STATE OF GEORGIA

A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

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National Highway Traffic Safety Administration
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BACKGROUND

Injury is the leading cause of death for persons one to 44 and the most common cause of non-fatal hospitalizations. According to a 2019 CDC Morbidity and Mortality Weekly Report, the cost of injuries in the U.S. has soared to $4.2 trillion annually.

In January 2022, the U.S. Department of Transportation (US DOT) released the *National Roadway Safety Strategy* (NRSS). In Secretary Buttigieg's introductory letter, he reported that almost 95 percent of our Nation's transportation deaths occur on America's streets, roads, and highways, and they are on the rise. An estimated 38,680 people died in motor vehicle crashes in 2020 and in the first half of 2021, an estimated 20,160 people died, up 18.4 percent compared to the first six months of 2020.

At the core of this strategy is the adoption of the Safe System Approach, which focuses on five key objectives: **safer people, safer roads, safer vehicles, safer speeds, and post-crash care**. In the Safe System Approach, post-crash care is considered the last, best chance to prevent serious injuries or deaths.

The US DOT's National Highway Traffic Safety Administration (NHTSA) is charged with reducing death and injury on the nation's highways. NHTSA's Office of Emergency Medical Services (OEMS) promotes post-crash care by providing leadership and coordination to the EMS community in assessing, planning, developing, and promoting comprehensive, evidence-based, emergency medical services and 911 systems. Moreover, OEMS uses its resources to assist States with the development of integrated EMS programs which include comprehensive systems of care.

To accomplish this goal, 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 EMS 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 includes areas of preparedness with updated standards. The Reassessment Program now reflects current EMS practice and supports the development of a comprehensive and integrated State health management system. NHTSA serves as a facilitator by assembling a team of technical experts who demonstrate expertise in EMS development and implementation. These experts demonstrate leadership and expertise through involvement in national organizations committed to the improvement of EMS throughout the country. Selection of the TAT is based on the identified needs of the requesting State. Examples of specialized expertise include experience in the development of legislative proposals, data collection systems, and trauma systems.

Experience in similar geographic and demographic situations, such as rural areas, coupled with knowledge in providing EMS in urban populations is essential.

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.

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The TAT thanks all of the presenters for being candid and open regarding the status of EMS in Georgia 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 Michael Johnson (Director), Kelly Joiner (Deputy Director), Richard Rhodes (State Training Coordinator), Cassie Longhart (State Data Manager), David Newton (Past Director), and the rest of the OEMST staff for their logistical support and gracious hospitality.

INTRODUCTION

In the famous novel *Gone with the Wind*, Scarlett O'Hara proclaims, "Burdens are for shoulders strong enough to carry them." Her bold proclamation is well focused on the EMS leaders in Georgia at the local, regional, and State levels. Throughout this EMS reassessment, many speakers mentioned the supportive, professional, and collegial relationships between the OEMST and the multitude of system partners. These sincere remarks spoke volumes about the culture of how many different people and groups are working together as a team to improve EMS.

Historically, the State has done strong work in building a system that includes all the classic elements reviewed in a State EMS assessment. The State is organized into 10 EMS regions. Those regions are divided into zones with designated emergency ambulance services. Data is being captured Statewide on a National EMS Information System (NEMSIS) compliant system as well as a trauma registry. It is exciting to see the State moving toward turning their data into information that can be used both to inform the public and to guide decision making. Specialty systems of care continue to grow for trauma, cardiac, stroke, and pediatric patients.

Every State has challenges and Georgia is no exception. Over the course of the assessment, many presenters mentioned workforce needs at the local EMS agency level. This lack of personnel is a serious problem without an easy solution. Moving patients with time sensitive emergency conditions from outlying areas to appropriate specialty care hospitals is proving to be difficult. Part of the issue may be workforce limitations where a local EMS agency does not want to send its only ambulance and crew on an extended transport leaving the local service area uncovered. While every EMS agency functions under physician medical direction, the State's strong tradition of local control is causing difficulties establishing clinical and operational protocols that can assure ***consistent*** and ***systematic*** care to all patients. Currently, there is little financial or educational support for physicians who play an essential medical director role.

In another great moment, Scarlett O'Hara says, "After all, tomorrow is another day!" The future of the EMS system in Georgia is bright given the willingness of system participants to continue thinking creatively about what patients and their communities really need and how they can best deploy the available resources to meet those needs. While little is likely to happen in Georgia's EMS system overnight, measurable progress will come through the sustained hard work of these many people who trust and respect each other.

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 EMS 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 (NEMSIS) 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

The Georgia General Assembly (Assembly) found, “the furnishing of emergency medical services is a matter of substantial importance to the people of this State” (Code § 31-11-1) and designated the Georgia Department of Public Health (GDPH) OEMST as the lead State agency for the development, coordination, implementation, and monitoring of the EMS and trauma care systems. This continues to be the most appropriate home for the oversight of the emergency medical care system and EMS healthcare professionals. The TAT applauds the Assembly’s foresight in establishing

the OEMST within the Department of Public Health (DPH), and heartily supports the OEMST remaining with the DPH.

The OEMST is advised by two groups established by administrative rule, the Emergency Medical Services Advisory Council (EMSAC) and the Emergency Medical Services Medical Directors Advisory Council (EMSMDAC). The ten EMS Regional Councils are designated as the local coordinating entity responsible for making recommendations to the Department regarding emergency ambulance coverage for 911 zones.

The OEMST has an annual budget of approximately $4.9 million. This budget includes time-limited grant funds and other outside revenue that may not be sustainable to support current and future needs of the EMS system. The NHTSA TAT has identified two significant budget concerns.

The Georgia Trauma Commission (GTC) supports the OEMST with a small portion (up to 3%) of the Trauma Commission's legislative allocation. These monies are intended for OEMST, "administration of an adequate system for monitoring State-wide trauma care, recruitment of trauma care service providers into the network as needed, and for research as needed to continue to operate and improve the system" (GA Code § 31-11-102 - 9). Since 2019, the allocation has consistently decreased below the full 3% allowed by the Assembly. This decrease in funding has jeopardized three positions essential to the OEMST's statutory role in regulatory oversight of the trauma system and integration with other specialty systems of care.

Georgia is seeing significant population growth, and the OEMST continues to work diligently with public and private entities to assure availability and effectiveness of the EMS system for all visitors and residents. Pandemic response workforce grant funding has allowed for the hiring of five OEMST positions that are now critical to the OEMST operation. The loss of these positions would potentially slow or even reverse progress made to meet the needs of the system during and after the COVID pandemic.

The regulatory and system development authority granted by the Assembly to the DPH OEMST has led to an established EMS system that provides service to the vastly diverse areas of Georgia. However, there are gaps in this regulatory authority that need to be addressed. In recent years, a demand for EMS personnel and agencies providing EMS coverage for specific commercial and other atypical needs has resulted in a largely unregulated portion of the EMS industry**.** For example, the benefit of the public welfare necessitates adding air ambulance regulation to include fixed wing aircraft and crews that are otherwise unregulated.

Recommendations

- **Reinstate the full 3% distribution, per Code, from the GTC to the OEMST.**

- Establish State funds to assure the continued availability of the five OEMST positions that are currently grant funded.

- Develop regulation for special event EMS personnel and entities. This includes personnel and entities that provide EMS coverage for movie productions, search and rescue entities, and personnel and entities providing coverage at large, mass gathering events who are not affiliated with established EMS agencies.

- Authorize the OEMST in Code to regulate fixed wing air ambulance entities and personnel.

- Develop regulation of critical care and community EMS/Mobile Integrated Health personnel and entities.

- Consider renaming OEMST to more accurately reflect the mission and portfolio of activities to include all specialty systems of care.

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

The oversight of the EMS and specialty systems of care is provided by the OEMST which is properly housed in the GDPH. There are five programs that are managed centrally. Additionally, there is a State EMS Advisory Council (EMSAC) that advises the Department on matters essential to system operation as well as advocating for system development and improvement. Since the 1995 NHTSA Assessment, the composition of the EMS Advisory Council has been defined in rule.

There are 10 EMS Regions, each with a Regional EMS Director, Regional EMS Training Coordinator, and Regional Emergency Medical Services Advisory Council (REMSAC) that all serve as local coordinating entities. Membership is reflective of the

EMS System in the Regions. Additional responsibilities of the REMSAC are to develop and implement a regional ambulance zoning plan, review requests for zoning by EMS agencies, review necessary data regarding key performance measures, and make recommendations regarding zoning to the Department. This system of zoning assures EMS coverage throughout the State. Selection of ambulance service for each zone is based upon economy, efficiency, and benefit to the public welfare.

Each Regional Office also conducts investigations and inspections; licenses EMS vehicles; designates EMS initial education programs; approves initial and continuing EMS education courses; and provides EMS instructor development. An improvement from the 1995 NHTSA Assessment, all 10 Regional EMS Directors and Regional EMS Training Coordinators report up to the OEMST. The Office lacks a full-time, dedicated State EMS Training Coordinator to monitor, facilitate, and align training activities.

Given the appropriate broad authority and responsibility of the OEMST, their current staffing and budget levels are insufficient to accomplish all statutory, regulatory, and organizational mandates. In addition, the provision of EMS care and transportation, along with the assurance that specialty systems of care patients are transported to the most appropriate facility at the most appropriate time is a fundamental component of the Statewide health care system. The fiscal resources that support these activities are inadequate to meet system needs and expectations.

OEMST personnel resources are critical to fully realize EMS resource management activities including data analysis, Statewide technical assistance, recruitment and retention, and medical direction. Specifically, there are gaps in personnel to support programs including EMS and trauma compliance, EMS administration, specialty systems of care coordination and medical oversight.

Georgia OEMST regulates trauma care. The GTC funds trauma care. Improved alignment in the mission and the role of these two groups is critical to streamline development and regional implementation of the trauma program.

There is a lack of centralized coordination of EMS and trauma assets at the State level. This creates a potential gap that may lead to pockets of disparity in the delivery of EMS and trauma care resulting in underserved populations or geographic areas. The announcement of the closure of a Level I trauma center in Atlanta is an example of how such a resource gap can occur.

Recommendations

- **Fully fund the OEMST to ensure adequate resources are available to accomplish all statutory, regulatory, and organizational mandates.**

- Develop and maintain a comprehensive database of EMS and specialty systems of care resources that provides an accurate accounting and understanding of the status of personnel, equipment, and services.

- **Reinstate the full 3% distribution, per Code, from the GTC to the OEMST.**

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 personnel (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

The OEMST currently licenses approximately 24,951 practitioners, of which just over

1% are licensed at the EMT-Responder and Cardiac Tech levels. The EMT-Intermediate or AEMT level make up about 39%, and the Paramedic level accounts for about 36% of the total licensed practitioners. That is an astounding percentage of paramedics, easily eclipsing most States.

Many presenters referenced staffing shortages throughout the State at all levels. This is a complicated matter that has elements of numbers of personnel, whether those personnel are working within the EMS system, how many jobs people hold, etc. These workforce issues should be further evaluated.

There is a robust EMS educational system that strives to make EMS education of all levels available to as many personnel in Georgia as possible. Public and private educational entities share in this educational outreach. The number of programs and their broad distribution appear to meet current demands for education.

In continuing the commitment to quality education, the OEMST has recently unveiled changes to the instructor licensing process. While complex, this process strives to assure the competence and quality of instructors at all levels.

Another very recent development is the formation of the EMS Education Consortium whose mission is to serve as a liaison between the OEMST and the State's educational institutions. The Consortium includes the public and private university and technical based institutions, as well as the hospital, fire, EMS, and private enterprise-based institutions. **While the potential of this idea is yet to be realized, the TAT enthusiastically supports the consortium concept.**

The OEMST's process of initial designation of EMS education programs appears to be consistent and thorough, however, the TAT was surprised to find that there is no redesignation process. This is not consistent with most other States, nor is it consistent with national accreditation practices.

The OEMST's efforts to assure compliance with adequate EMS continuing education, credible testing and licensure procedures, and upgrading and managing the TRAIN GA learning management system are all admirable and worthy of continued support. Adding the Federal "RAPBACK" program is a particularly positive development and will make the criminal background check program more efficient and effective.

One initiative that has significant potential is the utilization of EMS education programs administered to high school students in the public school system. The efforts of the OEMST and the State's EMS stakeholders and educational entities to offer educational and career opportunities to current and future EMS professionals is encouraging and heartening.

Recommendations

- Develop rule for redesignation of EMS education programs, to include annual inspections, reports, and standards setting.

- Support stakeholders during implementation of new instructor licensing standards.

- Continue to develop recruitment tools like the EMS education program administered to high school students.

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

Georgia is served today by 289 ground, seven air, and seven neonatal ambulance agencies that operate 2,365 ground ambulances, 48 air ambulances, and 13 neonatal ambulances. The State is separated into zones which assign 911 ambulance coverage responsibilities to ambulance services (some zones have multiple providers). In addition to these patient transport resources, there are over 1,000 licensed non-transporting EMS vehicles. The State is separated into zones which assigns 911 ambulance coverage responsibilities to ambulance services. Some of the zones have multiple providers.

EMS agencies are licensed every two years by the OEMST and are required to provide evidence of key personnel, medical director, pharmacy agreement, data management policy, vehicle insurance, personnel rostering, infectious disease and exposure control plans, and CLIA certification. Georgia requires each EMS agency to have medical director approved protocols, in conformity with the Georgia EMS scope of practice, and recommends development using the NASEMSO Model EMS Clinical Guidelines. The minimum protocol requirements are limited and cover only cardiac, stroke, and trauma conditions. The State's approach to locally developed EMS agency protocols leads to considerable variation in patient management by EMS personnel. Ground 911 ambulance staffing is a minimum of two licensed EMS personnel, one of which must be at the EMT level or higher. Air ambulances and neonatal ambulances have additional staffing requirements.

EMS vehicles are inspected initially and annually thereafter, typically by regional EMS staff. It was acknowledged that as important as verifying the operational and safety status of the vehicles is the opportunity for regional staff to meet face-to-face with agency leaders and personnel. The State does not require any particular ambulance design specification. There are multiple design specifications, each intended to assure safety and suitability for use. Initiatives to assign ambulance response mode, such as limiting the use of lights and siren, are handled at the local level based on guidance from the agency medical director. Georgia has minimum requirements for EMS equipment and supplies. Requirements for advanced equipment is based on the agency's protocols, approved medication list, and other medical director specifications. The topic of safe transport for children was mentioned in a presentation on the EMSC program, and pediatric restraint devices are listed on the minimum ambulance equipment list.

Since 1995, there has been significant growth in the number and distribution of rotor wing air ambulances. While there is disparity in access to air-medical service based on location, it should be noted that the State Office of Rural Health is working to improve this with supporting an air ambulance in the northwest quadrant of the State through a $600,000 annual subsidy.

The ultimate goal of an EMS transportation system is to deliver the right patient to the right care (hospital) in the right amount of time. Choosing a proper hospital destination has proven difficult within Georgia despite good progress in the development of specialty systems of care. Some patients simply refuse to go to the closest hospital with capability to manage their needs. Some EMS agencies are reluctant to pull their limited ambulance and crew resources to make transports/transfers to more distant specialty hospitals. Given that Georgia has defined the right patient and the right hospital, focusing future efforts on improving transport in the right amount of time seems important.

Recommendations

- **Identify an ambulance design specification to be used for licensing new ambulances in the State.**

- Encourage standardization in clinical protocols and operational policies and procedures as a means to provide all EMS patients with a consistent level of service.

- Update the minimum equipment list required for ambulances and other EMS vehicles to reflect current best practices.

- **Create an ambulance transport plan for the State which addresses disparities in transportation of patients to appropriate specialty centers.**

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 personnel 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

Georgia has 133 general hospitals including 30 critical access hospitals (CAH), 37 rural hospitals and 26 additional specialty or Federal hospitals. As expected, hospitals are clustered around major population centers and there are several large regions of the State with significant gaps in hospital resources. Of 159 counties, there are 54 without a hospital. Proximity to hospitals in neighboring States provides resources for a few regions but several continue to struggle with limited specialty care resources and long transport times.

The OEMST has authority to designate trauma, cardiac, stroke, and most recently, pediatric-ready hospitals. Specialty hospital designations include 35 trauma centers, two pediatric trauma centers, 35 cardiac centers, 74 stroke centers, and two burn centers. The regulatory, oversight, and funding structure of each of these specialty

systems of care is disparate and could lead to confusion and inefficiencies in the system.

The Emergency Cardiac Care (ECC) program was established in 2017 and provides for the designation of cardiac centers, registry development, sample triage assessment tools and protocol development. The OEMST has an ECC director, registrar, and epidemiologist. There are currently 13 Level 1 centers, 16 Level 2 centers, and nine Level 3 centers with several hospitals in the process of designation. The designated centers are required to submit data to the State ECC registry. This data is consistent with data collected by the National Cardiovascular Data Registry (NCDR), Get with the Guidelines (GWTG), and Cardiac Arrest Registry for Enhanced Survival (CARES).

The Stroke System of Care (SSoC) was developed under the Coverdell-Murphy Act in 2001 and fully assimilated into the GDPH in 2005. The OEMST has the authority to designate stroke centers as either Comprehensive Stroke Centers (CSCs), Thrombectomy Capable Stroke Centers (TCSCs), Primary Stroke Centers (PSCs), or Remote Treatment Stroke Centers (RTSCs). For a hospital to be designated as a CSC, TCSC, or PSC, it must be certified as a stroke center by a national accreditation organization recognized by the OEMST. A RTSC is required to have telemedicine capabilities, which were identified as a financial barrier to stroke center designation for several of the rural hospitals. As appropriated, there is State grant funding available for hospitals to support stroke readiness projects.

The Coverdell Acute Stroke Registry (CASR) program is focused on quality improvement of the SSoC and prevention of stroke. Its activities are funded by the Centers for Disease Control's Paul S. Coverdell National Acute Stroke Registry cooperative agreement. There are 83 hospitals participating in the registry, including the designated centers, and covers an estimated 96% of all hospital stroke admissions. The stroke registry is integrated with Georgia EMS Information System (GEMSIS), vital records, and hospital discharge databases. The CSAR has a community paramedic program focused on high-risk populations prevention activities and provides many educational resources for EMS and hospitals regarding stroke care. There is no funding for a SSoC Coordinator at OEMST, however, in the interim, one of the EMS Regional Directors has assumed this additional role.

Georgia has participated in the National Pediatric Readiness Project (PRP) under coordination of the EMSC program. The most recent PRP survey highlighted a few areas of concern and has served as a foundation for focused improvement activities. The OEMST is promulgating rule for Pediatric Ready which will provide a three-level designation scheme for hospital pediatric readiness.

The Office of Rural Health has provided some support by giving over $13 million dollars in grant funding over a ten-year period, mostly to hospitals, for operations, cardiac system development, education, and funding for the current Pediatric Ready initiative.

Recommendations

- **Allocate funding for a stroke coordinator for the SSoC under OEMST.**
- **Evaluate the disparate funding mechanisms of each system of care and develop appropriate sustainable funding mechanisms for specialty systems of care including cardiac and stroke.**
- **Develop regional destination guidelines to ensure appropriate transport to specialty care centers.**
- Identify regional specialty care needs and promote development and startup funding for specialty care centers.

F. COMMUNICATIONS

Standard

An effective communications system is essential to EMS operations and provides the means by which 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

Emergency medical communications in Georgia is established by local authorities through various operational approaches. While 911 does exist throughout the State, there is no clear indication of what jurisdictions have 911 and with which capabilities.

While the Georgia Emergency Communications Authority (GECA), under the Georgia Emergency Management Agency (GEMA), has been tasked to provide guidance to local governments in establishing new 911 systems, management of the public safety answering point (PSAP) occurs on the local level with no State oversight or coordination. Given the lack of structure and coordination, there is currently limited automated transfer of computer-aided dispatch (CAD) data to EMS.

Whether or not EMS communications needs are adequately addressed seems to vary by location. While there are interoperable communications in some communities, there are no functions in the existing system assuring Statewide communications from dispatch to ambulance, hospital to hospital, and ambulance to other public safety partners.

The OEMST, within their limited authority, has enacted the following mandates for EMS agencies to ensure ambulance to ambulance and ambulance to hospital communications.

- All units shall be equipped with a two-way communications system that provides ambulance to hospital communications.
- All units shall have two-way communication with the location receiving requests for emergency service.
- Personnel shall be available at all times to receive emergency telephone calls and provide two-way communications.

Two State laws for dispatch centers will go into effect on January 1, 2024.

- All Communication Officers must be certified in telephone CPR in addition to their basic training.
- Any person becoming a director, shall enroll in, attend, and complete a course of training and instruction on the management of public safety answering points and the establishment and operation of 911 systems.

Recommendations

- Collaborate with the GECA to address EMS needs within the Georgia 911 system.

- Develop and implement a Statewide emergency medical dispatch system.

- Integrate call-taking and dispatch activities into the local EMS quality assurance program and peer review protection.

- Facilitate and encourage the data sharing of emergency dispatch systems Statewide and the auto-population of data from computer aided dispatch systems to the EMS electronic patient care report (ePCR) systems.

- Assess the need for a State EMS Communications Coordinator.

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

The Georgia trauma system has 35 designated hospitals including six Level I (including one pediatric), nine Level II (including one pediatric), eight Level III, nine Level IV, and two burn centers. The geographical distribution of these hospitals, unfortunately, leaves large areas of the State without ready access to trauma care services. Several presenters referred to the “corridor of death” as a challenge to timely care due to lack of resources and long transport distances to definitive care. Some regions must transport out-of-state to the closest trauma center. There are several military hospitals in the State that provide trauma care and were reported to have good integration with the civilian EMS agencies in their area.

Consistent with Code, the OEMST is the lead agency for trauma and houses the State Trauma Program Manager, Trauma Registrar, and Epidemiologist. The OEMST oversees the verification and designation process and provides evaluation regarding system needs. Level I, II, and III centers do not have to be American College of Surgeons (ACS) verified, however, the GTC will not give Level I’s and II’s funding unless they are ACS verified. The OEMST provides consultation and verification services for the Level III and IV hospitals. The Trauma Program Manager also attends the ACS verification visit for Level I and II hospitals in the State. There is currently no State trauma medical director.

The GTC was created in 2007 and serves as the funding mechanism for the system.

The GTC is appointed by the Governor, Lieutenant Governor, and Speaker of the House. They are responsible for the receipt and distribution of State, Federal, and any grants funds to ensure system preparedness and offset uncompensated trauma care services for EMS, hospitals, and physicians. Some funds are also to be used to help increase trauma system participants by covering partial start-up costs for new facilities. Funding for the GTC is from "super-speeder" ticket fines and a percentage of a fireworks tax. The GTC has developed processes to reimburse EMS, hospitals, and physicians as payor of last resort for uncompensated trauma care to ensure continued readiness of the trauma system. The GTC provides EMS with various educational opportunities and technology resources for wireless connectivity. The GTC can pay up to 3% of their total allocated funds to the OEMST for Statewide monitoring of trauma care, recruitment of trauma care service providers, and research. Historically, this 3% payment was fairly consistent until 2019 when the distribution fell to just over 2.1%.

The State trauma registry is maintained by the OEMST. Quarterly and annual reports of individual trauma center compliance and performance are used by the facilities, OEMST, and GTC to develop performance measures and identify opportunities for improvement. Only designated centers are required to submit to the trauma registry. As such, the total trauma impact on the State cannot be identified or evaluated. Patients transferred directly out-of-state are also unaccounted for in the registry.

During TAT assessment, the announcement of the closure of a Level 1 trauma center in Atlanta was made. This highlights the fragility of the system and may have a devastating impact. It is counter to the public interest for a trauma center to cease (or even reduce) operations unexpectedly and without adequate notice for the system to adjust. As important as monitoring clinical and outcome measures, both the OEMST and the GTC should consider requiring submission of financial status information as a condition for all trauma centers. This would allow OEMST to monitor trends that could lead to closure or a reduction in the hospital's ability to continue delivering trauma care. The OEMST needs to be in a position to see if a trauma center is heading towards financial problems and work towards adjustments to the trauma system such as the recruitment of new trauma hospitals, encouraging existing centers to increase capacity, preparing the pre-hospital transportation system to the possibility of longer transports, etc. The GTC should allocate funding in ways that can support existing trauma centers or develop new trauma center resources if a hospital leaves the trauma system.

Recommendations

- **Distribute to the OEMST the full 3% of GTC funding each year.**

- Evaluate the distribution of trauma funds to ensure adequate "start-up cost" coverage is available to bring more facilities into the network and ensure adequate rural Level IV network participation.

- Evaluate the trauma system on a regional basis. Identify and support start-up

operations for new trauma centers.

- **Develop trauma destination protocols for regional adaptation and adoption.**

- The OEMST, GDOT, and GOHS should ensure linkage of trauma registry to CRASH, GEMSIS, and hospital discharge databases.

- Obtain registry data for patients transferred to out-of-state facilities.

- Establish and fund a Specialty Systems of Care medical director.

- **Establish in Code or regulation the requirement for trauma centers to periodically report their financial status to avoid sudden and unexpected reductions to the capacity of the trauma system.**

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 personnel's role in injury prevention and control; and
- The need for dedicated staff and resources for PI&E.

Status

The success of an effective Statewide EMS system depends heavily on the public understanding of that system. It would be ideal if the majority of citizens knew how to do compression only CPR, use direct pressure and tourniquets to control severe hemorrhage, when (and when not) to call 911, the difference between an EMT and a paramedic, why not all local hospitals provide specialized care for time sensitive conditions, the costs of a serious head injury, and how to share the roadways with bicyclists and pedestrians. An EMS public information, education, and relations (PI&E) program competes with the bombardment of information that confronts us daily from many sources. To effectively implement a robust PI&E program, there must be careful planning, cooperation of multiple stakeholders, and sustained commitment of time and effort.

Georgia's efforts in PI&E presented at this reassessment were mostly focused on OEMST providing internal partners with useful information to enable public messaging products related to opioid abuse, traffic safety, and COVID. The OEMST data manager is working on using available EMS data to publish an EMS system report. Once built, that annual report can be updated for distribution in future years.

The Governor's Office of Highway Safety has invested grant support to help build the EMS information system including GEMSIS Elite, DataMart, and the CODES project.

Those are important foundations that support not only improvements in trauma care but also guide public information about every other aspect of EMS care. There are other natural partners such as the trauma centers who are generally required to provide public education about injuries as part of their mission. They often use nationally available products such as the *Stop the Bleed* program.

It was reported that EMS agencies must submit a public education plan as part of a zoning proposal. No follow up is done to measure the results and no ongoing reporting is required for the public education activities of existing agencies. It is likely that a great deal of public education is delivered locally or regionally but these efforts are not centrally documented. While it was stated that most fire-based agencies have public information officers (PIOs), there was less certainty about other entities. The fire service has training for their PIOs but there appears to be no similar preparation for non-fire organizations.

Georgia currently has no EMS PI&E plan. This would be a great way to begin taking steps toward a more organized approach to providing EMS information directly to the public. This would also provide a prime opportunity to consider a number of factors including priorities for the public to know about EMS, targeted messaging to demographic groups, best positioning for delivery of messages, information needed to support the message, and effectiveness of the messaging evaluation.

Recommendations

- **Develop a Statewide EMS PI&E plan and monitor progress toward objectives on an annual basis.**
- **Encourage all EMS agencies to appoint a PI&E officer.**
- Implement Public Information Education and Relations (PIER) training for EMS agency personnel.
- Establish a mechanism to track and inform EMS public education activities provided by State agencies, hospitals, and EMS agencies.

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

Medical direction is an area of great opportunity in Georgia. With the hiring of a highly qualified State EMS medical director, this critical area has the leadership needed to be systematically improved. The membership of EMSMDAC has become more engaged and willing to take on larger projects. It is thus well positioned to advise OEMST on best practices to move patient care and specialized systems of care forward in the State. Many of the areas highlighted in this report have already been recognized as focus areas within the 2020 Strategic Plan in the area of medical direction or were previously noted as a part of the 2009 ACS report.

Outside the urban areas, medical directors are almost uniformly unpaid. While there is Code which specifically provides immunity to EMS medical directors, this protection is voided by any form of payment. In modern EMS, however, the role of medical oversight is critical to helping assure quality patient care and system integration and should both direct clinical activities as well as provide input into specific operational aspects of EMS. The National Association of EMS Physicians (NAEMSP) has noted, “the EMS service has an obligation to provide the EMS medical director with the resources, authority, insurance, and compensation commensurate with [their] responsibilities.”

There is provision for a regional medical director role, but it is not well defined. This is a lost opportunity for medical involvement in regional systems of care and support of local medical directors.

Georgia is a “home rule” State, and there is a perceived resistance to mandates of any sort that could supersede local authority. Unfortunately, this has extended to include national level guidance documents such as evidence-based guidelines (i.e., pain management) and EMS model clinical guidelines. This stance is an impediment to implementation of nationally vetted best practices and evidence-supported or evidence-based patient care practices and procedures.

Similarly, due to the culture of home rule, there is little to no guidance on what training or expertise is needed and/or required to perform both online and offline medical oversight. Given the clinical and operational complexities of modern EMS, competent and appropriate online and offline medical direction requires specific education.

By Code, the patient has the ultimate choice of which facility to be transported to, regardless of recommendations made by EMS. This can result in patient transport to facilities that cannot provide the proper patient care. Online medical control is often helpful in these situations. Regardless of hospital destination, provisions should be made for EMS to have concurrent access to competent medical guidance via online medical direction (OLMD). There are a number of ways to accomplish this goal (also identified in the ACS 2009 report). The issue needs to be specifically addressed. This may be through base station hospital/physician accreditation, regionalized agreements for specific resource hospital use for medical direction, access to agency medical oversight, or other options. In addition, at minimum, orders given to EMS should be recorded or documented formally and be available for review if needed.

There is no routine reporting to the EMSMDAC or EMSAC on utilization of medications, identification of outlier protocols/practices/medications, quality measures, patient destination, air medical utilization, or other specific clinical or operational items. There is no structured way to share this information between medical directors. It is only through ad hoc discussions at EMSMDAC that local medical directors gain awareness of new practices and peer perspective on current practices.

The addition of post-licensure skills by the OEMST, with the support and advice of EMSMDAC, sets a positive precedent for coordinated forward movement of the EMS System. Surveillance of such new skills and their outcomes on individual patients and populations through structured reporting is critical.

There are several areas where EMSMDAC should provide medical leadership in operational guidance. These include termination of resuscitation, DNR/POLST, destination criteria, and air medical utilization.

There is a dichotomous and diametrically opposite approach in patient care protocols. For instance, progressive protocols such as field implementation of heparin together with antiplatelet agents in STEMI are contemplated, while a consistent minimum protocol such as early aspirin administration for ACS/STEMI are still in the planning phase. A Statewide foundation of consistent basic care approaches is important to

support the more advanced options being contemplated, and to offer all patients in Georgia assurance that they are receiving at least the basic, evidence-based interventions, regardless of their location. In addition, some level of basic consistency in protocols, particularly for the specialty systems of care, will leverage robust Statewide data capabilities to allow more meaningful insight into the effectiveness of EMS care at a regional and State level.

There is no formalized clinical peer review. Such a process is essential for quality patient care, but also for fairness.

While performance measures have been created at the zone level, no actual reports were available for review. Reports are provided on request to individual agencies, but there are no routine reports created at the State or regional level.

The medical director has specific authority to limit a licensed practitioner's scope of practice. No specific reporting of any scope of practice limitation is required.

All licensed EMS agencies, including non-transport, are required to have a medical director. By report, there are first response agencies who are providing limited medical care that are neither licensed nor have a medical director.

Recommendations

- Create a definition of what medical actions (i.e., assessment, intervention) are regulated and require documentation, medical oversight, etc.

- **Introduce a specific EMS physician medical director certification/recertification paradigm.**

- **Provide regulatory oversight, licensing, and assure medical oversight and quality assurance of clinical care for anyone providing out-of-hospital emergency patient care within the State of Georgia. Regulation should be updated to at least add non transport agencies, fixed wing air ambulance, and agencies responding into the State to pick up patients to the current portfolio.**

- Incorporate medical oversight as a requirement for 911 PSAPs that provide medical advice or prearrival medical instructions (including telephone CPR). Include 911 PSAPs who provide prearrival medical instructions within peer review protection Code.

- Provide initial and continuing education requirements for EMS agency and training program medical directors on EMS medical oversight, duties, and responsibilities, ideally based on national training programs. Incorporate State-specific resources and regulatory considerations.

- Provide consistent and transparent availability of documentation of EMSMDAC public deliberations and actions. Create a tracking mechanism for advisory recommendations of EMSMDAC and their status.

- Create a formal medical peer review process through EMSMDAC to address both individual and system issues identified.

- Create and periodically monitor clinical and system quality measures.

- Enumerate specific duties and authority for the State, regional, and various agency type medical directors.

- Identify mechanisms to provide reimbursement to physicians providing medical oversight of EMS.

- **Address liability protections for EMS medical directors, particularly those with expanded roles such as regional medical director.**

- Create model clinical treatment and operational guidelines for adaptation and adoption at the regional and agency level.

- Require OEMST notification of any scope of practice restrictions due to performances concerns.

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 EMS in public health surveillance and response.

Status

There is an old adage among EMS providers that we should never waste a good emergency as a learning opportunity. The past two years of the COVID pandemic have borne that out as truth for State EMS offices including Georgia's OEMST. Presentations during this reassessment described multiple recent real-life, real-time examples for how EMS is seamlessly integrated into preparedness planning and response.

At the State level, GEMA is the lead agency. They maintain the Georgia Emergency Operations Plan. There are annexes and specialty plans to deal with tropical cyclones, winter weather, and support for Federal activities related to a former President. There is an impressive array of resources in the State including strike teams, shelters, pre-designated casualty collection points, re-entry task forces and search and rescue. One presenter summed it up by saying, "Georgia takes care of Georgia."

Regionally the State coordinates with other FEMA Region IV States on resource sharing and potential EMAC requests. As far as ESF-8 activities go there is an informal Unified Planning Committee that the eight southeast region States participate in. There is a FEMA Region IV infectious disease transport network that appears to be primarily led by Georgia expertise and resources. It was noted that Georgia is often asked to play a role as a "pass through" State where resources are staged in advance of movement to other States in the region for weather related events.

Within the GDPH, there are emergency operations and pandemic influenza response plans. GDPH maintains a Department Health Assessment and Response Team (DHEART). GDPH also has a receive, stage, and store (RSS) warehouse. While this facility was originally established as the State's Strategic National Stockpile (SNS) warehouse, during the COVID Pandemic, the RSS played additional roles in managing personal protective equipment (PPE) and BinaxNOW testing. This effort was well supported by regional EMS personnel. Local EMS personnel were identified in the tier 1-A group for COVID vaccinations. Paramedics participated Statewide in vaccine administration. The Georgia OEMST was able to establish emergency rules aimed at boosting the EMS personnel pool.

Georgia is also the home to some impressive specialty EMS resources housed within the Emory University School of Medicine's Prehospital and Disaster Medicine program in the Department of Emergency Medicine. A system of environmental controls, administrative policies, work practices and safety equipment were put in place to prevent the transmission of biological agents to workers, other persons, and the environment. This enabled the safe transport of multiple Ebola patients through the Atlanta CDC quarantine station to specialized care. Between 2014 and 2020, over 10,000 Georgia EMS personnel received awareness level training and over 1,000 received operator/technician level training. The National Emerging Special Pathogens Training and Education Center is working to share their expertise across the country including readiness assessments.

Recommendations

- Continue to evaluate exercises and actual events to hone the existing preparedness capabilities.

- Maintain efforts to expand Georgia's specialty expertise in prehospital management of infectious diseases nationally.

K. EVALUATION

Standard

Each State should implement a comprehensive evaluation program to assess effectively 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 work OEMST has done by providing a current, NEMSIS-compliant ePCR platform (GEMSIS), educating providers and agencies on appropriate use, together with effective data collection and validation is laudatory. Data submission requirements and actual timely submission are strong. The addition of downtime and system failure plans will further buttress the value and robustness of this system. Specialized insights and data visualizations facilitated by use of GEMSIS data through Biospatial have the potential to be invaluable at both the State and agency level.

OEMST is poised and ready to provide tremendous amounts of salient and timely reporting, not only internally to evaluate and impact EMS patient care, and to inform and grow the specialty systems of care, but to link to other available databases (i.e., hospital discharge data, vital records, crash/injury data, insurance data) to assess patient outcomes, system efficacy, and costs of care and many other pertinent items. Ideally, discrete databases that have been created should be integrated.

"Ideally, a system should have some means of ensuring whether resources meet the needs of the population. To achieve this end, a resource and needs assessment evaluating the availability and geographic distribution of EMS personnel and physical resources is important to ensure a rapid and appropriate response. This assessment includes a detailed description of the distribution of ground ambulance and aeromedical locations across the region (2009 ACS)." This sort of assessment is now possible not only in the focus areas of trauma, but broadly across the range of EMS patient care locally, regionally, and at the State level. Such objective assessment (and reassessment) must be a high priority.

Injury and syndromic surveillance capabilities of the GEMSIS system are a hidden gem of OEMST that should be showcased and capitalized on for EMS system and specialty systems of care development as well as utility in public health emergencies. The data infrastructure and personnel support (including data manager and epidemiology support) at OEMST are well positioned to meet this challenge, but the potential has yet to be actualized in more than sporadic ways, with most of the work to date in support of specialty systems of care. An Annual Report is contemplated and should be a priority item for a host of reasons.

While initial metrics have been created as suggested for Zones, actual reporting on these metrics does not yet appear to be occurring at the regional or State level, or in anything but an ad hoc (mostly agency-level) manner, or related to specialty systems of

care (trauma, stroke). Evaluation and monitoring of these metrics should be implemented as soon as possible so design, structure, or modification of systems of care, operational, and clinical protocols can occur in a planned fashion. Meaningful clinical and operational metrics already standardized through NEMSQA, CAMTS, ACS, GWTG, CAAS, and Biospatial opioid, cardiac, and trauma dashboards could be selected for use and reporting at the agency, regional, and State level and implemented as soon as possible. Effort should be made to encourage IRB-approved or exempted publishable research capability, with a process for approval and access with HIPAA / privacy compliance concerns addressed. OEMST's facilitation of initial educational institutions' use of GEMSIS to build provider understanding and skill is likely to provide great benefit to improving data quality when these graduates join an EMS agency.

The timeliness of syndromic surveillance provided by GEMSIS is excellent, given the 24-hour requirement for data submission. As a result, EMS has the most contemporaneous data and heralded State epidemiologic data bumps for COVID that had potential to assist with planning on many levels. It is quite possible that the beginning monkeypox outbreak will highlight additional strengths and opportunities the system can offer to augment and inform public health efforts and broader State-level mitigation, planning, response, and recovery efforts. The pilot patient armband program funded by the Governor's Office for Highway Safety, which is beginning shortly, has tremendous potential for facilitating deterministic linkage of multiple data sources well beyond the initial focus area of crash – EMS – hospital data extending from initial patient contact to hospital discharge. Interim reporting of data to EMSAC and EMSMDAC as this project progresses will be important to demonstrate value and ability to translate to non-crash injury complaints as well as utility in disaster situations.

Passive availability of tools such as GEMSIS and Biospatial with their built-in tools and metrics is excellent, but significantly greater engagement and utilization at the EMS agency level (such as demonstrated by Clayton County Fire) and State level is needed. These tools allow even small EMS agencies with very limited support staff to perform meaningful analysis, and this should be strongly encouraged, facilitated, and showcased broadly. Statewide reports on clinical and operational metrics and analysis outside the current specialty systems of care work must become standard. Agencies and regions should assess the frequency, category, and severity of conditions treated and the appropriateness of care provided, as well as provider-level metrics.

Hospital engagement in loop closure with agencies and providers should become an area of emphasis for a number of reasons. A natural starting point is the specialty systems of care where there is financial incentive to participate (i.e., trauma) or engagement with EMS is a required benchmark (i.e., cardiac), and requirement to enter outcome information into Hospital Hub/GEMSIS could be a component. A "push" of EMS data into the medical record and "push" movement of patient outcome data to agencies, providers, and medical directors for quality improvement and loop closure would be highly valuable rather than the current "pull" paradigm.

OEMST should seize the opportunity to do system-level analysis that can provide insight on both individual and aggregate clinical care as well as the functionality system's operational components (i.e., EMS and hospital resource utilization, interfacility transfer timeliness, proper patient destination, and air medical utilization). Positive results should be widely shared to demonstrate the value EMS provides.

Recommendations

- **Pursue broad linkage of databases for high level analysis. This should include not only direct hospital and patient care records between EMS and hospitals for quality initiatives and outcome assessment, but also databases such as the crash outcome data evaluation system (CODES) to facilitate better understanding of traffic-related injuries.**

- Implement HIE resources to allow the ability to follow a single patient from 911 to discharge.

- Incorporate similar levels of specificity of required data elements into each specialty care center's guidance in Rule 511-9-2-.05 and designate specialty care centers.

- Utilize the trauma BIS tool to create a baseline and scheduled repeat assessments to measure development and success of the trauma system and its individual component agencies, hospitals, and related stakeholders.

- Create a process for access to OEMST data for IRB-approved or exempted research that aligns with other State processes for HIPAA compliant data sharing while allowing review of potential value of research before providing access.

- **Implement routine regional and State level reporting of specific clinical and operational metrics.**

- **Assure adequate and appropriate protection of data analyses and peer review data.**

- Implement an integrated data warehouse rather than multiple discrete siloed registries or data sources.

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ORGANIZATIONS/APPOINTMENTS

Vermont EMS Office, Retired Director
National Association of State EMS Officials
- Past Program Manager
- Past President
- Past Treasurer

New England Council for EMS
- Past President
- Executive Committee

Vermont Ambulance Association, Past Vice-President
Vermont Public Safety Broadband Network Commission, EMS Representative
National EMS Compact Program, Facilitator for original legislation drafting and retired national EMS educator
EMS Agenda for the Future, Original Co-Chair
EMS Education Agenda for the Future, National Implementation Team, Chair
FLEX Program, National Resource Center, Board Member
EMS Agenda for the Future Implementation Guide Committee member
National Registry of EMTs, Former Board Member
Essex Rescue, Retired Executive Director and AEMT Captain
Health Care Finance Administration Negotiated Rule Making, NASEMSO, Committee Member
National EMS Scope of Practice Model Project – Original Principal Investigator and Project Champion for the 2018 update
American College of Surgeons- Trauma System Assessment Team Member
EMSC Grant Review Team Member
USDOT, NHTSA EMS Assessment/Reassessment Program, Technical Assistance Team, Member, States of Delaware, Texas, and North Dakota, Colorado, Alaska, Ohio, Connecticut, Delaware, Mississippi, Oregon, Michigan, Kansas, North Dakota, American Samoa, Nevada, Oklahoma, and Hawaii.
USDOT, NHTSA Pedestrian and Bicycle Safety Assessment Program, Technical Assistance Team, Member, States of Michigan, Washington, Tennessee, Florida, Maryland

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ORGANIZATIONS/APPOINTMENTS

American College of Emergency Physicians (ACEP), Fellow
President, Idaho Chapter 2004-2009
American Board of Emergency Medicine, Diplomate,
EMS Sub-specialty
National Association of EMS Physicians (NAEMSP)
Fellow, Academy of EMS
National Association of State EMS Officials (NASEMSO)-Medical Director Council
Air Medical Physician Association
National EMS Management Association
Chair, Idaho Time-Sensitive Emergencies Southeast Region Committee
Southeast Region Chair, Idaho TSE Council
Medical Director for several 911, air medical, tactical and wildland fire agencies.
Medical Director, College of Southern Idaho EMS program, Twin Falls, ID
Tactical Physician, Bannock County Sheriff, Southeast Idaho STAR,
Affiliate Clinical Faculty, Idaho State University, Pocatello, ID
Clinical Faculty, University of Washington School of Medicine
Associate Medical Director, NMETC, West Bridgewater, MA
Consultant, SafeTech Solutions, LLP –

- Principal Author – A Guide to Medical Direction in North Dakota
- Principal Author – A Guide to Medical Direction in South Dakota

PALS Training Center Development, Tblisi, Republic of Georgia, 2014
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team Member, States of Oklahoma, Missouri, Ohio, Wyoming, Alaska, Iowa, Indiana, South Carolina, and Hawaii.

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ACADEMIC APPOINTMENT

Professor of Clinical Emergency Medicine, University of Nevada-Reno School of Medicine, Reno, Nevada

LICENSURE & CERTIFICATION

State Medical Licenses: Virginia (inactive); Texas; Kansas (inactive); Oklahoma; Missouri; Arkansas; Illinois; Nevada.

Selected Certifications:

Diplomate, American Board of Emergency Medicine
Certified in Public Health, National Board of Public Health Examiners
Board Certified in Emergency Medicine (1996), Emergency Medical Services (2013) American Board of Emergency Medicine
Paramedic, National Registry of Emergency Medical Technicians
Firefighter I, Fairfax County Fire and Rescue Academy, Virginia

SELECTED EMS MEDICAL OVERSIGHT EXPERIENCE

EMS System Medical Director, Wichita-Sedgwick County EMS System, Kansas.
Associate Medical Director, Medical Control Board, EMS System for Metropolitan Oklahoma City and Tulsa
Medical Director, Northeast Ambulance and Fire District, St Louis
Missouri State EMS Medical Director; Medical Director, Missouri Disaster Medical Assistance Team (DMAT)
Medical Director, AirEvac Lifeteam, Missouri and Arkansas

SELECTED NATIONAL AFFILIATIONS / LEADERSHIP

American College of Emergency Physicians: EMS Section member, AAWEP Section member, Air Medical Section member, EMS Committee member.
National Association of EMS Physicians: Air Medical Ad Hoc Task Force, Education Committee, Quality and Safety Committee, Council of EMS Fellowship Directors, Women in EMS Committee, Board of Directors, At Large Physician Member; Secretary-Treasurer
Air Medical Physicians Association
Committee on Accreditation of Educational Programs for the EMS Professions Board, NAEMSP representative

National EMS Advisory Council, Emergency Physician representative, appointed by Secretary of Transportation Foxx, Vice Chair

SELECTED PROJECTS

American College of Emergency Physicians, EMS Committee. Policy work: ACEP Position Statement on Appropriate and Safe Utilization of Helicopter Emergency Medical Services: A Joint Position Statement; EMS Management of Patients with Potential Spinal Injury.

American College of Emergency Physicians representative to National Highway Transportation Safety Administration EMS Education Standards Committee. Provide stakeholder input into national Education Standards.

National Association of EMS Physicians representative to Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions.

NASEMSO Model State Guidelines Project, ACEP Representative.

Chair, EMS Culture of Safety Strategy project. Cooperative agreement with NHTSA / HRSA / ACEP.

Invited Subject Matter Expert, National Center for Disaster Medicine and Public Health, for creation of Addendum to the Instructional Guidelines of the National EMS Education Standards for the Model Uniform Core Criteria (MUCC) for mass casualty triage.

American College of Emergency Physicians Representative, Committee on Accreditation of Ambulance Services Ground Vehicle Safety Standards project.

SELECTED PUBLICATIONS

Peer Reviewed

Powell JR, Browne LR, Guild K, Shah MI, Crowe RP, Lindbeck G, **Braithwaite S**, Lang ES, Panchal AR; Technical Expert Panel. Evidence-based Guidelines for Prehospital Pain Management: Literature and Methods. Prehosp Emerg Care. 2021 Dec 20:1-11.

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Member, New Mexico Trauma System Fund Authority
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