

National Emergency Medical Services Advisory Council



summary report [2010-2012]

The opinions expressed in this report are those of the National EMS Advisory Council (NEMSAC) and do not necessarily reflect the official position or policies of the National Highway Traffic Safety Administration and/or the U.S. Department of Transportation.

NEMSAC has not voted to formally approve this document; however, each of the recommendations has been approved. Recommendations appearing in this report have been edited for space and clarity. For the full text of advisories, together with related research, literature citations and other supporting materials, visit www.ems.gov/nemsac.htm.

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Foreword



Since the 1960s, the National Highway Traffic Safety Administration (NHTSA) has worked with Federal, State, tribal and local partners to provide tools and resources for improving EMS systems. These partnerships have resulted in a range of products and services including guidance for improving the education of EMS personnel, improved data systems such as the National EMS Information

System (NEMSIS) to measure and improve EMS performance, technical support for the development of 9-1-1 systems, and many others.

NHTSA works closely with the National EMS Advisory Council (NEMSAC), a group of national EMS leaders that was formed in 2007 by the Secretary of Transportation to provide advice regarding EMS to both NHTSA and to other federal agencies through the Federal Interagency Committee on EMS (FICEMS). In the five years since it was established, NEMSAC has become an important forum for helping us keep current on events and activities among the

EMS constituencies as well as serving as an effective channel for input to the Department of Transportation and to FICEMS. We highly value their input.

In addition to providing an opportunity for the EMS community to speak directly to the Federal government, NEMSAC also gives the government a way to listen. And we are listening. To advance EMS systems nationwide, the Federal government must understand the needs of the EMS community so that it can work in partnership and provide the greatest benefit. NEMSAC provides this input and Federal EMS programs are benefiting from this advice.

This NEMSAC Summary Report covers the work of the Council from 2010 through mid-2012. Much of their work during this period focused on the emerging importance of EMS as a system. The variety of EMS service configurations across the nation reflects the diversity of our communities. EMS is delivered by fire departments and as an independent service, by volunteers and by career professionals, by public and private agencies at the Federal, state and local levels. Dozens of configurations are needed to best serve the range of local needs and environments. NEMSAC is a common focal point, working to help NHTSA coordinate this array of services into a cohesive, efficient and effective system with the objective of improving patient outcomes.

The Star of Life has become synonymous with emergency medical care worldwide; it has six bars representing detection, reporting, response, on-scene care, care in transit, and transfer to definitive care—in other words, the essential functions of the EMS system. Bringing these elements together is a big job, and I'd

like to commend our NEMSAC members for their dedication and progress. Their expertise and council are valued by NHTSA. I encourage you to read this Summary Report carefully, to learn from it, and to share it with others.

NEMSAC is – and will remain – an important component of the national EMS program. Thirteen of the current members have agreed to serve a second two-year term. An additional 12 members, appointed in summer 2012, are first-time representatives who bring fresh perspectives and different experiences to the Council. We look forward to the input that this group will provide and to their help in guiding Federal support for EMS systems throughout the U.S. *



David L. Strickland
Administrator,
National Highway Traffic
Safety Administration



As a channel for EMS to speak to Washington with a unified voice, NEMSAC addresses issues that have the potential to strengthen the care EMS provides to patients nationwide, now and in the future.

Introduction

The National EMS Advisory Council presents this Summary Report with the hope that it promotes clear priorities, a strong vision for the future, and thoughtful and effective leadership on vital issues facing emergency medical services throughout the United States.

Some time ago, the Council members went through a systematic process to identify the topics we considered most important to pursue. We began with a list of more than 80 possibilities, from which emerged a short list of top priorities. The issues highlighted in this report represent fundamental concerns—some of the most challenging and important issues of our time. They have the potential to strengthen the care we provide to patients now and in the future, and significantly enhance the sustainability of EMS while enabling us to offer even greater value to society.

The research, recommendations and advisories that led to this Summary Report represent thousands of hours of work on the part of my colleagues on the Council. Each of them believes deeply in the EMS mission and the people who serve in the profession. Each of them has contributed immeasurable value in the form of ideas, creativity and willingness to listen to others—not to mention working late nights in support of a vital cause.

Did we always agree on everything? No, absolutely not. But having this national conversation, passionately discussing the

things that matter most, making sure that all voices are heard ... those are the things that lead to unity and move us forward.

Throughout the nation, every person deserves an EMS system that is ready to respond 24 hours a day when the need arises. Regardless of location, regardless of circumstances, regardless of the patient's ability to pay—the promise of EMS is to be there, to be competent, to be safe and to be compassionate. EMS is truly one of our society's most critical safety nets.

At the same time, every EMS community member—whether career or volunteer, air or ground, fire-based, private, municipal, hospital- or community-owned, from the newest EMT student to the longest-serving chief—deserves a quality education, a safe working environment, and the resources and support to get the job done.

NEMSAC has been described as a vital channel for EMS to speak to Washington with a unified voice, and to be heard by Federal stakeholders involved in emergency medical services. During my tenure on the Council, I've been impressed by the sincere interest in EMS that so many of our Federal partners have consistently expressed. I look forward to their ongoing support as EMS continues to mature as a profession.

In closing, on a personal note, I am humbled by the collective wisdom, selfless dedication and collaborative spirit of my colleagues on the Council, and honored by the opportunity to work with our Federal partners in support of the EMS system. *



Aaron Reinert
NEMSAC Chair



About the Council

The mission of the National EMS Advisory Council is to advise the National Highway Traffic Safety Administration on all EMS matters and related issues.

NEMSAC has 25 members, appointed by the Secretary of Transportation to serve as a vital link between the EMS community and the Federal Government. Together, the Council members provide expert advice and recommendations on key issues to NHTSA and

to the Federal Interagency Committee on Emergency Medical Services (FICEMS) over their two-year term.

While NEMSAC members do not represent specific organizations or agencies, they are collectively representative of the interests of EMS as a whole. Members are appointed to speak on behalf of particular segments of the EMS community including: air medical providers; data managers; dispatchers/911; emergency managers; emergency nurses; emergency physicians; EMS educators; EMS medical directors; EMS researchers; fire-based EMS; pediatric emergency medical services; State and local legislative bodies; private EMS; local EMS service directors and administrators; hospital administration; hospital-based EMS; public health; State EMS directors; State highway safety directors; trauma surgeons; and volunteer EMS.

How the Council Works

For each two-year term, NEMSAC commonly works in committees dedicated to specific topic areas, each chaired by a Council member. Committees typically have several assignments over the course of their term.

For the 2010–2012 term, committees included Safety; Medical Oversight and Research; Systems; Finance; and Education and Workforce. National EMS issues may also be discussed by the full Council outside of a committee.

Committees conduct research and engage in discussion and debate to develop recommendations, advisories and reports to the full Council for public deliberation and approval. Only then are advisories and recommendations communicated to NHTSA.

Issues for consideration are identified in a variety of ways. The Council may develop a list of priorities via consensus or a similar process. In other instances, a specific question may come from NHTSA and/or FICEMS. Finally, an emerging issue may be brought forward by a Council member, a member of the EMS community, a member of the public, a national association or a Federal agency.

The NEMSAC process is an open one, and public attendance at meetings is encouraged. Time is reserved on meeting agendas for public comment as well.

For more ways to participate in the NEMSAC process and make your voice heard, see page 23 of this report or visit www.ems.gov/nemsac.htm.

Summary of Recommendations

NHTSA and FICEMS should sponsor an EMS System Design Project. This project should identify the essential components of EMS systems, standardize terminology, and establish performance standards for minimum levels of service.

NHTSA and FICEMS should sponsor an EMS System Finance Study. The study should be comprehensive and should include EMS system components, total EMS system costs and the cost of readiness as defined by the Institute of Medicine. The study should also include finance models to address both current and proposed future cost and revenue potentials.

NHTSA should move forward with a “Creating a Culture of Safety in EMS” project. All levels of EMS, from State and Federal Government through leadership/management, EMS agencies, educators and individual providers, should adopt the EMS Culture of Safety. NHTSA should address the role that leadership plays in a positive workplace safety culture. FICEMS should: support the EMS Culture of Safety as a core value via agency grants, programs and policies; seek outside expertise in developing a national patient safety program; encourage the Centers for Medicare & Medicaid Services (CMS) to include a mechanism to reward EMS programs that implement a culture of safety; and urge CMS to include ambulance services in Quality Improvement Organizations’ statement of work.

NHTSA should lead an effort in advancing evidence-based guidelines (EBGs) in EMS. This includes forming relationships with stakeholder organizations and academic journals to hasten publication of EBGs. EBG developers should form partnerships throughout EMS, and develop implementation toolkits or training curricula. As EBGs are developed or updated, they should be incorporated into national EMS education. Strategies presented in the National EMS Research Agenda should be further implemented.

FICEMS should work with partners to create centers of excellence for EMS EBG development, and should work to make the process of developing EBGs more efficient via resources such as a worldwide EMS-related EBG registry and workshops to build EBG-development expertise. It should also sponsor an EBG scientific assembly and encourage incorporation of EBG processes into grants.

NHTSA should convene an expert group to consider the evidence basis of EMS system design. It should create an “EMS Systems of the Future” document to provide medical, operational, administrative and financial guidance to EMS systems nationwide.

For full recommendations, citations and supporting information, visit www.ems.gov/nemsac.htm. *



NEMSAC recommended that a collaborative, high-profile effort should be made to foster a culture of safety at all levels in EMS nationwide, to encompass patient safety, responder safety and vehicle safety.

Continuing to Focus on Safety

By building a national culture of safety that permeates all levels of the profession, EMS can pursue improvements in patient safety, responder safety and vehicle safety.

A positive workplace safety culture is associated with fewer errors, adverse events and other negative safety outcomes. In the 2011 NEMSAC advisory “The Role of Leadership in EMS Workplace Safety Culture,” the Council noted research suggesting that leadership that is accountable, engaged, motivated, adaptable and persistent is required to instill and sustain a positive EMS safety culture. It further noted how important it is for the perceptions of safety culture to be well aligned between leaders and frontline workers.

Unfortunately, differences in the perception of safety culture between EMS leaders and frontline workers are commonplace, with leaders often having a higher perception of safety culture than frontline workers. And although perceptions of workplace safety culture may

vary considerably among EMS organizations, research shows that many frontline workers have a “non-positive” perception of EMS management’s commitment to safety. Accordingly, NEMSAC observed that there is reason to believe poor or inadequate leadership contributes to “poor or non-positive safety culture.”

Since the Council was formed, the safety of EMS patients and providers has been at the forefront of discussion by NEMSAC. Regarding patient safety, the Council expressed a fundamental belief in the 2009 advisory “Reducing Adverse Events in EMS: Creating a Culture of Safety,” which concluded that concepts related to patient safety are not yet ingrained in the EMS community. In particular, principles that have otherwise been shown to create a safer environment (particularly leadership that creates and fosters an environment without fear) have not been broadly adopted.

In a NEMSAC committee’s review of State laws and regulations regarding quality and patient safety, most States did not have any statutes or regulations specifically regarding the safety of patients as part of their EMS rules and regulations. Where safety provisions did exist, they primarily addressed vehicle safety, such as the wearing of seatbelts. No States had any rules pertaining to the administration of medication or the



The EMS system has a fundamental duty to mitigate the risk of preventable harm to patients, members of the public and EMS workers alike.

application of procedures such as intubation. The Council further noted that resources for quality improvement related to patient safety are lacking in EMS. It noted that a strong hierarchical structure and punitive culture, as are commonly observed in EMS, could impede learning from preventable errors.

In 1999, the Institute of Medicine report “To Err Is Human” caught the attention of the public and the medical community with the topic of preventable adverse medical events. Since then, the nation’s health-care system has moved toward a culture of safety in many inpatient and outpatient settings. But these concepts and practices have yet to be widely embraced in the EMS community.

Recent data cited by NEMSAC in the advisory “Emergency Vehicle Operator Education, Training, and Safety” suggest that operator error accounts for a large proportion of ambulance crashes. This raises questions about the sufficiency

of current emergency vehicle operator training and education and what strategies might mitigate the risks to patients, responders and the public. Technology, improved employment screening, increased awareness of risks and safety practices, opportunities for new drivers to gain experience and be evaluated, addressing sleep and fatigue, and collecting data may all help reduce the risk of EMS vehicle crashes.

Why Is This Issue Important?

The EMS system has a fundamental duty to mitigate the risk of preventable harm to patients, members of the public and EMS workers. While elements of safety culture are working their way through the EMS community, the industry as a whole does not yet have a systematic approach to patient safety, vehicle safety or the importance of leadership in safety.

Based on the limited data available, NEMSAC believes that emergency vehicle driver performance and safety outcomes can improve by adopting a comprehensive systems approach to safety of emergency vehicle operations. This should include evaluation of operator educa-

The nation’s health-care system has moved toward a culture of safety in many inpatient and outpatient settings. But these concepts and practices have yet to be widely embraced in the EMS community.



tion programs, fatigue management programs, vehicle operations surveillance systems, and agency standards and operating procedures.

NEMSAC asserts that a high-profile, collaborative effort should be undertaken to foster a culture of safety in EMS that encompasses aspects of both patient safety and responder safety, with special focus on the role of leadership.

Recommendations

1. NHTSA should move forward with a process: Creating a Culture of Safety in EMS.
2. All levels of EMS—from government (State and Federal) to leadership/management, EMS agencies and educators to the level of the individual provider—should adopt the EMS Culture of Safety.
3. The NHTSA Office of EMS (OEMS) should consider developing and disseminating an implementation guide for EMS leaders. Such a guide will complement the national Safety Culture Strategy by outlining specific tools and resources that leaders and managers can leverage in their pursuit of improving EMS safety culture. The document may provide guidance on how leaders and managers can evaluate their own workplace safety culture, how they can compare their findings to peer organizations and how organizations can respond to findings.
4. FICEMS should invite representation from transportation safety experts from the FAA (Federal Aviation Administration) and NASA (National Aeronautics and Space Administration) to provide expertise for developing a national patient safety program. It should engage with safety experts in agencies such as the NTSB (National Transportation Safety Board) and the FDA (Food and Drug Administration).
5. FICEMS should adopt the EMS Culture of Safety as a core value and support it in FICEMS agency grants, programs and policies.
6. FICEMS should encourage the Centers for Medicare & Medicaid Services (CMS)—in any value-based purchasing system it develops for EMS—to include a mechanism to financially reward those EMS programs that have implemented a Culture of Safety throughout their organization.
7. FICEMS should urge CMS to help EMS providers improve the quality of services they deliver to Medicare beneficiaries—and all patients—by including ambulance services in the Quality Improvement Organizations' Statement of Work. *

Evidence-Based EMS

Evidence-based guidelines have tremendous potential to advance the field of EMS, both in patient care and system design. National leadership can help speed their adoption and acceptance by the EMS community.

Evidence-based guidelines (EBGs) are developed by multidisciplinary teams using rigorous methods to appraise scientific evidence. The EBG approach emerged from the discipline of evidence-based medicine (EBM), which involves conscientiously, explicitly and judiciously using current best evidence in making decisions about patient care, combining individual clinical expertise with the best available clinical evidence from published research.

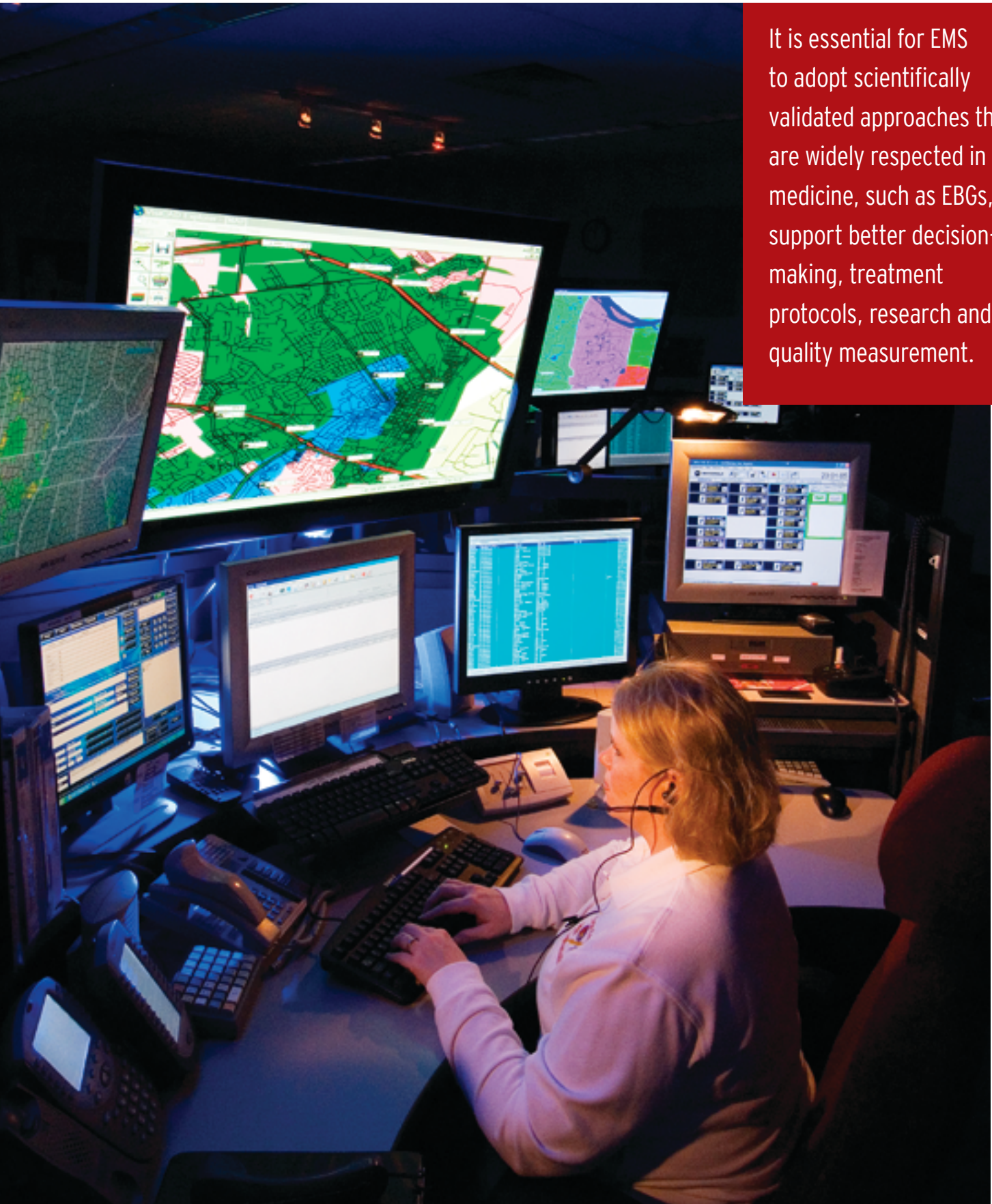
EBGs are already widely respected in medicine. However, they have not been broadly adopted in EMS. In its 2012 advisory “The Next Steps for Prehospital Care Evidence-Based Guidelines,” NEMSAC emphasized that advancing EBGs in the EMS profession is both

beneficial and essential, and expressed recommendations through which Federal entities can support the adoption of EBGs within EMS.

In 2001, the National EMS Research Agenda, published by the National Highway Traffic Safety Administration, endorsed the development of evidence-based prehospital care protocols for adults and children. A 2006 report (“The Future of Emergency Care in the United States”) by the Institute of Medicine offered similar recommendations.

In 2008, NHTSA funded a national meeting to educate EMS leaders on the role of prehospital care EBGs and create a National EBG Model Process for developing, implementing and evaluating EMS guidelines. The National EBG Model Process was subsequently approved by FICEMS.

The National EBG Model Process is based on a system known by the acronym GRADE. GRADE (Grading of Recommendations, Assessment, Development and Evaluation) is a comprehensive, standardized method for evaluating the quality of evidence and the strength of a given recommendation; it also takes into account



It is essential for EMS to adopt scientifically validated approaches that are widely respected in medicine, such as EBGs, to support better decision-making, treatment protocols, research and quality measurement.



factors such as the balance between the potential for desirable and undesirable effects related to a decision, as well as the wise use of resources.

Evidence-based guidelines are an important element for providing an expert synthesis of the evidence and improving the quality of EMS, where practice often varies among locations. Because they promote a consistent approach by prehospital providers for a given clinical scenario, EBGs can facilitate creation of standards for measuring the quality of prehospital care.

NEMSAC identified several challenges to developing and widely implementing EBGs in EMS including:

Widespread Limitations EBG development depends on both quantity and quality of evidence, and research in prehospital care is still less than optimal. Limited funding for research activities and the scarcity of EMS professionals trained in research further impede the development of EBGs in EMS. A related challenge involves the length of time it takes after a guideline is published for it to be disseminated and implemented in the field. For example, research has shown that it can take more than a year for EMS field providers to be trained to use a clinical guideline after it is released. And additional time may be necessary to incorporate new EBGs into education standards and practice.

The Predominant EMS Culture The discipline of EBG development calls for close examination of evidence, rather than intuition, tradition or consensus. But EMS historically has based many decisions on such factors as consensus, anecdotal evidence or a combination thereof. Because of this culture influence, there is reasonable anticipation that a widespread shift to an EBG-based approach may be met with resistance in the EMS community.

Unknown Impact on Outcomes EBGs have generally not been widely developed or implemented in the EMS field, which for the most part precludes qualified research into their impact on patient outcomes. Adoption of EBGs in EMS, and specifically the National EBG Model Process, may be aided by such initiatives as the National EMS Information System (NEMSIS). NEMSIS generates uniform and consistent data for EMS calls within the patient care report. This consistency makes such reports more likely to be useful to investigators assessing quality of care or otherwise developing EBGs. Furthermore, the standardization of data that NEMSIS enables at the local, regional, State and national level also brings considerable value to the development of EBGs.

Why Is This Issue Important?

The ultimate goal of EMS is to provide the most appropriate and most current care to positively influence patient outcomes—and to do so responsibly and efficiently. NEMSAC notes that NHTSA and its Federal partners have recognized the potential of EBGs to advance the field of EMS, and have funded past projects to move EBGs forward in the prehospital profession, including pilot initiatives to develop EBGs for pediatric seizure treatment, prehospital pain management, and utilization of air-medical transport for the trauma patient.

It is essential for EMS to adopt scientifically validated methodologies that are widely respected in medicine, such as EBGs, to support decision-making and treatment protocols. EBGs can also enable better research and quality measurement.

EBGs are not limited only to therapeutic interventions—they can be developed around any aspect of EMS activities for which there is evidence to evaluate. One such activity is EMS system design, as examined in the 2012 NEMSAC advisory “Evidence Basis for EMS System Design.”

MUCC: An Example of Guideline Implementation

The Model Uniform Core Criteria (MUCC) for Mass Casualty Incident (MCI) Triage, developed with funding support from the Centers for Disease Control and Prevention (CDC), provide uniform national guidelines for MCI triage systems.

MUCC was developed in 2011 through a consensus-based process informed by the best currently available scientific evidence. In May 2012, NEMSAC recommended that FICEMS support national adoption of MUCC. The NEMSAC recommendations addressed such issues as:

Metrics for Adoption and Measurement MUCC consists of a series of criteria. These criteria could form the basis for a checklist that could be used to measure MCI triage systems and tools’ compliance with MUCC.

Involvement of Multiple Channels for Disseminating Guidelines Tools for implementing MUCC can be developed and disseminated among national, State, regional and local EMS officials, with additional support and leadership from national EMS organizations.

Support From Federal Entities NEMSAC advised that FICEMS member agencies can assist in disseminating relevant guideline documents to EMS organizations and facilitate a national effort to standardize MCI triage training materials in support of nationwide adoption of triage tools and systems that are MUCC compliant.

EMS systems are highly complex, integrated structures with multiple components, many times acting autonomously. This results in wide variability in what medical care is provided, how it is provided and how (or whether) it is measured.

This variability is unsurprising given the lack of a standardized process for decision-making in EMS, particularly related to balancing advances in care with the cost of delivering them. For the first time, however, by providing a reliable mechanism for examining EMS system design in the context of both medical and economic outcomes, the EBG process may allow EMS leaders to structure their systems to deliver the best possible outcomes at the most reasonable cost.

NEMSAC concluded that these two considerations—the medical evidence related to patient outcomes, and economic evidence that supports prioritization of potential design components—can be analyzed to make improvements in system design via an EBG process.

The Council emphasized that evidence-based guidelines should be an ongoing process and a fundamental part of the EMS culture nationwide, in both patient care and system design. In issuing its two advisories on evidence-based guidelines, NEMSAC issued several recommendations for ways in which Federal entities can support the advancement of EBGs in EMS:

Recommendations

1. NHTSA should lead the effort in forming relationships with stakeholder organizations and academic journals to hasten the process of publishing EBGs. Also, organizations developing EBGs should form partnerships with EMS organizations, State and local EMS agencies, and EMS provider agencies to help decrease the time to implementation of EBGs in the field. Such organizations should also develop

To deliver the best possible outcomes at the lowest reasonable cost, evidence-based guidelines should be an ongoing process and a fundamental part of the EMS culture nationwide, in both patient care and system design.

implementation toolkits or training curricula to incorporate a given EBG into providers' clinical practice.

2. As EBGs are introduced or updated, NHTSA and other education stakeholders should make efforts to incorporate them into national EMS education.
3. FICEMS should work in coordination with NHTSA, the National Institutes of Health (NIH), the National Quality Forum (NQF) and the Agency for Healthcare Research and Quality (AHRQ) to seek means to further implement the strategies presented in the National EMS Research Agenda, specifically the recommendations on defining prehospital patient outcome measures, promoting training of EMS researchers, and creating funding sources specifically for EMS research, in order to increase the quantity and quality of EMS research and expertise, thereby supporting the development of EBGs.
4. FICEMS should work with NHTSA, AHRQ and other member agencies to create Center(s) of Excellence for EMS EBG development.
5. FICEMS, in partnership with NHTSA and AHRQ, should work to make the process of developing EBGs more efficient by creating supporting mechanisms, such as a registry of current EBG efforts with prehospital relevance worldwide. Educational resources should also be developed to build expertise in the EBG development process throughout the EMS field.
6. FICEMS, the NIH and the AHRQ should request that member agencies and departments incorporate into Federal grant guidance language specifying that qualified EBG processes be used for grants.
7. FICEMS should sponsor a regular EBG Scientific Assembly that brings together practitioners and academic EMS professionals to determine best practices for developing and implementing EBGs, to prioritize EBGs for



future development and to develop strategies for overcoming barriers that the culture of EMS presents to disseminating and implementing EBGs. The EBG Scientific Assembly should also conduct workshops to help novice EBG investigators learn the National EBG Model Process and GRADE system.

8. NEMSAC recommends that NHTSA continue with its existing “EMS Typology” project and report back to NEMSAC on the results of the nationwide survey of EMS systems.
9. NEMSAC recommends that NHTSA convene a working group of EMS experts charged with reviewing the evidence and typology and establishing a framework to consider the evidence basis of EMS system design.
10. NEMSAC recommends that NHTSA embark on a project, using the framework document referenced in the previous recommendation above, to create an “EMS Systems of the Future” document to provide medical, operational, administrative and financial guidance to EMS systems throughout the United States. ✪



In many communities, EMS response is the only available health-care safety-net service. Yet EMS is not recognized by most policymakers as an essential service, with funding that ensures readiness to respond.



Performance-Based Funding and Reimbursement

A growing number of EMS agencies nationwide are believed to face funding difficulties. This issue deserves thoughtful and innovative solutions in pursuit of a more sustainable, readiness-based funding and reimbursement model.

EMS is unquestionably a critical part of the nation’s health-care safety net. Yet, in many local communities, the cost of providing emergency ambulance services frequently exceeds currently available revenue. Even in the best cases, there usually is little or no surplus revenue to fund innovation or improvements in safety or quality of prehospital care.

In systems in which costs exceed revenue, the mismatch can be resolved either by increasing reimbursement or subsidies, or by decreasing costs. There are, of course, fixed costs required to provide a clinically acceptable level of service, and NEMSAC notes that

decreasing funding at any level will result in a direct negative impact on quality of care.

Noting an apparent trend in which health-care providers are moving away from user fees or payment per procedure to other payment models, the Council believes EMS should also evaluate other models for reimbursement.

EMS systems have long been variably characterized as existing within the realms of health care, public health and public safety. Yet the only reliable funding source—reimbursement via user fees—falls within just one of those domains (health care), contributing to increased potential for chronic underfunding.

NEMSAC also notes that misperceptions about the role of EMS agencies in the broader health-care system, by both government oversight agencies and the general public, may be contributing to a significant funding crisis.

Prior to arrival at the scene, there is no way to know with certainty what services are needed. Yet ambulance reimbursement is subject to the health-care system's medical necessity rules, which NEMSAC believes are inappropriate when determining reimbursement for ambulance transport. (NEMSAC's position is that reimbursement should be based on the "prudent layperson" standard, and not subject to denial or reduction on retrospective review.)

The public expects high-quality EMS 24 hours a day, 365 days a year.

The current predominant reimbursement system requires a patient to be transported to receive

Using publicly available data, NEMSAC estimated that the nation's ground ambulance services provide some \$2.9 billion in uncompensated care annually.

payment. The National EMS Assessment indicates that only 76 percent of EMS responses result in a transport. Put another way, 24 out of every 100 responses are ineligible for reimbursement because they do not result in ambulance transport to a hospital.

Furthermore, NEMSAC estimated that the nation's ground ambulance services provide some \$2.9 billion in uncompensated care annually (\$1.542 billion in charity care plus \$1.327 billion in undercompensated care). This calculation, which is based on publicly available data, includes transport only; it does not include costs related to consolidated 911 dispatch



EMS funding mechanisms must consider the role EMS plays in producing positive patient outcomes.

centers, prevention activities, community outreach, first responders, billing and collection, or the cost of responding to calls that do not result in a patient being transported to a hospital. The Council noted that none of those costs are captured in previous studies.

Why Is This Issue Important?

The public expects high-quality EMS 24 hours a day, 365 days a year. In many communities, EMS response is the only available health-care safety-net service. Unfortunately, EMS is not recognized by most policy makers as an essential service, with sustainable appropriate funding mechanisms to ensure readiness to respond.

To fully realize improved patient outcomes, efficiencies and patient satisfaction, EMS must be integrated into the broader health-care system. EMS funding mechanisms must consider the role EMS plays in producing positive outcomes.

EMS also must be able to respond to emergency requests for service regardless of a patient's ability to pay.

A comprehensive evaluation of total EMS system cost is warranted, and should include each of the individual system functions and activities, not merely ambulance transport.

NEMSAC has proposed a pathway to shift to a more sustainable, readiness-based funding and reimbursement model; this model takes into account the significant impact that ambulance services and EMS systems can have on the safety and health of the public.

NEMSAC has also developed an EMS System Finance Matrix that attributes EMS functions and proposed funding to either user fees (via payers) or government (via tax dollars).

Finally, NEMSAC asserts that EMS should be considered an essential service. As such, appropriate steps must be taken by all stakeholder communities to ensure sustainable funding.



Recommendations

1. NHTSA, in coordination with FICEMS, should sponsor a comprehensive EMS System Design project that will identify the essential components and functions of EMS systems, standardize terminology and establish performance standards for minimum levels of service.
2. NHTSA, in coordination with FICEMS, should sponsor a comprehensive EMS System finance study that accounts for all costs and revenues. The study should include: EMS system components; total EMS system costs; cost of readiness as defined by the Institute of Medicine; finance models to address both current and proposed future cost and revenue potentials. The project should produce a template to calculate financial considerations in upgrading current services to minimum standards or to an advanced scope of service (e.g., basic life support to advanced life support service, treat-without-transport options, specialized cardiac and stroke programs, community paramedicine, and hospital/emergency department readmission abatement programs); as well as potential savings to the health-care system, to support cost/benefit determination. The study should also include a shared-savings model for EMS performance enhancement and improved patient outcomes, with savings to the health-care system reinvested back into EMS to further develop cost-saving programs. *



Council Members

2010-2012

Sherri-Lynne Almeida, RN, DrPH, MSN, MEd • Almeida serves as chief nursing officer for CareFusion and was formerly the EMS administrator and infection control officer for the Houston Fire Department. She is also a past president of the Emergency Nurses Association.

Leageay Barnes • Barnes is the program director for emergency medical services at Oklahoma City Community College. She is also an active member of the National Association of EMS Educators.

Arthur Cooper, M.D. • Cooper is a professor of surgery and director of trauma and pediatric surgical services at Columbia University's Medical Center in affiliation with the Harlem Hospital Center in New York.

Marc Goldstone, J.D. • Goldstone served 14 years as a paramedic and is vice president and associate general counsel for the Community Health Systems of Tennessee. He was the founding chairman of the Emergency Medical Services/Medical Transportation Attorneys Group of the American Health Lawyers Association.

Kyle R. Gorman • Gorman is the executive officer of the Clackamas County Fire District One in Oregon. He has been active in the International Association of Fire Chiefs and the National Fire Protection Association's Technical Committee on EMS.

Troy M. Hagen, MBA • Hagen is director of Ada County Paramedics in Idaho and oversees all aspects of the countywide ambulance taxing district that covers 1,055 miles and 400,000 residents in urban and rural areas.

Thomas Judge • Judge is executive director of LifeFlight of Maine and the immediate past president of the Association of Air Medical Services, which represents 300 air medical services.

Kenneth R. Knipper • Knipper has been a prominent and outspoken advocate for volunteer EMS providers, both in Kentucky and nationally, for more than 25 years.

Baxter Larmon, Ph.D. • Larmon is a professor of emergency medicine at the David Geffen School of Medicine at the University of California, Los Angeles (UCLA) and the founding director of the UCLA Center for Prehospital Care. He founded the Prehospital Care Research Forum, which has published more than 400 EMS-related studies.

Gary G. Ludwig • Ludwig is the deputy fire chief for Memphis, Tennessee. He is currently chair of the EMS section of the International Association of Fire Chiefs.

James McPartlon • McPartlon is the general manager of Mohawk Ambulance Service in Schenectady, New York. He is past president of the American Ambulance Association.

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The mission of the National EMS Advisory Council is to advise the National Highway Traffic Safety Administration on all EMS matters and related issues.

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DOT HS 811 705
January 2013

