

THE STATE OF MICHIGAN

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DEVELOPMENTAL TEMPLATE  
FOR  
THE HOSPITAL MANAGEMENT  
OF  
BURN PATIENTS RESULTING FROM  
A  
MULTI-CASUALTY INCIDENT

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Regional Medical Bio-Defense Networks:  
Regions 1, 2 North, 2 South, 3, 5 and 6

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## **Preface**

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. In so doing, it is recognized 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. Consequently, this document should be viewed as a guide for planning a coordinated response in a multi-casualty burn environment even beyond what may normally be associated with a “disaster,” as defined by the “burn stages”(*Mass Casualty Burn Incident*).

This plan outlines the use of a long acting silver impregnated dressing, to treat burn patients and, much like the issues that may surround the defined “burn stages,” the identification of this 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. What is critical to the plan’s success are the concepts involved in driving the choice of using a silver impregnated dressing. 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 (*Appendix D-Michigan 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 care capacity from being overwhelmed through the use of “off site” triage and stabilization. By developing this type of surge capacity we can maximize the use of our critical definitive care resources.

The success of the Michigan healthcare preparedness project directly links to the initial formation of the eight Regional Medical Bio-Defense Networks (*Appendix H-Regional Medical Bio-Defense Network*) and eventual maturation to that which exists today. Michigan Department of Community Health (MDCH) carefully reviewed multiple models of regions within state processes and determined that the strongest infrastructure for preparedness was within the established Michigan State Police Emergency Management Homeland Security Districts. Therefore, the eight Regional Medical Bio-Defense Networks parallel those eight Emergency Management Districts.

Key to the success was the identification of a regional structure, supporting inclusion of all pre-hospital and hospital partners in a manner to minimize the business competition that naturally exists. The decision to avoid empowering any health system or organization over others within the jurisdiction necessitated the identification of one organization to serve as a fiduciary on behalf of the health entities and thus coordinate the implementation of activities to meet the critical benchmarks and priority planning areas. That entity is a fiduciary Medical Control Authority (MCA) in each region chosen through consensus by the 65 MCA’s established statewide. A MCA is an organization designated by MDCH, Emergency Medical Services (EMS) & Trauma Systems Section under Part 209 of PA 368 of 1978. It is in statute that each hospital with an Emergency Department must participate in a MCA. In addition, they maintain responsibility for supervision and coordination of emergency services within a specific geographic area through State approved protocols. Each MCA must have a medical director who is board certified in Emergency Medicine or a full-time practicing emergency physician trained in Advanced Trauma Life Support and Advanced Cardiac Life Support.

Each region maintains a base infrastructure that includes one full-time Regional Hospital Bioterrorism Coordinator and one part-time Medical Director employed or contracted by the fiduciary MCA. These staff, referred to as Regional Leadership, is a direct resource to the regions’ Advisory Committee and Planning Board. Each region has gained sophistication on

the make-up and responsibilities of their committee structure but has maintained the state mandate for decision making on allocation of regional funding through the planning board. This board must have a voting member from each hospital and MCA within their region. Members have an equal vote regardless of the size and influence of their organization within the region. Therefore, allocation of funding is upon consensus of partners and their identified needs within that region. This has been a critical component in moving many key initiatives forward. Most of the regional planning boards and advisory committees have membership that has been actively involved in the project since the onset in 2002. The benefit of membership participation has been demonstrated by consistent attendance.

The Michigan Health & Hospital Association (MHA) is an active partner to all hospital-focused activities and works closely with OPHP and the regions to utilize existing MHA mechanisms to communicate and coordinate hospital preparedness issues. Local public health utilizes their professional organization, Michigan Association of Local Public Health (MALPH) that works in partnership with state public health.

The Michigan State Police Emergency Management & Homeland Security Division (EMHSD) has instituted a regional approach to the coordination of emergency management and homeland security initiatives within Michigan. Each regional board maintains a liaison position that is held by a leader within the Regional Medical Bio-Defense Networks. This ensures communication, leveraging of resources and avoids duplication of initiatives. A state level Homeland Security Protection Board and Homeland Security Advisory Committee meet on a regular basis to provide advice and support for preparedness activities statewide. Each state agency provides updates to this executive level committee to ensure information is communicated appropriately. This plan is consistent with National Incident Management System (NIMS), and with the ASPR Cooperative Agreement. The Office of Public Health Preparedness and Regional Leadership developed and distributed requirements for the implementation of the NIMS for both hospital and EMS agencies. Regional leadership and MDCH OPHP and Community Health Emergency Coordination Center (CHECC) staff have completed the Federal Emergency Management Association (FEMA) IS-100, 200, 700, and 800 courses. Hospitals continue work to ensure that at least 50% of their potential Emergency Operation Center staff is trained in IS-100, 200, 700 and 800 and that the goal to have at least 1 individual responsible for implementing the hospital's emergency plan as well as state

and regional leadership trained in ICS-300 and ICS-400. Regions have incorporated NIMS into operational plans, existing and future training programs, and exercises.

## **Purpose**

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

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 Emergency Preparedness Region 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 various levels of government to include the 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.

## **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 .

## **Planning Assumptions**

The plan assumes:

- Adjusted standards of patient care will be provided until a patient can be transferred for definitive care to a recognized burn center.
- All burn patients are not equal.
- Federal assets may not be readily available.
- Reliance on our Great Lakes Healthcare Partnership (*Appendix K-Great Lakes Healthcare Partnership*).

The **first assumption** is that, in Michigan efforts to coordinate the capacity to care for patients during a multi-casualty burn event, partners within the Great Lakes Healthcare Partnership will adopt a similar organizational approach. While there exists consistency in the standards of care provided to burn patients, 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 **second of these assumptions** is the recognition that all burn patients are not equal and, as such, the extent and intensity of care and resources required will vary significantly within the targeted population. This is critical in assessing existing burn capacity as it relates to the development of resources identified by any state. In Michigan, the planning assumption is 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).

The **final assumptions** are that federal assets will not be readily available, and the need for both self-reliance and the assistance of the partners developed within the Great Lakes Healthcare Partnership to sustain the needs of patients for 72 hours. Within that timeframe, states must be prepared to provide care for the first 72 hours without outside assistance, aside from those resources from the surrounding states in the Great Lakes Healthcare Partnership that will be accessible, and that after 72 hours federal assistance will begin to become available.

## **Supplies**

To determine supply caches, assumptions were made regarding the Mass Casualty Incident (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)     3 16" x 16" sheets per patient

Silver Sulfadiazine (Silvadene) Dressing (SSD)     1 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 mass casualty burn incident, 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 Burn Surge Facilities (BSFs), 10% will be staged at U of M Survival Flight, 10% at Aeromed and 50% will be maintained and rotated through the State Burn Coordinating Center (SBCC). Once a year, those supplies stored at the Regional Burn Surge Facilities, Survival Flight and Aeromed will also be rotated through the State Burn Coordinating Center (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 BSFs 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 who have successfully completed the American Burn Association (ABA) on-line Advanced Burn Life Support (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, Michigan Department of Community Health Office of Public Health Preparedness 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 Community Health Emergency Coordination Center (CHECC), each emergency preparedness region, the State Burn Coordinating Center (SBCC), Michigan State Police Emergency Management & Homeland Security Division (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 Hospital Bioterrorism 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.

## **Concept of Operations**

In the event of a mass casualty burn incident, each of the established Michigan 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, and supply caches capable of supporting patient care for at least 72 hours.

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

1. Regional Medical Coordination Centers (MCCs)
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.

# **Organization & Assignment of Responsibilities**

## **Michigan Regional Medical Coordination Centers**

A Regional Medical Coordination Center (MCC) (*Appendix N-Regional Medical Coordination Centers*) is activated when emergency medical care coordination is needed in response to a real or potential mass casualty incident. This is evidenced as Tier 2 in the Medical Surge Capacity and Capability document, supported by the ASPR Health Preparedness Program . The Medical Coordination Center (MCC) functions as an extension of the regional model of healthcare preparedness and assists the local and state incident management system with medically related coordination and resource allocations. The basic concept of the Medical Coordination Center (MCC) operation must remain consistent, even though regional variations may exist based on resources and assets available. The primary functions of the Medical Coordination Center (MCC) are to assist incident management officials with:

1. Serving as a support to hospitals, local EOC's, other Regional Medical Coordination Centers (MCC's) and the Community Health Emergency Coordination Center (CHECC). (The State Emergency Operations Center (SEOC) is kept informed via the CHECC.)
2. Current availability of regional medical resources
3. Coordination of requests and receipt of intra and extra-regional medical resources
4. Casualty transportation system
5. Serving as the primary mechanism for medical communications to the CHECC (ESF #8)

## **State Burn Coordinating Center**

The state will establish one healthcare facility to act as the State Burn Coordinating Center (SBCC). This facility will be responsible for assisting the Community Health Emergency Coordinating Center (CHECC) and the State Emergency Operations Center (SEOC) in managing any mass casualty burn incident in which the resources of any given region or the state are exceeded (*Appendix F-State Burn Surge Communication Pathway*). The SBCC must be a healthcare facility with recognized 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 Great Lakes Healthcare Partnership coordinated plan for mass casualty burn incidents.

**State Burn Coordinating Center (SBCC) Requirements:**

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
- Interoperable communications that include MPSCS (800 MHz).
- American Burn Association (ABA) verification as a Burn Center, or commensurate capabilities
- Michigan Health Alert Network (MIHAN) participation

**State Burn Coordinating Center Desired Capabilities:**

- Rapid Web-publication capabilities

**During a Burn Mass Casualty Incident, the State Burn Coordinating Center (SBCC) will:**

- Activate an internal response disaster team
- Notify and coordinate with American Burn Association to identify Burn Centers outside Michigan capable of receiving patients
- Based on communication with the CHECC/SEOC, activate Burn Surge Facilities within Michigan. The CHECC/SEOC should communicate with the neighboring state burn coordinating centers, as needed.
- Coordinate the triage of all burn patients to in-state and neighboring state Burn Centers and, if necessary, to in-state and neighboring state Burn Surge Facilities – sending and receiving
- Support Burn Surge Facilities 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 Burn Surge Facilities 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.

**To support Michigan’s preparation (planning) to respond to a Burn Mass Casualty Incident, the State Burn Coordinating Center will:**

- Assist in the development of training protocols for personnel at designated Burn Surge Facilities and Burn Centers
- Coordinate the maintenance and updating of disaster protocols at the Burn Surge Facilities
- Develop and maintain a process for recording burn casualty reports from any mass casualty incidents.
- Coordinate the rotation and updating of burn supply caches.
- Coordinate the procurement of critical burn surgery supplies (skin allograft, wound care products) from outside the state and their distribution to the other in-state Burn Centers
- Maintain a current database of supply sources and contacts
- Utilize Michigan Health Alert Network (MIHAN) as well as other web-based resources to facilitate distribution of documents, protocols and databases needed for Burn Mass Casualty Incident preparedness
- Act as a liaison with coordinating burn centers from other states in the Great Lakes Health Care Partnership, on an ongoing basis, for the regional response plan.
- Maintain documentation for potential reimbursement
- Assist with education, training and exercises as appropriate

**Michigan Burn Centers**

Michigan currently has six healthcare facilities recognized as “burn centers” (*Appendix D-Michigan Burn Centers*). They have been identified as accepting 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 J- ACS Burn Unit Referral Criteria*). These centers will work in conjunction with the SBCC to manage the flow of burn surge patients to ensure the optimal use of the states definitive burn care capacity.

### **Regional Burn Surge Facilities (BSFs)**

The state will establish Regional BSFs within each of the eight Emergency Preparedness Regions. Each Emergency Preparedness Region will initially identify one Regional Burn Surge Facility. The intent is to develop a new resource within the region not typically associated as being a traditional “burn center”. It is noted that all regions have at least one Level I or II trauma center that is not a “burn center” and is ideally poised to assume this role. Therefore, it is appropriate to develop the Level I and II (non-burn) trauma centers as regional burn surge facilities. Once a region has established its Level I and II trauma centers as BSFs, the region may desire to expand to other facilities within the region. Only facilities that have significant critical care and general surgical capabilities should be considered. Such facilities should, at a minimum, meet the general requirements of a Level III trauma center. The goal is a multilateral increase in short-term capabilities across the regions, state, and ultimately throughout the Great Lakes Healthcare Partnership.

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 ABLIS-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.

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

Each BSF should have sufficient numbers of ABLIS-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.

It is expected that the BSFs in or near the region of the incident will need to care for some burn patients during the initial 3 days as established burn centers will not have sufficient 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.

## **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. 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.

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 G-Medical Communications Pathway during Emergency Response*).

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 Great Lakes Healthcare Partnership, as well as the National American Burn Association network of burn centers.

During a Burn Stage III incident, state Burn Centers will manage as many patients as resources are available 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, and the process for the coordination of patient movement utilizing our Great Lakes Healthcare Partnership will begin. This will be coordinated through established incident command structure.

<b>Mass-Casualty Burn Stage (BS)</b>	<b>Definition</b>	<b>Plan</b>
<b>Stage I</b>	<p><b>Any event in which local trauma/burn resources are overwhelmed with patients (example: 10-24 patients):</b></p> <ol style="list-style-type: none"> <li>1. Have <math>\geq 30\%</math> TBSA burn</li> <li>2. Meet Mass Casualty Burn Center Referral Criteria (see page 14)</li> <li>3. Qualitative or quantitative nature of injuries exceed local capacity to provide effective care</li> </ol>	<ol style="list-style-type: none"> <li>1. Individual health care facilities will manage the plans.</li> <li>2. 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.</li> <li>3. 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 (<i>Appendix I</i>)</li> <li>4. BSF's may be utilized as needed to briefly care for patients until patients transfer to a recognized burn center</li> </ol>
<b>Stage II</b>	<p><b>Any event in which regional trauma/burn resources are overwhelmed with patients (example: 25 – 100 patients):</b></p> <ol style="list-style-type: none"> <li>1. Have <math>\geq 30\%</math> TBSA burn</li> <li>2. Qualitative or Quantitative nature of injuries exceeds defined capacity of the region</li> </ol>	<ol style="list-style-type: none"> <li>1. Individual health care facilities will manage plans.</li> <li>2. Regional MCC will coordinates medical response, CHECC and the SBCC activation.</li> <li>3. 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 (<i>Appendix I</i>)</li> <li>4. BSF's may be utilized as needed to briefly care for patients until patients transfer to a recognized burn center</li> <li>5. If existing burn center resources are exhausted, patients will be referred utilizing process outlined in Burn Stage III.</li> </ol>
<b>Stage III</b>	<p><b>Any event in which state trauma/burn resources are overwhelmed with patients (example: &gt; 100 patients or the potential to have &gt; 100 patients exists):</b></p> <ol style="list-style-type: none"> <li>1. Have <math>\geq 30\%</math> TBSA burn</li> </ol>	<ol style="list-style-type: none"> <li>1. Individual health care facilities will manage plans.</li> <li>2. Regional MCC will coordinates medical response, CHECC and the SBCC activation.</li> <li>3. CHECC in coordination with SEOC supports local MCC and EOC's, respectively.</li> <li>5. SBCC assists BSFs and works with MCCs and CHECC to</li> </ol>

	<p>2. Qualitative or quantitative nature of injuries exceeds defined capacity of the state</p>	<p>facilitate coordination of other burn resources with Great Lakes Healthcare Partnership &amp; the national ABA network of burn centers</p> <p>6. State Burn Centers will manage as many patients as resources permit who meet Mass Casualty Burn Center Referral Criteria (Appendix I), and assist near-by BSF's as able</p> <p>7. If ABA is unavailable or transport is not feasible, Regional BSF's will be utilized to house patients. BSFs 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</p>
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TBSA = total body surface area; EOC =Emergency Operations Center; MCC =Medical Coordination Center; SBCC =State Burn Coordinating Center; SEOC =State Emergency Operations Center; CHECC =Community Health Emergency Coordination Center; ABA = American Burn Association

## **Patient Transport**

One of the most critical elements of this, or any healthcare response plan for mass casualty incidents, is the underlying assumption of the ability to be able to transport patients to those facilities that are able to provide optimal care based on the nature of patients injuries. The potentially catastrophic results of a failure in meeting that assumption necessitates that redundancies are built into this plan.

In order to maximize the ability to provide patient transfer to optimize patient care, Michigan is creating Ambulance Strike Teams (*Appendix L- Resource Activation/Utilization Guidelines*). In an event that is categorized as Burn Stage I, a local MCC can request deployment of one or more regional ambulance strike teams or utilize other Casualty Transport System (CTS) that are available, as provided within each of the Regional Medical Bio-Defense Operational Guidelines. If an incident is categorized as a Burn Stage II or Burn Stage III, then the coordination of a request for other regional Ambulance Strike Teams should be done 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 may warrant activation of the National Disaster Medical System (NDMS). NDMS is a federal system 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. Burn Specialty DMAT teams have specialized expertise in burn care and may be available to assist BSFs.

The CHECC will work closely with the SEOC in conducting an on-going assessment for the need for NDMS. In the event the SEOC activates NDMS, the CHECC and SEOC will work with the regional MCCs and local EOCs, respectively, to promote an effective and timely utilization of NDMS.

## **Documentation of Casualties**

In order to utilize resources appropriately and keep from overwhelming the Burn Surge Facilities, it will be necessary to keep track of all burn casualties. The following three forms will be utilized throughout the incident:

- Initial Burn Casualty Report Form (*Appendix A*)
- Follow-up Burn Casualty Report Form (*Appendix B*)

- Burn Surge Facility Casualty Census Form (*Appendix M*)

The overall goal of the documentation will be for the SBCC 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.

### **Patient Treatment Recommendations**

In an effort to mitigate some of the effects that a surge of burn patients will have on any given facility, patient treatment recommendations will be based on providing initial patient care only. The care should be focused on initial management:

- 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 (Silvadene) or other antimicrobial preparation.

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

## Acronyms

1. ABA- American Burn Association
2. ABLS- American Burn Life Support
3. ACS- American College of Surgeons
4. ABG- Arterial Blood Gas
5. BSF- Burn Surge Facility
6. CBC- Complete Blood Count
7. CHECC-Community Health Emergency Coordination Center
8. CMS- Circulation Movement & Sensation
9. CO- Carbon Monoxide
10. COHb- Carboxyhemoglobin
11. CXR- Chest X-Ray
12. DHHS- Department of Health and Human Services
13. DMAT- Disaster Medical Assistance Teams
14. EKG- Electrocardiogram
15. EMHSD- Emergency Management & Homeland Security Division
16. EMS- Emergency Medical Services
17. EOC- Emergency Operations Center
18. ETT- Endo-tracheal Tube
19. FEMA- Federal Emergency Management Association
20. FiO<sub>2</sub>- Fractional Inspired Oxygen
21. ICS- Incident Command System
22. ICU- Intensive Care Unit
23. IV- Intravenous
24. MALPH- Michigan Association of Local Public Health
25. MCA- Medical Control Authority
26. MCC- Medical Coordination Center
27. MCI- Multi-Casualty Incident
28. MDCH- Michigan Department of Community Health
29. MHA- Michigan Health & Hospital Association
30. MSCC- Medical Surge Capacity and Capability
31. MSP- Michigan State Police
32. NDMS- National Disaster Medical System
33. NIMS- National Incident Management System
34. OOB- Out of Bed
35. OPHP- Office of Public Health Preparedness
36. PO- By Mouth
37. RBSF- Regional Burn Surge Facility
38. SBCC- State Burn Coordinating Center
39. SEOC- State Emergency Operation Center
40. SSD- Silvadene
41. TBSA- Total Body Surface Area