

STATE OF NEW HAMPSHIRE



A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

September 11-13, 2018

**National Highway Traffic Safety Administration
Technical Assistance Team**

Mark Gestring, MD, FACS
Andy Gienapp, MS, NRP
Peter Taillac, MD, FACEP
Keith Wages

Dave Bryson, Facilitator
Susan Gillies, Executive Support

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BACKGROUND

Injury is the leading cause of death for persons in the age group one through 44 as well as the most common cause of hospitalizations for persons under the age of 40. The financial costs of injuries are staggering: injuries cost billions of dollars in health care and social support resources.

In 2014, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) reported the price tag for crashes was at \$871 billion in economic loss and societal harm. This includes \$277 billion in economic costs – nearly \$900 for each person living in the United States – and \$594 billion in harm from the loss of life and the pain and decreased quality of life due to injuries. Each year over 37,000 people lose their lives on the nation's roads. NHTSA is charged with reducing death and injury on the nation's highways. NHTSA has determined it can best use its limited Emergency Medical Services (EMS) resources if its efforts are focused on assisting States with the development of integrated EMS programs which include comprehensive systems of trauma care.

To accomplish this goal, in 1988 NHTSA developed a Technical Assistance Team (TAT) approach which permitted states to utilize highway safety funds to support the technical evaluation of existing and proposed emergency medical services programs. Following the implementation of the Assessment Program, NHTSA developed a Reassessment Program to assist those states in measuring their progress since the original assessment. The Program remains a tool for states to use in evaluating their statewide EMS programs. The Reassessment Program follows the same logistical process, and now uses the same ten component areas plus the area of preparedness with updated standards. The standards now reflect current EMS philosophy and allow for the evolution into a comprehensive and integrated health management system, with regional accountable systems of care, as identified in the 2006 Institute of Medicine (IOM) Report on the Future of Emergency Care. NHTSA serves as a facilitator by assembling a team of technical experts who demonstrate expertise in emergency medical services development and implementation. These experts demonstrate leadership and expertise through involvement in national organizations committed to the improvement of emergency medical services throughout the country. Selection of the Technical Assistance Team is also based on experience in special areas identified by the requesting State. Examples of specialized expertise include experience in the development of legislative proposals, data gathering systems, and trauma systems. Experience in similar geographic and demographic situations, such as rural areas, coupled with knowledge in providing emergency medical services in urban populations is essential.

The New Hampshire Office of Highway Safety and the Division of Fire Standards and Training and Emergency Medical Services (the Division) requested NHTSA's assistance. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the New Hampshire EMS program. NHTSA developed a format whereby the EMS staff coordinated comprehensive briefings on the EMS system.


The TAT assembled in Concord, New Hampshire, September 11 - 13, 2018. For the first day and a half, over 20 presenters from the State provided in-depth briefings on EMS and trauma care. Topics for review and discussion included the following:

- Regulation and Policy
- Resource Management
- Human Resources and Education
- Transportation
- Facilities
- Communications
- Trauma Systems
- Public Information and Education
- Medical Direction
- Preparedness
- Evaluation

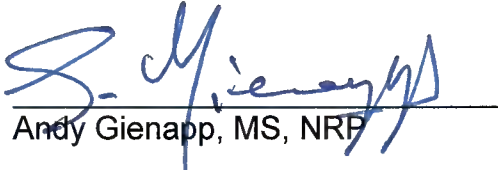
The forum of presentation and discussion allowed the TAT the opportunity to ask questions regarding the status of the EMS system, clarify any issues identified in the briefing materials provided earlier, measure progress, identify barriers to change, and develop a clear understanding of how emergency medical services function throughout New Hampshire. The team spent considerable time with each presenter so they could review the status for each topic.

Following the briefings by presenters invited by the Division, public and private sector providers, and members of the medical community, the TAT sequestered to evaluate the current EMS system as presented and to develop recommendations for system improvements. When reviewing this report, please note the TAT focused on major areas for system improvement.


The statements made in this report are based on the input received. Pre-established standards and the combined experience of the team members were applied to the information gathered. All team members agree with the recommendations as presented.



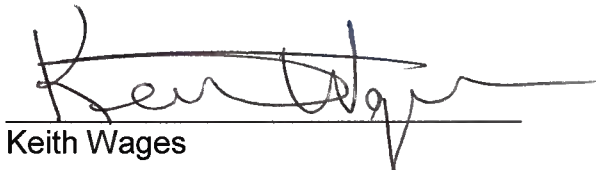
Mark Gestring, MD, FACS



Andy Gienapp, MS, NRP



Peter Taillac, MD, FACEP



Keith Wages

ACKNOWLEDGMENTS

The Technical Assistance Team (TAT) acknowledges the Division, its Bureau of EMS, and the Office of Highway Safety for their support of the assessment process.

The TAT thanks all of the presenters for being candid and open regarding the status of EMS in New Hampshire and for their extraordinary efforts and well-prepared presentations. Each presenter was responsive to the questions posed by the TAT which aided the reviewers in their evaluation. Many of these individuals traveled considerable distance to participate.

Special recognition and thanks go to Justin Romanello, Bureau Chief, and the entire staff for their logistical support and gracious hospitality.

INTRODUCTION

From the classic New England charm of its sea coast to the majestic White Mountains, New Hampshire is both a vacation and adventurer's paradise, as well as a place 1.3 million residents call home. The State is geographically small, but mountainous terrain in the north and a limited highway system can pose significant challenges to the consistent delivery of EMS services. The rural nature of much of the State combined with the voluntary engagement of many key components of the EMS system add to the complexity of issues faced by those working to improve the delivery of emergency medical services to the citizens of New Hampshire.

One of the original Thirteen Colonies, New Hampshire became the first colony to set up an independent government and the first to establish a constitution in January 1776. General John Stark, a New Hampshire war hero, is credited for the State's motto when he proclaimed in a speech, "Live free or die; death is not the worst of evils."

New Hampshire is proud of its long-standing tradition of individualism amongst its population and the desire on the part of state government to keep regulations and fees to a minimum. There are no state income taxes, no sales taxes, no laws governing adult vehicular restraints or helmet use and no requirement for drivers to maintain automobile insurance. While these aspects of the State's cultural dynamic make New Hampshire a unique place to live, they also present unique challenges to the development and maintenance of an effective statewide EMS system.

Ongoing efforts on the part of dedicated professionals passionate about improving access and emergency care have led to significant improvements in the statewide EMS system. Since the first NHTSA Statewide EMS Assessment in 1990, the Bureau of EMS has moved out of the Department of Health and Human Services (DHHS) and into the Department of Safety. A more recent assessment of the statewide trauma system completed by the American College of Surgeons Committee on Trauma in 2016 helped to identify important issues related to the delivery of trauma care across the State. This report helped State EMS leadership prioritize efforts needed to address identified concerns and allowed progress to be made in many key areas.

The mission of the Division is to protect the residents and visitors of New Hampshire. The purpose of this report is to provide recommendations to the State EMS leadership on how to better accomplish that mission.

A. REGULATION AND POLICY

Standard

Each state should embody comprehensive enabling legislation, regulations, and operational policies and procedures to provide an effective statewide system of emergency medical and trauma care and should:

- Establish the EMS program and designate a lead agency;
- Outline the lead agency's basic responsibilities and authorities including licensure and certification including the designation of emergency medical services regions;
- Require comprehensive EMS system planning;
- Establish a sustainable source of funding for the EMS and trauma system;
- Require prehospital data collection which is compatible with local, State and national efforts such as the National EMS Information System (NEMIS) and evaluation;
- Provide authority to establish minimum standards related to system elements such as personnel, services, specialty care facilities and regional systems and identify penalties for noncompliance;
- Provide for an injury/trauma prevention and public education program;
- Integrate the special needs of children and other special populations throughout the EMS system; and
- Integrate pediatric EMS needs into State statutes, rules and regulations.

All of these components, which are discussed in different sections of this guideline, are critical to the effectiveness of legislation, regulations or policies/procedures which are the legal foundation for a statewide EMS system.

Status

Pursuant to the New Hampshire Revised Statutes Annotated Chapter 153-A, the Division has been established as the lead EMS agency for Emergency Medical and Trauma Services and Emergency Medical Services Rules have been promulgated in Chapter Saf-C 5900 of the New Hampshire Code of Administrative Rules. These rules were adopted with the advice and assistance of the Emergency Medical and Trauma Services Coordinating Board, the EMS Medical Control Board and the Trauma Medical Review Committee.

The Commissioner of Public Safety is ultimately responsible for the statewide supervision of emergency medical services, and the Director of the Division oversees the administration of the Division.

The Division is responsible for:

- managing the training, testing, and licensing of EMS providers, units, instructors, training agencies, and EMS vehicles, including wheelchair vans (Law: [RSA 153-A](#)) (Rules: [Saf-C 5900](#));
- supporting, promoting, and offering education and public information regarding the availability and use of the EMS and trauma services system;
- providing for the training and testing (written/practical) of emergency medical care providers ([RSA 153-A:11](#));
- planning and providing resources for a cooperative effort between private and governmental agencies and emergency medical and adult/pediatric trauma services in the event of an emergency, including response to a mass casualty incident;
- facilitating the establishment and maintenance of a communications network that addresses citizen access to the emergency medical and trauma services system and communications between all of the agencies and facilities involved in the care or transportation of patients ([EMS Units](#)), healthcare facilities, [EMS Regional Councils](#), local, county, and state agencies);
- establishing a data collection and analysis capability that provides for the evaluation of the emergency medical and trauma services system (TEMSIS);
- carrying out investigations, as provided under [RSA 153-A:14](#); and,

- preparing budgets and grant requests for funds needed to maintain an effective emergency medical and trauma services system.

The Division reported difficulty in conducting business due to the State's prohibition against electronic participation in meetings.

The Division also reported that EMS providers not affiliated with fire organizations are not eligible for line of duty death (LODD) benefits although they assume the same risks in performing their duties.

Recommendations

The Division should:

- **Amend the New Hampshire Code of Administrative Rules to authorize the Division to sanction licensed EMS personnel for failing to comply with the standards of care.**
- Work with elected officials to amend statute to enable electronic conferencing for board meetings to increase participation from stakeholders across the State.
- Work with elected officials to amend statute to include line of duty death benefits for all licensed EMS personnel including privately employed and volunteer personnel.

B. RESOURCE MANAGEMENT

Standard

Each State EMS lead agency should identify, categorize, and coordinate resources necessary for establishment and operation of regionalized, accountable EMS and trauma systems. The lead agency should:

- Maintain a coordinated response to day-to-day emergencies as well as mass casualty incidents or disasters and ensure that resources are used appropriately throughout the State;
- Have policies and regulations in place to assure equal access to basic emergency care for all victims of medical or traumatic emergencies;
- Provide adequate triage, including trauma field triage, and transport of all patients by appropriately certified personnel (at a minimum, trained to the emergency medical technician [EMT] level) in properly licensed, equipped, and maintained ambulances;
- Provide transport to a facility that is appropriately equipped, staffed and ready to administer to the needs of the patient including specialty care hospitals (section 4: Transportation);
- Appoint an advisory council, including pediatric EMS representation, to provide broad-based input and guidance to the State EMS system and to provide a forum for cooperative action and for assuring maximum use of resources; and
- Coordinate with State Highway Safety Agency and other State Agencies in the development of the Strategic Highway Safety Plan to ensure that EMS system information is used to evaluate highway safety problems and to improve post-crash care and survivability.

Status

New Hampshire utilizes a system of licensing which first defines the agency as either transporting or non-transporting. The vehicles within the agencies are then classified as Advanced Life Support (ALS) or Basic Life Support (BLS). Either a paramedic or Advanced Emergency Medical Technician (AEMT) may staff ALS vehicles, while BLS vehicles must be staffed by an EMT.

New Hampshire currently does not license or endorse critical care paramedics or agencies. This has created challenges for the inter-facility transport of the most acute patients as the current practice across the State relies upon air ambulance services (which are often unavailable due to weather) or the use of nurses, physicians, or mid-level practitioners from the local facility (which strips resources from the community).

The EMS Coordinating Board is comprised of 22 members representing a broad cross-section of the State and includes pediatric representation. The EMS for Children (EMSC) program is active and engaged and progressing on the recognition of pediatric capabilities within the facilities.

The Division enjoys a close working relationship with the Office of Highway Safety, participates in the strategic planning for highway safety and on the Traffic Records Coordinating Committee. The Office of Highway Safety has supported the Division in its data collection and injury surveillance efforts by providing funding support for EMS and trauma data systems. Efforts are ongoing to link EMS and trauma data with crash records.

A variety of service delivery models exist within New Hampshire that range from volunteer, to "call", to full-time paid departments. There are indications that New Hampshire is experiencing difficulty in recruiting and retaining its workforce, not unlike the rest of the nation. Additionally, the most rural parts of the State remain dependent on volunteers and are facing the challenge of replacing this ever-decreasing resource. For years in rural America, EMS has been funded through the subsidy provided by the volunteer in the form of donated labor. As volunteers have become fewer and fewer, rural communities find themselves struggling to find pathways to sustainable EMS. This problem is not unique to New Hampshire as all of rural America finds itself in the same predicament.

There are no easy solutions to solve workforce problems, but the Division is taking important steps. Determining the current status of the workforce and the factors that are placing strain on it is crucial to developing solutions. To that end, the Division is encouraged to quickly implement the new electronic licensure system as it will provide vital data from across the State, and to pursue an in-depth workforce survey. This information can then be analyzed to determine opportunities for workforce development and growth.

Transport to appropriate facilities, strengthening of regulatory language and policies, and the development of robust systems of care are addressed in other sections of this report, but New Hampshire's success in addressing those recommendations are fundamental to the concepts of resource management.

Recommendations

The Division should:

- Pursue an agreement with the National Collaborative for Bio-preparedness as a potential solution for linking EMS and trauma data with the crash records system.
- **Conduct a comprehensive statewide EMS workforce study to determine the status of the workforce, identify any gaps by geographical region, and if gaps exist, establish a workforce training and retention plan.**
- **Develop administrative rules that define authority and a recognition process for Critical Care Paramedics and services.**

C. HUMAN RESOURCES AND EDUCATION

Standard

Each State should ensure that its EMS system has essential trained and certified/licensed persons to perform required tasks. These personnel include: first responders (e.g., police and fire), prehospital providers (e.g., emergency medical technicians and paramedics), communications specialists, physicians, nurses, hospital administrators, and planners. Each State should provide a comprehensive statewide plan for assuring a stable EMS workforce including consistent EMS training and recruitment/retention programs with effective local and regional support. The State agency should:

- Ensure sufficient availability of adequately trained and appropriately licensed EMS personnel to support the EMS system configuration;
- Assure an ongoing state EMS personnel needs assessment that identifies areas of personnel shortage, tracks statewide trends in personnel utilization and which establishes, in coordination with local agencies, a recruiting and retention plan/program;
- Establish EMT as the state minimum level of licensure for all transporting EMS personnel;
- Routinely monitor training programs to ensure uniformity, quality control and medical direction;
- Use standardized education standards throughout the State that are consistent with the National EMS Education Standards;
- Ensure availability of continuing education programs, including requirements for pediatric emergency education;
- Require instructors to meet State requirements;
- Assure statutory authority, rules and regulations to support a system of EMS personnel licensure that meets or exceeds the national EMS Scope of Practice Model, new National EMS Education Standards, as they are available, and other aspects of the EMS Education Agenda for the Future; and
- Monitor and ensure the health and safety of all EMS personnel.

Status

Currently there are 5,317 licensed EMS personnel at the Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT) and Paramedic levels. With the exception of 31 individuals still certified at the New Hampshire EMT level, all licensees are initially registered by the NREMT and must maintain National Registry certification. All initial education programs are Division-authorized and must comply with the National EMS Education Standards. When critical care transport resources are not available, the Division reports that hospital staff sometimes assist with transports even though hospital staff may be unfamiliar with ambulance operations.

As of August 2018, the number of New Hampshire EMS licensees by level were as follows:

EMR	206
NHEMT	31
EMT	2,517
AEMT	1,235
Paramedic	1,065

Of the 120 licensed EMS Instructors/Coordinators, approximately 60 teach initial education courses. The pass rate on the initial attempt is 71 percent for all levels with the following breakdown by level:

EMR-	69 percent
EMT-	72 percent
AEMT-	63 percent
Paramedic-	90 percent

Three items from the presentations that deserve specific recognition are:

1. Paramedic Inter-Facility certification training for paramedics conducting routine inter-facility transfers.
2. "EMS in the Warm Zone" training program.
3. New Hampshire was the 16th state to enact legislation to join the Interstate Compact for EMS Licensure (commonly known as REPLICA).

Recommendations

The Division should:

- **Conduct a comprehensive statewide EMS workforce study to determine the status of the workforce, identify any gaps by geographical region, and if gaps exist, establish a workforce training and retention plan.**
- Establish an EMS Education Section within the Division and create an EMS Education Manager position.
- Require Advanced EMT Education to be conducted by professional education organizations such as training agencies, hospitals and post-secondary education institutions.
- Review and revise the standards for EMS instructors to include sanctions for instructors who consistently fail to meet educational standards.
- In conjunction with NREMT, establish a process for RN to EMT licensure.
- **Utilize the excellent fire training and simulation facility for more EMS training programs, potentially including standardized programs such as PEPP/PALS, PHTLS, ACLS, etc.**

D. TRANSPORTATION

Standard

Each State should require safe, reliable EMS transportation. States should:

- Develop statewide EMS transportation plans, including the identification of specific EMS service areas and integration with regionalized, accountable systems of emergency care;
- Implement regulations that establish regionalized, accountable systems of emergency care and which provide for the systematic delivery of patients to the most appropriate specialty care facilities, including use of the most recent Trauma Field Triage Criteria of the American College of Surgeons/Committee on Trauma;
- Develop routine, standardized methods for inspection and licensing of all emergency medical transport services and vehicles, including assuring essential pediatric equipment and supplies;
- Establish a minimum number of personnel at the desired level of licensure on each response and delineate other system configuration requirements if appropriate;
- Assure coordination all emergency transports within the EMS system, including public, private, or specialty (air and ground) transport and including center(s) for regional or statewide EMS transportation coordination and medical direction if appropriate; and
- Develop regulations to ensure ambulance drivers are properly trained and licensed.

Status

The New Hampshire EMS system contains over 300 licensed EMS agencies operating more than 579 vehicles, and a workforce of more than 5,300 licensed providers. As with most states, the business models of the agencies are widely varied, as well as the level of care the Division authorizes each agency to provide.

Response areas are declared by each agency and generally follow the geopolitical boundaries of the sponsoring municipality.

The Division has established by administrative rule that a minimum staffing level is comprised of two licensed persons: an Emergency Medical Responder (EMR) and an Emergency Medical Technician (EMT), with the EMT as the minimum level of licensure to attend a patient. It does not appear that there are any criteria established for the drivers of ambulances.

The Division maintains a two-year cycle of ambulance inspections, although the number of vehicles presents an enormous task for the Division.

The number of complaints and investigations received by the Division warrant the assignment of additional personnel to the compliance section.

The Centers for Disease Control (CDC) Trauma Triage Guidelines are included in the statewide protocols which are incorporated by reference into administrative rule.

During the assessment, there was extensive discussion on issues and factors relating to the systems of care within the State, most specifically, the systems addressing the time sensitive emergencies of trauma, stroke, and STEMI. While each of these systems have had some effort and success, with regard to transportation, there is little evidence to suggest that the transport of patients supports these systems and concepts.

For example, it was reported that EMS routinely transports trauma patients to facilities that do not have a trauma designation, even when transport to a designated trauma center warrants bypassing the closest facility. This indicates that the transportation of patients is reliant on the EMS agencies interpretation of the term "appropriate facility" rather than an organized system of care.

There is an advocacy group promoting the proper transport and treatment of stroke patients, although no formal infrastructure for a stroke system exists. Similarly, there is no formal structure for a cardiac or STEMI system of care.

Air medical assets within the State are limited to the three rotor-wing aircraft operated by Dartmouth-Hitchcock Medical Center. It was reported that other aircraft are routinely entering the State to transport patients with little coordination within the system. Additionally, these air medical services do not report data and patient care reports to the Division, leaving the Division unable to determine how many patients are transported out of state, and unable to determine whether those patients were transported to appropriate destinations.

These are all indicators that New Hampshire does not have true integrated, regionalized, and accountable systems of care which are linked by a comprehensive, organized, and well-regulated transportation plan.

While the issues with the trauma system will be discussed in greater detail within this report, the TAT concurs with the American College of Surgeons (ACS) findings in their 2016 systems report that the New Hampshire system does not appear to be transporting patients appropriately to trauma centers. We would assert that in all likelihood, this is occurring with regard to other time sensitive emergencies.

Recommendations

The Division should:

- **Prioritize the recommendations of the 2016 ACS Systems Report, building toward a statewide, mandated and inclusive trauma system.**
- Develop a comprehensive and integrated transportation plan that supports time sensitive systems of care including trauma, stroke and STEMI.
- **Continue to pursue compliance with existing statutes and administrative rules by air ambulance services to include patient reporting requirements.**
- **The Division should assign additional personnel to help process and investigate complaints received by the Division.**
- Utilize staff members dedicated to quality improvement duties to analyze the data that is available to determine the current level of appropriate transportation.
- **Amend administrative rules to remove ambiguity to include defining the term “appropriate facility.”**
- De-conflict and streamline equipment requirements to reduce costs and administrative burdens for multi-level EMS agencies.

E. FACILITIES

Standard

It is imperative that the seriously injured (or ill) patient be delivered in a timely manner to the closest appropriate facility. Each State should ensure that:

- Both stabilization and definitive care needs of the patient are considered;
- There is a statewide and medically accountable regional system, including protocols and medical direction, for the transport of patients to state-designated specialty care centers;
- There is state designation of specialty medical facilities (e.g. trauma, burns, pediatric, cardiac) and that the designation is free of non-medical considerations and the designations of the facilities are clearly understood by medical direction and prehospital personnel;
- Hospital resource capabilities (facility designation), including ability to stabilize and manage pediatric emergencies, are known in advance, so that appropriate primary and secondary transport decisions can be made by the EMS providers and medical direction;
- Agreements are made between facilities to ensure that patients, including pediatric patients, receive treatment at the closest, most appropriate facility, including facilities in other states or counties;
- Hospital diversion policies are developed and utilized to match system resources with patient needs – standards are clearly identified for placing a facility on bypass or diverting an ambulance to appropriate facilities.

Status

There are 26 hospitals in the State of New Hampshire and the Division reports that all are required to participate in the State trauma system. Ten are designated as trauma centers at some level. Sixteen are undesignated. Level I and Level II trauma centers are verified by the American College of Surgeons Committee on Trauma (ACS-COT) and designated by the State. Level III centers can be verified by either ACS-COT or the State and Level IV centers are verified by the State.

While current State guidelines direct that trauma patients should be brought to the nearest “appropriate” hospital, the term “appropriate” is not defined and does not refer to trauma center designation. Currently, trauma patients are transported by EMS to both designated and undesignated trauma centers.

Critical care transport infrastructure is vital to facilitate safe, timely and efficient transfer of complex patients who require a higher level of care. This is addressed in the transportation section.

Hospital diversion policies are currently vague and inconsistent across facilities. The Division reports that monitoring of hospital diversion is difficult at the system level.

From an overall systems perspective, oversight of hospitals falls under DHHS while oversight of EMS falls under the Division. As trauma systems require coordination of both, this can lead to administrative and communication issues.

There is currently no State designation for facilities that manage acute stroke or STEMI.

Recommendations

The Division should:

- **Require all New Hampshire hospitals to seek State trauma center designation at some level. Trauma patients should not be transported by EMS to non-designated hospitals.**
- Require Level III trauma centers to be verified by the American College of Surgeons prior to designation by the State. The State should continue to designate and verify Level IV trauma centers.
- **Clarify and standardize policies related to hospital diversion. Improve active monitoring and reporting of hospital diversion to State EMS officials.**
- **Define a clear chain of communication between oversight of hospitals (DHHS) and oversight of EMS (the Division) to facilitate overall trauma system oversight.**
- Develop a State stroke verification and designation program. Encourage smaller facilities to meet ASRH (Acute Stroke Ready Hospitals) standards.
- Develop a State STEMI verification and designation program to assure facilities meet evidence-based cardiac care standards.

F. COMMUNICATIONS

Standard

An effective communications system is essential to EMS operations and provides how emergency resources can be accessed, mobilized, managed, and coordinated. Each State should assure a comprehensive communication system to:

- Begin with the universal system access number 911;
- Strive for quick implementation of both wire line and wireless enhanced 911 services which make possible, among other features, the automatic identification of the caller's number and physical location;
- Strive to auto-populate prehospital patient care report (NEMSIS compliant) with all relevant times from the public safety answering point (PSAP);
- Provide for emergency medical dispatch training and certification for all 911 call takers and EMS dispatcher;
- Provide for priority medical dispatch;
- Provide for an interoperable system that enables communications from dispatch to ambulance, ambulance to ambulance, ambulance to hospital, hospital to hospital and ambulance to public safety communications;
- Provide for prioritized dispatch of EMS and other public safety resources;
- Ensure that the receiving facility is ready and able to accept the patient;
- Provide for dispatcher training and certification standards;
- The statewide communications plan includes effective, reliable interoperable communications systems among EMS, 911, emergency management, public safety, public health and health care agencies; and
- Each State should develop a statewide communications plan that defines State government roles in EMS system communications.

Status

The TAT believes that New Hampshire is setting the standard regarding communications and New Hampshire should be proud of its accomplishments in this area.

The State is served by a universal E911 system, with progress being made toward Next Generation 911.

Calls are answered by a singular, statewide entity in two separate locations. These Public Safety Answering Points (PSAPs) employ a cadre of call takers who determine the required public safety resources being requested, and then transfer the call to an appropriate dispatch center. New Hampshire has solved the dilemma of providing pre-arrival instructions by requiring that each employed call taker receives the same training, to include Emergency Medical Dispatching (EMD) certification. When pre-arrival instructions are required, the PSAP call-taker remains on the call to assure delivery. This model is a singular achievement and should be emulated by other State systems.

Another somewhat unique, and exemplary element of the communications system is the establishment of benchmarks for the communication system, and the routine monitoring and reporting of those benchmarks to the Coordinating Board.

New Hampshire has opted in to the FirstNet option for the build out of the Public Safety Broadband network, and progress is being made toward enhancing the communications infrastructure. Full implementation of the Public Safety Broadband is vital to the long-term success of the New Hampshire system.

Additionally, progress is being made toward the implementation of a statewide, 800 MHz network to allow communication between public safety partners.

Ambulances are required to maintain the ability to transmit on statewide analog frequencies as a measure of redundancy.

A state's communication system is not often thought of as a system of care, but in the case of the New Hampshire system, it offers an apt comparison as the Division continues to rise to the challenges of developing a comprehensive system.

The TAT was universally impressed with the efforts made regarding communications and believe that within the arena of communications lie the common elements that are crucial to the success of other systems of care. Specifically, these include:

1. Statutory authority to implement the system;
2. Solid, and sustainable funding;
3. A regional and statewide approach to development of the system;
4. Regulation and oversight, which includes benchmarking and quality improvement activities;
5. Technical assistance from subject matter experts; and
6. A high degree of organization and agreement.

If the Division can fully understand the elements of success within the communications system, and then implement corollary elements regarding trauma, stroke, and STEMI systems of care, New Hampshire will have a statewide system which is truly enviable.

Recommendations

The Division should:

- Seek input and counsel from the Emergency Services Division regarding successful strategies for implementation of other systems of care.
- Engage the Emergency Services Division as an advocate for the development of systems of care.
- Work with the Emergency Services Division to analyze available data to determine patient flow, transportation, and current EMS operations to gain situational awareness regarding the status of New Hampshire's system of care.

G. TRAUMA SYSTEMS

Standard

Each State should maintain a fully functional trauma system to provide a high quality, effective patient care system. States should implement legislation requiring the development of a trauma system, including:

- Trauma center designation, using American College of Surgeons Committee on Trauma guidelines as a minimum;
- Trauma field triage and transfer standards for trauma patients;
- Data collection and trauma registry definitions for quality assurance, using American College of Surgeons Committee on Trauma National Trauma Data Standards, as soon as practicable;
- Systems management and quality assurance; and
- Statewide Trauma System Plan, consistent with the Health Resources and Services Administration Model Trauma System Planning & Evaluation Document.

Status

An assessment of the statewide trauma system was completed by the ACS-COT in 2016 and identified issues are being addressed by EMS leadership. Despite this, there were several foundational issues that were felt to require immediate attention:

- Trauma patients are currently being transported to hospitals that are not designated as trauma centers at any level.
- Despite the New Hampshire State statute that directs the Division to “monitor adherence to guidelines and statutes” (RSA 153-A:8), hospitals around the State do not consistently contribute trauma data to the State trauma system making mandated monitoring impossible.
- There is no distinct funding stream for the trauma system.
- There is no trauma program manager at the State level to oversee and direct all aspects of the trauma system operation.

- There is no dedicated trauma registrar to manage the State trauma registry. As hospitals begin to submit data on a more regular basis, the ability of the Division to effectively manage and utilize trauma system specific data will be impacted.

Recommendations

The Division should:

- **Continue to address the recommendations made by the ACS-COT during their review of the New Hampshire trauma system in 2016.**
- **Require all New Hampshire hospitals to be designated as trauma centers at some level through the State process.**
- **Develop a trauma system which ensures trauma patients are transported only to designated trauma centers.**
- **Develop a sustainable funding stream to support the trauma system.**
- **Fund and recruit a State trauma program manager (1.0 FTE) who would be responsible for oversight of the trauma system at the State level.**
- **Fund and recruit a State trauma registrar (1.0 FTE) who would be responsible for oversight, management and analysis of the State trauma registry data.**
- **Require State designated trauma centers to contribute trauma patient data to the State registry.**

H. PUBLIC INFORMATION, EDUCATION AND PREVENTION

Standard

Public awareness and education about the EMS system are essential to a high-quality system. Each State should implement a public information and education (PI&E) plan to address:

- The components and capabilities of an EMS system;
- The public's role in the system;
- The public's ability to access the system;
- What to do in an emergency (e.g., bystander care training);
- Education on prevention issues (e.g., alcohol or other drugs, occupant protection, speeding, motorcycle and bicycle safety);
- The EMS providers' role in injury prevention and control; and
- The need for dedicated staff and resources for PI&E.

Status

The Division partners with the New Hampshire Office of Highway Safety and numerous stakeholders throughout the State to implement its public information and education strategies with a specific focus on public awareness and advocacy. Following are three examples of successful programs:

1. In cooperation with the Governor, the Division organizes an EMS Week Proclamation Signing Ceremony that serves to educate the public on the importance of EMS and highlights the accomplishments of the Division.
2. The Division has implemented an effective and well-received Stop the Bleed program with over 130 instructors and involving many hospitals and agencies, including school nurses. The program is supported by the Division, and thus far, over 1,000 citizens have been taught through the program.

3. Pursuant to RSA 153-A: 32 and RSA 153-A: 33, the Division oversees a State AED Registry that includes over 4,500 Registered Units. In addition to overseeing the program, the Division has secured discounted pricing for any New Hampshire-based organization, which has reduced the cost per AED unit by more than half.

Recommendations

The Division should:

- **Continue to partner with the New Hampshire Office of Highway Safety to increase the role and visibility of the EMS and Trauma programs in the State Highway Safety Strategic Plan.**
- Utilize its website to increase awareness and public engagement in various programs such as Stop the Bleed, the State AED Registry and the New Hampshire Project First.

I. MEDICAL DIRECTION

Standard

Physician involvement in all aspects of the patient care system is critical for effective EMS operations. EMS is a medical care system in which physicians oversee non-physician providers who manage patient care outside the traditional confines of the office or hospital. States should require physicians to be involved in all aspects of the patient care system, including:

- A State EMS Medical Director who is involved with statewide EMS planning, overseeing the development and modification of prehospital treatment protocols, statewide EMS quality improvement programs, scope of practice and medical aspects of EMS provider licensing/disciplinary actions;
- Online and off-line medical direction for the provision of all emergency care including pediatric medical direction, when needed and the authority to prevent and EMS provider from functioning based on patient care considerations; and
- Audit and evaluation of patient care as it relates to patient outcome, appropriateness of training programs and quality improvement.

Status

The State currently has a State EMS Medical Director. This is currently a volunteer (unpaid) position. The State EMS Medical Director currently also chairs the EMS Medical Control Board. This Board develops and updates New Hampshire's mandatory EMS protocols and the associated formulary.

Proposed rule changes, which will take effect July 1, 2019, will allow the formal hiring of a paid State EMS Medical Director and will relieve this person of the requirement to chair the Medical Control Board. The new position is anticipated to be 0.25 FTE but has not yet been clarified. Similarly, the Division has not yet established the specific responsibilities and authority of the State EMS Medical Director.

Each EMS agency is assigned a medical director from a single medical resource hospital in its service area. This medical director has oversight of the education and performance improvement activities of the agency. However, if an EMS provider is found to be deficient in his/her clinical skills or activities, the only recourse available to the medical director is to restrict his/her access to medications, effectively "demoting" the paramedic to an AEMT or EMT level pending remediation of the identified deficiency. Neither the agency medical director nor the State EMS Medical Director has the statutory authority to limit clinical privileges for such a provider.

Recommendations

The Division should:

- **Outline responsibilities and authority of the State EMS Medical Director. This position should be adequately compensated. This position could be expanded to include Preparedness and other DHHS medical oversight activities. If done, the position should be shared between DHHS and the Division.**
- **Strengthen the Division's authority through statute or rule to discipline a provider when necessary.**
- Provide (in rule or statute) legal protection for medical directors for their EMS activities.

J. PREPAREDNESS

Standard

EMS is a critical component in the systematic response to day-to-day emergencies as well as disasters. Building upon the day-to-day capabilities of the EMS system each State should ensure that EMS resources are effectively and appropriately dispatched and provide prehospital triage, treatment, transport, tracking of patients and documentation of care appropriate for the incident, while maintaining the capabilities of the EMS system for continued operations, including:

- Clearly defining the role of the State Office of EMS in preparedness planning and response including their relationship with the State's emergency management, public health and homeland security agencies;
- Establishing and exercising a means to allow EMS resources to be used across jurisdictions, both intrastate and interstate, using the Emergency Management Assistance Compact and the National Incident Management System;
- Identifying strategies to protect the EMS workforce and their families during a disaster;
- Written protocols, approved by medical control, for EMS assessment, triage, transport and tracking of patients during a disaster;
- A current statewide EMS pandemic influenza plan; and
- Clearly defining the role of emergency medical services in public health surveillance and response.

Status

As in all states, emergency preparedness is a shared responsibility between multiple agencies. New Hampshire EMS is a vital part of this partnership, along with New Hampshire Homeland Security and Emergency Management (HSEM), DHHS and the Granite State Healthcare Coalition. The Assistant Secretary for Preparedness and Response (ASPR) Hospital Preparedness Program (HPP) is managed by the DHHS. Currently the Division is not sharing in the HPP or other preparedness funding. The Emergency Management Assistance Compact (EMAC) program is active and functional.

There is no State Mass Casualty Incident (MCI) plan in place; however, the New Hampshire Federation of Mutual Aid Districts has the statutory Statewide Fire and All Hazards Mobilization Plan in place which could serve as a foundation for such a State plan. The Division is actively developing an Emerging Infectious Disease plan which will replace the older Pandemic Influenza plan.

The State EMS Medical Director currently has no defined role in supporting DHHS preparedness activities.

Recommendations

The Division should:

- **Actively partner with DHHS on preparedness plans and activities. Appropriate HPP resources should be made available to the Division.**
- Leverage and support the role of the State EMS Medical Director as it relates to State preparedness activities and responsibilities.
- Develop, in partnership with the Granite State Healthcare Coalition, a comprehensive State MCI plan.

K. EVALUATION

Standard

Each State should implement a comprehensive evaluation program to effectively assess and to improve a statewide EMS system. State and local EMS system managers should:

- Evaluate the effectiveness of services provided to victims of medical or trauma-related emergencies;
- Define the impact of the system on patient care and identify opportunities for system improvement;
- Evaluate resource utilization, scope of service, patient outcome, and effectiveness of operational policies, procedures, and protocols;
- Evaluate the operation of regional, accountable emergency care systems including whether the right patients are taken to the right hospital;
- Evaluate the effectiveness of prehospital treatment protocols, destination protocols and 911 protocols including opportunities for improvement;
- Require EMS operating organizations to collect NEMSIS compliant data to evaluate emergency care in terms of the frequency, category, and severity of conditions treated and the appropriateness of care provided;
- Assure protection from discoverability of EMS and trauma peer review data;
- Ensure data-gathering mechanism and system policies that provides for the linkage of data from different data sources through the use of common data elements;
- Ensure compatibility and interoperability of data among local, State and national data efforts including the National EMS Information System and participation in the National EMS Database;
- Evaluate both process and impact measures of injury prevention, and public information and education programs; and

- Participate in the State Traffic Records Coordinating Committee (TRCC) – a policy-level group that oversees the State’s traffic records system, to develop and update a Statewide Traffic Records System Strategic Plan that ensures coordination of efforts and sharing of data among various State safety data systems, including EMS and Trauma Registry data.

Status

The State has a robust NEMESIS-compliant electronic EMS patient care records system (TEMSIS). Submission of EMS data is required of all agencies. They have long-utilized the Image Trend system for EMS data and have been instrumental in improvements to that system. They also utilize Image Trend for their EMS licensing and other provider administrative functions (DERMIS) as well as the trauma registry.

The Division has developed and implemented multiple impressive performance improvement and continuous quality improvement (CQI) programs utilizing their EMS data registry. These include integrated CQI modules which are pushed out to the agencies, along with associated training. These provide easy-to-use opportunities for agencies to evaluate their care systems and benchmark themselves against State standards. These include clinical Performance Improvement (PI) indicators such as blood sugar monitoring and aspirin administration. They also include cardiac arrest and opioid overdose monitoring.

Recommendations

The Division should:

- Continue and expand the innovative PI/CQI implementation efforts which support agency quality improvement.
- **Improve statewide participation with trauma registry data submission to better support PI/CQI programs.**

L. CURRICULUM VITAE

MARK LAWRENCE GESTRING, M.D., F.A.C.S.

Mark_Gestring@URMC.Rochester.edu

Professor of Surgery, Emergency Medicine and Pediatrics, University of Rochester
School of Medicine, Rochester, NY

Office Address: University of Rochester
Strong Memorial Hospital
Department of Surgery
Division of Acute Care Surgery
P.O. Box SURG
601 Elmwood Ave
Rochester, NY 14642-8410
(585) 275-7248 Fax (585) 276-1992

Academic Appointments:

September 2017- Present Professor of Surgery, Emergency Medicine and Pediatrics,
University of Rochester School of Medicine, Rochester, NY

Board Certifications:

September 2006 American Board of Surgery- Surgical Critical Care
October 2001 American Board of Surgery

Related Certifications:

Advanced Trauma Life Support- Provider
Advanced Trauma Life Support- Instructor
Advanced Trauma Life Support- Course Director
Advanced Trauma Life Support- State Faculty
Advanced Trauma Life Support- Regional Faculty
Advanced Trauma Life Support- Instructor Course Director
Advanced Cardiac Life Support- Provider
Rural Trauma Team Development Course- Instructor

Memberships in Professional and Scientific Societies:

National Societies:

American College of Surgeons
American Association for the Surgery of Trauma

Eastern Association for the Surgery of Trauma
Central Surgical Association
American Trauma Society
Association for Academic Surgery
Air Medical Physicians Association
Pediatric Trauma Society

Board and Committee Appointments:

National:

National Fire Protection Association

Technical Committee on Cross Functional Emergency Preparedness and Response-
August 2017 – Present

National Association of State EMS Officials, National EMS Scope of Practice Model
Subject Matter Expert Panel- June 2017 – Present

American College of Surgeons Committee on Trauma-

National Committee member- March 2017- Present

Chair- EMS/Prehospital Committee: October 2015- present

Member- VRC Committee: March 2017 - Present

Associate member- VRC committee: February 2012- March 2017

Associate member- EMS/Prehospital committee: February 2012-October 2015

American Association for the Surgery of Trauma-

Disaster Committee: September 2017 - present

Acute Care Surgery Committee: September 2010-2013

Eastern Association for the Surgery of Trauma-

Foundation Board of Directors: January 2010-December 2015

Nominations committee: January 2012-December 2012

Board of Directors: January 2007-January 2010

Bylaws Committee Chairman: January 2007-January 2010

Rural Trauma Committee: January 2006-January 2011

Bylaws Committee: January 2004- January 2007

Careers in Trauma Committee: January 2001-January 2003

ANDY GIENAPP, MS, NRP

Manager
Wyoming Office of Emergency Medical Services

6101 Yellowstone Rd., Suite 400
Cheyenne, WY 82002

(307) 777-7955

Email: andy.gienapp@wyo.gov

ORGANIZATIONS/APPOINTMENTS

National Association of State EMS Officials (NASEMSO)
National EMS Management Association (NEMSMA)
NASEMSO Board Member – Western Plains Region Representative, Government Information Committee, Air Medical Committee, Rural and Frontier EMS Committee (Chairperson)
Commission on Accreditation of Prehospital Continuing Education (CAPCE) – Board Member (Vice-chair)
EMS Supervisor, Hamilton County Emergency Medical Service – Chattanooga, TN
Chattanooga State Technical Community College, Adjunct Faculty, Emergency Medical Services Department
EMS Supervisor, Memorial Hospital EMS, Chattanooga, Tennessee
Paramedic, White Rose Ambulance, York, Pennsylvania
Commander – Wyoming Medical Detachment
Operations and Training Officer – DENCOM DIMA
Executive Officer- 278TH ACR Convoy Security Company
Executive Officer- 278TH Brigade Medical Company
Assistant Brigade Medical Operations Officer – 190TH SBDE
Medical Platoon Leader
Flight Medic-Combat Enhanced Capability Aviation Team (CECAT)
Medic – Field Artillery Battalion – 181ST FA
Medic – Ambulance Company – 583rd Med. Co. (AMB)
USDOT, NHTSA EMS Reassessment Program, Technical Assistance Team Member, States of Indiana, Delaware, Michigan, and South Carolina
Technical Expert Panel, *EMS Agenda 2050*
Senior Advisory Committee – Wyoming Department of Homeland Security
Serve Wyoming Commission

PETER P. TAILLAC, MD, FACEP

Medical Director, Utah State EMS
Bureau of Emergency Medical Services and Preparedness
Utah Department of Health

801-803-3217
ptaillac@utah.gov

Diplomate, American Board of Emergency Medicine
Fellow of the American College of Emergency Physicians

Board Certifications:
Emergency Medicine
Emergency Medical Services

Clinical Professor of Surgery
Division of Emergency Medicine
University of Utah School of Medicine

Immediate past Chair, Medical Directors Council, National Association of State EMS
Officials

NHTSA National EMS Advisory Council, EMS Medical Director Representative

Medical Director
West Valley City Fire and EMS

Colonel, Medical Corps
State Surgeon
Utah Army National Guard
Combat medical experience in both Iraq and Afghanistan

Participant in multiple projects to develop and implement evidence-based prehospital treatment guidelines, including: Statewide Implementation of an EBG for Prehospital Pain Management (NASEMSO/NHTSA), Prehospital Evidence-Based Guidelines: Assessment of EMS Utilization in States (PEGASUS) (HRSA/EMS-C), Compassionate Options for Pediatric EMS (COPE) (HRSA/EMS-C), the ACS Hemorrhage Control Guideline (NHTSA), the NASEMSO Model Prehospital Guidelines Project (NHTSA), the National Prehospital EBG Strategy (NAEMSP/NHTSA), EMS Compass/National EMS Quality Alliance (NHTSA).

KEITH WAGES

Director, Georgia Office of EMS and Trauma
Georgia Department of Public Health
1680 Phoenix Boulevard; Suite 200
Atlanta, GA 30349

770.996.3133- Office

robert.wages@dph.ga.gov

Director
Georgia Office of EMS and Trauma
(2010- Present)
(1990-1996)

Executive Director
Minnesota EMS Regulatory Board
(1996-1998)

Organizations/Appointments/Awards

National Association of State EMS Officials
President 2016-Present
President -elect 2014-2016
Board of Directors 2011 –Present
South Region Chair 2011-2014

Federation of Association of Regulatory Boards- Member- 2014- Present
Interstate Commission for EMS Personnel Practice- Member- 2016- Present

Joint National EMS Leadership Forum- Chair- 2016- Present

NREMT EMS Physician Fellowship Course Faculty - 2012 – Present

National EMS Museum- Board of Directors- 2018- Present

Governor's Public Safety Award for Outstanding Contributions – 2013

Dr. John B. O'Neal, III Pioneer Award – 2007

Georgia Association of EMS Chairman's Award – 2008

USDOT, NHTSA, EMS Assessment and Reassessment Program, Technical Assistance
Team Member, States of Tennessee, South Carolina, Ohio, Indiana and South
Carolina (reassessment)