



**Principles and Application of Mass Casualty Triage Course
for Emergency and Hospital-based Clinicians
*Hospital/Health System Overview***

Course Background

New literature in emergency and disaster medicine emerging from recent mass shootings, bombings, and other disasters suggests that hospitals and their emergency departments need better preparation to triage large numbers of victims in very short periods of time. The operational and clinical complexities experienced in recent events including Orlando, and Las Vegas, underscore the importance of emergency department (ED) and hospital readiness to care for large numbers of critical patients, the majority of whom are likely to arrive by means other than Emergency Medical Services (EMS). Whether patients are brought by EMS or self-evacuating, hospitals will have limited abilities due to resource scarcity of operating rooms, imaging equipment, laboratory studies, blood products, and specialists. Preparation for such incidents requires significant training and planning on the part of ED staff so that they can recognize and respond to these low probability/high impact events, as well as robust interdepartmental coordination to ensure availability of critical supplies and personnel.

This course results from a fact-finding delegation visit to Las Vegas, taken in February 2018. Coordinated by the Greater New York Hospital Association (GNYHA), the delegation visit consisted of representatives of nine NYS health systems as well as government response partners representing police, EMS, public health, and emergency management. The purpose of the visit was to learn about Las Vegas' response to the October 1, 2017, mass shooting that injured hundreds and resulted in the deaths of 58 individuals. During the visit, delegation members toured and met with clinicians at the three hospitals that cared for the largest number of victims, as well as first responder and public health agency representatives.

Course Pilot

During 2018, the Center for Disaster Medicine at New York Medical College (CDM at NYMC), in collaboration with the Greater New York Hospital Association, conceptualized and developed this course. The course was piloted at five hospitals – Elmhurst Hospital in Queens, Montefiore Medical Center in the Bronx, Albany Medical Center in Albany, Lincoln Hospital in the Bronx, and St. John's Riverside in Yonkers. CDM received extensive feedback from course participants, and used this information to further refine the course, and develop optional modules, as well as to develop expectations during the pre- and post-course period.

Course Cost

The cost of the 8-hour course is \$6,000. Cost of each supplemental module described below is \$2,000. For hospitals located in New York City that hold a Healthcare Preparedness Program-funded contract with the New York City Department of Health and Mental Hygiene (DOHMH), funding associated with the contract training deliverable may be used to support this course, if course content relates to stated training goals.

Hospitals under contract with DOHMH have two options: 1) ensure that the update to the training plan submitted to DOHMH reflects work in the area of mass casualty incident response, or 2) craft a *Design Your Own Deliverable* project related to mass casualty response planning. CDM has also applied to the NYS Department of Health to have the course added to the pre-approved training list for ASPR HPP participants. A determination will be made in early 2019.



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Course Description, Learning Objectives, and Outline

This 8-hour course is designed to refresh and improve the knowledge and skills of emergency department and hospital-based clinicians who would be responsible for the initial triage and care of victims from mass casualty events. The course:

- Reviews the latest reports and scientific literature on mass casualty events
- Discusses pre-hospital triage and initial treatment
- Explores the interface of pre-hospital care and initial hospital triage/care
- Discusses the approach to hospital triage and initial management based on scarce resources and choke points in the hospital setting, including the emergency department
- Discusses the hospital's approach to surge capacity including identifying and utilizing pre-designated surge capacity areas to improve response to mass casualty incidents

Through lecture presentations based on the latest evidence and reports, group discussions, integration of the facility's emergency management plan, and several hands-on exercises and learning stations, participants will learn the most effective and evidence-supported emergency department and hospital triage methods, initial interventions, and patient flow approaches for mass casualty events. Participants will also identify ways to improve the emergency preparedness of their emergency departments and hospitals for these types of incidents. While the primary focus is on mass casualty events, the education provided, and lessons learned will also help to improve participating clinicians' and facilities' preparedness for other types of disasters and public health emergencies.

By working extensively with key facility contacts, lecture content and hands-on exercises will be tailored to the existing emergency operations plans of the host institution or system. Additionally, through pre- and post-meetings, individuals critical to a mass casualty response will have the opportunity to collaboratively reflect on and consider changes to institutional response plans. CDM at New York Medical College has accredited this course for continuing medical education for participants. The afternoon hands-on simulations will also enable participating facilities to meet Joint Commission exercise standards and CMS testing requirements.

Course Learning Objectives

1. Understand the methodology for the initial emergency department/hospital triage of victims from a mass casualty incident and the most effective use of scarce resources including use of adjunct technologies such as ultrasound.
2. Demonstrate the application of triage techniques including emergency department/hospital triage, and initial procedure and disposition decisions on both conscious and unconscious patients.
3. Describe how patients arriving at a facility, including by EMS and non-EMS transport from a mass casualty event, pose special challenges to hospitals and emergency departments.
4. Compare the most common evidence-based methods of prehospital triage used in disaster and mass casualty incidents.
5. Distinguish the difference between the approach to traditional emergency department triage, and triage during a disaster or mass casualty event.
6. Describe the process of re-triage based on change in clinical status or arrival of patients with higher acuity/priority.
7. Discuss the challenges associated with the determination of "expectant" patients or those who may be beyond saving based on the availability of resources.



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8. Describe the problems associated with “role confusion” among physicians who are asked to perform triage, but not treatment on patients.
9. Evaluate ways to update and/or improve current mass casualty incident plans in the hospital and/or emergency department including surge planning and identification of pre-designated surge capacity areas within the hospital.

Supplemental Modules

The 8-hour course is primarily designed for physicians and those who already have experience in emergent care, trauma, and ultrasound. The course can be enhanced by offering two additional modules:

Nursing Module— Because team-based care is supported by inter-professional training, this module can be added for nursing providers. Nurses will participate in a portion of the morning’s didactic sessions and all practical exercises with their physician partners, but will be provided specific lectures and learning stations directed at improving the knowledge and skills relevant to nursing practice.

Ultrasound Module – Ultrasound can be an important adjunct in hospital-based triage and initial care, a 4-hour module that focuses on key evidence and hands-on training in the use of ultrasound for mass casualty triage and care can be added. CDM at New York Medical College has accredited this course for continuing medical education.



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Course Outline and Agenda

- 09:00 – 09:05 Overview and Introduction to Course
- 09:05 – 09:45 Update on Mass Shooting and Recent Mass Casualty Events- Reports and Evidence Based Literature
- 09:45 – 10:15 Overview of Healthcare Facility Emergency Management Approaches (*specific to host facility*)
- 10:15 – 10:30 Review of Pre-hospital Triage Systems for Mass Casualty and Disaster Triage
- 10:30 – 10:45 Break
- 10:45 – 11:15 Principles and Approaches to Emergency Department/Hospital Triage and Review of Hospital Scarce Resource Challenges in Mass Casualty Events
- 11:15 – 12:00 Adjunct Technologies to Emergency Department/Hospital Triage Techniques and Initial Care Including Usage of Ultrasound
- 12:00 – 13:00 Lunch

**During the afternoon, course participants are split into groups and rotate through three hands-on exercises described below:*

- *Mass Casualty Triage Exercise:*
 - *Functional exercise covering ED decompression to prepare for arrival of MCI patients, and initial patient triage approaches*
- *ED/Hospital MCI Triage and Interface with Pre-hospital Triage:*
 - *Facilitated discussion with hands-on practice of MCI hospital triage using ultrasound as an adjunct technology. In addition, this exercise covers how to use an MCI hospital triage system with patients who have a pre-hospital assigned triage category, and the implications for resource utilization.*
- *Surge Capacity and ED Bed Management during Disasters:*
 - *Functional exercise covering ED preparation for a surge of patients, and decompression of the ED including admission, rapid disposition, and transfer of patients.*

13:00 – 16:00 Rotation 1, 2, and 3 (with brief breaks)

16:00 – 17:00 Full Group Debriefing, Wrap up, Course Evaluation/Assessment

Note: *The above represents the typical course delivery. For classes with participants from a single facility or system, the Emergency Management section would be delivered by the site/system emergency manager and would refer to the Emergency Operations Plans for that facility or system. In addition, for courses involving physicians and non-physicians including nurses, separate lectures for physicians and non-physicians can be offered from 10:45am-12:00pm.*



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Hospital/Health System Participation

Participation in this course is an opportunity to advance emergency planning and readiness. As such, it requires the commitment of hospital resources to ensure planning, and participation by an appropriate cross-section of staff.

Specific commitments include:

- Completion of the Participant Application signature page found below, which requires sign-off by facility leadership, and identification of key organizational contacts. High-level facility commitment is needed to ensure participation by key departments and allocation of appropriate resources.
- Identification of a facility lead for planning and course delivery. This person is the key point of contact between CDM at New York Medical College and the facility/system to facilitate planning, confirm logistics, obtain needed resources and space, collect and provide facility input for the course, and provide any feedback to CDM staff.
- Enroll 20-30 participants (with advanced notice class size can be increased). Emergency and hospital-based physicians who would be directly involved in a mass casualty response should form the majority of course participants. Additional physicians who may play key coordination or surge roles can also be included.
- Nurses can be participants in the course, however advance notice is needed. While the target audience for the basic course is physicians, it is recognized that in an actual event the team is multi-disciplinary. As such the course can be delivered with nursing-focused didactics and participatory activities added. If your facility would like to add the nursing module, please indicate this on the Participant Application form.
- Because the program is tailored to the facility or health system and designed to raise questions and improve planning at that level, the following individuals must be involved in key program aspects:
 - Emergency Management Lead for facility/system – delivers facility or system-specific overview of emergency management plan to participants, contributes to planning of hands-on exercises, and observes those exercises. Post-course, he/she facilitates a discussion at the facility or system’s Emergency Management Committee regarding lessons learned and areas for improved planning (see next item).
 - Facility Bed Control Lead– participate in afternoon Surge Capacity and Bed Management Functional Exercise.
 - Inpatient Unit Nursing Director Representative – Participate in Surge Capacity and Bed Management Exercise.
 - EMS Representative – While not required, because the course discusses the initial triage and management of arriving patients, participation by EMS will add value to this key relationship.
- Presentation of lessons learned from course to the facility or system’s Emergency Management Committee by the Facility Lead for the course and Emergency Management Lead. It is beneficial to also have the Executive Champion present, as well as course participants.
- Provide the needed space and resources for course delivery as detailed below.



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Space and Resource Needs

- A conference/meeting room capable of holding up to 30 participants and a second room for hands-on sessions and exercises capable of holding at least 15 participants, as well as space for activities. Both rooms will be needed for the entire day. If the nursing or ultrasound modules are added, a third classroom will be needed.
- Projectors and screens for the conference room and each of the classrooms.
- Identification and availability of an area in or near the ED to conduct the live functional exercise in the afternoon. Please have a primary choice and two contingencies, in case situations and availability change during the day. The area will need to be available at least 90 minutes before the afternoon exercise for set-up. Signage should be available and displayed to advise patients and staff that an exercise will be in progress. Vests for any observers should be available.
- Identification of a staging area for simulated patients for the afternoon exercise. This area should be close to the ED exercise area.
- Provide the following documents to allow planning of exercises:
 - ED Floor Plan
 - Redacted Operating Room schedule for the day of the exercise (this is used during the surge capacity tabletop exercise)
- Meals and snacks for facility participants.
- Identification (as required) and parking for CDM instructors, simulated patients and staff.
- Load-in and load-out location for equipment.

Commitment by Center for Disaster Medicine at New York Medical College

- Provide a Course Director to work with the facility in course planning and delivery. The Course Director will be experienced in healthcare emergency management and healthcare emergency preparedness education. The Course Director will serve as the main point of contact with the facility for logistics, determining facility needs and tailoring course delivery and exercises, meeting with key stakeholders at the facility during pre-course planning and post-course evaluation, and providing feedback to the facility about the entire process.
- Obtain, educate as needed, and orient simulated patients for the hands-on sessions and exercises.
- Provide all necessary educational tools to include, but not limited to: simulators including high fidelity ultrasound with phantoms and demonstration devices, triage equipment, exercise supplies and handouts.
- Tailor program to facility/system to include Emergency Management lecture focused in partnership with facility emergency management lead, and nursing and ultrasound modules, if desired.
- Attend post-course Emergency Management Committee meeting to provide input as requested.
- Offer CME for physician attendees.
- Assist facility with any documentation needed to meet regulatory agency requirements.
- Solicit evaluation of program from all participants.

Key Contact

David Markenson, MD, Medical Director, Center for Disaster Medicine, New York Medical College
(914) 594-1746 David.Markenson@nymc.edu



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PARTICIPATION APPLICATION

Please return this application to:

Center for Disaster Medicine at New York Medical College
David Markenson, MD, Medical Director, David_Markenson@nymc.edu

_____ [facility/health system name] will participate in the *Principles and Application of Mass Casualty Triage for Emergency and Hospital Based Clinicians Course*.

Chief Executive Officer or Chief Operating Officer: _____

Organization: _____

Signature: _____

Emergency Medicine Chair/Emergency Department Director: _____

Organization: _____

Signature: _____

Chief Medical Officer: _____

Organization: _____

Signature: _____

Chief Nursing Officer (required if offering Nursing Module): _____

Organization: _____

Signature: _____

Course Project Team

Facility Lead/Key Contact

Name: _____ Title: _____

Telephone: _____ Email: _____

Emergency Management Lead (if different than Facility Lead)

Name: _____ Title: _____

Telephone: _____ Email: _____

Emergency Department Representative

Name: _____ Title: _____

Telephone: _____ Email: _____

Please indicate if this course will focus on a single facility or involve providers from multiple facilities:

- Single facility
- Multiple facilities

Please indicate if you would like to offer the supplemental courses:

- Nursing Module
- Ultrasound Module