



FICEMS

Federal Interagency Committee on EMS

**Questions for the NEMSAC on the FICEMS Role in
Implementation of the Model Uniform Core Criteria for Mass
Casualty Incident Triage**

March 29, 2012

Issue

At the December 19, 2011 meeting of the Federal Interagency Committee on Emergency Medical Services (FICEMS) the FICEMS directed the FICEMS Technical Working Group (TWG) to seek input from the National EMS Advisory Council (NEMSAC) in developing a Model Uniform Core Criteria for Mass Casualty Incident Triage (MUCC) implementation strategy for consideration by the FICEMS. The following questions, and accompanying background information, were prepared by the TWG for presentation to the NEMSAC on behalf of FICEMS.

Questions for the NEMSAC Regarding the FICEMS Role in National Implementation of MUCC

- 1) Should FICEMS support the national adoption of MUCC?**
 - a) What reasonable national metrics could be used by FICEMS to measure adoption of MUCC principles by the national EMS community over time?**
 - b) Is there a need for a national, state and/or local process, criteria, and organization to determine what triage tools are MUCC compliant?**
- 2) Should there be an addendum published to the National EMS Education Standards referencing the principles of MUCC?**
 - a) Should additional actions be taken by FICEMS member agencies to support the initial and continuing education of EMS workers in the principles of MUCC, if so what additional actions?**
- 3) What are the most significant common barriers that State, territorial and tribal governments might face in supporting adoption of MUCC?**
 - a) Are there specific actions FICEMS member agencies should take to support State, territorial and tribal governments in overcoming these barriers to adoption of MUCC?**
- 4) Are there specific actions FICEMS should undertake to engage non-Federal national EMS stakeholder organizations in supporting national implementation of MUCC?**

Background

The Model Uniform Core Criteria (MUCC) for Mass Casualty Triage is a science and consensus-based national guideline that recommends 24 core criteria for all mass casualty triage systems.

MUCC Developed Through Consensus Informed by Evidence

In 2006, the National Association of EMS Physicians (NAEMSP), with funding from the Centers of Disease Control and Prevention (CDC), convened a workgroup (hereafter the SALT workgroup) of subject matter experts from national stakeholder organizations, to examine the science supporting existing mass casualty triage systems and make a recommendation for the adoption of a single system as a national standard. In an article published in *Disaster Medicine and Public Health Preparedness* the SALT workgroup stated that “[t]he committee conducted their work through a series of conference calls and 2 face-to-face meetings. Initially, a list of all mass casualty triage systems was generated and reviewed by all of the members [of the SALT workgroup] to ensure it was complete. Each member was assigned a triage system and asked to conduct an exhaustive literature review and develop a report of the system for the group. This review included peer-reviewed publications as well as other types of reports. Each system had 2 or more members assigned to conduct a review. The reviews were presented to the group and a grid was developed that described each system in regards to several parameters (eg, color codes, training time and costs, when a patient is designated as dead).”¹

According to the SALT workgroup responders evaluating patients at a mass casualty incident (MCI) typically use a triage system to help prioritize the use of limited patient care and transportation resources. Multiple triage methods have been developed and are in use in the United States, such as Simple Triage and Rapid Treatment (START) and Jump START, the pediatric equivalent to START. MCIs frequently cross jurisdictional lines and involve responders from multiple agencies that may be using different triage methods. For operational simplicity, communications interoperability, and clinical efficiency, it is logical for all of the responders at a given incident to use the same triage method. However, the SALT workgroup concluded that no MCI triage system had sufficient scientific evidence to justify national adoption. The SALT workgroup proceeded with the development of a new triage system, the Sort-Assess-Lifesaving Interventions-Treatment/Triage (SALT) triage system (Appendix A). SALT, a non-proprietary free system, was developed from available research, widely accepted best practices of existing mass triage systems, and consensus opinion from the SALT workgroup.

The SALT workgroup considered the development of SALT to be a first step in creating a national guideline for MCI triage systems. While SALT was developed from a scientific base, adopting SALT as the single national standard for MCI triage would require local, state and federal agencies to change their current practices. Therefore, the SALT workgroup identified the need to develop the Model Uniform Core Criteria (MUCC) for Mass Casualty Triage, which would help to ensure interoperability among existing triage tools.

¹Lerner, E.B., Schwartz, R.B Coule, P.L., Weinstein, E.S Cone, D.C., Hunt, R.C., et al. 2008. Mass casualty triage: an evaluation of the data and development of a proposed national guideline. *Disaster Medicine and Public Health Preparedness*, 2 Suppl 1:S25-S34.

The MUCC was created by a 30 member CDC-funded workgroup (hereafter, the MUCC workgroup) that expanded upon the work of the SALT workgroup². The MUCC consists of four general categories (general considerations, global sorting, lifesaving interventions, and individual assessment) and 24 specific criteria (Appendix B) which the MUCC workgroup recommended as model minimum elements which all MCI triage systems should include.

MUCC Represents the Best Available Science

MUCC is a group of 24 criteria (Appendix B) that the MUCC workgroup recommended as essential elements of a MCI triage system. Of MUCC's 24 criteria, 15 are currently used by existing MCI triage systems (Appendix B), excluding SALT, which is completely MUCC-compliant. Having a standard for triage systems increases interoperability between MCI triage systems and provides guidelines for the revision of existing MCI triage systems. During a response to an MCI, responders will assess patients in a similar manner if they are using MCI triage systems that are MUCC-compliant. This reduces the potential for triage errors.

While the MUCC is supported by the best available science, the evidence base for evaluating MCI triage systems in prehospital settings is limited. The majority of MUCC's criteria are supported by indirect evidence (i.e., evidence that comes from different situations or different patient populations) and consensus decisions, meaning the SALT and MUCC workgroups found gaps in the science. The intent of the MUCC workgroup was to revise MUCC as new evidence becomes available, however a process and timeline for updating MUCC has not yet been defined.

MUCC Widely Endorsed but Challenges Remain

According to the *National EMS Assessment* (FICEMS 2011) “[o]f the 47 states providing information, 34 (72%) have developed EMS specific mass casualty protocols at either the local and/or state levels. A total of 18 (38%) states have developed and implemented statewide protocols and triage guidelines for local EMS agency use.”³ According to a 2008 survey of State EMS Offices conducted by the Maryland Institute for Emergency Medical Services Systems (MIEMSS), thirty-four of forty responding States reported that START (or JumpSTART) was either mandated by the State or the most commonly used mass casualty triage system at the local level.⁴ These data sources indicate variability among the states in the use of mass casualty triage systems. It is possible that assessing MUCC compliance might be feasible at the State level for the eighteen states that have developed and implemented statewide EMS mass casualty protocols. Assessing MUCC compliance for the sixteen states which reported locally developed mass casualty protocols might have to be determined through an evaluation of the multiple protocols within these sixteen States.

² Lerner, E.B., Cone, D.C., Weinstein, E.S., Schwartz, R.B., Coule, P.L., Cronin, M., et al. 2011. Mass casualty triage: an evaluation of the science and refinement of a national guideline. *Disaster Medicine and Public Health Preparedness*, 5(2):129-37.

³ FICEMS, 2012. *National EMS Assessment: Final Draft*. Downloaded from www.ems.gov on March 7, 2012 at 1400hrs.

⁴ MIEMSS, 2010. *Maryland Survey: Mass Casualty Triage System As of July 24, 2008*. Unpublished results provided to FICEMS Preparedness Committee.

To date, MUCC has been endorsed by, or received concurrence from, a number of national organizations (Appendix C). Despite widespread acceptance of the MUCC, there is, to date, a lack of evidence regarding the impact of using a MUCC compliant MCI triage method versus a non-MUCC compliant MCI triage method.

TWG Recommends National Implementation of MUCC

In considering whether to recommend FICEMS support for implementation of MUCC, the TWG considered several issues including available scientific evidence, current challenges face by EMS agencies regarding MCI triage and the endorsements of MUCC by a broad array of national EMS stakeholder organizations.

NHTSA's National Standard Curricula for emergency medical services providers have previously identified START as the MCI triage method. Currently, the mass casualty section of the National EMS Education Standards states it is subject to ongoing collective and cooperative review and input from all stakeholders including the Departments of Transportation, Homeland Security and Health and Human Services. The National EMS Education Standards Instruction Guidelines mention several techniques for MCI triage including the CDC guidelines, START and others. There is not a single exclusive MCI triage method that is identified.

FICEMS support for the national implementation of MUCC may facilitate improved EMS agency interoperability during a MCI.

MUCC represents the most comprehensive effort undertaken nationally to develop common uniform criteria for mass casualty triage criteria. It is unlikely that a comparable effort will be undertaken by a Federal agency in the near future. The endorsement of MUCC by a broad array of national EMS organizations will likely contribute to widespread national adoption of MUCC. However, Federal support would likely contribute to a more rapid and coordinated transition to MUCC by the EMS and emergency management community.

Appendix A:

Diagram of SALT and Tables Detailing MUCC

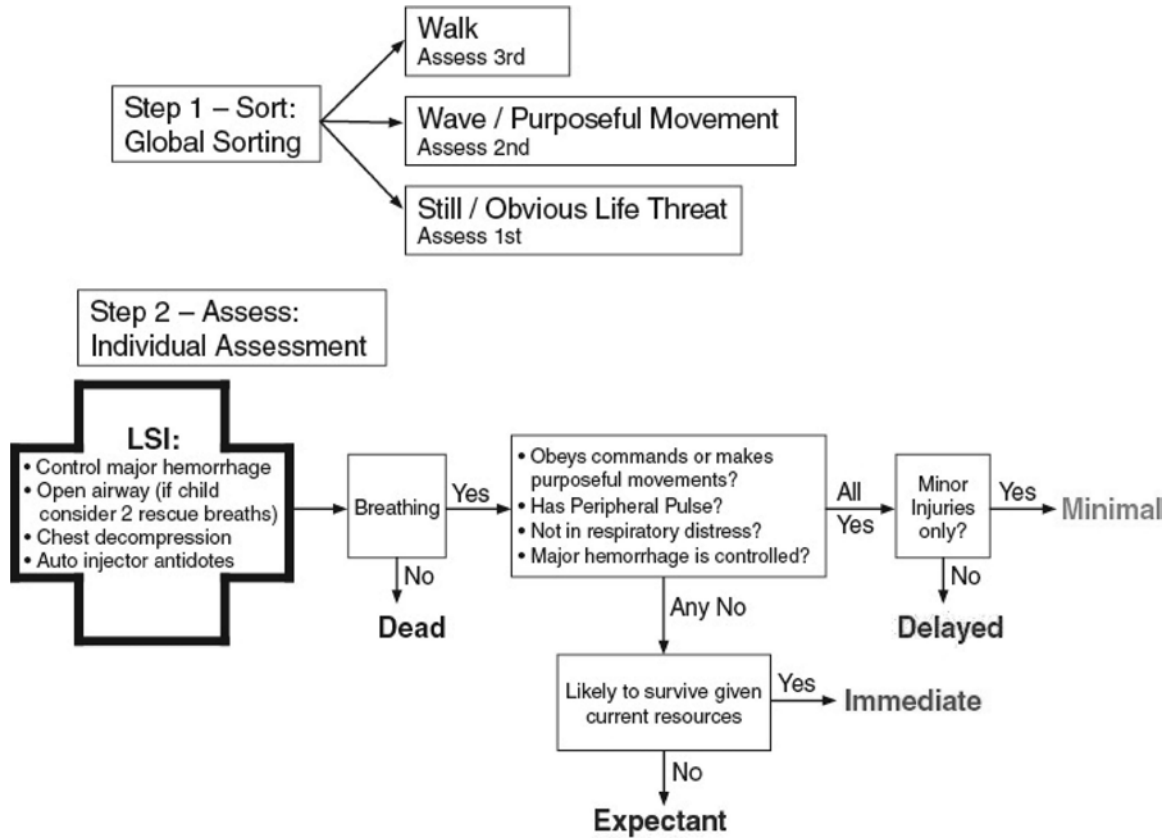


Figure: The Sort-Assess-Lifesaving Interventions-Triage/Treatment (SALT) Triage System

LSI= Lifesaving intervention

Appendix B:

Summary of the 24 Model Uniform Core Criteria

CRITERIA	Used by other triage systems?
<i>General Considerations</i>	
Triage systems and all of their components must apply to all ages and populations of patients.	Yes
Triage systems must be applicable across the broad range of mass-casualty incidents in which there is a single location with multiple patients.	No
Triage systems must be simple, easy to remember, and amenable to quick memory aids.	Yes
Triage systems must be easy to apply and practical for use in an austere environment.	Yes
Triage systems are resource dependent, and the system must allow for dynamic triage decisions based on changes in available resources and patient conditions.	Yes
The triage system must require that the assigned triage category for each patient be visibly identifiable (e.g., triage tags, tarps, markers).	No
Triage is dynamic and reflects patient condition and available resources at the time of assessment. Assessments must be completed whenever possible and categories adjusted to reflect changes.	No
<i>Global Sorting</i>	
Simple commands must be used initially to prioritize victims for individual assessment.	Yes
The first priority for individual assessment is to identify those who are likely to need a lifesaving intervention. They can be identified as those who are unable to follow commands and do not make purposeful movements, or those who have an obvious threat to life (e.g., life-threatening external hemorrhage).	No
The second priority for individual assessment is to identify those who are unable to follow the command to ambulate to an assigned place but are able to follow other commands (e.g., wave) or make purposeful movement.	No
The last priority for individual assessment is to identify those who follow commands by ambulating to an assigned place (or make purposeful movements) and have no obvious life-threatening conditions (e.g., life-threatening external hemorrhage).	Yes
All patients must be assessed individually regardless of their initial prioritization during global sorting. This includes the assessment of walking patients as soon as resources are available.	No
<i>Lifesaving Interventions</i>	
Lifesaving interventions are considered for each patient and provided as necessary, before assigning a triage category. Patients must be assigned a triage category according to their condition after any lifesaving interventions.	Yes
Lifesaving interventions are performed only if the equipment is readily	No

available, the intervention is within the provider's scope of practice, the intervention can be performed quickly (i.e., in less than 1 min), and the intervention does not require the provider to stay with the patient.	
Lifesaving interventions include the following: controlling life-threatening external hemorrhage, opening the airway using basic maneuvers (for an apneic child, consider 2 rescue breaths), performing chest decompression, and providing auto-injector antidotes.	No
<i>Individual Assessment</i>	
Each victim must be assigned to 1 of 5 triage categories (immediate, delayed, minimal, expectant, and dead). Each category must be represented with an associated color: immediate/red, delayed/yellow, minimal/green, expectant/gray, dead/black.	Yes
Assessment must not require counting or timing vital signs and instead use yes-or-no criteria. Diagnostic equipment must not be used for initial assessment.	No
Capillary refill must not be used as a sole indicator of peripheral perfusion.	Yes
Patients who are not breathing after 1 attempt to open their airway (in children, 2 rescue breaths may also be given) must be classified as dead and visually identified as such.	Yes
Patients are categorized as immediate if they are unable to follow commands or make purposeful movements, OR they do not have a peripheral pulse, OR they are in obvious respiratory distress, OR they have a life-threatening external hemorrhage; provided their injuries are likely to be survivable given available resources.	Yes
Patients are categorized as expectant if they are unable to follow commands or make purposeful movements OR they do not have a peripheral pulse, OR they are in obvious respiratory distress, OR they have a life-threatening external hemorrhage, AND they are unlikely to survive given the available resources. These patients should receive resuscitation or comfort care when sufficient resources are available.	Yes
Patients are categorized as delayed if they are able to follow commands or make purposeful movements, AND they have peripheral pulse, AND they are not in respiratory distress, AND they do not have a life-threatening external hemorrhage, AND they have injuries that are not considered minor.	Yes
Patients are categorized as minimal if they are able to follow commands or make purposeful movements, AND they have peripheral pulse, AND they are not in respiratory distress, AND they do not have a life-threatening external hemorrhage, AND their injuries are considered minor.	Yes
Patients categorized as immediate are the first priority for treatment and/or transport, followed by patients categorized as delayed and minimal. Patients categorized as expectant should be provided with treatment and/or transport as resources allow. Efficient use of transport assets may include mixing categories of patients and using alternate forms of transport.	Yes

Appendix C:

National Organizations that Have Endorsed MUCC (as of June 2011)

- American Academy of Pediatrics
- American College of Emergency Physicians
- American College of Surgeons–Committee on Trauma
- American Trauma Society
- Children's National Medical Center, Child Health Advocacy Institute, Emergency Medical Services for Children National Resource Center
- International Association of Emergency Medical Services Chiefs
- National Association of County and City Health Officials
- National Association of Emergency Medical Technicians
- National Association of EMS Physicians
- National Association of State EMS Officials
- National Disaster Life Support Education Consortium
- National EMS Management Association
- Society for the Advancement of Violence and Injury Research
- **Concurrence by** Health Resources and Services Administration Maternal and Child Health Bureau Emergency Medical Services for Children Program