



Emergency Medical Services
Domestic Preparedness
Improvement Strategy

August 2014



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Improvement Strategy

FINAL DRAFT

Washington, D.C.

August 2014

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Participating Organizations

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Executive Summary

The Emergency Medical Services (EMS) Domestic Preparedness Improvement Strategy provides a consensus-based strategic roadmap to resolve gaps in EMS preparedness, as identified by the leadership of national EMS stakeholder representative organizations. This document does not attempt to directly solve gaps in EMS preparedness; rather, it describes processes and stakeholder responsibilities necessary to successfully solve the most significant and persistent gaps in EMS preparedness. For each of the ten goals, the approach described herein emphasizes the seating of a workgroup of EMS subject matter experts and EMS organizational representatives to lead the work plan for that goal.

The ability of our nation's EMS systems to respond to a significant natural disaster or terrorist incident is predicated upon the strength and capability of local, regional, and state EMS Systems. "An EMS system struggling to meet the day to day needs of the public will not have the capacity to deal with a sustained surge of patients"¹. Today, many EMS systems in large cities, suburban communities, rural or remote towns, or frontier areas are struggling to meet routine demand, and are not adequately funded, resourced, staffed or equipped to respond to a significant natural disaster or terrorist attack. In spite of being persistently underfunded, the nation's EMS systems continue to do their best to respond to disasters, sometimes risking the safety of their workforce to protect the public that they serve.

The initiatives proposed in this strategy emphasize a strategic approach to EMS preparedness. That is, an approach that is forward looking and consensus and stakeholder-based at the EMS provider and local, state, tribal, territorial and federal government levels. This strategic approach to EMS domestic preparedness also considers the ability of private and public sector EMS provider organizations and governments to implement and sustain their preparedness efforts. Rather than listing goals in order of priority, this strategy orders goals by four interdependent categories: (1) Development and Promulgation of EMS Strategy; (2) Creation of EMS Preparedness and Response Guidelines; (3) EMS Preparedness and Response Data, Assessments and Analysis; and, (4) EMS Preparedness Organizational Relationships, Responsibilities, and Structures.

The EMS Domestic Preparedness Improvement Strategy also identifies significant and common barriers to improve EMS Systems' preparedness and response. These barriers include diminishing sources of operational revenue, limited preparedness grant funding, and lack of implementing or supporting legislation and regulation at the state and local level.

Successfully implementing the ten initiatives identified in the EMS Domestic Preparedness Improvement Strategy and overcoming the barriers identified in this strategy will materially and sustainably improve EMS Domestic Preparedness throughout the nation, states, tribal states, territories, and localities.

¹Emergency Medical Services: At the Crossroads. Committee on the Future of Emergency Care in the United States Health System. Institute of Medicine of the National Academies. The National Academies Press. Washington, D.C., 2007. Preface xvi.

Background and Purpose

Background

The U.S. Department of Homeland Security (DHS) is committed to defending the homeland against terrorist attacks and catastrophic incident, including medical disasters and biological threats. The DHS Office of Health Affairs (OHA) serves as the principal agent for all medical and public health matters. Through integrated efforts with local, state, tribal, and federal governments and the private sector, the OHA leads DHS's role in providing medical guidance, standards, policy and outreach to medical first responder stakeholders. The Workforce Health and Medical Support (WHMS) Division within OHA supports this effort by interacting with state and local first responder leadership by collaborating with national organizations that represent the public health, emergency medical services (EMS), fire, law enforcement and emergency management communities to identify gaps and implement solutions. The OHA Program responsibility for this effort is the Medical First Responder Coordination Branch (MFRC).

Purpose

The Department of Homeland Security, Office of Health Affairs, in an effort to bring solutions to published EMS Domestic Preparedness Gaps, charged the National Association of State EMS Officials (NASEMSO) with leading a process to analyze and summarize specific published EMS preparedness reports and to develop a document that outlines implementable solutions to the identified gaps.

To accomplish this charge, NASEMSO seated an EMS Domestic Preparedness Strategy Group consisting of representatives of thirteen EMS stakeholder organizations, representing EMS at the federal, national, state, tribal, and local levels. Represented constituencies included state EMS officials, fire chiefs, EMS physicians, emergency managers, 911 communication center leaders, private-sector ambulance companies, local EMS managers, and federal representatives from the departments and various programs that have EMS leadership responsibilities.

The NASEMSO EMS Domestic Preparedness Strategy Group met in spring and summer of 2014. At the first meeting, held in March 2014, the NASEMSO EMS Domestic Preparedness Strategy Group reviewed a comprehensive summary of the EMS domestic preparedness literature (Appendix B) and based on that literature, identified and prioritized the most significant gaps in EMS domestic preparedness (Appendix C). The strategy group also identified general solutions to each of the ten most important gap areas.

Between the two NASEMSO EMS Domestic Preparedness Strategy Group meetings, NASEMSO staff and preparedness committee members developed the draft Emergency Medical Services Domestic Preparedness Improvement Strategy, consisting of goals, strategies, tasks, and activities to mitigate the ten most significant gaps in EMS preparedness and response. These goals, strategies, tasks and

activities were structured to provide specific guidance and assign responsibilities to EMS organizations at the federal, national, state, tribal, and local levels.

At the June 2014 meeting, the NASEMSO EMS Domestic Preparedness Strategy Group reviewed, discussed, and provided thoughtful suggestions to revise the draft Emergency Medical Services Domestic Preparedness Improvement Strategy. The Strategy Group also discussed at length, the barriers to improve emergency medical services system preparedness and disaster response at the federal, national, state, tribal and local levels.

Following the June 2014 meetings, the penultimate revision of the Emergency Medical Services Domestic Preparedness Improvement Strategy was distributed to strategy group members for their final review and recommendations. Final recommendations were reviewed and incorporated into the final version of the Emergency Medical Services Domestic Preparedness Improvement Strategy. This strategy was approved by the NASEMSO membership and submitted to the US Department of Homeland Security (DHS), Office of Health Affairs (OHA), Workforce Health and Medical Support (WHMS) Division, Medical First Responder Coordination Branch (MFRC).

Barriers to Improve EMS Preparedness and Response

Significant and common barriers to improve EMS Systems' preparedness and response include diminishing sources of operational revenue, limited federal preparedness grant monies, and lack of supporting legislation and regulation at the state and local level.

To understand the complexity associated with improving the nation's EMS systems' ability to appropriately respond to a natural disaster or terrorist incident, it is necessary to understand the diversity in those EMS systems. There is great disparity in EMS systems, from the skill level of EMS personnel, to system organizational structure, from funding mechanisms, to the capabilities of the EMS systems. Many EMS organizations must use a variety of funding mechanisms, which have varying degrees of success. Some systems have strong local or regional coordination, others do not.²

The ability of our nation's EMS systems to respond to a significant natural disaster or terrorist incident is predicated upon the strength and capability of local, regional, and state EMS Systems. Throughout the nation, in large cities, suburban communities, and small towns, EMS systems are struggling to meet the day to day needs of the public, largely due to diminishing financial support for EMS services, and practices to decrease reimbursement. Many of these EMS Systems are not prepared to respond to a natural or man-made disaster in their jurisdiction.

Stable EMS Funding is Necessary for Stable EMS Systems

Historically, emergency medical services systems have been paid through a variety of funding mechanisms. Payments for many EMS services are primarily based on fee-for-service reimbursement, provided by a plethora of government and public-sector insurance companies. Fee for service payments were designed to compensate for the direct cost of the service provided to an individual patient. Fee for service payments do not adequately cover the cost of readiness--the cost of providing a staffed first response vehicle and/or ambulance that is ready to respond 24 hours per day, 365 days per year.

During the last decade, aggregate fee for service reimbursement for EMS providers has decreased to levels that threaten many EMS systems, especially providers of ambulance service, with insolvency. Historically, costs for the uninsured and Medicaid patients were offset with reimbursement from higher paying insurance programs, such as Medicare or commercial plans. Recently, many government and commercial insurers have reduced their reimbursement rates or created increasingly complex processes to reduce the number of bills they will pay, resulting in lower payments to ambulance providers.

While it will be a challenging endeavor, national, state, and local leaders in government, medical reimbursement, EMS, and other healthcare services must come together and recommend a new and adequate model to fund sustainable emergency medical services throughout the nation.

² Institute of Medicine. Committee on the Future of Emergency Care in the United States Health System. Future of Emergency Care: Emergency Medical Services at the Crossroads. The National Academies Press. Washington D.C. The National Academies Press. 2007. Pages 2-4.

Federal Grant Support of EMS

As noted above, EMS systems must be sustainable, based on an allocation system that adequately funds the costs of readiness and emergency preparedness, in addition to the cost of response. EMS systems should use grants only as seed money to offset the costs of creating new capabilities that can be maintained through other revenue sources. Relative to federal preparedness grants, EMS is a profoundly underfunded component within the medical and public health and first responder communities. Although EMS is one of three of the nation's traditional first responders, EMS receives extremely limited funding—it has been reported that EMS receives only four percent of federal disaster preparedness funds from DHS and HHS. Federal grant funding for EMS functions has markedly decreased during the past three years. A significant portion of state and territorial EMS offices are not materially participating in the federal grants to improve domestic preparedness and response, and of those participating, there is great disparity in the amount of funding requested and received.

Resolving the lack of federal preparedness grant funding received by EMS is not simple. While most Department of Homeland Security and Department of Health and Human Services preparedness grant programs allow funds to be spent on EMS, they do not mandate minimum funding levels for EMS. In many states and localities, less influential EMS agencies lose grant funds to more influential law, fire, and public health organizations. While the solution is not clear, increasing dedicated all-purpose federal funding for EMS-focused preparedness and response will induce greater participation and uniformity among state EMS offices and local EMS systems, and facilitate the improvements necessary to improve EMS preparedness and response capabilities. Additionally, EMS organizations at the local and state level must more effectively engage in the preparedness grant allocation process.

Statutory and Regulatory Support

In most states, statutory and regulatory changes will improve EMS preparedness and response. Legislation is necessary to authorize interstate compacts that allow EMS personnel licensed in another state to function in a state in advance of a disaster and for incidents that do not involve activation of the Emergency Management Assistance Compact, as a component of an interstate mutual aid response. Similarly, at the state level, legislation is necessary to provide legal protections when EMS systems and EMS personnel deviate from routine standards of care to provide crisis care to victims of mass casualty incidents, such as natural disasters and terrorist incidents. Depending on states' statutory schemas, state regulatory changes or local statutes and regulation may also be necessary to implement or support improvements in EMS system preparedness and response.

Goal Implementation Process and Summary of Goals

Goal Implementation Process

The EMS Domestic Preparedness Improvement Strategy identifies ten goals. For each goal, the strategy advocates that a workgroup, consisting of representatives from national EMS stakeholder organizations and other EMS partners, be seated by a convening authority. The NASEMSO is willing to serve as the convening authority for the workgroups, as it served as the convening authority for the Emergency Medical Services (EMS) Domestic Preparedness Improvement Project.

Rather than seating a workgroup for each of the ten goals, the EMS Domestic Preparedness Strategy Group and NASEMSO contemplate seating one or two workgroups to accomplish the ten goals identified in this strategy. Each of the work groups will include membership similar to the membership of the EMS Domestic Preparedness Improvement Project, and may incorporate additional subject matter or technical advisors, as needed to accomplish each goal.

Using no more than two workgroups to accomplish the ten goals described in this strategy leverages established professional relationships among national EMS stakeholder organizations, and encourages concepts, solutions, and strategies that remain consistent among goals. Workgroups are necessary to form consensus among national EMS stakeholder organizations, which will be necessary for the successful implementation of each goal. While the ten goals consider many technical issues, they also raise significant political issues, because future national, state, or local standards, guidelines, and funding allocations may be based directly or indirectly on these goals.

The EMS Domestic Preparedness Strategy Workgroup acknowledges that this strategy does not complete the Domestic Preparedness Improvement Project. Rather, this report signals the commencement of a long-term, multi-year, national effort to implement solutions that solve or reduce identified gaps in EMS preparedness and response at the federal, national, state, tribal, and local levels.

The ten goals in this project are listed on the following page, arraigned in four general categories: (1) Development and Promulgation of an EMS Strategy; (2) Creation of EMS Preparedness and Response Guidelines; (3) EMS Preparedness and Response Data, Assessments and Analysis; and, (4) EMS Preparedness Organizational Relationships, Responsibilities, and Structures. Goals are not listed in order or priority.

Summary of Goals

Development and Promulgation of an EMS Preparedness Strategy

Goal One: To create an EMS Preparedness Agenda for the Future

Creation of EMS Preparedness and Response Guidelines

Goal Two: To establish comprehensive EMS System preparedness capabilities guidelines

Goal Three: To develop EMS personnel preparedness core competencies guidelines

Goal Four: To establish guidelines, which provide best practices for EMS responses to high risk situations

Goal Five: To create model guidelines and model legislation, including legal protections, to facilitate the development of EMS crisis standards of care

Goal Six: To evolve EMS systems, organizations, and personnel to provide optimal care to pediatric patients during medical disaster situations

EMS Preparedness and Response Data, Assessments, and Analysis

Goal Seven: To develop sufficiently-detailed capability standards, metrics, and assessment methodologies to guide EMS system preparedness planning and assessments

Goal Eight: To create a national EMS disaster data collection and analytic capability, which can inform EMS preparedness and response initiatives

EMS Preparedness Organizational Relationships, Responsibilities, and Structures

Goal Nine: To improve working relationships and interaction between individual state's emergency management agencies and emergency medical services' offices

Goal Ten: To determine whether the current federal structure for EMS optimally promotes, leads, and funds EMS preparedness and response in the regions, states, and locally

EMS Stakeholders and Definition of Key Terms

The complete list of terms and acronyms used throughout this document are defined in Appendix A. However, because Emergency Medical Services (EMS) encompasses numerous disciplines, sub disciplines, and many types of stakeholder organizations, the terms that often have disparate meanings, are vague or can be easily misconstrued are described in the body of this document. For the purposes of this document, the following terms have the following specific meanings:

EMS provider:	A public, non-profit or private sector organization/agency that directly provides first response or ambulance services or a closely affiliated service, such as medical rescue services.
EMS stakeholders:	An individual, group or organization who affects or can be affected by a change in EMS standards, organization, laws, doctrine or funding.
EMS stakeholder representatives:	A group or organizations that represents EMS stakeholders who share a common interest, such as the American Ambulance Association is a stakeholder representative group of ambulance providers and the International Association of Fire Fighters is a stakeholder representative group of firefighters. This term includes labor and professional organizations.
EMS system:	Public, non-profit, and private sector providers of first response and ambulances services, including their communications centers, and hospitals that receive patients from ambulance services.
Expert panel:	A panel of individuals recognized for their expertise in an area or function of EMS or closely related discipline. Relative to EMS, expert panels include representatives of frontier, rural, and urban EMS providers; local, tribal, territorial, state, and federal governments; and EMS stakeholder representatives from national EMS organizations.
Federal government:	Departments, agencies, offices, boards and commissions operated by the government of the United States of America.
Federal Interagency Committee on Emergency Medical Services (FICEMS):	FICEMS was established in 2005 by the US Department of Transportation Reauthorization, Public Law 109-59 (Section 10202), to ensure coordination among Federal agencies involved with State, local, tribal, and regional emergency medical services and 9-1-1 systems. In addition to an appointed

State EMS Director, FICEMS includes ten representatives from among the following federal agencies: Department of Defense (DoD), Department of Health and Human Services (DHHS), Department of Homeland Security (DHS), Federal Communications Commission (FCC), and National Highway Traffic Safety Administration (NHTSA) Department of Transportation (DOT).

- Funding:** The provision of financial support, typically through one time funds or funds designated for a specific purpose, such as grants, or on-going funding or general funding, such as levels of fee for service reimbursement. Also see support.
- Local government:** The lowest tier of government within a state. Local government often operates as a city or county, prefecture, district, township, town, borough, parish, municipality, village, or shire.
- National EMS Organizations:** National EMS organizations are membership-driven EMS stakeholder organizations that are national in scope. Also see EMS Stakeholder representatives. This term includes national labor and professional organizations with roles or responsibilities relating to EMS.
- National Highway Traffic Safety Administration (NHTSA):** NHTSA is a component of the U.S. Department of Transportation. NHTSA carries out safety programs to reduce traffic injuries and deaths. NHTSA's Office of EMS reduces death and disability by providing leadership and coordination to the EMS community in assessing, planning, developing, and promoting comprehensive, evidence-based emergency medical services and 9-1-1 systems. Specifically, NHTSA partners with peer agencies to advance a National vision for EMS, and promotes the development of resources that EMS managers need to make critical decisions.
- Non-Governmental Organization (NGO):** Non-governmental organizations (NGOs) are private sector or non-profit organizations that are not part of a government organization.
- State government:** The government of any of the fifty states.

Support:

Support is any assistance provided from one organization to another organization. Support typically means financial support; however, support also includes technical, administrative or logistical support, such as providing expert advice or background, providing document copying and distribution services, or arraigning or providing meeting space. Also see funding.

Territorial government:

The government of a territory subject to and belonging to the United States, but not within the national boundaries or any individual state. This includes tracts of land or water not included within the limits of any State and not admitted as a State into the Union. Territories of the United States include Puerto Rico, the Northern Mariana Islands, the US Virgin Islands, American Samoa, Guam, and the United States Minor Outlying Islands.

Tribal government:

The government of any of 566 federally-recognized Indian tribes and Alaska Native entities as provided by the U.S. Constitution, treaties, court decisions, and federal statutes.

Goal One: To create an EMS Preparedness Agenda for the Future

Gap and Summary

An EMS preparedness agenda for the future must be developed. There is not a nationally-applicable, stakeholder consensus document that describes the desired future state of EMS preparedness, nor provides a roadmap to achieve the desired future state of EMS preparedness. A consensus-based EMS preparedness agenda for the future will provide direction and a roadmap to unify EMS leaders and organizations' preparedness efforts.

Solution

The National Association of State EMS Officials and other national EMS organizations should approach the National Highway Traffic Safety Administration (NHTSA) to determine whether a preparedness component could be incorporated into the forthcoming revision of the *EMS Agenda for the Future*. If integration of a preparedness component is not possible, NASEMSO should convene a work group to develop an EMS Preparedness Data Dictionary and Assessment Guidelines.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to develop an EMS Preparedness Agenda; either integrated into the *EMS Agenda of the Future* or as a separate document.
2. Develop the draft *EMS Preparedness Agenda for the Future*.
3. Distribute the draft *EMS Preparedness Agenda for the Future* to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive public comment from EMS Stakeholder organizations and revise the *EMS Preparedness Agenda for the Future* based on those comments.
5. Publish the *EMS Preparedness Agenda for the Future*.
6. Encourage organizations and state and local governments to implement the *EMS Preparedness Agenda for the Future*. Incentivize the adoption of these standards through grants and other mechanisms.

Goal Two: To establish comprehensive EMS System preparedness capabilities guidelines

Gap and Summary

While there are Core Capabilities³ for preparedness, these capabilities may not be sufficiently specific and detailed for use in operational and tactical planning at EMS provider, local government or state government levels and within EMS systems of various sizes and complexities. Comprehensive EMS System Preparedness Capabilities will facilitate EMS systems' developing preparedness capabilities and measuring themselves against optimal and acceptable performance expectations.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to evaluate existing preparedness standards contained in federal government documents and grant programs, evaluate other authoritative documents, including IOM reports and academic writings of the Center for Homeland Security and Defense, and develop EMS System Preparedness Capabilities Guidelines.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to review and to determine the appropriateness and applicability of the EMS System Preparedness Capabilities to EMS systems of various sizes, population densities, and risk.
2. One or more subject matter experts should review and aggregate existing EMS system preparedness standards contained in HPP and PHEP grants, best practices, and other authoritative sources, including academic writings of the Center for Homeland Security and Defense.
3. Develop the draft EMS System Preparedness Capabilities document.
4. Disseminate the draft EMS System Preparedness Capabilities document to EMS stakeholder organizations at the local, tribal, state, and national levels for review and comment.
5. Receive public comment from EMS Stakeholder organizations and revise the EMS System Preparedness Capabilities document based on those comments.
6. Publish the EMS System Preparedness Capabilities.

³ Core Capabilities are the 31 distinct critical elements needed to achieve the National Preparedness Goal, as developed by the Federal Emergency Management Administration (FEMA). The EMS System Preparedness Capabilities discussed in this goal are distinct from FEMA's 31 Core Capabilities.

7. Encourage organizations and state and local governments to adopt the EMS System Preparedness Capabilities. Incentivize the adoption of these standards through grants and other mechanisms.
8. Assess the effectiveness and accuracy of the EMS System Preparedness Capabilities through a formal process.
9. Revise the EMS System Preparedness Capabilities document based on the assessment.

Goal Three: To develop EMS personnel preparedness competency guidelines

Gap and Summary

There is not a single source of nationally-accepted preparedness competencies for EMS personnel. Without such a guideline, EMS system leaders and planners will not know the preparedness competency of each level of EMS personnel. Nationally accepted preparedness competency guidelines will establish EMS personnel competency baselines. These baselines will facilitate the development of sound EMS operational and tactical planning and allow the development of interoperative EMS systems and intersystem-mutual aid.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to evaluate existing sources of preparedness competency standards for EMS personnel. This workgroup should also develop and promulgate EMS preparedness competency guidelines, specifically addressing areas such as personnel self-protection and scene safety, patient treatment and mass care, incident command, and patient distribution.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to review, select or develop EMS Personnel Preparedness Competencies.
2. One or more subject matter experts should review and aggregate existing EMS personnel preparedness standards contained in Core Competencies⁴, Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness (PHEP) grants, best practices, and other authoritative sources.
3. Develop the draft EMS Personnel Preparedness Competencies document.
4. Distribute the draft EMS Personnel Preparedness Competencies document to EMS stakeholder organizations at the local, tribal, state, and national levels for review and comment.
5. Receive public comment from EMS Stakeholder organizations and revise the EMS Personnel Preparedness Competencies document based on those comments.
6. Publish the EMS Personnel Preparedness Competencies.

⁴ Core Capabilities are the 31 distinct critical elements needed to achieve the National Preparedness Goal, as developed by the Federal Emergency Management Administration (FEMA). The EMS Personnel Preparedness Competencies discussed in this goal are distinct from FEMA's 31 Core Capabilities.

7. Encourage organizations and state and local governments to adopt the EMS Personnel Preparedness Competencies. Incentivize the adoption of these standards through grants and other mechanisms.
8. Assess the effectiveness and accuracy of the EMS Personnel Preparedness Competencies through a formal process.
9. Revise the EMS Personnel Preparedness Competencies based on the assessment.

Goal Four: To establish guidelines, which provide best practices for EMS responses to high risk situations

Gap and Summary

There are limited national standards and few nationally-recognized best practices for EMS responses across all hazards, especially to high-risk situations responses such as active shooters, responses to bombings, and incidents where EMS responders become the target. Consensus-based national guidelines, based on best practices of local law enforcement and local EMS systems, will assist EMS systems to adopt standards that provide rescuer safety, are clinically-based, and reflect current, best-practice models of high-risk EMS response. This national dialogue will also decrease the probability that some EMS systems adopt response and treatment models that put rescuers and patients at unnecessary risk.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to evaluate existing local, state, and national best practice documents for EMS responses across all hazards, especially into high-risk situations responses such as active shooters, responses to bombings, and incidents where EMS responders become the target. Based upon a review of these documents, this workgroup should specifically involve those organizations that have developed consensus documents relating to one or more of the all hazard topic areas. Based upon these documents and the growing body of information derived from local planning, the workgroup should develop guidelines to help local EMS systems develop policies and procedures consistent with consensus documents and generally accepted best practices.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives, including representatives from the law enforcement community, to develop Guidelines for EMS Responses to High-Risk Situations. Consider having representatives from the Committee for Tactical Emergency Care (C-TECC) participate in this group.
2. Develop Guidelines for EMS Responses into High-Risk Situations document.
3. Distribute the draft Guidelines for EMS Responses to High-Risk Situations document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive public comment from EMS Stakeholder organizations and revise the Guidelines for EMS Responses to High-Risk Situations document based on those comments.
5. Publish the Guidelines for EMS Responses to High-Risk Situations.

6. Encourage organizations and state and local governments to adopt Guidelines for EMS Responses to High-Risk Situations. Incentivize the adoption of these standards through grants and other mechanisms.
7. Assess the effectiveness and accuracy of the Guidelines for EMS Responses to High-Risk Situations through a formal process.
8. Revise the Guidelines for EMS Responses to High-Risk Situations based on the assessment.

Goal Five: To create model guidelines and model state or local legislation, including legal protections, to facilitate the development of EMS crisis standards of care

Gap and Summary

There is a lack of well-recognized national or Federal crisis standards of care guidelines for EMS systems and EMS personnel. In most states there is not legal protection for EMS systems, EMS organizations, and EMS personnel when deviating from the normal standards of care. Uniform and implementable standards of care must be developed that allow EMS systems, organizations, and providers to provide rationale disaster medical care during significant disasters, with adequate legal protection. Official, well recognized standards of crisis care that include legal protections are necessary to allow EMS systems to transition from providing routine EMS care during a significant disaster to providing life-saving care to those with the greatest probability of survival.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to evaluate existing local, state, and federal crisis standards of care for EMS System and to develop model crisis standards of care guidelines and processes for EMS systems and EMS personnel. This workgroup should also identify processes and tools that will support the passage of legislation at the state and local levels to grant legal protections for EMS systems, EMS organizations, and EMS personnel when implementing crises care.

Implementation Strategy

1. Seat an expert group of EMS Stakeholder representatives and clinicians to develop Model Guidelines for EMS Crisis Standards of Care.
2. Develop the draft Model Guidelines for EMS Crisis Standards of Care document.
3. Distribute the draft Model Guidelines for EMS Crisis Standards of Care document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive public comment from EMS Stakeholder organizations and revise the Model Guidelines for EMS Crisis Standards of Care document based on those comments.
5. Publish the Model Guidelines for EMS Crisis Standards of Care.

6. Encourage organizations and state and local governments to adopt the Model Guidelines for EMS Crisis Standards of Care. Incentivize the adoption of these standards through grants and other mechanisms.
7. At the federal or state level, develop political support to pass legal protections for EMS personnel when using the Model Guidelines for EMS Crisis Standards of Care.
8. Asses the effectiveness and accuracy of the Model Guidelines for EMS Crisis Standards of Care through a formal process.
9. Revise the Model Guidelines for EMS Crisis Standards of Care based on the assessment.

Goal Six: To evolve EMS systems, organizations, and personnel to provide optimal care to pediatric patients during medical disaster situations

Gap and Summary

EMS systems should continue to improve the care they provide to pediatric populations during medical disaster responses. Improving EMS systems' care of pediatric patients during disasters is significant because children comprise approximately 27% of the nation's population and account for nearly 20% of all emergency department visits. Improving EMS systems' organization, policies and practices, training, equipment, and quality may improve pediatric outcome during disasters with pediatric medical consequences.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to review current pediatric medical disaster documents, including documents from state EMS for Children programs, and develop best practice EMS systems guidelines for the care of pediatric patients during medical disasters.

Implementation Strategy

1. Seat an expert group of EMS and pediatric stakeholders' representatives to develop a Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.
2. One or more subject matter experts should review and aggregate existing documents related to standards of EMS care for pediatrics, in disaster and medical disaster situations.
3. Develop the draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters document.
4. Distribute the draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
5. Receive public comment from EMS Stakeholder organizations and revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters, based on those comments.
6. Publish the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.
7. Encourage organizations and state and local governments to adopt the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters. Incentivize the adoption of these standards through grants and other mechanisms.

8. Assess the effectiveness and accuracy of Guideline for the Care of Pediatrics during Medical Surge Events and Disasters through a formal process.
9. Revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters based on the assessment.

Goal Seven: To develop sufficiently-detailed capability standards, metrics, and assessment methodologies to guide EMS system preparedness planning and assessments

Gap and Summary

There are limited detailed and sufficiently-focused guidelines that describe methods and metrics to assess and evaluate EMS preparedness and response. Existing metrics and assessment methods are generally not sufficiently-detailed to validate local and state EMS systems' preparedness capabilities. Standardized and focused assessment methodologies and metrics will facilitate the accurate measure of EMS systems' ability to meet applicable performance standards and to assess EMS systems' preparedness capabilities.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to develop metrics and assessment methodologies to facilitate the assessment of local and state EMS systems. These metrics and assessment methodologies should be capable of assessing the guidelines and standards created by other workgroups, including guidelines and standards related EMS system preparedness capabilities, EMS personnel preparedness competencies, and pediatric disaster care.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to develop an EMS Preparedness Data Dictionary and Assessment Guidelines.
2. Develop a draft EMS Preparedness Data Dictionary and Assessment Guidelines, including uniform data collection standards, and input, process, output, and outcome-based assessment methodologies.
3. Distribute the draft EMS Preparedness Data Dictionary and Assessment Guidelines to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive comments from EMS Stakeholder organizations and revise the EMS Preparedness Data Dictionary and Assessment Guidelines based on those comments.
5. Publish the EMS Preparedness Data Dictionary and Assessment Guidelines.
6. Encourage professional organizations and state, local, and tribal governments to adopt the EMS Preparedness Data Dictionary and Assessment Guidelines. Incentivize the adoption of these standards through grants and other mechanisms.

7. Assess the effectiveness and accuracy of the EMS Preparedness Data Dictionary and Assessment Guidelines through a formal process.
8. Revise the EMS Preparedness Data Dictionary and Assessment Guidelines document based on the assessment.

Goal Eight: To create a national EMS disaster data collection and analytic capability, which can inform EMS preparedness and response initiatives

Gap and Summary

There is not a national data system for EMS disaster data or the capability to aggregate EMS disaster data from disparate databases. While NEMSIS is a widely adopted EMS dataset, it does not have the data elements necessary to adequately analyze EMS disaster preparedness and response. The ability to collect and analyze EMS disaster data, often from existing and disparate data sources, can inform activities to improve EMS disaster preparedness and response at the local, state, national and federal levels. The ability to collect and analyze EMS disaster data will encourage EMS disaster research, identify EMS disaster best practices, develop evidence bases for EMS disaster planning, support academic review of EMS disaster practices, and justify grant-based funding of EMS disaster initiatives.

Solution

The National Association of State EMS Officials, other national EMS organizations, appropriate federal partners, and data and information system professional should convene a workgroup to identify the desired EMS data collection and analytic capability. The workgroup should also understand relevant existing and emerging datasets and data sources, including those from other disciplines, and based upon this evaluation; determine the appropriate process to create a national EMS disaster data collection and analytic capability.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders, and data and information system experts to identify the desired EMS data collection and analytic capability.
 - Identifying the desired EMS data collection and analytic capability requires: (a) detailed information about desired and existing data sets; (b) expert understanding of the IT requirements to data mine existing and new databases or creating a single database or data system; and, (c) expertise in HIPAA and other medical privacy laws.
2. Identify the dataset necessary to support the desired EMS disaster analytic capability.
3. Comprehensively assess the available datasets, databases, and data systems to determine whether it is better to use a data mining/data aggregation model or develop a unique database.
4. Based upon the results of the dataset identification project (Implementation Strategy 2) and the dataset/database/data system assessment (Implementation Strategy 3), select and hire an IT-savvy professional project manager.
5. The professional project manager should work with the working group to develop a project plan to

define the scope and deliverables of the EMS disaster analytic capability project.

6. Release a Request for Proposal (RFP) to organizations interested in supporting the EMS disaster analytic capability project and who possess the comprehensive abilities demanded by this project.
7. Hire the appropriate organization to complete this project.
8. Plan, monitor, manage, and correct the organization to assure the goals and objectives of the EMS disaster analytic capability project are met.

Goal Nine: To improve working relationships and interaction between individual state's emergency management agencies and emergency medical services' offices

Gap and Summary

There are misperceptions of joint and organizational roles and responsibilities and inconsistent relationships between some state's Emergency Medical Services Offices (EMS) and Emergency Management Agencies (EMA). To encourage successful medical disaster planning and response efforts, it is important to resolve these issues within individual states. Strong professional relationships and clear joint and organizational roles and responsibilities between a state's emergency management agency and a state's EMS office will improve medical disaster planning and medical disaster response.

Solution

Representatives from the National Association of State EMS Officers (NASEMSO) and the National Emergency Managers Association (NEMA) should meet to better understand concerns relating to organizational roles and responsibilities, and relationships. These representatives may consider developing model tools, which can be used to help resolve typical interagency challenges. Within individual states, EMS officers and emergency managers should identify and work toward resolving the specific issues most relevant to their state.

Implementation Strategy

1. Representatives from the National Association of State EMS Officers (NASEMSO) and the National Emergency Managers Association (NEMA) should meet to better understand concerns relating to organizational roles and responsibilities, and relationships. NASEMSO and NEMA representatives should explore methods to clarify and describe issues, using tools such as membership surveys and facilitated discussions.
2. NASEMSO and NEMA should develop model interagency liaison guidelines and other tools to help individual state's EMS officers and emergency managers resolve any issues.
3. Individual state's EMS officers and emergency managers should identify specific problems and resolutions for issues within their state. Based on the characteristics of the problem(s), solutions may include legislation, interdepartmental policies and procedures, formally defining roles, responsibilities, structures and processes, and building social capital.
4. State's EMS officers and emergency managers should identify and work toward resolving the specific issues most relevant to their state.
5. NASEMSO and NEMA, and state EMA and EMS leaders should meet in two years following the start of this goal to assess whether state EMA and EMS office relationships have improved.

Goal Ten: To determine whether the current Federal structure for EMS optimally promotes, leads, and funds EMS preparedness and response in the regions, states, and locally

Gap and Summary

Determine whether the current Federal structure for EMS optimally represents the diversity of EMS in the local, state, tribal states, territories, and regions' EMS systems, and in support of comprehensive EMS preparedness and response. The optimal federal structure for EMS would provide coordination in federal EMS leadership, doctrine, planning, funding, and messaging. Yet, it is possible that the current federal structure for EMS, including coordination by the Federal Interagency Committee on EMS (FICEMS), may optimally represent the diversity in EMS systems' governance, structure, and composition.

Solution

The National Association of State EMS Officials, other national EMS organizations, and appropriate federal partners should convene a workgroup to assess the optimal federal structure for EMS in support of EMS system preparedness and response at the local, state, tribal states, regional and national level. The optimal federal structure would provide coordination in leadership, doctrine, planning, funding and messaging.

Implementation Strategy

1. Seat an expert group of EMS Stakeholders and leadership from the Federal agencies that have input to the national EMS system to evaluate the benefits of a lead federal agency for EMS.
2. Develop a draft position paper reviewing the benefits and limitations of various federal EMS lead agency organizational structures.
3. Distribute the draft position paper to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. EMS stakeholders and stakeholder organizations at the local, tribal, state and national levels provide comments to the Federal Interagency Committee on EMS (FICEMS) regarding the benefits of a federal lead agency for EMS.
5. The Federal Interagency Committee on EMS (FICEMS) reviews and considers recommendations and determines next appropriate steps.

Appendix A: Acronyms and Terms Defined

Advanced Emergency Medical Technician:

The Advanced Emergency Medical Technician (AEMT) provides basic and limited advanced emergency medical care and transportation for critical and emergent patients who access the emergency medical system. This individual possesses the basic knowledge and skills necessary to provide patient care and transportation. Advanced Emergency Medical Technicians function as part of a comprehensive EMS response, under medical oversight. Advanced Emergency Medical Technicians perform interventions with the basic and advanced equipment typically found on an ambulance.

Department of Health and Human Services (HHS):

The Department of Health and Human Services (HHS) is the United States government's principal agency for protecting the health of all Americans and providing essential human services, especially for those who are least able to help themselves. HHS is headed by the Secretary who is the chief managing officer for including 11 operating divisions, 10 regional offices, as well as the Office of the Secretary.

Department of Homeland Security (DHS):

The Department of Homeland Security prevents terrorism and enhances security; manages our borders; administers immigration laws; secures cyberspace; and ensures disaster resilience. The department provides the coordinated responses to terrorist attacks, natural disasters or other large emergencies while working with public and private sector partners. DHS works with industry and state, local, tribal and territorial governments to secure critical infrastructure and information systems.

Emergency Management Accreditation Program (EMAP):

The Emergency Management Accreditation Program is the voluntary assessment and accreditation process for emergency management programs. EMAP provides a means for strategic improvement of emergency management programs, culminating in accreditation.

Emergency Medical Responder:	The Emergency Medical Responder (EMR) possesses the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response and to assist higher level personnel at the scene and during transport. Emergency Medical Responders perform basic interventions with minimal equipment.
Emergency Medical Services (EMS):	Emergency Medical Services, more commonly known as EMS, is a system that provides emergency medical care. It is activated by a call for help, after an incident of serious illness or injury. The focus of EMS is emergency medical care of the patient(s). EMS is most easily recognized when emergency vehicles or helicopters are seen responding to emergency incidents. But EMS is much more than a ride to the hospital. It is a system of coordinated response and emergency medical care, involving multiple people and agencies. A comprehensive EMS system is ready every day for every kind of emergency.
EMS for Children (EMS-C):	The EMS for Children Program is located in the Health Resources and Services Administration, Maternal and Child Health Program. The mission of the EMS for Children program is to reduce child and youth mortality and morbidity caused by severe illness or trauma. EMS for Children aims to ensure that state of the art emergency medical care is available for the ill and injured child or adolescent; pediatric service is well integrated into an emergency medical service system backed by optimal resources; and the entire spectrum of emergency services, including primary prevention of illness and injury, acute care, and rehabilitation, is provided to children, adolescents, and adults.
EMS provider:	A public, non-profit or private sector organization/agency that directly provides first response or ambulance services or a closely affiliated service, such as medical rescue services.
EMS stakeholders:	An individual, group or organization who affects or can be affected by a change in EMS standards, organization, laws, doctrine or funding.
EMS stakeholder representatives:	A group or organizations that represents EMS stakeholders who share a common interest, such as the American Ambulance Association is a stakeholder representative group of ambulance providers and the International Association of Fire Fighters is a

stakeholder representative group of firefighters. This term includes labor and professional organizations.

EMS system: Public, non-profit, and private sector providers of first response and ambulances services, including their communications centers, and hospitals that receive patients from ambulance services.

Emergency Medical Technician (EMT): The Emergency Medical Technician (EMT) provides basic emergency medical care and transportation for critical and emergent patients who access the emergency medical system. The EMT possesses the basic knowledge and skills necessary to provide patient care and transportation.

Expert panel: A panel of individuals recognized for their expertise in an area or function of EMS or closely related discipline. Relative to EMS, expert panels include representatives of frontier, rural, and urban EMS providers; local, tribal, territorial and state governments; and EMS stakeholder representatives from national EMS organizations.

Federal government: Departments, agencies, offices, boards and commissions operated by the government of the United States of America.

Federal Interagency Committee on Emergency Medical Services (FICEMS): FICEMS was established in 2005 by the US Department of Transportation Reauthorization, Public Law 109-59 (Section 10202), to ensure coordination among Federal agencies involved with State, local, tribal, and regional emergency medical services and 9-1-1 systems. In addition to an appointed State EMS Director, FICEMS includes ten representatives from among the following federal agencies: Department of Defense (DoD), Department of Health and Human Services (DHHS), Department of Homeland Security (DHS), Federal Communications Commission (FCC), and National Highway Traffic Safety Administration (NHTSA) Department of Transportation (DOT).

Funding: The provision of financial support, typically through one time funds or funds designated for a specific purpose, such as grants, or on-going funding or general funding, such as levels of fee for service reimbursement.

Hospital Preparedness Program (HPP): The Hospital Preparedness Program (HPP) provides leadership and funding through grants and cooperative agreements to States, territories, and eligible municipalities to improve surge capacity and enhance community and hospital preparedness for public health emergencies. The HPP Program funding supports enhanced planning, increased integration, and improved health infrastructure. The program is managed the Office of the Assistant Secretary for Preparedness and Response, (ASPR) which provides programmatic oversight and works with its partners in State, territorial, and municipal government to ensure that the program’s goals are met or exceeded

Institute of Medicine (IOM): The Institute of Medicine (IOM) is an independent, nonprofit organization that works outside of government to provide unbiased and authoritative advice to decision makers and the public. The IOM is the health arm of the National Academy of Sciences. The aim of the IOM is to help those in government and the private sector make informed health decisions by providing evidence upon which they can rely. Each year, more than 2,000 individuals, members, and nonmembers volunteer their time, knowledge, and expertise to advance the nation’s health through the work of the IOM.

Local government: The lowest tier of government within a state. Local government often operates as a city or county, prefecture, district, township, town, borough, parish, municipality, village, or shire.

National EMS Organizations: National EMS organizations are membership-driven EMS stakeholder organizations that are national in scope. Also see EMS Stakeholder representatives. This term includes national labor and professional organizations with roles or responsibilities relating to EMS.

National Highway Traffic Safety Administration (NHTSA): NHTSA is a component of the U.S. Department of Transportation. NHTSA carries out safety programs to reduce traffic injuries and deaths. NHTSA’s Office of EMS reduces death and disability by providing leadership and coordination to the EMS community in assessing, planning, developing, and promoting comprehensive, evidence-based emergency medical services and 9-1-1 systems. Specifically, NHTSA partners with

peer agencies to advance a National vision for EMS, and promotes the development of resources that EMS managers need to make critical decisions.

Non-Governmental Organization (NGO):

Non-governmental organizations (NGOs) are private sector or non-profit organizations that are not part of a government organization.

Paramedic:

The Paramedic is a health care professional whose primary focus is to provide advanced emergency medical care for critical and emergent patients who access the emergency medical system. This individual possesses the complex knowledge and skills necessary to provide patient care and transportation. Paramedics function as part of a comprehensive EMS response, under medical oversight. Advanced Emergency Medical Technicians perform interventions with the basic and advanced equipment typically found on an ambulance.

Public Health Emergency Preparedness Program (PHEP):

The Public Health Emergency Preparedness (PHEP) cooperative agreement is a critical source of funding for state, local, tribal, and territorial public health departments to upgrade their ability to effectively respond to a range of public health threats, including infectious diseases, natural disasters, and biological, chemical, nuclear, and radiological events. Preparedness activities funded by the PHEP cooperative agreement are targeted specifically for the development of emergency-ready public health departments that are flexible and adaptable.

State government:

The government of one of the fifty states.

Support:

Support is any assistance provided from one organization to another organization. Support typically means financial support; however, support also includes technical, administrative or logistical support, such as providing expert advice or background, providing document copying and distribution services, or arraigning or providing meeting space. Also see funding.

Territorial government:

The government of a territory subject to and belonging to the United States, but not within the national boundaries or any individual state. This includes tracts of land or water not

included within the limits of any State and not admitted as a State into the Union. Territories of the United States include Puerto Rico, the Northern Mariana Islands, the US Virgin Islands, American Samoa, Guam, and the United States Minor Outlying Islands.

Tribal government:

The government of any of 565 federally-recognized tribes Indian and Alaska Native entities as provided by the U.S. Constitution, treaties, court decisions and federal statutes.

Appendix B: Reference Documents

The following documents informed the participants in the EMS Preparedness Improvement Project:

- [State EMS Involvement in Domestic Preparedness Efforts](#) (NASEMSO 2013 Status Update)
- [State EMS Involvement in Domestic Preparedness Efforts](#) (NASEMSO 2010 Status Update)
- [Emergency Medical Services: Fiscal Year 2010 Report to Congress](#) (Jan. 24, 2013, U.S. Department of Homeland Security/Federal Emergency Management Agency)
- [High-Level Analysis of Grant Funding for Medical and Public Health Preparedness](#) (July 31, 2009, grants analysis capturing historical trends in medical and public health grant funding, prepared by Battelle Eastern Science & Technology Center for the U.S. Department of Homeland Security)
- [Emergency Medical Services at the Crossroads](#) (2006, Committee on the Future of Emergency Care in the U.S. Health System, Institute of Medicine, National Academy of Sciences)

Appendix C: Gaps Identified and Prioritized

The NASEMSO EMS Domestic Preparedness Strategy Group, during their first meeting in March 2014, identified the following significant gaps in EMS domestic preparedness. The following gaps were identified using nominal group technique (NGT) and are listed in the order they were recorded:

- Lack of core capabilities
- Insufficient input by people affected by the process
- Lack of standardized response: All hazards
- Increased burdens placed on systems
- Lack of coordination in general
- No standardized system of metrics
- Some systems need resolution of day to day capabilities before disaster capabilities
- No pre-Emergency Management Assistance Compact (EMAC) operating parameters defined for inter and intra state deployment
- No national core competencies for EMS personnel as it relates to preparedness
- No connection between Health Information Exchanges and EMS records
- No model laws/rules related to licensure, training, competency of EMS personnel capability of EMS agencies related to preparedness
- No defined lead federal agency for EMS
- No mechanism for situation awareness
- Lack of EMS integration in planning
- Lack of pediatric population considerations
- Too much non-emergency demand on the system
- Lack of understanding of 9-1-1
- No systems based research
- No universal understanding of the mosaic of EMS agencies and its level of complexity
- No national warehouse for disaster medical data
- No national inventory of local EMS Systems including key characteristics
- No national data dictionary in the dispatch realm
- Lack of evidence-based making criteria
- No identification of ways to improve effectiveness and efficiency without increase funding
- No altered/crisis standards of care
- Difficulty integrating private sector EMS resources (ambulances)
- Gap between EMS and post incident medical care
- No measures, metrics, assessment and evaluation
- No assessment of gaps to identify changes in Standard Operating Procedures or clinical levels
- EMS does not embrace or exploit its diversity
- No mega EMS National Government Organization

- Increase widening of gap between urban, rural and frontier EMS
- No good grasp of recognizing trigger points and transitions
- No training, exercise, awareness of state and national response at the local level
- No consistent relationship between State EMS and State EMA
- Lack of understanding of EMS's role
- Lack of consideration for health care changes effects on EMS
- Not looking at sure system systematically
- Lack of ability to sustain capabilities for multi operational periods
- Lots of ideas and recommendation s, but no "How to get 'er done"
- Disconnect between EMS and Public Health
- No National EMS Preparedness Agenda
- No consideration of the entire continuum of care

After creating the list of gaps in EMS domestic preparedness, the NASEMSO EMS Domestic Preparedness Strategy Group combined gaps into similar topic areas. This revised list of EMS preparedness gaps was accepted by the Strategy Group by consensus. Next, the NASEMSO EMS Domestic Preparedness Strategy Group conducted the first round of multivoting to prioritize gaps in EMS domestic preparedness. The first round of the multivoting identified the following significant EMS preparedness gaps in the following rank order:

1. No measures, metrics, assessment and evaluation
2. Undefined core capabilities for EMS systems (what should a system do)
3. No consistent relationship between state EMS and state EMA
- 4(a).⁵ No federal lead agency for EMS
- 4(b). Lack of pediatric population considerations
- 4(c). No EMS preparedness agenda for the future
- 4(d). Lack of EMS integration in planning
- 5(a). Lack of core competencies in preparedness for EMS personnel
- 5(b). Lack of education, exercises and awareness of state and national response at the local level
- 6(a). No altered/crisis standards of care
- 6(b). No national warehouse for disaster medical data
- 6(c). Lack of standardized response across all hazards

After rank ordering and discussing the previous list of significant gaps in EMS preparedness, the NASEMSO EMS Domestic Preparedness Strategy Group repeated the multivoting rank order process, using the gaps identified at the conclusion of the first round of the multivoting process. The final round of the multivoting prioritization process reprioritized the following significant EMS domestic preparedness gaps in the following rank order:

⁵ (a), (b), and (c) denote gaps that received the same number of votes.

1. No measures, metrics, assessment and evaluation
2. No EMS preparedness agenda for the future
- 3(a).⁶ Undefined core capabilities for EMS systems (what should a system do)
- 3(b). No federal lead agency for EMS
- 3(c). Lack of core competencies in preparedness for EMS personnel
- 4(a). No altered/crisis standards of care
- 4(b). Lack of standardized response across all hazards
- 4(c). Lack of pediatric population considerations
- 5(a). No consistent relationship between state EMS and state EMA
- 5(b). No national warehouse for disaster medical data

The following gaps received no votes and were deleted from the project:

0. Lack of EMS integration in planning
0. Lack of education, exercises and awareness of state and national response at the local level

⁶ (a), (b), and (c) denote gaps that received the same number of votes.

Appendix D: Goal and Implementation Tables



Goal One: To create an EMS Preparedness Agenda for the Future

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to develop an EMS Preparedness Agenda; either integrated into the *EMS Agenda of the Future* or as a separate document.
2. Develop the draft *EMS Preparedness Agenda for the Future*.
3. Distribute the draft *EMS Preparedness Agenda for the Future* to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive public comment from EMS Stakeholder organizations and revise the *EMS Preparedness Agenda for the Future* based on those comments.
5. Publish the *EMS Preparedness Agenda for the Future*.
6. Encourage organizations and state and local governments to implement the *EMS Preparedness Agenda for the Future*. Incentivize the adoption of these standards through grants and other mechanisms.

Workgroup Recommendations

- Approach the National Highway Traffic Safety Administration (NHTSA) to determine whether a preparedness component could be integrated into the upcoming revision of the *EMS Agenda for the Future* document.
- Consider a collaborative approach among national non-governmental EMS representative agencies and federal departments and agencies with EMS preparedness responsibility.
- The federal government should be a part of these reviews and provide support.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 1.1			Participate in or provide support to a NASEMSO-seated EMS stakeholder representative workgroup.	NASEMSO should seat an EMS stakeholder representative working group.
Activity 1.2			Participate in the development of a draft EMS Preparedness Agenda for the Future.	Develop and disseminate a draft EMS Preparedness Agenda for the Future.
Activity 1.3			Disseminate the EMS Preparedness Agenda for the Future document to EMS stakeholders at the local, state, tribal, and national	Disseminate the EMS Preparedness Agenda for the Future draft document to EMS stakeholders at

			levels for comment.	the local, state, tribal, and national levels for comment.
Activity 1.4	EMS providers and local governments provide public comments to draft EMS Preparedness Agenda for the Future.	Tribal and state governments provide public comments to draft EMS Preparedness Agenda for the Future.	<ul style="list-style-type: none"> • Provide public comment to draft EMS Preparedness Agenda for the Future. • Participate in the revision of the EMS Preparedness Agenda for the Future document, based on federal, national, state and local comments. 	<ul style="list-style-type: none"> • Provide public comment to draft EMS Preparedness Agenda for the Future • Revise the EMS Preparedness Agenda for the Future document, based on federal, national, state and local comments.
Activity 1.5			Publish <i>EMS Preparedness Agenda for the Future</i> .	Publish <i>EMS Preparedness Agenda for the Future</i> .
Activity 1.6	EMS providers and local governments adopt and implement the EMS Preparedness Agenda for the Future.	Tribal and state governments adopt and implement the EMS Preparedness Agenda for the Future.	<ul style="list-style-type: none"> • Encourage organizations and state and local governments to adopt the EMS Preparedness Agenda for the Future. • Incentivize the adoption of the EMS Preparedness Agenda for the Future through grants and other mechanisms. 	Encourage organizations and state and local governments to adopt the EMS Preparedness Agenda for the Future.

Goal Two: To establish comprehensive EMS system preparedness capabilities guidelines

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to review and to determine the appropriateness and applicability of the EMS System Preparedness Capabilities to EMS systems of various sizes, population densities, and risk.
2. One or more subject matter experts should review and aggregate existing EMS system preparedness standards contained in the HPP and PHEP grants, best practices, and other authoritative sources, including academic writings of the Center for Homeland Security and Defense.
3. Develop the draft EMS System Preparedness Capabilities document.
4. Disseminate the draft EMS System Preparedness Capabilities document to EMS stakeholder organizations at the local, tribal, state, and national levels for review and comment.
5. Receive public comment from EMS Stakeholder organizations and revise the EMS System Preparedness Capabilities document based on those comments.
6. Publish the EMS System Preparedness Capabilities.
7. Encourage organizations and state and local governments to adopt the EMS System Preparedness Capabilities. Incentivize the adoption of these standards through grants and other mechanisms.
8. Assess the effectiveness and accuracy of the EMS System Preparedness Capabilities through a formal process.
9. Revise the EMS System Preparedness Capabilities document based on the assessment.

Workgroup Recommendations

- Evaluate existing preparedness standards contained in core capabilities, Hospital Preparedness Program (HPP), and Public Health Preparedness Program (PHEP) grants.
- Evaluate other authoritative documents including Institute of Medicine (IOM) reports and academic writings of the Center for Homeland Security and Defense.
Evaluate National Guidance for Healthcare System Preparedness document available at <http://www.phe.gov/Preparedness/planning/hpp/reports/Pages/default.aspx>

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 2.1			Participate in or provide to support to an NASEMSO-seated expert group of EMS stakeholder representatives to review and to determine the appropriateness and applicability of the EMS system preparedness capabilities for EMS	NASEMSO should seat an expert group of EMS stakeholder representatives to review and to determine the appropriateness and applicability of the EMS system preparedness capabilities standards for EMS systems of various sizes, population densities,

			systems of various sizes, population densities, and risk.	and risk.
Activity 2.2			Evaluate existing preparedness standards contained in HPP and PHEP grants, academic writings, and national organization and best-practice guidelines.	Evaluate existing preparedness standards contained in HPP and PHEP grants, academic writings, and national organization and best-practice guidelines.
Activity 2.3			Develop draft EMS Systems Preparedness Capabilities document.	Develop draft EMS Systems Preparedness Capabilities document.
Activity 2.4			Disseminate the draft EMS Systems Preparedness Capabilities document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.	Disseminate the draft EMS Systems Preparedness Capabilities document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
Activity 2.5	<ul style="list-style-type: none"> • EMS providers and local governments provide public comments to draft EMS Preparedness Capabilities document • EMS providers and local governments may consider early adoption of preparedness initiatives in draft EMS 	<ul style="list-style-type: none"> • Tribal and state governments provide public comments to draft EMS Preparedness Capabilities document • Tribal and state governments may consider early adoption of preparedness initiatives in draft EMS Preparedness 	<ul style="list-style-type: none"> • Provide public comment to draft EMS System Preparedness Capabilities document • Participate in the revision of the EMS System Preparedness Capabilities document, based on federal, national, state and local comment. 	<ul style="list-style-type: none"> • Provide public comment to draft EMS System Preparedness Capabilities document • Revise the EMS System Preparedness Capabilities document, based on federal, national, state and local comment.

	Preparedness Capabilities.	Capabilities.		
Activity 2.6			Publish the EMS System Preparedness Capabilities.	Publish the EMS System Preparedness Capabilities.
Activity 2.7	EMS providers and local governments adopt and implement the EMS System Preparedness Capabilities.	Tribal and state governments adopt and implement the EMS System Preparedness Capabilities.	<ul style="list-style-type: none"> • Encourage organizations and state and local governments to adopt the EMS System Preparedness Capabilities. • Incentivize the adoption of the EMS System Preparedness Capabilities through grants and other mechanisms. 	Encourage organizations and state and local governments to adopt the EMS System Preparedness Capabilities.
Activity 2.8	EMS providers and local governments assess the effectiveness and accuracy of the EMS System Preparedness Capabilities through a formal process.	Tribal and state governments assess the effectiveness and accuracy of the EMS System Preparedness Capabilities through a formal process.	Assess the effectiveness and accuracy of the EMS System Preparedness Capabilities through a formal process.	Assess the effectiveness and accuracy of the EMS System Preparedness Capabilities through a formal process.
Activity 2.9			Revise the EMS System Preparedness Capabilities document based on the assessment.	Revise the EMS System Preparedness Capabilities document based on the assessment.

Goal Three: To develop EMS personnel preparedness core competency guidelines

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to review, select or develop EMS Personnel Preparedness Competencies.
2. One or more subject matter experts should review and aggregate existing EMS personnel preparedness standards contained in core competencies, Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness (PHEP) grants, best practices, and other authoritative sources.
3. Develop the draft EMS Personnel Preparedness Competencies document.
4. Distribute the draft EMS Personnel Preparedness Competencies document to EMS stakeholder organizations at the local, tribal, state, and national levels for review and comment.
5. Receive public comment from EMS Stakeholder organizations and revise the EMS Personnel Preparedness Competencies document based on those comments.
6. Publish the EMS Personnel Preparedness Competencies.
7. Encourage organizations and state and local governments to adopt the EMS Personnel Preparedness Competencies. Incentivize the adoption of these standards through grants and other mechanisms
8. Assess the effectiveness and accuracy of the EMS Personnel Preparedness Competencies through a formal process
9. Revise the EMS Personnel Preparedness Competencies based on the assessment.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 3.1			Participate in or provide support to a NASEMSO-seated EMS stakeholder representative workgroup.	NASEMSO should seat an expert group of EMS Stakeholders representatives to review, select or develop EMS Personnel Preparedness Core Competencies.
Activity 3.2			Subject matter experts should review and aggregate existing EMS personnel preparedness standards contained in Core Competencies, HPP and PHEP grants, best practices, and	Subject matter experts should review and aggregate existing EMS personnel preparedness standards contained in Core Competencies, HPP and PHEP grants, best practices, and

			other authoritative sources.	other authoritative sources.
Activity 3.3			Develop the draft EMS Personnel Preparedness Competencies document.	Develop the draft EMS Personnel Preparedness Competencies document.
Activity 3.4			Distribute the draft EMS Personnel Preparedness Competencies document to EMS stakeholder organizations at the local, tribal, state, and national levels for review and comment.	Distribute the draft EMS Personnel Preparedness Competencies document to EMS stakeholder organizations at the local, tribal, state, and national levels for review and comment.
Activity 3.5	EMS providers and local governments to provide comments to EMS Personnel Preparedness Competencies Guideline document.	Tribal and state governments to provide comments to EMS Personnel Preparedness Competencies Guideline document.	<ul style="list-style-type: none"> EMS stakeholders provide comments to EMS Personnel Preparedness Competencies Guideline document. Participate in the revision of the EMS Personnel Preparedness Competencies Guideline document, based on federal, national, state and local government, and EMS providers' comments. 	<ul style="list-style-type: none"> EMS stakeholders and EMS stakeholder organizations provide comments to EMS Personnel Preparedness Competencies Guideline document. Revise the EMS Personnel Preparedness Competencies Guideline document, based on federal, national, state and local governments, and EMS providers'

				comments.
Activity 3.6			Publish the EMS Personnel Preparedness Competencies.	Publish the EMS Personnel Preparedness Competencies.
Activity 3.7	EMS providers and local governments to adopt and implement the EMS Personnel Preparedness Competencies.	Tribal and state governments to adopt and implement the EMS Personnel Preparedness Competencies.	<ul style="list-style-type: none"> • Encourage organizations and state and local governments to adopt the EMS Personnel Preparedness Competencies. • Incentivize the adoption of the EMS Personnel Preparedness Competencies through grants and other mechanisms. 	Encourage organizations and state and local governments to adopt the EMS Personnel Preparedness Competencies.
Activity 3.8	EMS providers and local governments to assess the effectiveness and accuracy of the EMS Personnel Preparedness Competencies through a formal process.	Tribal and state governments to assess the effectiveness and accuracy of the EMS Personnel Preparedness Competencies through a formal process.	Assess the effectiveness and accuracy of the EMS Personnel Preparedness Competencies through a formal process.	Assess the effectiveness and accuracy of the EMS Personnel Preparedness Competencies through a formal process.
Activity 3.9			Revise the EMS Personnel Preparedness Competencies based on the assessment.	Revise the EMS Personnel Preparedness Competencies based on the assessment.

Goal Four: To establish guidelines, which provide best practices for EMS responses to high risk situations

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives, including representatives from the law enforcement community, to develop Guidelines for EMS Responses to High-Risk Situations. Consider having representatives from the Committee for Tactical Emergency Care (C-TECC) participate in this group.
2. Develop Guidelines for EMS Responses into High-Risk Situations document.
3. Distribute the draft Guidelines for EMS Responses to High-Risk Situations document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive public comment from EMS Stakeholder organizations and revise the Guidelines for EMS Responses to High-Risk Situations document based on those comments.
5. Publish the Guidelines for EMS Responses to High-Risk Situations.
6. Encourage organizations and state and local governments to adopt Guidelines for EMS Responses to High-Risk Situations. Incentivize the adoption of these standards through grants and other mechanisms.
7. Assess the effectiveness and accuracy of the Guidelines for EMS Responses to High-Risk Situations through a formal process.
8. Revise the Guidelines for EMS Responses to High-Risk Situations based on the assessment.

Workgroup Recommendations

- The workgroup must develop nationally-accepted standardized responses, which are adaptable to communities of different sizes and characteristics.
- Guidelines should come from federal government.
- Guidelines for EMS Responses to High Risk Situations must be based on a partnership among EMS, ambulance, and fire departments' response plans.
- EMS must be involved in local planning.
- Local operational practices should consider national guidelines.
- Guidelines must be flexible to rapidly changing clinical and tactical practices.
- A critical objective of this goal is to keep EMS providers safe, which includes providing appropriate training, equipping, and exercising.
- The Committee for Tactical Emergency Casualty Care (www.c-tecc.org) provides guidelines for interagency response to high threat scenarios (EMS, fire and LEO). The guidelines provide common language for interagency implementation and tiered, local program development. FEMA has funded 7 TECC Technical Assistance programs to assist local jurisdictions in the development of TECC- based interagency response protocols. The C-TECC is also involved in the ongoing DHS Improving Survival from Active Shooter and IED MCI.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 4.1	<ul style="list-style-type: none"> • EMS providers and local governments to work with local 	Tribal and state governments to create interim doctrine for EMS	Participate in or provide support to a NASEMSO-seated expert	NASEMSO should seat an expert group of EMS Stakeholders

	<p>law and public safety providers to develop or implement interim doctrine for EMS Responses to High-Risk Situations, until formal doctrine for EMS Responses to High-Risk Situations are created.</p> <ul style="list-style-type: none"> • EMS providers and local governments to train and equip EMS providers to operate safely in high risk environments. 	<p>Responses to High-Risk Situations or send early guidance to local governments and EMS providers requesting they create interim doctrine for EMS Responses to High-Risk Situations, until formal doctrine for EMS Responses to High-Risk Situations is created.</p>	<p>group of EMS Stakeholders representatives, including representatives from the law enforcement community and C-TECC, to develop Guidelines for EMS Responses to High-Risk Situations.</p>	<p>representatives, including representatives from the law enforcement community and C-TECC, to develop Guidelines for EMS Responses to High-Risk Situations.</p>
Activity 4.2			<p>Develop Guidelines for EMS Responses to High-Risk Situations document.</p>	<p>Develop Guidelines for EMS Responses to High-Risk Situations document.</p>
Activity 4.3			<p>Distribute the draft Guidelines for EMS Responses to High-Risk Situations document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.</p>	<p>Distribute the draft Guidelines for EMS Responses to High-Risk Situations document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.</p>
Activity 4.4	<p>EMS providers and local governments to provide comments to Guidelines for EMS Responses to High-</p>	<p>Tribal and state governments to provide comments to Guidelines for EMS Responses to High-</p>	<ul style="list-style-type: none"> • EMS stakeholders and EMS stakeholder organizations 	<ul style="list-style-type: none"> • EMS stakeholders and EMS stakeholder organizations

	Risk Situations.	Risk Situations.	provide comments to Guidelines for EMS Responses to High-Risk Situations. <ul style="list-style-type: none"> • Receive public comment from EMS Stakeholder organizations, state, tribal, and local government, and EMS providers, and revise the Guidelines for EMS Responses to High-Risk Situations document based on those comments. 	provide comments to Guidelines for EMS Responses to High-Risk Situations. <ul style="list-style-type: none"> • Receive public comment from EMS Stakeholder organizations, state, tribal, and local government, and EMS providers, and revise the Guidelines for EMS Responses to High-Risk Situations document based on those comments.
Activity 4.5			Publish the Guidelines for EMS Responses to High-Risk Situations.	Publish the Guidelines for EMS Responses to High-Risk Situations.
Activity 4.6	<ul style="list-style-type: none"> • EMS providers and local governments to adopt Guideline for EMS Responses to High-Risk Situations. • EMS providers and local governments to train and equip EMS providers to operate safely in 	Tribal and state governments to adopt Guideline for EMS Responses to High-Risk Situations.	<ul style="list-style-type: none"> • Encourage organizations and state and local governments to adopt Guideline for EMS Responses to High-Risk Situations. • Incentivize the adoption of these 	Encourage organizations and state and local governments to adopt Guideline for EMS Responses to High-Risk Situations.

	high risk environments, consistent with formal doctrine.		standards through grants and other mechanisms.	
Activity 4.7	EMS providers and local governments to assess the effectiveness and accuracy of the Guidelines for EMS Responses to High-Risk Situations through a formal process.	Tribal and state governments to assess the effectiveness and accuracy of the Guidelines for EMS Responses to High-Risk Situations through a formal process.	Assess the effectiveness and accuracy of the Guidelines for EMS Responses to High-Risk Situations through a formal process.	Assess the effectiveness and accuracy of the Guidelines for EMS Responses to High-Risk Situations through a formal process.
Activity 4.8			Revise the Guideline for EMS Responses to High-Risk Situations based on the assessment.	Revise the Guideline for EMS Responses to High-Risk Situations based on the assessment.

Goal Five: To create model guidelines and model federal and/or state legislation, including legal protections, to facilitate the development of EMS crisis standards of care

Implementation Strategy

1. Seat an expert group of EMS Stakeholder representatives and clinicians to develop Model Guidelines for EMS Crisis Standards of Care.
2. Develop the draft Model Guidelines for EMS Crisis Standards of Care document.
3. Distribute the draft Model Guidelines for EMS Crisis Standards of Care document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive public comment from EMS Stakeholder organizations and revise the Model Guidelines for EMS Crisis Standards of Care document based on those comments.
5. Publish the Model Guidelines for EMS Crisis Standards of Care.
6. Encourage organizations and state and local governments to adopt the Model Guidelines for EMS Crisis Standards of Care. Incentivize the adoption of these standards through grants and other mechanisms.
7. At the federal or state level, develop political support to pass legal protections for EMS personnel when using the Model Guidelines for EMS Crisis Standards of Care.
8. Asses the effectiveness and accuracy of the Model Guidelines for EMS Crisis Standards of Care through a formal process.
9. Revise the Model Guidelines for EMS Crisis Standards of Care based on the assessment.

Workgroup Recommendations

- The Institute of Medicine (IOM) has relevant research, including the IOM Toolkit.
- The California Department of Public Health has developed crisis and surge medical guidelines.
- The US Health and Human Services Department (HHS) has developed relevant standards
- The federal government should promulgate guidelines.
- There is a distinction between disaster medical care and routine/frequent multi-casualty incidents (MCI), which are typically smaller multi-patient accidents.
- The Model Guidelines for EMS Crisis Standards of Care should describe care provided by Emergency Medical Responders (EMRs), Emergency Medical Technicians (EMTs), Advanced Emergency Medical Technicians (AEMTs), and Paramedics.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 5.1	EMS providers and local governments to develop or implement interim EMS Crisis Standards of Care, until formal EMS Crisis Standards of Care are established.	Tribal and state governments to create interim EMS Crisis Standards of Care or send early guidance to local governments and EMS providers requesting they create interim EMS Crisis Standards of Care, until formal	<ul style="list-style-type: none"> • Participate in or provide support to a NASEMSO-seated expert group of EMS Stakeholder representatives and clinicians to develop Model 	<ul style="list-style-type: none"> • NASEMSO should seat an expert group of EMS Stakeholder representatives and clinicians to develop Model Guidelines for EMS Crisis Standards of

		EMS Crisis Standards of Care are established.	<p>Guidelines for EMS Crisis Standards of Care.</p> <ul style="list-style-type: none"> Develop and send early guidance to states encouraging states, local governments, and EMS providers to create interim EMS Crisis standards of care, until formal EMS Crisis Standards of Care are established. 	<p>Care.</p> <ul style="list-style-type: none"> Support the development and sending of early guidance to states encouraging states, local governments, and EMS providers to create interim EMS Crisis standards of care, until formal EMS Crisis Standards of Care are established.
Activity 5.2			Develop the draft Model Guidelines for EMS Crisis Standards of Care document.	Develop the draft Model Guidelines for EMS Crisis Standards of Care document.
Activity 5.3			Distribute the draft Model Guidelines for EMS Crisis Standards of Care document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.	Distribute the draft Model Guidelines for EMS Crisis Standards of Care document to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
Activity 5.4	EMS providers and local governments to provide comments to Model Guidelines for EMS Crisis Standards of Care.	Tribal and state governments to provide comments to Model Guidelines for EMS Crisis Standards of Care document.	Receive public comment from EMS Stakeholder organizations, EMS providers, and state and local governments and revise the Model Guidelines	<ul style="list-style-type: none"> EMS stakeholders and EMS stakeholder organizations provide comments to EMS Crisis Standards of

			for EMS Crisis Standards of Care document based on those comments.	Care. <ul style="list-style-type: none"> • Receive public comment from EMS Stakeholder organizations, EMS providers, and state and local governments and revise the Model Guidelines for EMS Crisis Standards of Care document based on those comments.
Activity 5.5			Publish the Model Guidelines for EMS Crisis Standards of Care.	Publish the Model Guidelines for EMS Crisis Standards of Care.
Activity 5.6	Adopt the Model Guidelines for EMS Crisis Standards of Care.	Adopt the Model Guidelines for EMS Crisis Standards of Care.	<ul style="list-style-type: none"> • Encourage organizations and state and local governments to adopt the Model Guidelines for EMS Crisis Standards of Care. • Incentivize the adoption of the Model Guidelines for EMS Crisis Standards of Care through grants and other mechanisms 	Encourage organizations and state and local governments to adopt the Model Guidelines for EMS Crisis Standards of Care.
Activity 5.7	EMS providers and local government to support the development and	Tribal and state governments develop political support, at the	At the federal or state level, develop political support to pass	At the federal or state level, develop political support to pass legal

	adoption of legal protections for EMS personnel when using the Model Guidelines for EMS Crisis Standards of Care.	federal or state level, to pass legal protections for EMS personnel when using the Model Guidelines for EMS Crisis Standards of Care.	legal protections for EMS personnel when using the Model Guidelines for EMS Crisis Standards of Care.	protections for EMS personnel when using the Model Guidelines for EMS Crisis Standards of Care.
Activity 5.8	EMS providers and local governments to assess the effectiveness and accuracy of the Model Guidelines for EMS Crisis Standards of Care through a formal process.	Tribal and state governments to assess the effectiveness and accuracy of the Model Guidelines for EMS Crisis Standards of Care through a formal process.	Asses the effectiveness and accuracy of the Model Guidelines for EMS Crisis Standards of Care through a formal process.	Asses the effectiveness and accuracy of the Model Guidelines for EMS Crisis Standards of Care through a formal process.
Activity 5.9			Revise the Model Guidelines for EMS Crisis Standards of Care based on the assessment.	Revise the Model Guidelines for EMS Crisis Standards of Care based on the assessment.

Goal Six: To evolve EMS systems, organizations, and personnel to provide optimal care to pediatric patients during medical disaster situations

Implementation Strategy

1. Seat an expert group of EMS and pediatric stakeholders' representatives to develop a Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.
2. One or more subject matter experts should review and aggregate existing documents related to standards of EMS care for pediatrics, in disaster and medical disaster situations.
3. Develop the draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters document.
4. Distribute the draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
5. Receive public comment from EMS Stakeholder organizations and revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters, based on those comments.
6. Publish the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.
7. Encourage organizations and state and local governments to adopt the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters. Incentivize the adoption of these standards through grants and other mechanisms.
8. Assess the effectiveness and accuracy of Guideline for the Care of Pediatrics during Medical Surge Events and Disasters through a formal process.
9. Revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters based on the assessment.

Workgroup Recommendations

- Review and understand current documents, including state EMS for Children (EMS-C) programs.
- Some areas have robust EMS-C programs, but there is minimal consideration for specialized treatment during medical disaster situations.
- Workgroup members recommended the following articles:

Shirm S, Liggin R, Dick R, Graham J. Prehospital Preparedness for Pediatric Mass-Casualty Events. *Pediatrics*. 2007 Oct; 120(4):e756-61.

Bankole S, Asuncion A, Ross S, Aghai Z, Nollah L, Echols H, Da-Silva S. First responder Performance in Pediatric Trauma: A comparison with an adult cohort. *Pediatric Critical Care Medicine*. 2011 Jul; 12(4):e166-70.

Baker TW, King W, Soto W, Asher C, Stolfi A, Rowin ME. The Efficacy of Pediatric Advanced Life Support Training in Emergency Medical Service Providers. *Pediatric Emergency Care*. 2009 Aug;25(8):508-12

Centers for Disease Control and Prevention, Ambulatory and Hospital Care Statistics Branch. National Hospital Ambulatory Medical Care Survey:2010. Accessed April 10, 2014 from http://www.cdc.gov/nchs/data/ahcd/nhamcs_emergency/2010_ed_web_tables.pdf

National Pediatric Readiness Project. National Results. Revised March 21, 2014. Accessed April 10, 2014 from http://www.pediatricreadiness.org/State_Results/National_Results.aspx.

National Commission on Children and Disasters. 2010 Report to the President and Congress. AHRQ Publication No. 10-M037. Rockville, MD: Agency for Healthcare Research and Quality. October 2010. www.childrenanddisasters.acf.hhs.gov

Institute of Medicine, Forum on Medial and Public Health Preparedness for Catastrophic Events. Disaster Preparedness, Response, and Recovery Considerations for Children and Families: Workshop Summary. Washington, DC: National Academies Press. 2013.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 6.1			Participate in or provide support to a NASEMSO-seated expert group of EMS Stakeholder representatives to develop a Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.	NASEMSO should seat an expert group of EMS Stakeholder representatives to develop a Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.
Activity 6.2			One or more subject matter experts should review and aggregate existing documents related to standards of EMS care for pediatrics, in disaster and medical disaster situations.	One or more subject matter experts should review and aggregate existing documents related to standards of EMS care for pediatrics, in disaster and medical disaster situations.
Activity 6.3			Develop the draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters document.	Develop the draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters document.
Activity 6.4			Distribute the	Distribute the



			draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.	draft Guideline for the Care of Pediatrics during Medical Surge Events and Disasters to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
Activity 6.5	EMS providers and local governments to provide comments to the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.	Tribal and state governments to provide comments to the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.	<ul style="list-style-type: none"> • EMS stakeholders and EMS stakeholder organizations provide comments to the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters. • Receive public comment from EMS Stakeholder organizations and revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters, based on those comments. 	<ul style="list-style-type: none"> • EMS stakeholders and EMS stakeholder organizations provide comments to the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters. • Receive public comment from EMS Stakeholder organizations and revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters, based on those comments.
Activity 6.6			Publish the Guideline for the Care of Pediatrics during Medical	Publish the Guideline for the Care of Pediatrics during Medical

			Surge Events and Disasters.	Surge Events and Disasters.
Activity 6.7	EMS providers and local governments to adopt and implement the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.	Tribal and state governments to adopt and implement the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.	<ul style="list-style-type: none"> Encourage EMS organizations and state and local governments to adopt the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters. Incentivize the adoption of these standards through grants and other mechanisms. 	Encourage EMS organizations and state and local governments to adopt the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters.
Activity 6.8	EMS providers and local governments to assess the effectiveness and accuracy of Guideline for the Care of Pediatrics during Medical Surge Events and Disasters through a formal process.	Tribal and state governments to assess the effectiveness and accuracy of Guideline for the Care of Pediatrics during Medical Surge Events and Disasters through a formal process.	Assess the effectiveness and accuracy of Guideline for the Care of Pediatrics during Medical Surge Events and Disasters through a formal process.	Assess the effectiveness and accuracy of Guideline for the Care of Pediatrics during Medical Surge Events and Disasters through a formal process.
Activity 6.9			Revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters based on the assessment.	Revise the Guideline for the Care of Pediatrics during Medical Surge Events and Disasters based on the assessment.

Goal Seven: To develop sufficiently-detailed capability standards, metrics, and assessment methodologies to guide EMS system preparedness planning and assessments

Implementation Strategy

1. Seat an expert group of EMS Stakeholders representatives to develop an EMS Preparedness Data Dictionary and Assessment Guidelines.
2. Develop a draft EMS Preparedness Data Dictionary and Assessment Guidelines, including uniform data collection standards, and input, process, output, and outcome-based assessment methodologies.
3. Distribute the draft EMS Preparedness Data Dictionary and Assessment Guidelines to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. Receive comments from EMS Stakeholder organizations and revise the EMS Preparedness Data Dictionary and Assessment Guidelines based on those comments.
5. Publish the EMS Preparedness Data Dictionary and Assessment Guidelines.
6. Encourage professional organizations and state, local, and tribal governments to adopt the EMS Preparedness Data Dictionary and Assessment Guidelines. Incentivize the adoption of these standards through grants and other mechanisms.
7. Assess the effectiveness and accuracy of the EMS Preparedness Data Dictionary and Assessment Guidelines through a formal process.
8. Revise the EMS Preparedness Data Dictionary and Assessment Guidelines document based on the assessment.

Workgroup Recommendations

- Review the success of the process used to develop National EMS Information System (NEMSIS).
- Review the Emergency Management Accreditation Program (EMAP) Program.
- The federal Government should participate in this review process and consider providing sources of funding.
- Assure that the guidelines recommend standards for: (1) planning, policies, and procedures; (2) organization; (3) education/training; (4) equipping; and, (5) exercising.
- The evaluation process should utilize input, process, output, and outcome assessment methodologies.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 7.1			Participate in or provide support to a NASEMSO-seated EMS stakeholder representative workgroup.	NASEMSO should seat an EMS stakeholder representative working group.
Activity 7.2			Participate in development of a draft EMS preparedness	Develop a draft EMS preparedness data dictionary,

			data dictionary, assessment methodologies, and preparedness guidelines.	assessment methodologies, and preparedness guidelines.
Activity 7.3	<ul style="list-style-type: none"> EMS Providers and local governments review draft guidelines and provide comments to federal government and national EMS leadership. 	<ul style="list-style-type: none"> Tribal and state governments review draft guidelines and provide comments to federal government and national EMS leadership. 	Distribute the draft EMS Preparedness Data Dictionary and Assessment Guidelines to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.	Distribute the draft EMS Preparedness Data Dictionary and Assessment Guidelines to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
Activity 7.4			<ul style="list-style-type: none"> Review local EMS provider, local, tribal and state governments' comments. Participate in the evaluation and revision of the EMS preparedness data dictionary, assessment methodologies, and preparedness guidelines, based on EMS provider, local, tribal, and state governments' comments. 	<ul style="list-style-type: none"> Review EMS provider, local, tribal, and state governments' comments. Evaluate and revise the EMS preparedness data dictionary, assessment methodologies, and preparedness guidelines, based on EMS provider, local, tribal, and state governments' comments.
Activity 7.5			Publish the EMS	Publish the EMS

			Preparedness Data Dictionary and Assessment Guidelines.	Preparedness Data Dictionary and Assessment Guidelines.
Activity 7.6	<ul style="list-style-type: none"> EMS Providers and local governments adopt and implement the EMS Preparedness Data Dictionary and Assessment Guidelines. 	<ul style="list-style-type: none"> Tribal and state governments adopt and implement the EMS Preparedness Data Dictionary and Assessment Guidelines. 	<ul style="list-style-type: none"> Encourage organizations and state and local governments to adopt the EMS Preparedness Data Dictionary and Assessment Guidelines. Incentivize the adoption of the EMS Preparedness Data Dictionary and Assessment Guidelines through grants and other mechanisms. 	Encourage organizations and state and local governments to adopt the EMS Preparedness Data Dictionary and Assessment Guidelines.
Activity 7.7	<ul style="list-style-type: none"> EMS providers and local governments assess the effectiveness and accuracy of the EMS Preparedness Data Dictionary and Assessment Guidelines through a formal process. EMS Providers and local governments use data 	<ul style="list-style-type: none"> Tribal and State governments assess the effectiveness and accuracy of the EMS Preparedness Data Dictionary and Assessment Guidelines through a formal process. Tribal and state governments use data dictionary and assessment methodologies to determine lessons learned and best practices. 	Assess the effectiveness and accuracy of the EMS Preparedness Data Dictionary and Assessment Guidelines through a formal process.	Assess the effectiveness and accuracy of the EMS Preparedness Data Dictionary and Assessment Guidelines through a formal process.

	<p>dictionary and assessment methodologies to determine lessons learned and best practices.</p> <ul style="list-style-type: none"> • EMS Providers and local governments report lessons learned and best practices to federal and national EMS leadership. 	<ul style="list-style-type: none"> • Tribal and state governments report lessons learned and best practices to federal and national EMS leadership. 		
Activity 7.8			Revise the EMS Preparedness Data Dictionary and Assessment Guidelines document based on the formal assessment.	Revise the EMS Preparedness Data Dictionary and Assessment Guidelines document based on the formal assessment.

Goal Eight: To create a national EMS disaster data collection and analytic capability, which can inform EMS preparedness and response initiatives

Implementation Strategy

1. Seat an expert group of EMS Stakeholders, and data and information system experts to identify the desired EMS data collection and analytic capability.
 - Identifying the desired EMS data collection and analytic capability requires: (a) detailed information about desired and existing data sets; (b) expert understanding of the IT requirements to data mine existing and new databases or creating a single database or data system; and, (c) expertise in HIPAA and other medical privacy laws.
2. Identify the dataset necessary to support the desired EMS disaster analytic capability.
3. Comprehensively assess the available datasets, databases, and data systems to determine whether it is better to use a data mining/data aggregation model or develop a unique database.
4. Based upon the results of the dataset identification project (Implementation Strategy 2) and the dataset/database/data system assessment (Implementation Strategy 3), select and hire an IT-savvy professional project manager.
5. The professional project manager should work with the working group to develop a project plan to define the scope and deliverables of the EMS disaster analytic capability project.
6. Release a Request for Proposal (RFP) to organizations interested in supporting the EMS disaster analytic capability project and who possess the comprehensive abilities demanded by this project.
7. Hire the appropriate organization to complete this project.
8. Plan, monitor, manage, and correct the organization to assure the goals and objectives of the EMS disaster analytic capability project are met.

Workgroup Recommendations

- Evaluate a data mining model to access and aggregate data contained in numerous disparate databases.
- The EMS disaster analytic system should be capable of accessing after action report data.
- The US Department of Health and Human Services (HHS) has lesson learned data from Superstorm Sandy for evaluation and will assist in EMS planning for future events.
- The National EMS Information System (NEMSIS) version 3 may contain some appropriate data elements.
- It may be better to add to NEMSIS than build a new dataset, but don't forget existing datasets
- It is important to evaluate routine multi-casualty incidents and "middle size" incidents.
- The EMS disaster analytic system should be capable of cataloging responses in other countries, such as Israel.
- Early in process, identify the data elements that are important.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 8.1			Participate in or provide support to a NASEMSO-	NASEMSO should seat an expert group of EMS

			seated expert group of EMS Stakeholders, and data and information system experts to create a national EMS disaster data collection analytic capability.	Stakeholders, and data and information system experts to create a national EMS disaster data collection and analytic capability.
Activity 8.2			Identify the dataset necessary to support a national EMS disaster analytic capability.	Identify the dataset necessary to support a national EMS disaster analytic capability.
Activity 8.3	EMS providers and local governments to comprehensively assess the available datasets and databases within their jurisdiction and report to working group.	Tribal and state governments to comprehensively assess the available datasets and databases within their jurisdiction and report to working group.	Comprehensively assess the available datasets and databases to determine whether it is better to use a data mining/data aggregation model or develop a unique database.	Comprehensively assess the available datasets and databases to determine whether it is better to use a data mining/data aggregation model or develop a unique database.
Activity 8.4			Based upon the results of the dataset identification project (Goal 2) and the dataset/database assessment (Goal 3), select and hire an IT-savvy professional project manager.	Provide technical expertise to help the federal government select and hire an IT-savvy professional project manager.
Activity 8.5			The professional project manager should work with the working group to develop a project plan to define the scope	The professional project manager should work with the working group to develop a project plan to define the scope

			and deliverables of the EMS disaster analytic capability project.	and deliverables of the EMS disaster analytic capability project.
Activity 8.6			Release a RFP to organizations interested in supporting the EMS disaster analytic capability project and who possess the comprehensive abilities demanded by this project.	Provide technical expertise to support the federal government in releasing a RFP to organizations interested in supporting the EMS disaster analytic capability project and who possess the comprehensive abilities demanded by this project.
Activity 8.7			Hire the appropriate organization to complete this project.	Provide technical expertise to the federal government to support the hiring of the appropriate organization to complete this project.
Activity 8.8			Plan, monitor, manage, and correct the organization to assure the goals and objectives of the EMS disaster analytic capability project are met.	Assist the federal government in Planning, monitoring, managing, and correcting the organization to assure the goals and objectives of the EMS disaster analytic capability project are met.

Goal Nine: To improve working relationships and interaction between individual state’s emergency management agencies and emergency medical services’ offices

Implementation Strategy

1. Representatives from the National Association of State EMS Officers (NASEMSO) and the National Emergency Managers Association (NEMA) should meet to better understand concerns relating to organizational roles and responsibilities, and relationships.
2. NASEMSO and NEMA representatives should explore methods to clarify and describe issues, using tools such as membership surveys and facilitated discussions.
3. NASEMSO and NEMA should develop model interagency liaison guidelines and other tools to help individual state’s EMS officers and emergency managers resolve any issues.
4. Individual state’s EMS officers and emergency managers should identify specific problems and resolutions for issues within their state. Based on the characteristics of the problem(s), solutions may include legislation, interdepartmental policies and procedures, formally defining roles, responsibilities, structures and processes, and building social capital.
4. State’s EMS officers and emergency managers should identify and work toward resolving the specific issues most relevant to their state.
5. NASEMSO and NEMA, and state EMA and EMS leaders should meeting in two years following the start of this goal to assess whether state EMA and EMS office relationships have improved.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 9.1				NASEMSO and NEMA representatives to explore methods to clarify and describe issues.
Activity 9.2				NASEMSO and NEMA representatives to develop model interagency liaison guidelines and other tools to guide the resolution of issues.
Activity 9.3		Individual state’s EMS officers and emergency managers should identify specific problems and resolutions for issues within their state. Based on the characteristics of the problem(s), solutions		

		may include legislation, interdepartmental policies and procedures, formally defining roles, responsibilities, structures and processes, and building social capital.		
Activity 9.4		State's EMS officers and emergency managers should identify and work toward resolving the specific issues most relevant to their state.		
Activity 9.5		NASEMSO and NEMA, and state EMA and EMS leaders should meeting in two years following the start of this goal to assess whether state EMA and EMS office relationships have improved.		NASEMSO and NEMA, and state EMA and EMS leaders should meeting in two years following the start of this goal to assess whether state EMA and EMS office relationships have improved.

Goal Ten: To determine whether the current Federal structure for EMS optimally promotes, leads, and funds EMS preparedness and response in the regions, states, and locally

Implementation Strategy

1. Seat an expert group of EMS Stakeholders and leadership from the Federal agencies that have input to the national EMS system to evaluate the benefits of a lead federal agency for EMS.
2. Develop a draft position paper reviewing the benefits and limitations of various federal EMS lead agency organizational structures.
3. Distribute the draft position paper to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
4. EMS stakeholders and stakeholder organizations at the local, tribal, state and national levels provide comments to the Federal Interagency Committee on EMS (FICEMS) regarding the benefits of a federal lead agency for EMS.
5. The Federal Interagency Committee on EMS (FICEMS) reviews and considers recommendations and determines next appropriate steps.

Workgroup Recommendations

- Seat a group of EMS stakeholders and leadership from the Federal agencies that have EMS as a component of their mission to assess whether there is a benefit of a lead Federal EMS agency.
- Review the recommendations for federal governance of EMS in the following document: Institute of Medicine. Committee on the Future of Emergency Care in the United States Health System. Future of Emergency Care: Emergency Medical Services at the Crossroads. The National Academies Press. Washington D.C. The National Academies Press. 2007.

	Local	State / Tribal / Territorial	Federal	National (NGO)
Activity 10.1			Provide support to seat an EMS stakeholder representative workgroup.	Seat an expert group of EMS Stakeholders representatives and leadership from the main Federal agencies that have input to the national EMS system to evaluate the benefits of a lead federal agency for EMS.
Activity 10.2			Support the development of a draft position paper reviewing benefits and	Develop a draft position paper reviewing benefits and limitations of



			limitations of various federal EMS lead agency organizational structures.	various federal EMS lead agency organizational structures.
Activity 10.3	EMS providers and local governments receive and review the draft position paper.	Tribal and state governments receive and review the draft position paper.	Distribute the draft position paper to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.	Distribute the draft position paper to EMS stakeholders, at the local, tribal, state, and national levels for review and comment.
Activity 10.4	EMS providers and local governments provide comments to FICEMS regarding the benefits of a federal lead agency for EMS.	Tribal and state governments provide comment to FICEMS regarding the benefits of a federal lead agency for EMS.	EMS stakeholders provide comment to FICEMS regarding the benefits of a federal lead agency for EMS.	EMS stakeholder and stakeholder organizations provide comment to FICEMS regarding the benefits of a federal lead agency for EMS.
Activity 10.5			The Federal Interagency Committee on EMS (FICEMS) reviews and considers recommendations and determines next appropriate steps.	

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