotomies:** Monitor the following signs and symptoms in full thickness, circumferential burn injuries which may indicate a circulation deficit requiring decompression by incision of burn wound:

1. Cyanosis of distal unburned skin on a limb
2. Unrelenting deep tissue pain
3. Progressive paresthesias
4. Progressive decrease or absence of pulses
5. Inability to ventilate in patients with deep circumferential burns of the chest
D. Comfort:

1. Frequent pain/sedation assessment
   a. Every hour
   b. Before and after pain/sedation medications given

2. Use age appropriate pain scales for pediatric patients

3. Give whatever pain medication is required
   a. Narcotic/Analgesic PO/IV
   b. Oxycodone PO
   c. Ativan/Versed PO/IV

E. Wound Care:

1. Assess and monitor the wound for:
   a. Change in wound appearance
   b. Change in size of wound
   c. Signs or symptoms of infection

2. Wound care should include:
   a. Washing the wounds with soap and warm tap water using a wash cloth
   b. Remove water by patting dry

3. Wound care should be performed every day, if using the following:
   a. Silver sulfadiazine cream
   b. Bacitracin

4. Burned scalps and faces
   a. Should be shaved daily

5. All blisters should be debrided, except for the following:
   b. Intact blisters on hands and feet. The exception would be if the blister is impeding range of motion to the joints.

6. Ears are poorly vascularized and at risk for chondritis
   a. Topical sulfamylon cream should be used; if unavailable, use silvadene
   b. Make sure to plug the ear canal due to the toxicity of sulfa to the auditory canal.
   c. Avoid external pressure including pillows and constrictive dressings

7. For extensive and severe burns to the face:
   a. Apply a thin layer of SSD cream, approximately a nickels thickness or enough to cover the wound, so that it doesn’t dry out prior to the next dressing change. The purpose of the gauze dressing is to keep the cream from rubbing off before the next dressing change.
   b. Avoid creams near the eyes.
8. For moderate facial burns:
   a. Bacitracin or another antibiotic ointment without dressing can be used

9. If fingers and toes are burned:
   a. Dress and wrap separately to promote range of motion and prevent webbing of the digits.

10. Genitalia and perineal burns require:
    a. A greasy gauze and/or lubricant between the labia and in the foreskin to
    b. prevent adhesions
    c. A foley is never indicated to maintain patency.
    d. May be used to monitor urine output, if needed.

11. Elevate burned extremities above the level of the heart

12. If applying an Acticoat dressing:
    a. Apply a single layer of the dressing moistened with water over burn wounds so that all areas are covered.
    b. Water should be used to keep the Acticoat and overlying gauze moist to maintain the dressing’s antimicrobial activity. (DO NOT use saline because it deactivates the silver’s antimicrobial ability.)
    c. Should be held in place with water-moistened gauze dressing.
    d. Dressing does not need to be changed for 7 days
       i. The overlying gauze can be changed as necessary.
       ii. If signs of infection appear, remove dressing to assess wound.
    e. Record the date of the application

F. **Ongoing Resuscitation (as needed)**

1. Monitor urine output
   a. Adjust fluids to keep urine output between the following:
      1. Adults- 30-50 ml/hr
      2. Pediatrics- 2 ml/kg/hr

2. Additional fluid needs can occur with:
   a. Very deep burns
   b. Inhalation injury
   c. Associated injuries
   d. Electrical injury
   e. Delayed resuscitation
   f. Prior dehydration
   g. Alcohol or drug dependence
   h. Small children
3. Children, the elderly and patients with preexisting cardiac disease are particularly sensitive to fluid management.

4. If Myoglobin in the urine (burgundy color):(treatment algorithm still under discussion)
   a. Maintain urine output of 100 ml/hour for adults and 4ml/kg/hr
   b. for pediatrics by increasing fluid rate.
   c. Place a foley
   d. Increase fluid rate (LR)
   e. Diuretics are never indicated with myoglobunuria
   f. Mannitol may be used only as a last resort to maintain urine output.
   g. Intravenous sodium bicarbonate may be administered to maintain an alkaline urine with a pH > 6

8. For circumferential burns to extremities:
   a. Perform pulse checks every 1 hour to determine need for emergent escharotomy.
      1. Monitor by palpation or doppler exam for:
         a. Decreased sensation
         b. Severe deep tissue pain
         c. Diminished distal pulses
         d. Slowed capillary refill
   b. After 24-48 hours, decrease frequency of pulse checks to every 2 hours if stable

9. Elevate extremities above the level of the heart

G. Nutrition:

1. Obtain dry Weight on admission
2. Dietary consult, as needed
3. Regular high calorie, high protein diet if able to take PO
4. If intubated, begin tube feeding at full strength increasing to goal rate.
   a. Soft feeding tubes are preferred over hard salem sump nasogastric tube
5. Ensure stool softeners are ordered to prevent constipation due to pain medications

H. Mobility:

1. Physical Therapy/Occupational Therapy consult, as needed.
   a. In a disaster, therapists may just splint patients in functional positions as needed
1. HOB elevated at all times

3. Ear burns
   a. No external pressure should be applied
   b. No pillows or blankets under the head

4. Neck burns
   a. Maintain the head in a neutral position
   b. No pillows or blankets under the head flexing the neck forward

5. Axilla burns:
   a. Keep arms extended to decrease contractures

6. Elevate burned extremities above the level of the heart to decrease swelling

7. If legs are burned, apply ace wraps when OOB (Out of Bed)
   a. Encourage active range of motion hourly, when awake

8. Encourage Activities of daily living
   a. Patient should have enough pain control to perform these activities.

I. Infection Control:

1. Utilize universal precautions

2. If wounds are exposed:
   a. Apply gown, mask, and gloves to protect patient

3. No systemic antibiotics are required for the burn injuries

J. Psychosocial:

1. Explain any procedures

2. Involve patient and family

3. Consider Social Worker consultation

4. Offer Spiritual Care
Casualty Report Forms
Appendix B - F
Appendix B
Initial Burn Casualty Report Form

Name: ________________________________________________

Age: ______

Gender: M / F

Date/Time of Injury: _________________________________

Injury Mechanism: _________________________________

Inhalation Injury Exposure:
   Enclosed space Y/N
   Toxic chemical exposure Y/N
   Facial burns Y/N
   Intubation/mechanical ventilation Y/N

Total Body Surface Area burned:
   % partial thickness: _________
   % full thickness: _________
   Body regions burned: _________

   Circumferential truncal burn Y/N
   Circumferential extremity burn Y/N
   Decreased peripheral perfusion Y/N

Concurrent Trauma Y/N
   Mechanism ________________________________
   Injuries _________________________________

Co morbidities/Past Medical History Burn: ________________________________

Wound Management (Dressings): ________________________________

Location (Burn Surge Facility, ICU/Floor): ________________________________

Contact information: ____________________________________________
Appendix C
Follow-Up Burn Casualty Report Form

Name: ________________________________
Age: _________
Gender: M / F
Date/Time of Injury: ______________________
Date/Time of evaluation for current report: _______________________
Injury Mechanism: _______________________________________________

BURN

Total Body Surface Area burned:
  % partial thickness
  % full thickness
  Circumferential truncal burn Y/N
  Circumferential extremity burn Y/N
  Decreased peripheral perfusion Y/N

Date/Time of last burn wound evaluation: ____________________________
Current burn wound dressing/management: ____________________________

Date/Time of last burn dressing change: _____________________________
Have escharotomies or other emergent procedures been performed? Y/N

RESUSCITATION RESPONSE
Total fluid volume received since initial injury: _______________________
Total fluids over last 24 hours: _________________________________
Current fluid administration rate: _________________________________
Urine output over last 24 hours: _________________________________
Urine output over last 4 hours: _________________________________

PULMONARY STATUS

Current FiO2: ______
Current SaO2: ______
Intubated:    Y/N
Ventilator settings: ______________________________________

COMPLICATIONS

Current Location of Patient (Burn Surge Facility, ICU? /Floor): ______
Number of burn casualties currently at your location: _________________
Priority for transfer among your current burn casualties: _______________
Contact information: _______________________________________
Appendix D
Michigan Mass Casualty Burn Center Referral Criteria

The criteria listed below should be viewed as providing guidance to medical staff in determining which patients should be considered for the cohort for transfer to a recognized burn center during a mass casualty burn incident. It should be noted that these criteria represent a departure from recommended considerations for situations which do not involve a mass casualty incident.

BURN CENTER REFERRAL CRITERIA (Stage II/III Mass Casualty)
1. Partial thickness burns greater than 40% total body surface area (TBSA)
2. Circumferential full-thickness burns involving an extremity
3. Full-thickness burns greater than 5% TBSA
4. High voltage (>1000 volt) electrical burns
5. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality

Based on Excerpted from Guidelines for the Operations of Burn Centers (pp. 79), Resources for Optimal Care of the Injured Patient: 2006, Committee on Trauma, American College of Surgeons (Appendix E-ACS Burn Unit Referral Criteria).

Note Regarding Inhalation Injury: It is expected during Stage III (and possibly stage II) incidents that ICU bed capacity at burn centers and Burn Surge Facilities will be overwhelmed during the initial period. In the absence of cutaneous burns meeting referral criteria, casualties with only smoke inhalation can be managed at any ICU-equipped and ventilator capable medical facility.
Appendix E
ACS Burn Unit Referral Criteria

Note: these criteria should be applied in situations where the incident does not result in a sufficient number of patients, based on either quantitative or qualitative measures, to be considered a mass casualty burn incident.

BURN UNIT REFERRAL CRITERIA

1. Partial thickness burns greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. 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 patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or long-term rehabilitative intervention

Excerpted from Guidelines for the Operations of Burn Centers (pp. 79), Resources for Optimal Care of the Injured Patient: 2006, Committee on Trauma, American College of Surgeons.
Appendix F

Burn Surge Facility Casualty Census Form

(Please complete this form in addition to report form for each individual casualty)

Facility: ____________________________________________
Contact Information: ____________________________________________
Date: ____________
Time: ____________
Date of Mass Casualty Incident: ____________

<table>
<thead>
<tr>
<th></th>
<th>Name</th>
<th>Age</th>
<th>TBSA</th>
<th>Intubated (Y/N)</th>
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<tbody>
<tr>
<td>1</td>
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<td>15</td>
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</tbody>
</table>

Continued on/from additional form? Y / N
Triage Decision Table

Appendix G
# Appendix G

Triage Decision Table
Michigan Burn Mass Casualty – Tiered Triage\(^4\)

<table>
<thead>
<tr>
<th>AGE</th>
<th>% Total Body Surface Area Burn + 10 for Inhalation Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 - 10</td>
</tr>
<tr>
<td>&lt;2</td>
<td>Very High</td>
</tr>
<tr>
<td>2 - 5</td>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>5 - 19.9</td>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>20 - 29.9</td>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>30 - 39.9</td>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>40 - 49.9</td>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>50 - 59.9</td>
<td><strong>Outpatient</strong></td>
</tr>
<tr>
<td>60 - 69.9</td>
<td>Very High</td>
</tr>
<tr>
<td>70+</td>
<td>Very High</td>
</tr>
</tbody>
</table>

\(^4\) ABA Chart modified to fit Michigan Plan 2009
Supplies and Exercising
Appendix H
Regional Supply Caches

To determine supply caches, assumptions were made regarding the MCI patient population. Projections were calculated based on an average sized adult, with 60% of the MCI patient population sustaining a 30% Total Burn Surface Area (TBSA) burn injury. The total number of estimated patients is 30 patients per million populations (i.e. 60% of the federal benchmark 50 patients per million populations). The supplies per patient have been determined based on the number injured as well as the hospitals already having a surplus on hand.

Silver based long acting dressing (Burn/3) – three 16” x 16” sheets per patient

Silver Sulfadiazine (Silvadene) Dressing (SSD) - one jar per patient

Regional Supply Caches

Recommendations regarding the purchase and stockpiling of burn supplies for the treatment of burn patients in the mass casualty environment are predicated on:

- There will be limited availability of essential supplies and bed space in burn centers
- There will be constraints on human resources
- The need for short term care to be managed by medical staff not traditionally trained in specialized burn wound care
- Adjusted standards of care will be provided during surge and crisis situations

As a consequence, a conscious decision is being made to utilize supplies that will simplify patient care provided in a mass casualty environment, thus minimizing the staff training needed to care for burn injuries. This is especially critical in an environment where staff resources will already be stretched beyond capacity.
Supply Staging
Based on this model using a silver based long acting dressing and Silvadene, Michigan will need to maintain a stock of 900 (16x16) sheets of the silver based long acting dressing, and 300 jars of Silvadene. In order to maintain a balance between ensuring that supplies will be readily available in case of a MCI, and being able to rotate stock into normal use to avoid losses due to product expiration:

- 30% of the total stock will be deployed to Regional BSFs
- 10% will be staged at U of M Survival Flight
- 10% at Aeromed Flight Service
- 50% will be maintained and rotated through the SBCC.

Once a year, those supplies stored at the Regional BSFs, Survival Flight and Aeromed will also be rotated through the SBCC. The use of this product rotation schedule is intended to make the purchase of a silver based long acting dressing and Silvadene, a one-time cost, by avoiding product loss due to expiration.

Regional Burn Surge Facility (BSF) Training
It is essential to the success of this plan that nurses and physicians staffing BSF’s are trained in basic burn care. At a minimum, it is expected that each BSF will have at least 15 nurses and 5 physicians on staff that have successfully completed the ABA on-line ABLS Course. This course covers essential fundamentals of emergency burn care and is felt to be an efficient and effective educational program.
In addition to the on-line ABLS Course, BSF’s will be encouraged to send their personnel to a state supported ABLS hands-on training as available.
Other training opportunities include rotating BSF nurses through regional burn centers to gather actual clinical experience in dealing with severe burns.

Exercising
This plan will be exercised at a variety of levels and in various ways. At least every 18 months, MDCH OPHP and the EMS and Trauma Systems Office will plan to conduct a tabletop exercise dealing with a mass burn scenario. It is anticipated that this exercise will include representatives from the CHECC, each emergency preparedness region, the SBCC, Michigan State Police EMHSD, and others.

Each region will be expected to participate in the tabletop exercise as identified above involving a mass burn scenario. It is anticipated that regional participation should include the Regional Medical Director, Regional Healthcare Coordinator, Regional Epidemiologist, Michigan State Police Emergency Management & Homeland Security Division District Coordinator, and representatives from regional hospitals (especially burn centers and BSFs), EMS, and local emergency management coordinators.

Multi-regional/Multi-state tabletop and functional exercises as well as full scale exercises will be considered as resources permit.
Mass Burn Casualty Kits

Inventory and Stock Check

- The supplies in the Burn Mass Casualty kits are intended only for use during a mass casualty event, and not for day-to-day clinical operations.

- Acticoat must be kept in its original boxes and packaging. A sample expired packaged is included to provide each facility with an example of what the product looks like. These examples are clearly marked “Expired.”

- A stock check is taken in the 1st week of every month and recorded on the Stock Checklist form (Appendix 1).

- Current stock levels are examined and any stock that is scheduled to expire within three (3) months should be either swapped out with supplies from the hospital’s clinical stock or notification should be made to the SBCC to procure replacement stock.

- Any anomalies in stock volume should be reported to the SBCC and MDCH for resolution and replacement.

Receipt and Storage of Stock Orders

- All deliveries must be acknowledged on the Stock Checklist.

- All stock received should be placed into the Burn Mass Casualty kit, and managed as defined above.

- Good housekeeping principles must be applied to stock management so that items are kept in an orderly manner.

Product recalls

- The MDCH and SBCC must be notified immediately (if they are not already aware) of product recalls. An assessment will be made of the criticality of the recall and appropriate action taken.

- For Stock Management purposes all recalled products are removed from all areas and disposed of or returned to the manufacturer as instructed. Document on the Stock Management Worksheet the disposition of this product as ‘recalled product’.
# Supply Check List

<table>
<thead>
<tr>
<th>Description</th>
<th>Supplier</th>
<th>Code / Ref</th>
<th>Location</th>
<th>Lab Stock</th>
<th>To Order</th>
<th>Date Order Received</th>
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<tbody>
<tr>
<td>Silvadene: 5 boxes (12 jars)</td>
<td>SBCC</td>
<td>SBCC</td>
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<tr>
<td>Acticoat: 5 boxes (Total of 60 16&quot;x16&quot; sheets – each box contains 2 smaller box with 6 16x16&quot; sheets)</td>
<td>Smith &amp; Nephew</td>
<td>SBCC</td>
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<td>Book of contacts (1)</td>
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<td>Printed training manual (1)</td>
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<td>Fluid cards (10)</td>
<td>SBCC</td>
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<tr>
<td>Triage charts (1 laminated, 10 non-laminated)</td>
<td>SBCC</td>
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</table>
Supply Re-order Sheet

Date___________

Requisitioned by:

Name: ________________________________________________________________

Hospital or Facility: ______________________________________________________

Address 1: ______________________________________________________________

Address 2: ______________________________________________________________

City, State, Zip code: ____________________________________________________

Phone: __________________________________________________________________

Email: __________________________________________________________________

To re-order stock, please complete this sheet and return it to Sarah Parviz in the SBCC via fax (734.764.7173) or email (separviz@med.umich.edu).

<table>
<thead>
<tr>
<th>Code/Ref No.</th>
<th>Description</th>
<th>Qty. Required</th>
<th>SBCC USE ONLY</th>
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</table>

Order Filled by: ____________________________ Date: _______________________

- 45 -
Burn Resources and Contact Information

Appendix I - P
## Appendix I
### Michigan Burn Centers

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>City</th>
<th>Region</th>
<th>Normal Capacity</th>
<th>Surge</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Michigan Medical Center</td>
<td>Ann Arbor</td>
<td>2S</td>
<td>Adults/Peds 16 Beds</td>
<td>35 Flex</td>
</tr>
<tr>
<td>Children's Hospital of Michigan</td>
<td>Detroit</td>
<td>2S</td>
<td>Pediatric 10 Beds</td>
<td>5 ICU 10 Floor</td>
</tr>
<tr>
<td>Detroit Receiving Hospital</td>
<td>Detroit</td>
<td>2S</td>
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<td>Spectrum Health</td>
<td>Grand Rapids</td>
<td>6</td>
<td>Adults/Peds 8 Beds</td>
<td>12 Flex</td>
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## Appendix J

### Michigan ACS Verified Trauma Centers

<table>
<thead>
<tr>
<th>ACS VERIFIED HOSPITAL</th>
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<th>LEVEL</th>
<th>REGION</th>
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<td>POH Medical Center</td>
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<td>William Beaumont Hospital</td>
<td>Royal Oak</td>
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<td>Ann Arbor</td>
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<td>2S</td>
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<td>St. Joseph Mercy Hospital</td>
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<td>2S</td>
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<td>2S</td>
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<td>ACS VERIFIED HOSPITAL</td>
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<td>LEVEL</td>
<td>REGION</td>
</tr>
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<td>Spectrum Health- Helen DeVos Children's Hospital</td>
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Appendix K
SBCC Activation Communications Pathway

Incident Occurs → Impacted Healthcare Organization (Hospital, EMS, etc.) → Regional MCC → SBCC → BSF → CHECC → SEOC

BSF — Burn Surge Facility
CHECC — Community Health Emergency Coordination Center
MCC — Medical Coordination Center
SBCC — State Burn Coordinating Center
SEOC — State Emergency Operations Center
Appendix L
Ongoing Notification Communications Pathway

Healthcare Organization providing care to burn patients (Hospital, EMS, etc.)

SBCC

Regional MCC

Local EOC

District EM

CHECC

SEOC

ACS Verified Burn Centers

Burn Surge Facilities

CHECC – Community Health Emergency Coordination Center
EM – Emergency Manager
EOC – Emergency Operations Center
MCC – Medical Coordination Center
SBCC – State Burn Coordinating Center
SEOC – State Emergency Operations Center
Appendix M
Communication Pathway Out of State
When Burn Capacity Exceeds Michigan Resource
Appendix N

Medical Communications Pathway During Emergency Response

- Local EOC activated and communicates a need for medical/public health resource to SEOC
- MDCH EMC communicates need to CHECC
- CHECC communicates with medical/public health subject matter experts to obtain information. Mat include local public health department and regional MCC
- CHECC communicates information obtained back to SEOC who in turn communicates with the local EOC
- The hospital EOC communicates status of the hospital resources to the MCC
- MCC provides this information as requested to the local EOC healthcare representative

SEOC – State Emergency Operations Center
CHECC – Community Health Emergency Coordination Center
MCC – Medical coordination Center
EOC – Emergency Operations Center
Appendix O
Regional Healthcare Coalitions

**Region 1:**
Matt Price
Region 1 BT. Coordinator
Office: 517-324-4404
d1rmrc-mattt@sbcglobal.net

**Region 2N:**
Richard Drummer
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Region2north@sbcglobal.net

**Region 2S:**
Amy Shehu
Region 2S BT. Coordinator
Office: 734-727-8001
ashehu@2south.org

**Region 3:**
Jennifer Stefaniak
Region 3 BT. Coordinator
Office: 989-583-7938
jstefaniak@saginawcounty.com

**Region 5:**
Dena Smith
Region 5 BT. Coordinator
Office: 269-337-6549
dsmith@kcms.msu.edu

**Region 6:**
Tim Bulson
Region 6 BT. Coordinator
Office: 231-728-1967
TBulson@mcmca.org

**Region 7:**
Gary Rapelje
Region 7 BT. Coordinator
Office: 231-935-7840
region7btc@gmail.com

**Region 8:**
Jon Stone
Region 8 BT. Coordinator
Office: 906-225-7745
jonathan.stone@mghs.org
Appendix P
Great Lakes Healthcare Partnership

The Great Lakes Partnership represents a coalition of healthcare preparedness planners from the FEMA Region V jurisdictions of: The City of Chicago, Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin, who are responsible for the Healthcare Preparedness Program under the Assistant Secretary for Preparedness and Response within DHHS. This group works together to develop a series of initiatives aimed at promoting multi-state and intra-regional cooperation in planning for disasters requiring a healthcare response.

This MCI Burn Plan represents an acknowledgement by the Great Lakes Healthcare Partnership membership, that a response to a major mass-casualty situation, especially one involving the need for the provision of highly specialized burn related care, redefines the concept of local preparedness in a disaster environment. While there is little argument against the conceptual case for all disasters being “local”, the context of what “local” really means in today’s environment is being challenged and redefined.

In more general terms, disaster responses occur when the available resources of a locality are, or have the potential to be, overwhelmed. By definition, specialized medical care such as burn care, involves a finite capacity for delivery. Therefore, the availability and provisions for delivering that care can easily be jeopardized due to limited resources.

The Great Lakes Healthcare Relationship gives the opportunity to draw from out-state resources when in-state resources have been exhausted.
## Great Lakes Healthcare Partnership Resources

<table>
<thead>
<tr>
<th>State</th>
<th>Hospital Name</th>
<th>City</th>
<th>Contact Person(s)</th>
<th>Phone Numbers</th>
<th>Beds</th>
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</thead>
</table>
| IL    | Loyola University Medical Center | Maywood | Kathy Supple | 708-216-3988 | 10 ICU
|       |               |      |                  |               | 11 Step Down |
| IL    | Cook County Hospital Sumner L Koch Burn Center | Chicago | Dr. Marella Hunamadass Dr. Gary An | 312-760-0789, 312-864-3147, 312-864-3148 | 6 ICU
|       |               |      |                  |               | 12 Step Down |
| IL    | University of Chicago Burn Center-Electrical Trauma Center | Chicago | Mary Jo Meyer Ann O’Connor | 773-702-6736 | 8 ICU |
| IL    | Memorial Medical Center Regional Burn Center | Springfield | Dr. Brandon Wilhelm | 217-788-3325 | 10 Beds |
| IN    | St. Joseph Medical Center Regional Burn Center | Fort Wayne | Sheryl Mourey Joseph Mlakar | 260-425-3575, 260-425-3570 | 10 Beds |
| IN    | Indiana University Medical Center –Burn Center- Wishard Memorial Hospital | Indianapolis | Physician on Call | 317-630-6471 | 11 Beds |
| IN    | Riley Children’s Hospital | Indianapolis | Kathy McGregor | 317-274-3927 | 7 Beds |
| MN    | Hennepin County Medical Center | | | 800-321-BURN | 18 Beds |
| MN    | Regions Hospital Burn Center | | | 800-922-2876 | 18 Beds |
| MN    | Miller-Dwan Medical Center | Duluth | | 218-786-2815 | 8 Beds |
| OH    | Miami Valley Hospital Regional Adult Burn Unit | Dayton | Melora Waltman | 937-208-6166 | 10 Beds |
| OH    | Ohio State University Medical Center | Columbus | Plastic Surgery Dept. | 614-293-5000 | 19 Beds |
| OH    | Children’s Hospital | Columbus | Jonathan Groner | 614-722-3900 | 8 Beds |
| WI    | University of Wisconsin Hospitals and Clinics | Madison | Access Center or Nichalas Meyer | 608-236-3260, 608-263-1378 | 7 beds |
| WI    | St. Mary’s | Milwaukee | MaryKay Henze | 412-291-1163 | 12 Beds |
Appendix Q
Regional Medical Coordination Centers (MCC)

Region 1:
Livingston County 911:
517-546-9111
mkinaschuk@co.livingston.mi.us

Region 2N:
Oakland County Safety
248-267-0535
rdrummer@region2north.com

Region 2S:
HEMS
734-727-7289
AShehu@2south.org

Region 3:
RMCC: 989-222-9946
BTDNregion3@gmail.com

Region 5:
West Michigan Air Care:
269-337-2500
communication@aircare.org

Region 6:
RMCC: 855-734-6622

Region 7:
989-732-5141

Region 8:
MCC: 906-222-3041
R8MCC@mghs.org
# Appendix R

**Michigan Mass Casualty Burn Plan**

**Resource Activation / Utilization Guidelines**

**Terms**
- Probable = Prepare for activation
- Possible = It could happen
- Green = Possible
- White = Unlikely
- Red = Definite
- Yellow = Probable

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<th>Agency / Entity</th>
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<th>Burn Stage II (25-100 Casualties)</th>
<th>Burn Stage III (&gt;100 Casualties)</th>
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Acronyms

ABA- American Burn Association
ABLS- American Burn Life Support
ACS- American College of Surgeons
ABG- Arterial Blood Gas
BSF- Burn Surge Facility
CBC- Complete Blood Count
CHECC-Community Health Emergency Coordination Center
CMS- Circulation Movement & Sensation
CO- Carbon Monoxide
COHb- Carboxyhemoglobin
CXR- Chest X-Ray
DHHS- Department of Health and Human Services
DMAT- Disaster Medical Assistance Teams
EKG- Electrocardiogram
EMHSD- Emergency Management & Homeland Security Division
EMS- Emergency Medical Services
EOC- Emergency Operations Center
ETT- Endo-tracheal Tube
FEMA- Federal Emergency Management Association
FiO2- Fractional Inspired Oxygen
ICS- Incident Command System
ICU- Intensive Care Unit
IV- Intravenous
MALPH- Michigan Association of Local Public Health
MCA- Medical Control Authority
MCC- Medical Coordination Center
MCI- Multi-Casualty Incident
MDCH- Michigan Department of Community Health
MHA- Michigan Health & Hospital Association
MSCC- Medical Surge Capacity and Capability
MSP- Michigan State Police
NDMS- National Disaster Medical System
NIMS- National Incident Management System
OOB- Out of Bed
OPHP- Office of Public Health Preparedness
PO- By Mouth
RBSF- Regional Burn Surge Facility
SBCC- State Burn Coordinating Center
SEOC- State Emergency Operation Center
SSD- Silvadene
TBSA- Total Body Surface Area
ACKNOWLEDGEMENTS

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Dr. Robert Takla
Dr. Stewart Wang
Theresa Jenkins