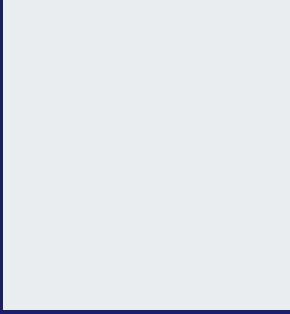




MA/REGION 1 PARTNERSHIP *for*  
**Regional Disaster  
Health Response**

**MA/Region 1 RDHRS  
2019  
Annual Report**



“The RDHRS is a unique partnership among healthcare institutions that is enhancing our Region's medical capabilities and capacity for disaster response. With this system, we are better able to save more lives in a catastrophic event.”

Paul Biddinger, MD, FACEP  
Principal Investigator, MA/Region 1 Partnership RDHRS

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# RDHRS Overview

The Massachusetts/Region 1 Partnership for Regional Disaster Health Response (MA/R1 Partnership or MA/R1 RDHRS) is proud to be one of two pilot programs funded by the Assistant Secretary for Preparedness and Response (ASPR) in 2018.

The MA/R1 Partnership seeks to improve multi-state regional coordination of patient care during disasters. Partners in this effort include all Massachusetts (MA) Level 1 adult and pediatric trauma and burn centers, all MA healthcare coalitions and EMS regions, the American Burn Association (ABA), state public health and emergency management agencies, ASPR regional staff, and several other area healthcare organizations and associations. Representatives active within the MA/R1 Partnership in the pilot year also included more than 100 subject matter experts (SMEs) from a wide variety of disaster medical fields as well as experts in healthcare operations.

The MA/R1 Partnership convened 12 subject matter expert (SME) advisory groups throughout the year to generate specific, practical interventions that will improve healthcare disaster plans and systems. From these groups' work, the MA/R1 Partnership has developed numerous new tools, protocols, and systems that can be used both Regionally and nationally.

The MA/R1 Partnership developed a conceptual RDHRS Response Center, designed to convene the necessary medical SMEs from RDHRS member institutions when a disaster event occurs to provide immediate access to experts in disaster medical specialties and healthcare operations. These experts can provide professional guidance with respect to the optimal triage, patient distribution, medical treatment and resource utilization actions that can save the most lives when the clinical capacity and/or capabilities of the affected healthcare system are overwhelmed.

We are thrilled with the work accomplished within the MA/R1 Partnership this year. We believe that the new products and systems developed by the MA/R1 Partnership have enhanced the ability of our healthcare community to provide needed care to injured and ill patients in all types of disaster scenarios. In the coming year, we look forward to further developing and expanding this work to include new partners and systems across the New England region and beyond.



PI/Medical Director  
Paul D. Biddinger, MD, FACEP



Executive Director  
David Reisman, MHA, FACHE

The Pilot Year: RDHRS by the Numbers



**24** partners across hospitals, state health departments, coalitions, and regional and national organizations



**6** states in Region 1 participated in quarterly meetings



85% of Partnership members surveyed agreed the RDHRS can be effective in improving hazard-specific disaster planning

**12** Subject Matter Expert advisory groups



200+ stakeholder meetings held

**89%** of Partnership members surveyed agreed the RDHRS is addressing gaps within disaster healthcare preparedness and response that have not been addressed to date

**90%** of states without a deployable medical team believe that they would benefit from such a team

**93%** of Partnership members agreed that the RDHRS can be an effective resource to provide medical expertise to public health/emergency management leaders to assist with decision-making related to healthcare operations during disasters

**12** disaster telemedicine simulations (including trauma, burn, and pediatric disasters)

**75+** participants involved in a training exercise that demonstrated regional response capabilities



**100** Essential Elements of Information (EIs) developed



# The ASPR RDHRS Vision

ASPR aims to better identify and address gaps in coordinated patient care during disasters through the establishment and maturation of a Regional Disaster Health Response System (RDHRS). The primary objectives of the RDHRS are to:



**Improve bidirectional communication and situational awareness** of the medical needs and issues of the response between healthcare organizations and local, state, regional and federal partners



**Leverage, build and augment the highly specialized clinical capabilities** that are critical to caring for patients affected by rare, unusual, or catastrophic events



**Augment whole of community (horizontal) integration of stakeholders** that comprise healthcare coalitions with readily accessible and clinical capabilities that may not be available in the coalitions' own jurisdictions

# MA/Region 1 RDHRS Mission

The Mission of the MA/Region 1 RDHRS is to support optimal healthcare disaster planning to ensure that appropriate clinical expertise is integrated into emergency response, and to enhance clinical surge capabilities within the Commonwealth of Massachusetts and our larger Regional healthcare community.

## Year One Project Objectives

- 1.** To increase the engagement of clinical and technical healthcare SMEs and organizations in disaster planning efforts and systems, particularly for specialized clinical scenarios involving surge in trauma, burn, pediatric, infectious diseases, or other special types of victims
- 2.** To develop a 24/7/365 response structure that provides public health and emergency management leaders with access to specialized medical and technical expertise related to patient movement and medical care in real time during disasters and that supports improved healthcare system situational awareness
- 3.** To expand the available Regional medical capabilities and capacity to respond by enhancing systems of disaster telemedicine and deployable disaster medical response teams

# Creating a Regional Disaster Health Community

The MA/Region 1 RDHRS leverages existing strong relationships among statewide healthcare and governmental partners who are committed to improving the coordinated delivery of patient care during disasters



Participants come from all 6 HHS Region 1 states.

**6** State Departments of Public Health

**6** Massachusetts Health and Medical Coordinating Coalitions

**5** Regional EMS Councils

**8** Level 1 Trauma Centers

**4** Professional Associations

**12** Subject Matter Expert Advisory Groups

# Identifying Critical Gaps

At the beginning of the project year, the MA/RI RDHRS surveyed its members to identify the actions they believed were most critical to improving existing clinical disaster care and response systems.

The top two actions were to:

1. Increase the involvement of medical SMEs in system surge planning, particularly for specialized clinical scenarios involving surge in trauma, burn, pediatric, or other special types of victims, and
2. Develop a structure that can provide public health and emergency management leaders with specialized medical and technical expertise related to patient movement and care in real-time during disasters.

Most hospitals in the United States do not have trauma, burn, inpatient pediatric, and other disaster specialists on staff. When medical systems are overwhelmed, they do not have mechanisms to obtain such expert consultation without transferring patients.

Most hospitals cannot use telemedicine systems during disasters to obtain trauma, burn, pediatric or other needed specialty consultation.

More than half of states have no state-level disaster medical team that can be mobilized during a disaster.

There is very little surge capacity in the medical system at any given point in time.

The majority of front-line clinical staff do not know how to identify High Consequence Infectious Diseases (HCIDs) at triage or how to properly protect themselves with personal protective equipment (PPE).

Many hospitals do not follow current best practice in planning for patients exposed to hazardous materials.

Hospital trauma and burn systems are designed for daily operations. In a disaster, there is no real-time mechanism to identify where immediate care is overwhelmed and where it is still available.

Mass casualty response plans remain fragmented among differing EMS regions. They also lack coordination with trauma centers' leadership.

# Expanding Disaster Medical Capacity and Capabilities

The MA/RI RDHRS has begun work to serve as a Regional disaster medical specialty consultant, helping hospitals and other healthcare providers in their area to improve their disaster capabilities through the creation of tailored planning and response tools and templates, through expert review of response plans, and by answering disaster medical questions from hospital planners.



“We see the sharing of information among our state and Regional partners as the mission of the ASPR regional teams – we love the idea of working with an entity like the RDHRS to be our ‘in house subject matter experts’”

Gary Kleinman  
Regional Administrator, ASPR Region 1



## Disaster Telemedicine

During a no notice event, there are limited resources and expertise in non-tertiary care hospitals, producing significant delays in patients receiving critical care. This year, the MA/RI RDHRS tested a disaster telemedicine model that can support all affected healthcare organizations in a disaster by providing consultation between affected clinicians and specialists to optimize patient care.



Telemedicine model tested in medical simulators with real-world physicians



# Expanding Disaster Medical Capacity and Capabilities

## Deployable Disaster Medical Teams

The MA/R1 RDHRS improved how states can develop, sustain, and share their own deployable disaster medical teams (DMTs) that will be needed when healthcare systems become overwhelmed. Over this past year, the MA/R1 RDHRS developed a new DMT model that leverages local hospital resources within Massachusetts:

Triage/Pre-Hospital Care

Emergency Department Decompression, Base of Operations (BoO), or General Emergency Medical Care

Shelter Support - General Medical Care

Hospital Augmentation - Specialty Care

Support of Patient Movement

Administration of Mass Prophylaxis

Medical Support for Pre-Planned Mass Gatherings

A survey conducted in partnership with the Association of State and Territorial Health Officers (ASTHO) revealed that fewer than half of states have any type of deployable medical team that could be mobilized in disasters.

“We are giving states the ability to better respond to disasters using their own highly trained medical personnel. By coordinating among states and teams, we are helping to ensure common capabilities and functions among all available teams.”

Jacquelyn Nally, BSN, MA, RN, NHDP-BC, CEM®  
RDHRS Deployable Teams Manager

## RDHRS Response Center

The RDHRS Response Center serves as a multi-agency coordination center (MACC) by effectively coordinating access among hospitals in times of crisis, and by extending the services of specialty disaster medical centers to support healthcare response. This extension of specialty disaster medical resources from RDHRS hospitals includes the functions of telemedicine, coordination of DMTs, and support for hospital evacuation and identification of appropriate placement of evacuating patients into receiving hospitals when requested.



“Possibly the most significant outcome of the tightly integrated Year 1 RDHRS exercise was deployment of truly actionable burn triage tables. Through the RDHRS, the American Burn Association was able to harness best-available situational awareness to execute a cogent local, regional, and national burn care community response that was tailored to the casualty/resource balance, in a premeditated fashion.”

James Jeng, MD, FACS  
ABA Disaster Subcommittee

### **Clinical Specialty Integration**

The RDHRS program provided an opportunity to illustrate how the RDHRS and a national specialty organization, such as the American Burn Association, can work together effectively to mutually enhance both disaster planning and response.

# Ensuring Organization and Coordination

## Essential Elements of Information (EEIs)

The MA/R1 RDHRS, working in partnership with the Nebraska NRDHRE, developed a list of 100 EEIs that can be used to improve healthcare systems' situational awareness of medical needs in disasters.

**MA/R1  
RDHRS  
EEIs**

Accurately describe the status of the healthcare system capacity and capabilities responding to the incident

Capture and share needed medical data about patient needs and threats that arise in specific disaster events

Describe the baseline healthcare capacity and capabilities of a given area

“The quality of decisions is directly related to the quality of information; and EEIs are the core component of an information management system. The RDHRS is helping to improve the quality of healthcare system response data needed for effective action.”

Thomas Hines, MPA, MEP, CEM®, NRP  
RDHRS EMS/Pre-Hospital Care & Trauma  
Program Manager

# Assuring Readiness

The MA/R1 RDHRS worked in collaboration with the Harvard School of Public Health Emergency Preparedness Research, Evaluations, and Practice (EPREP) Program to develop readiness metrics for peer review assessments, monitoring, recognition reporting, and a "Response Ready" designation program for coalitions, states, and regions.

## Response Readiness Scorecard

Measures were assembled into a "Scorecard" to rate progress towards the creation of a functional and "ready" coalition or Partnership. The final draft Scorecard (visual representation below) was developed by creating three components: domains, activities and tasks. Tasks were divided separately into healthcare coalition tasks and RDHRS tasks under each activity. Each task is proposed to be measured using a 1-5 or 1-4 Likert scale with not applicable options.



### Membership

1. Identify Members
2. Recruit Members
3. Establish MOU
4. Establish Governance
5. Specify Authorities



### Planning

1. Conduct Assessment
2. Identify Planning Gaps
3. Address the Gaps
  - Patient Tracking and Reunification
  - Specialty Disaster Medical Response
  - Surge Plans
  - Evacuation
  - Supply Chain Operations
  - CSC
  - Regulatory and Legal Barriers



### Info Sharing

1. Identify Systems
2. Identify Triggers
3. Identify Info Sharing Mechanisms
4. Identify Roles and Responsibilities
5. Identify Mechanisms for Clinical Expertise



### Training

1. Identify Role Group
2. Needs Assessment
3. Deliver Training



### Evaluation

1. Perform Annual Review
2. Conduct Exercises
3. Evaluate Performance
4. Document Improvement

# Proving the Concept

**On August 27, 2019, the Partnership conducted a statewide functional exercise:**

The functional exercise started with the scenario of a large burn event at a fictional 30,000-person family music festival where the propane tanks of food trucks exploded from flammable colored powders being thrown into the air. The fictional disaster created more than 1,500 injuries to adults and children, who had burns, penetrating trauma, blunt trauma from trampling, and other injuries. More than 450 of the patients were critically injured and required care in the state's trauma centers, burn centers, and pediatric specialty hospitals. However, following the disaster epidemiology of other historic disasters, many of the exercise patients self-evacuated or were taken first to nearby community hospitals and other facilities, and needed subsequent transfer to the specialized clinical centers.

## **The Exercise included:**

- Coordinating Patient Movement
- Utilizing Disaster Telemedicine and Deployable Medical Teams to augment specialty care
- Activating the RDHRS Response Center (RC) CTAC:
  - The Catastrophic Tertiary Access Center (CTAC) centrally managed and coordinated all interfacility transfers from community hospitals using a single point of access to direct the patients equitably using clinical capability and capacity criteria to available trauma, burn, and pediatric hospitals.
  - The CTAC was staffed with a disaster-trained medical director and advised by trauma, burn, and pediatric experts, as well as by patient placement expert nurses and admitting staff all drawn from the member RDHRS hospitals.



“[The RDHRS Response Center] established much more effective communications and coordination among all the Level 1 Trauma centers in Massachusetts.”

RDHRS Exercise Player

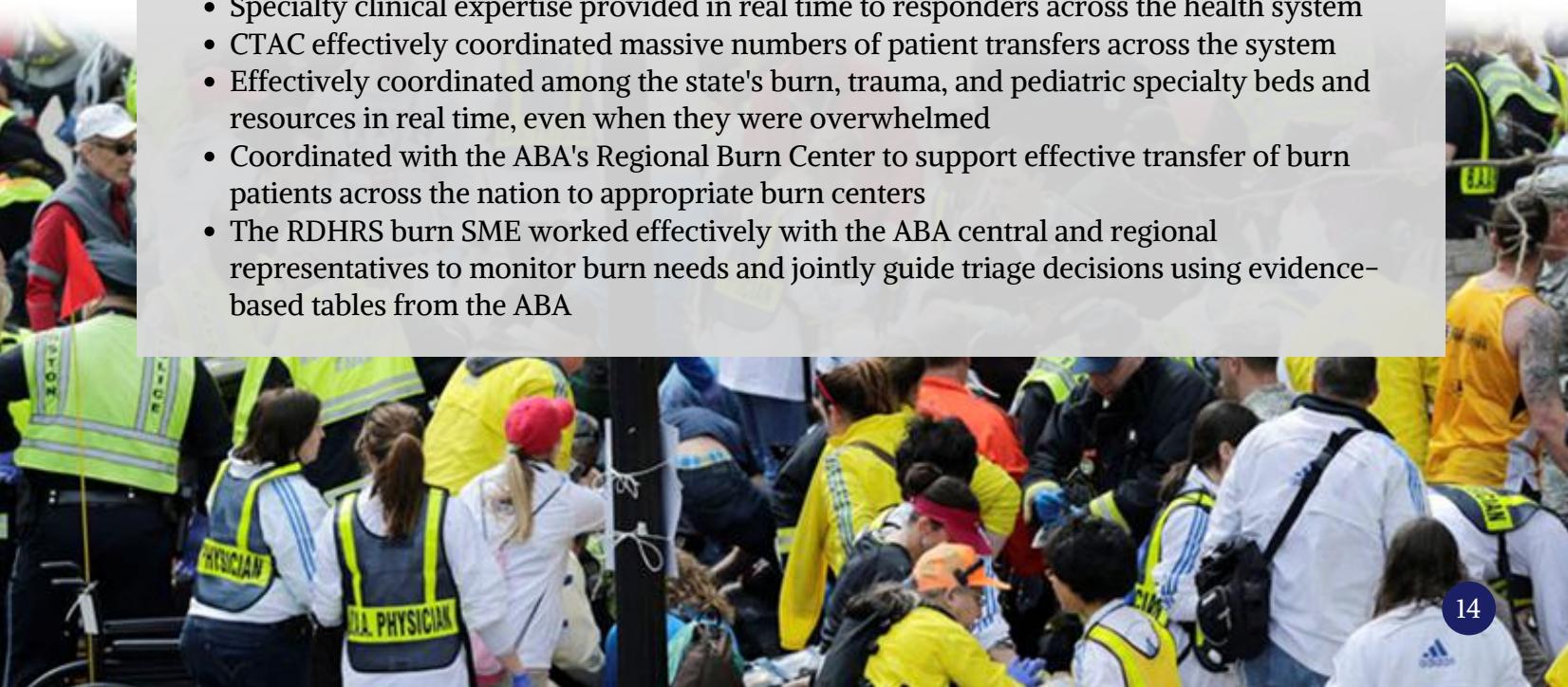


“ This was a tremendous learning opportunity about decision-making for bed placement of patients with burns! ”

RDHRS Exercise Controller

## Primary Successes of the Exercise:

- Specialty clinical expertise provided in real time to responders across the health system
- CTAC effectively coordinated massive numbers of patient transfers across the system
- Effectively coordinated among the state's burn, trauma, and pediatric specialty beds and resources in real time, even when they were overwhelmed
- Coordinated with the ABA's Regional Burn Center to support effective transfer of burn patients across the nation to appropriate burn centers
- The RDHRS burn SME worked effectively with the ABA central and regional representatives to monitor burn needs and jointly guide triage decisions using evidence-based tables from the ABA



# List of Tools and Products Produced

- RDHRS Partnership Charter Template
- RDHRS Example Emergency Operations Plan (EOP)

## Response Center Tools

- RDHRS Response Center (RC) Organization Chart
- Response Center Job Action Sheets
  - Response Center Manager JAS
  - Response Center Assistant Manager JAS
  - Response Center Agency Representative JAS
  - Response Center Chief Medical Officer JAS
  - Response Center Vulnerable Populations Advisor JAS
  - RDHRS Field Operations Supervisor JAS
  - RDHRS Hospital Deployable Teams Agency Liaison JAS
- RDHRS Initial Incident Action Plan
- RDHRS Duty Officer Activation Worksheet
- RDHRS Response Center Situation Report Template
- RDHRS - ICS 214 Activity Log

## Deployable Medical Team Tools

- RDHRS Deployable Medical Team (DMT) Manual
- RDRHS Deployable Medical Team Job Action Sheets
  - DMT Team Commander JAS
  - DMT Deputy Team Commander JAS
  - DMT Safety Officer JAS
  - DMT Chief Medical Officer JAS

- DMT Administrative Section Chief JAS
- DMT Operations Section Chief JAS
- DMT Group Supervisor JAS
- DMT Planning Section Chief JAS
- DMT Operations Section Chief JAS
- DMT Logistics Section Chief JAS
- DMT Communications Unit Leader JAS
- DMT Pharmacy Unit Leader JAS
- DMT TF-35 Base of Operations Checklist
- DMT Health and Medical Task Force Mission Chart
- DMT Mission Ready Packages
- DMT Steady State Organization Chart
- DMT Required Wrap Around Services Checklist
- List of Potential Solutions for Obtaining Required DMT Supplies
- List of Essential Supplies Immediately Required for DMT Deployment
- DMT Custody Property Record Template
- RDHRS Sample Job Description - Nurse Practitioner
- RDHRS Sample Job Description - Mental Health Specialist
- Analysis of Start-up and Sustainment Costs for a Sample Hospital-Hosted DMT

## CTAC Tools

- RDRHS Catastrophic Tertiary Access Center (CTAC) Plan
- CTAC Job Action Sheets
  - CTAC Supervisor JAS
  - RDHRS Hospital CTAC Liaison JAS

- CTAC Medical Director JAS
- CTAC Capacity Coordinator Leader JAS
- CTAC Bed Matching Leader JAS
- CTAC Transfer Request Operator JAS
- CTAC Transfer Confirmation Operator JAS
- CTAC Clinical SME - Burn JAS
- CTAC Clinical SME - Pediatrics JAS
- CTAC Clinical SME - Trauma JAS

## Telemedicine Tools

- RDHRS Disaster Telemedicine Plan
- Telemedicine User Guide and Just-In-Time Training Tool
- Telemedicine Job Action Sheets
  - Response Center Telemedicine Supervisor JAS
  - Response Center Telemedicine Coordinator JAS
- RDHRS Draft Legislation and Waiver Templates
- RDHRS Identify, Isolate, & Inform Fillable Algorithm
- RDHRS Current Infectious Disease Outbreaks of Concern Template
- RDHRS Example of Workforce Protection Reference Guide
- HSPH End of Year Evaluation Report of RDHRS
- Draft Response Readiness Evaluation Framework
- Draft Catalog of Potential EEIs
- RDHRS Operation Minute's Notice AAR

“This pilot project has demonstrated the critical necessity for improved disaster medical preparedness in Massachusetts and throughout Region 1. We are proud to have the opportunity to build multidisciplinary partnerships in an effort to provide a rapid and effective medical response in any disaster.”

David Reisman, MHA, FACHE  
Executive Director, MA/Region 1 Partnership RDHRS



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