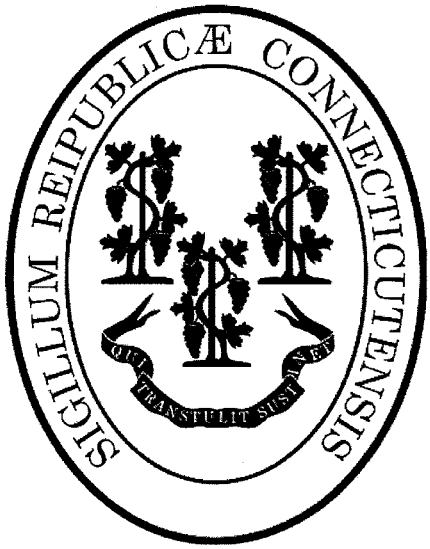
STATE OF CONNECTICUT



A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

July 30 – August 1, 2013

National Highway Traffic Safety Administration
Technical Assistance Team

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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 1995, for example, the lifetime costs of all injuries were estimated at $260 billion annually. These estimates do not include the emotional burden resulting from the loss of a child or loved one, or the toll of severe disability on the injured person and his or her family. Each year over 33,000 people lose their lives on our nation's roads, and approximately 70 percent of those fatalities occur on rural highways. The National Highway Traffic Safety Administration (NHTSA) is charged with reducing death and injury on the nation's highways. NHTSA has determined it can best use its limited EMS resources if its efforts are focused on assisting States with the development of integrated emergency medical services (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 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 Connecticut Department of Public Health, Office of Emergency Medical Services requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the Connecticut Statewide EMS program. NHTSA developed a format whereby the EMS staff coordinated comprehensive briefings on the EMS system.

The TAT assembled in Cromwell, Connecticut on July 30 – August 1, 2013. For the first day and a half, over 30 presenters from the State of Connecticut, provided in-depth briefings on EMS and trauma care, and reviewed the progress since the 2000 Reassessment. Topics for review and discussion included the following:

General Emergency Medical Services Overview of System Components

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

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 Connecticut. The team spent considerable time with each presenter so they could review the status for each topic.

Following the briefings by presenters from the OEMS, 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 a set of 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.

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ACKNOWLEDGMENTS

The Technical Assistance Team (TAT) would like to acknowledge the Connecticut Department of Public Health, Office of Emergency Medical Services (OEMS) for their support in conducting this assessment and the State Highway Safety Office for supporting the assessment process.

The TAT would like to thank all of the presenters for being candid and open regarding the status of EMS in Connecticut. 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 Raphael Barishansky, DPH, Director of OEMS, Judith Reynolds and the rest of the OEMS staff and all the briefing participants for their extraordinary efforts and well-prepared presentations.

INTRODUCTION

Connecticut, the Constitution State, is a state small in size yet strong in its human accomplishments, and a place where people come from around the world in hopes of living productive, prosperous lives. As the 29th most populous state in the union, yet the third smallest in size, Connecticut has a population density that is the fourth highest in the United States. A history of independent thinking and free spirit attitude combine with a sense of purpose to create a truly special place.

The Connecticut EMS system is an enigma. It is advanced and finely detailed in many areas, yet relatively undeveloped in others. It serves a governmental system that is centered around 169 municipalities rather than counties or regions. It is a system whose service area is small yet densely populated and diverse. It is on the forefront of current EMS thinking in some areas, yet challenged in others. It serves a relatively wealthy population, yet suffers financially. It is a system that has been tried by real life events and passed the test each time. Through it all, one thing is certain: Connecticut has an EMS system rich in talent and is committed to continued improvement.

This report captures a snapshot in time of the Connecticut EMS system and is based on the personal and written testimony gleaned from those who know and work in every aspect of the system on a daily basis. As in most states, there will be many unique circumstances that combine to challenge the Connecticut EMS system in the days and years ahead. The key to the future lies in mastering basic, yet key EMS system principles, letting go of practices that no longer serve the patient's best interests...even when they seem to still work, and finding creative solutions to fiscal and political challenges that inhibit evolution to a more efficient and effective EMS system. EMS providers and provider agencies across the entire continuum of EMS care from dispatch through rehabilitation must work together to ensure that the best care possible is given to each and every patient who accesses the system.

There is little doubt that Connecticut EMS providers will meet these challenges in ways that today are hard to envision, and by doing so will contribute greatly to improving the overall health status of the people they serve.

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 (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; and
- Integrate the special needs of children and other special populations throughout the EMS system;
- 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 Office of Emergency Medical Services (OEMS) resides within the Department of Public Health (DPH) and is the lead state agency for EMS in Connecticut. There is a noticeable interest in integration of EMS care into the overall healthcare continuum at the Department, and the commitment of Department and Office personnel is obvious.

The OEMS is tasked by statute providing public education and information programs; administering the EMS equipment and local system development grant program; system planning; regional council oversight; training; and providing staff support to the advisory board. The office is further tasked by regulation with providing regional EMS coordinators, assigning Primary Service Area Responders (PSARs) for each service area, licensure and certification of EMS providers, EMS vehicle standards, and rate setting for EMS services. EMS regulations are promulgated which further define these duties and EMS roles throughout the system. There is a set of draft regulations, which have been circulating for a multitude of years, which will further modify and update current regulations. It is anticipated that the draft will be fully promulgated by the end of 2013. An EMS plan dated 2006 was presented in draft form.

The OEMS is funded through a hodgepodge of different sources and has no direct funding line from the Department or the state legislature. The office is understaffed, and two key positions found in most state EMS offices (Trauma Manager and Data Manager) are not present. The regional coordinator positions are considered "durational employees". This practice gives the impression that their work is temporary in nature and it does not support a "long term" view when they are working in their regions. Additionally, it appears that funding for other aspects of the EMS system statewide are inadequate, and that the current rates for EMS provider agency reimbursement is reported to be low relative to other states. Fees obtained through licensure are not reinvested in the EMS system. These funding inadequacies are potentially enough to adversely impact the long term sustainability of the EMS system as a whole.

Despite mandatory electronic patient care reporting and several genuine efforts to improve EMS data collection, current EMS system funding does not support quality assurance and quality improvement for patient care, nor does it provide for adequate systems of care within the EMS system (e.g., trauma, stroke and cardiac care), leading to inconsistencies in care across the state, to the detriment of overall patient care and overall quality of health for the people of Connecticut.

The practice of issuing primary service areas (PSAs) to multiple agencies for different aspects of EMS care within each of the 169 local jurisdictions is complex and can be seen as confusing at best. Although EMS regions are established and recognized, they are barely utilized and failure to actualize the full potential of the EMS regionalization concept is causing inefficiencies and added costs to the delivery of care, as well as blocking improvements to the quality of care provided. A workgroup is currently tasked by the legislature to review the PSA process in hopes of making it more efficient. There is an active and interested Connecticut EMS Advisory Board, but the composition of the board and its size make it unwieldy at times, and additionally many of the appointed members do not participate on a regular basis.

There are many prevention and public education programs in place, but the quality and quantity of these programs vary by jurisdiction. There is an active Emergency Medical Services for Children program within the state that tends to the unique needs of children

in the EMS system.

The practices of rate setting, Certificate of Need requirements and issuance of PSARs are dated, and when combined are stifling to quality EMS provision, while law and regulation is silent on many contemporary EMS system issues.

Recommendations

- **The DPH should promulgate the draft EMS regulations as soon as possible. The regulations should be reviewed annually and updated in a process that takes 120-180 days.**
- **The OEMS should review regulations for other aspects of the EMS system and update where needed. A regional perspective should be taken to regulate medical oversight, pediatric care, and other specialty care, with appropriate consideration for prevention activities and those with special healthcare needs.**
- The OEMS should work with the CEMSAB and other constituents to update the State EMS Plan.
- The Legislature should continue efforts to review the PSA system and streamline it where possible. A regional approach to providing EMS care should be considered.
- The DPH should find a way to make the five regional coordinators permanent FTEs.
- The DPH should work with the Governor's Office and the Legislature to improve the appointment process and the composition of the EMS Advisory Board, and ensure that the Board has appointees who are active.
- The DPH should work with the Governor's Office and the Legislature to review the viability of the certificate of need process and the established laws on EMS rate setting.
- The DPH should work with the Governor's Office and the Legislature to improve funding for the EMS system and EMS 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

Since the last NHTSA system review report in 2000, the Connecticut EMS and trauma system has continued to evolve in a variety of ways that in many areas has built upon not only some of the recommendations of that report, but also incorporated many of the contemporary standards and guidelines adopted throughout the industry over the ensuing years. A statewide plan was developed in draft form in 2006 pursuant to statutory requirements. OEMS has been reorganized within the DPH in a regulatory branch. The office is actively working to ensure adoption and implementation of relevant standards with regard to education, data collection and system integration and although significant work is yet to be done in each of these areas, the commitment of

not only OEMS staff, but a supportive atmosphere from DPH leaders is providing a basis for future success.

In 2012, a new director of the OEMS was selected and has brought a robust level of energy, dedication and innovation to the statewide process. Stakeholders and constituents appear to be highly supportive of this new leadership and have significant expectations of future successes. One of the most valuable resources in the Connecticut EMS and trauma system is the existence of five (5) regions and their coordinators. This system of regionalization is clearly the key link between the DPH and the 169+ municipalities. The five regional coordinators are presently employed by the DPH and are part of the OEMS. However, these positions are durational state employees with a current commitment of funding of only two years. This status severely undermines the concept of regionalization of healthcare and the authority of OEMS.

The OEMS has significant authority in terms of the responsibility to administer and oversee the statewide EMS and trauma system. The most significant of which is ambulance rate setting authority, assignment of specific "primary service areas" for first response, basic life support and advanced life support functions, implementation of statewide treatment protocols and data collection. The concept of primary service areas is a process where the state lead agency grants sole response authority to a single entity to provide a specific level of service for a specific geographic area. This system appears to be convoluted and is not clearly understood by system participants, including those at the local, regional, and state level.

Given the broad authority and responsibility of the OEMS in terms of system oversight, the current staffing and budget levels available to support this work appears to be insufficient to meet the need. However, through the continued dedication of not only OEMS staff but the many stakeholders and constituents of the system, patient needs appear to be met in most circumstances.

The provision of EMS care and transportation, along with the assurance that trauma, stroke and STEMI patients are transported to the most appropriate facility at the appropriate time is a fundamental component of the statewide health care system. The fiscal resources that support these activities on a statewide basis seem to be inconsistent with system needs and expectations. There are no dedicated funds at the state level to support regulatory and system development opportunities.

Connecticut has significant EMS system resources with approximately 350,000 ambulance transports per year across the state. A key component of effective resource management is the ability of the regulatory agency and community to understand where resources are, how they are being used and measure the effectiveness of policies related to these resources. Although a statewide data collection system for both EMS and trauma exists, the ability of the lead agency and stakeholders to use these systems for evaluation purposes is greatly limited due to insufficient resources.

The CEMSAB has a number of committees that do the detail work. This board has been in place for many years and presently consists of 41 members. Although it has a board with some very active members, it is quite large and at times presents issues with regard to overall effectiveness in terms of participation, appointments, etc.

The OEMS has a history of working with the Highway Safety Office in Connecticut but due to staff and priority changes over the past decade, these opportunities have been inconsistent. There is clearly an effort to improve these relationships and seek new opportunities for collaboration. These efforts are readily supported and will provide on-going opportunities for success into the future.

Recommendations

- The OEMS should revise and update the 2006 statewide EMS plan in a manner that is consistent with current practice and industry standards and finalize the plan to provide a contemporary plan to support these activities for the next five to seven years. This plan should include not only current needs, but be a living document that can be adjusted to meet future needs and considerations.

- **The DPH should pursue the development of a dedicated source of cash funding for EMS system support and oversight in Connecticut so as to ensure that sufficient staff and resources are permanently available to support the provision of care and transportation across the state. Examples of these types of funding mechanisms might include fees attached to motor vehicle registrations, moving traffic violations, etc.**

- **The DPH should ensure that all current personnel positions in the OEMS are made permanent state funded positions and have sufficient funding and support to meet existing needs and expectations of the system.**

- The DPH should expand and enhance the support of the EMS and trauma data collection systems to ensure that data is readily available to system policy makers, service agencies and hospitals on an on-going and regular basis. These data are essential to patient care, resource management, and quality assurance.

- The Legislative PSA Task Force should re-evaluate and simplify the current system of Primary Service Area assignment/oversight to ensure better integration with statewide and regional needs and expectations. Develop quality standards as a primary component for the licensing of services.

- The DPH should consider restructuring the statewide advisory board to better target the current priorities of the system and ensure greater efficiency in the development of new policies and recommendations. This restructuring should include clear pathways of consistent communication between the regional

advisory councils and the CEMSAB and OEMS.

- The OEMS should continue to seek opportunities to partner with the Governor's Highway Safety Office and other appropriate partners to enhance the continued integration of EMS and trauma care into the statewide health care system.

- The Legislature, DPH, and OEMS should aggressively pursue the development of a regionalized system of emergency care including trauma, stroke, cardiac and other time-critical conditions.

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

During the past decade, the OEMS has continued to discharge its responsibilities in terms of developing a trained and prepared work force to support the statewide EMS and trauma system. The majority of recommendations contained within the 2000 state review report have been successfully implemented. Specifically, the EMS education system has adopted the National Scope of Practice standards as minimum requirements for education programs and courses, are in the process of fully adopting the most current national nomenclature for EMR, EMT and Paramedic certification/licensure levels and have mandated paramedic training program accreditation through the Committee on Accreditation for the EMS Professions and all programs are expected to be compliant as new classes are established. Successful certification through the National Registry of EMTs is the required standard for initial certification/licensure for EMT and paramedic candidates, but providers are not required to maintain National Registry certification beyond initial state certification/licensure. All EMS education classes/programs are required to have physician medical director support.

Connecticut has adopted the current national education standards for the Emergency Medical Responder (EMR) but does not require national registry certification for the purposes of state credentialing. Rather, the OEMS requires successful completion of a state examination process for the purposes of formal credentialing. Although there are approximately 700 providers certified as Advanced EMTs (AEMT), this level of practice is inconsistent with the national scope of practice and debate is presently underway as to whether this level of pre-hospital care will be continued into the future. At the present time, AEMT training continues in small numbers with a sponsor hospital administered examination required prior to certification.

The OEMS has continued to certify EMS instructors as well as approve all courses across the state on an individual basis. These courses are conducted in a variety of venues as dictated by local education needs and traditions. This effort has resulted in relatively high numbers of courses and state certification/licensure of over 23,000 providers at all levels. This pool of providers has remained consistent for the past several years. Additionally, the OEMS continues to support the numerous continuing education and refresher courses required to support this workforce. This work is supported by only two staff members with one lead person responsible for all training oversight. Overall, the sense is that clinical training courses are readily available across the state and issues of personnel shortages most likely stem from causes other than training opportunity shortages in most situations. However, concerns exist within the EMS community that the adoption of higher standards for clinical education over time may contribute to decreased volunteer personnel for rural and suburban agencies.

Concerns exist with regard to the on-going oversight and quality assurance evaluation of EMS education courses given the limited resources within the Office of EMS to

support such activities. Other than monitoring pass/fail rates on certification examinations and psychomotor skill testing, there is relatively little opportunity for state or regional staff to visit local educational offerings. Additionally, there are concerns with regard to state level authority to deal with poor education programs and instructors in terms of forcing improvements when poor performance is noted.

The present time-on-task for the certification of EMS providers is approximately 60 days with the current staffing availability, reflecting the lack of resources available to support this vital component of the state system. Processes are not digitally driven or automated and opportunities for improvement in terms of eliminating duplication of effort and improving efficiency likely exist. It is important to note that at present, there is no requirement for criminal background checks for the purposes of EMS provider certification/licensure.

Consistent with EMS education concerns across the United States, stakeholders have indicated that one of the most significant shortcomings in the EMS workforce in Connecticut is the shortage of leadership/management training opportunities for current and future EMS system directors. Quality clinical training and experience does not necessarily translate to successful skill sets in terms of managing and directing the business components of modern EMS systems. Stakeholders expressed a desire for expanded educational opportunities to provide leadership and management opportunities across the statewide system.

The OEMS continues to require successful completion of standardized refresher course examinations for the recertification of all levels with the exception of paramedics. These examinations are developed in-house and it is unknown whether they have been educationally validated and supported. Therefore their value in terms of effectiveness cannot be measured at this point. There are no educational or examination requirements for re-licensure of paramedics.

Recommendations

- The OEMS should work with government and system leaders to develop additional resources dedicated to the support of improved system education oversight and enforcement. Sufficient resources must be dedicated to this foundational system activity to ensure that quality educational experiences are provided across the statewide system and appropriate steps can be taken to strengthen programs where necessary.

- **The DPH should explore and consider a criminal background check system to ensure that all EMS providers are appropriately screened prior to authorization to practice to ensure appropriate protection for vulnerable populations in the health care system.**

- The OEMS should identify mechanisms to develop and provide high quality

management and leadership training for current and future leaders of the Connecticut EMS and trauma system.

- **The OEMS should review the current EMS provider certification/licensure process to identify opportunities to reduce certification turn-around times. This will improve the availability of appropriately trained and credentialed personnel for local provider agencies and health care systems.**

- The OEMS should continue its efforts to determine the clinical need/effectiveness of the AEMT level of practice, ensuring appropriate stakeholder input throughout the decision making process.

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

Connecticut issues licenses and certificates to ambulance providers and first responders to operate within exclusive geographic service areas. Even though the geographic services areas are specifically defined, it was reported that the OEMS has not had the opportunity or staff to utilize a GIS mapping system to demonstrate the levels of care being provided within each Primary Service Area (PSA).

Specific considerations for determining service areas include: population size, effect of proposed service on other services in the area, response and activation times and level of service. In addition, the OEMS seeks advice from the municipality and appropriate regional councils. There appear to be comprehensive considerations for the cost,

quality and access to emergency care in determining and assigning the PSAs. However, patient care data is not readily available for analysis of care within PSAs and their historical distribution and assignments appear to supersede other considerations.

Because the Department has a certificate of need process for assigning PSAs, they also establish a structure for maximum rates similar to a public utility model. Financial data is gathered from providers and other economic indices such as the Consumer Price Index are utilized to determine the rate structure. Not unlike other states, the payer mix is an issue and it was reported that reimbursement rates for Medicaid and Medicare were insufficient. In addition, ambulance providers can only charge for services if the patient is transported.

Though the Certificate of Need (CON), PSA and rate structure process are supported by providers, there were some concerns regarding the input of municipalities into the selection process. On the other hand, it was stated that the municipalities may not fully understand the existing process to secure a change in service providers and that some municipalities are not fully engaged in the provision of EMS care. It was also stated that performance measures and expectations within service provider contracts were not standardized throughout the state.

There were many issues presented to the TAT regarding the assignment and review process for PSAs including how to change the service areas, the variations in contracts and EMS plans, methodology and considerations to assign PSAs and a process for municipalities to petition changes. Because of these concerns, there is a legislative task force assigned to review the issues and present a report to the legislature by February 2014. Although there is not enough time or sufficient analysis of data for the TAT to make specific recommendations regarding the current PSA process, seeking methodology from other states would be recommended.

There are 169 municipalities in Connecticut and 8 counties. However, the counties do not have infrastructure to provide EMS, fire and police services. There are 186 services in Connecticut, 72 are volunteer ambulance and 61 are volunteer fire. EMS services are licensed or certified at the first responder, basic, intermediate, and paramedic levels. Licenses are issued annually. Vehicles are inspected biennially. There are 655 ambulances, 101 invalid coaches, 2 helicopters, 2 boats, 7 MICI (non- transport intermediate) and 177 MICP (medic non- transport). In order for a current provider to add a vehicle to their fleet they have to submit an application to the OEMS. This requirement is basically another "certificate of need" process for simply adding another vehicle resource to a primary service area. It is not understood why there is a need for this process or why the application process is different between provider types (for profit versus municipal or not for profit).

For-profit services are charged a $200 PSA license fee whereas municipal, volunteer and not -for- profit services are not charged for the issuance of a certificate. The Department of Motor Vehicles (DMV) inspects the vehicles for road safety and the

OEMS inspects the vehicles for medical requirements. There are no fees assessed by OEMS for the inspections however, the DMV assesses a $20 fee for their inspections. There is one staff member from OEMS who conducts the vehicle inspections on ambulances. First responders are not inspected. In addition to the inspection process, the OEMS has a strong investigative team to address complaints regarding the coordination of EMS transports.

There is one hospital-based air ambulance service with two helicopters located in two areas of the state. This provider has been nationally accredited since 2004 and provides service to the entire state. Their critical care transport teams are trained to manage neonatal, pediatric, cardiac and trauma patients. They provide rapid transport to definitive care from the scene and also provide inter-facility transport. The number of aircraft is few given the population base and service area size. There may be a need for additional air medical resources.

The OEMS has established regulatory standards defining the minimum equipment and staffing standards for ambulance services. They require two certified personnel on the ambulance with at least one EMS provider being licensed or certified at the level of the licensed or certified agency. One major concern pertained to the out dated regulations that have not been changed for over 10 years because it includes the equipment list embedded within the rules. This is problematic because the list is dynamic and continually changes. As in previous assessments, there continue to be no requirements within the regulatory standards for ambulance drivers to have emergency vehicle operations training.

Connecticut has a unique model where they license management service organizations (MSO). These organizations are utilized by mostly rural EMS services to help provide EMS personnel. There may be a role for MSOs to also provide personnel for special events; however there is no regulation in place or billing mechanism for them to do so.

There was mention that statewide air ambulance guidelines are in place. However, the 2011, Center for Disease Control (CDC) trauma triage guidelines have been approved by the EMS Advisory Board but are not currently implemented statewide.

Issues with the patient care data collection system greatly impact the capabilities of the state to assess the cost, quality and access to emergency medical care statewide. This inability to utilize patient care data hampers the assessment process for a PSA, system performance improvement efforts and further development of a comprehensive and coordinated statewide EMS system.

Recommendations

- In addition to searching other states for Certificate of Need methodology, the DPH and OEMS should utilize the dispatch center and EMS data in the analysis of the Primary Service Area (PSA) structure.

- **The DPH should ensure that cost, quality and access to emergency care are standard criteria for the PSA assignments and consistently incorporated into contractual language.**

- The OEMS should utilize stakeholders and advisory committees to establish regionalized performance measures to assess the provision of EMS.

- The OEMS should educate EMS providers on the pediatric equipment requirements which will be implemented when the new rules are promulgated.

- The OEMS should incorporate training requirements into the new regulatory standards for ambulance vehicle operators to promote provider and patient safety.

- The OEMS should explore the impact of approving an additional charge for non-transport services within the current rate setting structure.

- The OEMS should seek funding opportunities to support leadership training for all service providers.

- **The OEMS should utilize GIS software to map the current PSAs by level of service.**

- The OEMS should eliminate the process for providers to add vehicle resources as needed within their own PSA.

- The OEMS should assess adequacy of air medical coverage.

- The OEMS should facilitate the ability of MSOs to staff and charge for special events.

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

The 29 acute care hospitals in Connecticut all have hospital-based emergency departments and are distributed primarily based on population density. Additionally, there are two veterans' hospitals, one of which is a federal facility. Thirteen hospitals are designated trauma centers: two pediatric Level I, two adult Level I, eight Level II, and one Level III have been verified by the American College of Surgeons.

DPH Regulation 19a-177 additionally allows for Level IV trauma centers within Connecticut. However, there is neither a state process nor a current ACS process to verify Level IV trauma centers. This same 1995 Regulation (19a-177) includes Trauma Field Triage Protocols that require the most severely injured patients be taken to a Level I or Level II trauma center. Although these triage criteria are largely followed by EMS providers across the state, they are now outdated.

Each of the two Level I pediatric trauma centers is also a full-service children's hospital. The trauma field triage protocols instruct that severely injured children less than 13 years of age should be taken to a Level I or Level II facility with pediatric resources including a pediatric ICU. There is one accredited burn center in the state, Bridgeport Hospital, and the three surrounding states provide additional burn center support.

There are 21 acute care hospitals designated as Primary Stroke Centers by the state, but only 12 of these are JCAHO certified for stroke care. Three CT hospitals have obtained credentials as "Chest Pain Centers with Percutaneous Coronary Intervention (PCI)" from the Society of Cardiovascular Patient Care. Additional facilities also provide PCI capability although there is no state-level credentialing at present. A 2012 document *DPH Policy Guidance for STEMI Patients* is intended to facilitate timely PCI and has been distributed to the EMS community.

Connecticut also has five freestanding emergency centers. Each is operated by an acute care hospital. Three facilities within Connecticut are independently licensed as rehabilitation centers; additional rehabilitation beds are available within many of the acute care hospitals.

There is no formal coordination of interfacility transfer at the state or EMS region level; neither has there been a statewide survey of hospital capabilities. Many interfacility transfer agreements are said to exist between hospitals for time critical diagnoses – some formal and some based on historic referral patterns within the state. Although hospitals within Connecticut rarely go on diversion, a policy has been developed to provide guidance for pre-hospital providers faced with this challenge. *The Connecticut Emergency Medical Services Medical Advisory Committee (CEMSMAC) Statewide Diversion Guidelines* recommend that "A hospital regardless of (its) diversion status must accept a patient who is so unstable that, in the opinion of the ambulance crew, the patient must be taken to the closest hospital. On-line medical direction must be contacted in this circumstance to discuss final destination (10/11/07 CEMSMAC)."

Although all acute care hospitals within the state are required to submit trauma patient care data to the state trauma registry, only 19 acute care hospitals submit these data, the 13 trauma centers and 6 others. Two of these non-designated hospitals submit their data to the National Trauma Data Bank as well. There is at least one trauma center participating in the Trauma Quality Improvement Program (TQIP) of the American College of Surgeons.

Recommendations

- The OEMS should develop a mechanism for verification of Level IV trauma centers (and consider in-state verification of Level III centers).

- **The OEMS should promulgate rules that would result in each acute care hospital in the state participating in an inclusive trauma care system.**

- The OEMS should publish the capabilities of each hospital in the state and provide updates on a regular basis – this should include listing the capabilities of each freestanding emergency center.

- The OEMS should ensure future EMS legislation requires transfer agreements between all appropriate facilities to enhance provision of optimal and regionalized systems of care for all time-critical diagnoses (trauma, cardiac, stroke) and special populations (pediatric, burn).

- The OEMS should use trauma registry data to provide blinded comparative outcomes (as possible) to each trauma hospital on an annual basis.

- The DPH should complete statewide implementation of modern trauma triage guidelines based on the 2011 CDC Field Trauma Triage Guidelines.

- The OEMS, in conjunction with the CEMSAB, should create clear criteria for designation of Primary Stroke Centers and PCI Centers and annually publish region-based lists of state-designated centers as a component of statewide programs for stroke and cardiac emergencies.

- **The OEMS should develop a strategy to enforce the existing requirement that all acute care hospitals submit trauma patient data to the state trauma registry, in order to begin system performance improvement activities.**

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; and
- 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.
- Each State should develop a statewide communications plan that defines State government roles in EMS system communications.

Status

Connecticut was one of the first states to implement a statewide 9-1-1 system. The enhanced 9-1-1 system facilitates a prompt and accurate response to medical emergencies. These systems are in place within the 109 Public Safety Answering Points (PSAP) and 13 regional Coordinated Medical Emergency Direction Centers

(CMEDs). The CMEDs are able to connect ambulances to all of the hospitals for medical oversight. All ambulances and hospitals are equipped with UHF radios. In addition to the radios, hospitals also have satellite phones. The CMEDS have been equipped with the high band MEDNET (VHF) radios purchased with funds from the Public Health Emergency Preparedness program. Every hospital and communications center will have VHF radios for the purpose of redundancy.

The DPH is also migrating its capabilities into the backbone of the state police communications system and will be creating statewide DPH talk groups. It was noted that by the end of February 2014, Connecticut will have a fully interoperable medical communications system with standard operating frequencies.

All public safety telecommunications personnel who answer 9-1-1 calls are required to take a state approved training course. A portion of the course includes EMD which is required in statute. EMD training and certification is done under the authority of the Office of Statewide Telecommunications (OSET).

Though Emergency Medical Dispatch was implemented in 2000, there are no OEMS certification or recertification criteria for EMD. There are no reporting criteria for communities to maintain certified dispatchers. There is no routine quality improvement process to assess care and capabilities of the dispatcher and the medical priority dispatch systems. In addition, there is no data available to assess the impact on patient care outcomes or to evaluate the dispatch protocols used.

There is a state EMS communications plan that has been revised and addresses changes in the communications system that have occurred over recent years. There is involvement of the CEMSAB in the development of the plan. There are also monthly CMED meetings for strategic planning.

Discussion continues regarding the consolidation of PSAPs and the 13 CMEDS. The CMEDs have varying degrees of volume and some have no hospitals within their region.

Recommendations

- **The OEMS should complete a utilization review of the CMED system to determine appropriate distribution and number of CMEDs and support regionalization of care.**

- The OEMS should establish and enforce a regulatory standard to ensure medical direction is provided for any dispatch center utilizing emergency medical dispatching.

- The OEMS should incorporate emergency medical dispatch centers into any local,

regional or state QI processes to assess care through pre-arrival instructions and to improve interagency communications.

- **As the EMS data collection system is implemented, the OEMS should facilitate and encourage the automation of the emergency dispatch system statewide and the auto-population of data from computer aided dispatch systems to the electronic patient care report (ePCR).**

- The OEMS, in collaboration with OSET, should continue to promote and implement the EMD training and certification.

- The OEMS should provide oversight to ensure the consistent utilization of medical dispatch systems statewide.

G. PUBLIC INFORMATION AND EDUCATION

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

There continue to be statewide activities related to injury prevention and public awareness/education through the EMS for Children program. This program resides within the OEMS and the program manager is actively engaged in meeting the HRSA performance measures. The EMS for Children conducts an annual conference, provides outreach education and participates with coalition partners on prevention activities (Safe Kids).

Through dedicated OEMS staff, the website has been updated and pertinent information is pushed out to providers on a more regular basis. They have also established links on the website to other injury prevention programs and resources such as the Injury Prevention Center at the Connecticut Children's Medical Center.

The OEMS also participates in EMS week and provides a display at the Legislative building for Public Health Day. The five regional EMS coordinators are very engaged with local efforts and also have set up a system to share relevant information with service providers on a regular basis.

The OEMS is to be commended for the implementation of the HeartSafe program. They have established a collaborative relationship with the American Heart Association to promote CPR courses and the use of automatic external defibrillators (AED) to the

public. Efforts should definitely continue to support this program with attention to capturing data on its effectiveness, securing financial resources and recognizing citizens who have successfully used the knowledge to save a life.

Once the data system is fully functional, the data can be used to assess the nature and type of injury in Connecticut to target prevention programs and to support legislative initiatives. The OEMS does not have an epidemiologist to assist with data analysis and reporting. The reports found on the website are not user friendly and do not adequately tell the story of EMS care in Connecticut.

In reviewing the minutes on the website, the EMS PI and E committee is one of the most active committees of the CEMSAB.

Recommendations

- The OEMS should continue to develop a strong coalition to promote public information and injury prevention with partners such as the Connecticut Children's Medical Center Injury Prevention Center and the Office of Highway Safety.

- **The OEMS should utilize patient care data, when it is available, to assess injury and to target prevention efforts.**

- The OEMS should evaluate the effectiveness of the HeartSafe program and share success stories during EMS week activities.

- The OEMS should continue to update the website and integrate information from regional councils.

- The OEMS should through the advisory committees, update PI and E section of state EMS plan.

- The OEMS should actively participate in the Safe Communities programs in partnership with the Office of Highway Safety.

- The OEMS should seek resources to enhance the development of reports and fact sheets that educate system stakeholders, legislators and the public about the emergency healthcare system.

- **The OEMS should fill the vacant epidemiologist position.**

H. 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 EMS Medical Director is a contracted consultant who provides advice to the OEMS regarding issues but does not have any specific authority. The current job description appears to be an accurate representation of duties. The current State EMS Medical Director is engaged and well-respected. Under his leadership, the state has embarked on a statewide guideline/protocol project – which has developed into a New England regional protocol project. The position is not required by statute or current regulations but appears in the new regulations.

Medical oversight is provided through the sponsor hospital system. Each agency that provides care above EMT-Basic level (National Standard Curriculum) is required to have a signed agreement with a sponsor hospital. Each sponsor hospital is currently required to provide an EMS Medical Director and an EMS Coordinator, although the new regulations will only require the sponsor hospital to provide a Medical Director. Online Medical Control (direct medical oversight) is not frequently utilized as most systems are "standing order" driven. When needed, OLMC is provided from the sponsor hospital through a CMED. There appears to be variability in the sponsor hospital provision of medical oversight services such as physician involvement, quality management expertise, and EMS education. There is no funding for medical oversight within the system. As a result, sponsor hospitals are reluctant to have minimal regulatory standards for the provision of medical oversight and there is little

accountability in the system regarding medical direction. EMS Medical Directors are required to be board certified in emergency medicine, but no specific EMS training is required. Only 30% of EMS Medical Directors had any EMS training.

The EMS regions have a role in creating regional protocols and policy. Only two regions have regional protocols. It appears that there is great variability of regional involvement. The regulations include a "regional EMS Medical Director" but that role seems to only "represent" the region to outside entities and does not have regional authority or role. While PSAPs are required to perform Emergency Medical Dispatching (EMD), there is no ongoing requirement for medical oversight of EMD.

There appear to be significant challenges around quality improvement within the system. The amount of quality management activity is highly variable. Interestingly, when the 26 sponsor hospitals were surveyed about their QA/QI activities, only 20 hospitals responded. It appears that the only legal protection from discoverability is if there is a specific "peer-review" standing meeting at the hospital. Although sponsor hospitals provide medical direction, there is still little to no patient outcome data available, especially if a patient goes to a different hospital. There is no protection for quality management activities that occur at the dispatch, EMS agency, medical director, hospital, regional or state level. It appears that EMS medical direction is a low risk liability environment in Connecticut, but there are no liability protections in place.

Connecticut is blessed with two pediatric hospitals that are level I trauma centers. They do appear to be involved in EMS but it is unclear what their reach is outside of their specific regions. Their expertise in the statewide protocols would be invaluable.

Recommendations

- **The OEMS should ensure that new regulations require ALL levels of EMS provider (EMR→paramedic) as well all EMD providers to have indirect medical oversight from an EMS Medical Director.**

- The OEMS should implement statewide protocol guidelines as soon as possible.

- The DPH should pursue legislation providing discoverability protection for the quality management activities at the dispatch, EMS agency, hospital, regional and state levels.

- The DPH and CEMSAB should investigate potential funding mechanisms for appropriate compensation of medical oversight activities.

- The DPH should pursue legislation that provides liability protection for sponsor hospitals and EMS Medical Directors for the provision of EMS medical oversight.

- **The OEMS should ensure that the State EMS Medical Director and regional medical directors have sufficient authority/responsibility to implement statewide protocols, clinical care guidelines and quality management activities.**

- The OEMS should ensure that regular education/training opportunities are provided for EMS medical directors throughout the state.

- The OEMS should establish requirements for both initial and ongoing training of EMS medical directors.

- The OEMS should require pediatric specialist input for all EMS protocol development.

- The DPH should ensure that patient outcome data is available to all levels of the EMS system.

I. 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

Connecticut was an early leader in state trauma system implementation. This is evidenced by the statewide trauma plan that was completed in 1995, based on the HRSA Model Trauma Care System Plan, and early development of a statewide trauma triage guideline. Since that time, progress has been slow for many reasons, including the fact that there is not a trauma-specific FTE within the Office of EMS. The original trauma system plan and trauma triage guideline are now outdated and obsolete, but have not yet been replaced. An updated trauma plan was submitted to DPH in 2007, but has not been released (ideally it will be consistent with the public health model based 2006 HRSA Model Trauma System Planning and Evaluation document). Updated trauma triage guidelines are nearly complete.

Thirteen hospitals are designated as trauma centers: two pediatric Level I, two adult Level I, eight Level II, and one Level III have been verified by the American College of Surgeons. DPH Regulation 19a-177 additionally allows for Level IV trauma centers within Connecticut. However, there is neither a state process nor a current ACS process to verify Level IV trauma centers. Each of the two Level I pediatric trauma centers is also a full-service children's hospital.

The 16 acute care hospitals that are not designated should be encouraged to become part of an inclusive statewide trauma care system, designated at a level commensurate

with their capabilities. This would allow Connecticut to again demonstrate leadership in trauma system development and trauma quality improvement initiatives. It should be noted that one potential shortcoming of the current designation process is that hospitals choose to be verified and then designated at a certain trauma center level. This could potentially result in hospitals not providing care for all trauma patients that would benefit from their actual capabilities.

Although the current Connecticut trauma system has many of the necessary components and appears to function well, in reality there is no objective proof of this. The trauma centers submit data to a state trauma registry, but no data returns to the contributing hospitals. A region-based statewide preventable mortality study would shed light on strengths and weaknesses of the current system. A study of patients transferred from one facility to another, within and between regions, would provide additional information on quality and timeliness of care and system efficacy.

The Trauma Committee, a standing committee of the Connecticut Emergency Medical Services Advisory Board, meets jointly with the American College of Surgeons Connecticut Committee on Trauma. The goal of the two committees (which have largely overlapping membership) is the same: improving care of the injured patient. Better integration of these two closely related committees may serve to facilitate additional productivity through less redundancy.

The OEMS should use the data in the state trauma registry to educate citizens and residents in the state about the trauma system and its benefits to each one. Through this mechanism, OEMS will gain the financial and legislative support needed to complete the development of a modern inclusive Connecticut trauma care system.

Recommendations

- The CEMSAB and OEMS should complete and publish the 2007 update of the statewide trauma system plan.

- The DPH should complete statewide implementation of modern trauma triage guidelines based on the 2011 CDC Field Trauma Triage Guidelines.

- **The OEMS should secure required FTE support and permanent funding for trauma care system function and maturation, including hospital verification and system performance improvement/quality assurance, as guided by statewide EMS and trauma registry data.**
    - **The DPH should create the position and hire a state trauma system manager.**
    - **The DPH should create the position and hire a state data manager for EMS and trauma system data.**
    - **The OEMS should fill the vacant epidemiologist position.**

- The OEMS should develop a designation process for Level IV trauma centers and encourage hospital designation at all levels (I, II, III, and IV) commensurate with actual hospital capabilities in order to create an inclusive trauma care system.

- The OEMS should provide an annual trauma system report to stakeholders including: the legislature, all EMS agencies, all hospitals and freestanding emergency centers, and the public to enhance legislative and public support.

- The CEMSAB should make use of the Trauma Committee and the CT State ACS Committee on Trauma to drive maturation of the trauma care system.

- **The OEMS should perform and publish a state trauma preventable mortality study using statewide EMS and trauma center data in conjunction with CEMSAB Trauma Committee clinical expertise, to better define the magnitude of the Connecticut trauma problem, guide system development priorities, and obtain additional legislative and financial support.**

- The OEMS should work with statewide, regional, and community organizations to develop strong grassroots support for the trauma system.

J. 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

Although there has been a lack of significant progress in this area since the last assessment, the OEMS is commended for the work that it has been able to accomplish in the last year. OEMS is collecting EMS data in a data aggregator on its servers. The OEMS has contracted with Digital Innovations to provide the aggregator. Licensed and certified EMS agencies are required to have an electronic PCR (ePCR) that is NEMSIS Gold compliant and provide data uploads to the OEMS server. There are currently 11 different ePCR programs in use in Connecticut. The State has successfully uploaded their 2012 records, comprising over 500,000 ePCRS, to the National EMS Database. A great success indeed! In addition, the OEMS has used State Highway Safety grant funds to purchase Toughbooks and distribute them directly to EMS agencies to promote usage of ePCRs. Currently, 95% of required agencies are uploading their data.

The state trauma registry exists in the state's trauma regulations and all acute care hospitals are required by law to submit data. Despite this requirement, only 19 hospitals provide data to the state trauma registry. The state has no registry or data collection effort for other time-critical illnesses such as stroke, ST-elevation myocardial infarction or cardiac arrest. There was no testimony provided that indicated that the state had any intent to collect data on these other time-critical conditions.

Overall, the OEMS lacks sufficient staffing to evaluate the quality of the data going into the system, provide the legislature with specific reports as required by law, and provide feedback about quality of care and patient outcome. Currently, one of the regional coordinators, categorized as a "durational" employee, has served as the state's data liaison to EMS agencies and has been a key force in the implementation described above. However, the state's EMS epidemiologist position remains unfilled and there is no position for an EMS trauma data manager. It is unlikely that the state will be able to make any improvement in its ability to provide data to stakeholders, constituents, or legislators until these positions are filled.

The data in the registries is owned by the state. There appears to be no legislation or rule that specifically protects the databases from legal discovery although contributors have been unable to get any functional data out of the system. Although there is a data/quality subcommittee of the CEMSAB, they have been unable to do any meaningful QI because of lack of access to the data. In addition, a statewide data dictionary is not in existence. All QA/QI activities occur at the local level between the sponsoring hospital's EMS Medical Director and the agencies. Only one region has QA/QI standards and goals. There is inadequate protection from discoverability for these activities.

The OEMS has recently become involved in the Traffic Records Coordinating Committee and appears to be partnering with them for a grant to create linkages with many different existing databases.

Recommendations

- **The DPH should fill the vacant epidemiologist position and create and fill an EMS and trauma data manager position.**

- The OEMS should work with the CEMSAB Data/QI Committee as well as the trauma committee to create a strategic plan for moving forward. The should include a plan for:

    - Development of a statewide EMS data dictionary
    - Development of a statewide EMS minimal data set
    - Development and publication of reports to the public and legislature
    - Reporting on the trauma registry dataset to stakeholders
    - Creating/providing QI toolkits that may be utilized at a local level to improve quality of care.
    - Providing training throughout the state for local EMS agencies and sponsor hospitals on how to utilize their own data.

- The DPH should develop legislation and regulation to provide legal protection of the databases from discovery.

- **The DPH should develop legislation that protects QA/QI activities from discovery whether performed at the local, regional or statewide level. This should include CEMSMAC and the CEMSAB Trauma Committee.**

- **The DPH should ensure that patient outcome data is available to all levels of the EMS system.**

- The OEMS, CEMSAB and its committees should develop and implement a statewide performance improvement plan for EMS and time-critical emergency conditions.

K. 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

The relationship between the Office of EMS and the Office of Public Health Preparedness and Response is well established and it is clear that EMS is involved with planning, exercising, response and after-action reviews. The OEMS role in Public Health response and in the State Health Operations Center as well as the State Emergency Operations Center is well understood. Connecticut has experienced an unusually high number of real-world events in recent years, and these events have tested and improved the coordination of EMS emergency response. These events include a power plant explosion, two hurricanes, a train crash and a multi-fatality school shooting. There have also been incidents that brought about the evacuation of long term care facilities.

Mutual aid agreements, the ability to participate in the Emergency Management

Assistance Compact and use of National Incident Management System is evident and prevalent. There are considerations for EMS in the pandemic influenza plans for the state. There are protocols for assessment, triage and the tracking of patients, and the two offices are working together on an EMS management module to supplement the triage protocols. Another accomplishment of note is the development of mass gathering regulations for large events, which also includes considerations for EMS care. Compliance with this regulation at the local level was reported to be limited.

Testimony indicates a general feeling that EMS provider agencies are well prepared for disaster events and that there are considerations in place for events requiring the extended use of PPE and also events that might create healthcare system surge conditions. There are concerns, however, in some instances that smaller responder agencies and private providers may need additional focus.

Work is underway on EMS Crisis Standards of Care and there is evidence of past execution of altered dispatch protocols during past events.

As with normal EMS operations, the system of Emergency Management Agency (EMA) response is distributed among the 169 municipalities. State EMA regions and the EMS regions are consistent and it may be productive to consider regionalization of EMS disaster response to determine if it provides a streamlining of capability and readiness cost.

There are many opportunities yet available for EMS and Public Health Preparedness to collaborate. Development of more robust EMS run data analysis and trauma data analysis would be of great benefit for surveillance. Preparedness funding for EMS positions in the EMS regions could potentially improve both EMS care and EMS preparedness.

Recommendations

- The OEMS should identify and close preparedness gaps that may exist with smaller response agencies, specifically in the areas of PPE stockpile, preparedness training and planning, and exercises.

- **The Department of Public Health should be more involved in the collaboration between OEMS and the Public Health Preparedness programs and work to more effectively leverage developed capabilities and resources.**

- OEMS should work with Public Health Preparedness and Homeland Security to develop a written statewide EMS workforce protection plan.

L. CURRICULUM VITAE

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ORGANIZATIONS/APPOINTMENTS

Past President, National Association of State Emergency Medical Services Officials (NASEMSO)
Former East Region Representative, NASEMSO
Former Domestic Preparedness Committee Chair, NASEMSO
Member, ASTHO Directors of Public Health Preparedness
Appointee, Delaware Emergency Medical Services Oversight Council
Appointee, Delaware Statewide Interoperability Executive Council
Principal Investigator, Delaware Public Health Preparedness Grant
Principal Investigator, Delaware Hospital Preparedness Grant
Member, Delaware Homeland Security Advisory Council
Member, Delaware Traffic Records Coordinating Council
Member, Delaware Homeland Security Grant Program Steering Committee
Member, Delaware Highway Safety Planning Council
Member, Delaware Trauma Systems Committee
Member, Atlantic EMS Council
Past member, Committee on Accreditation of Educational Programs for the EMS Professions
USDOT, Technical Assistance Team, Traffic Records Program, Member, State of Minnesota.
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member, States of Oklahoma, Missouri, Wisconsin and Wyoming.

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ORGANIZATIONS/APPOINTMENTS

American College of Surgeons Committee on Trauma,
Past Chair, ATLS Subcommittee 2003-2006, International Chair 2006-2009, Consultant
Trauma Systems Consultation Committee (Team leader AZ, TN, IN, TX, reviewer NC, CT, HI)
Member and Lead Reviewer, Trauma Center Verification & Review Committee (VRC)
Region Chief, Military Region 1999-2002
State Trauma Center Site Surveyor (Virginia, Pennsylvania, Illinois, Washington, Oregon)
Institute of Medicine, Committee on a Vision for Space Medicine Beyond Earth Orbit
NATO Emergency War Surgery Handbook, 3rd US Revision, Editorial Board
Ambroise Pare Military Surgical Forum of ISS-SIC, Past President
Society of Apothecaries of London, Diploma in the Medical Care of Catastrophes,
Diplomate and Examiner
Madigan Army Medical Center, Tacoma, Washington, Staff Surgeon,
Surgical Chief, ICU
47th Combat Support Hospital, Saudi Arabia and Iraq, Chief, Trauma Surgery
Inova Fairfax Hospital, Falls Church, Virginia, Vice Chief, Trauma Services
Emanuel Hospital, Associate Medical Director, Trauma Services, 2002-2009
Trauma Medical Director, Johnson City Medical Center 2009-2011
U.S. Public Health Service, Division of Trauma and Emergency Medical Systems,
BHRD, HRSA, Director 1994-1995
Uniformed Services University of the Health Sciences
Professor of Surgery 2002- present
National Capital Area Medical Simulation Center, Surgical Simulation Laboratory, Director
Oregon Health Sciences University, Clinical Professor of Surgery, 2004-2009
East Tennessee State University, Professor of Surgery, 2009-2011
Journal of Trauma, Senior Reviewer; *Injury,* Reviewer.
HRSA Ad Hoc Committee to write Model Trauma Care System Plan/MTSPE, 1992/2003
Member, Resources Revision Committee, ACS COT and Contributing Author (Green Book)
Member, Pro Tem, ACS Health Policy Steering Committee
Member, Oregon State Trauma Advisory Board, 2004-2009
Member, Tennessee Trauma Care Advisory Council 2011
Member, Standards Committee, Pennsylvania Trauma Systems Foundation 2012
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member,
States of Mississippi, Montana, North Dakota, Missouri, Ohio, Wisconsin and Wyoming.

D. RANDY KUYKENDALL, MLS, NREMT-P

Interim Director
Health Facilities and EMS Division

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ORGANIZATIONS/APPOINTMENTS

Health Facilities & EMS Division, Deputy Director for Acute, Community & Emergency Service, 2012-2013
Colorado Emergency Medical and Trauma Services Section, Colorado Department of Public Health and Environment, Chief
National Association of State EMS Officials (NASEMSO), President, 2010 – 2012.
Committee on the Accreditation of Education Programs for the EMS Professions (CoAEMSP) 2006-2010, Past Chairman
Pueblo Community College, Department Chairman
State of New Mexico Emergency Medical Services Bureau, State EMS Training Coordinator/EMS Program Operations Manager
National Council of State EMS Training Coordinators, Inc., Chairman
US Department of Transportation, Paramedic Curriculum (1986) Leadership and Development Committee
Injury Prevention Program for EMS Providers, Leadership and Development Committees
States of Colorado and New Mexico, Legislative Policy Development and Implementation
Colorado and New Mexico Statewide EMS Advisory Councils
Colorado statewide EMS and Trauma Advisory Council, Executive Secretary
New Mexico EMS Statewide Advisory Committee, Former Vice Chairman
Emergency Medical Technician and Paramedic, Las Cruces, New Mexico
1990- New Mexico Governor's Award
1998-Colorado EMS Instructor of the Year
2006-Colorado EMS Association President's Award
USDOT, NHTSA EMS Assessment and Reassessment Program, Technical Assistance Team, Member, Territory of Puerto Rico, and States of Ohio, and Wisconsin.

SUSAN D. McHENRY, MS

EMS Specialist

U.S. Department of Transportation
National Highway Traffic Safety Administration
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EMS Specialist
DOT, National Highway Traffic Safety Administration
(March 1996 - to Present)

Director, OEMS
Virginia Department of Health
(1976 to March 1996)

ORGANIZATIONS/APPOINTMENTS

National Association of State EMS Directors (1979-1996)
  Past President
  Past Chairman, Government Affairs Committee
National Association of EMS Physicians, Member
American Trauma Society
  Founding Member, Past Speaker House of Delegates
ASTM, Former Member, Committee F.30 on Emergency Medical Services
Institute of Medicine/National Research Council
  Pediatric EMS Study Committee, Member
  Committee Studying Use of Heimlich Maneuver on Near Drowning Victims, Member
World Association on Disaster and Emergency Medicine
  Executive Committee, Former Member
Editorial Reviewer for *A Prehospital and Disaster Medicine*, (former).

RITU SAHNI, MD, MPH, FACEP

Medical Director, Lake Oswego Fire Department

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Lake Oswego, OR 97035

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ORGANIZATIONS/APPOINTMENTS

Medical Director, Oregon EMS/Trauma System, 2007-2012
Diplomate, American Board of Emergency Medicine
President, National Association of EMS Physicians Board of Directors
National Registry of EMTs, Board of Directors
Fellow, American College of Emergency Physicians
Society of Academic Emergency Medicine, Past Member
National EMS Advisory Council, Past Member
National Association of State EMS Officials, Past Member
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member, States of Michigan and Delaware.

JANICE D. SIMMONS, BFA

Executive Support
Technical Assistant Team

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EDUCATION

BFA, Education, magna cum laude
Maryland Institute College of Art, 1991

EXPERIENCE

USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member, 1992 - Present

Executive Support, On-Site Project Management, and Technical Document Editing for assessment programs including:

Emergency Medical Services;
Impaired Driving;
Motorcycle Safety;
Occupant Protection;
Pedestrian Safety; and
Driver Education.

JOLENE R. WHITNEY, MPA

Deputy Director
State of Utah Department of Health
Bureau of Emergency Medical Services & Preparedness

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ORGANIZATIONS/APPOINTMENTS

Utah Bureau of EMS and Preparedness, Deputy Director
Past Chair National Council of State Trauma Systems Managers
NASEMSO liaison for the ACS Trauma System Planning and Evaluation Executive Committee
NHTSA EMT Refresher Course Curriculum Development
HRSA Rural Trauma Grant Reviewer
Utah Public Health Association, Member
American Trauma Society, Member
Task Force Chair for Utah Trauma System Development
Air Ambulance Rules Task Force, Chair
Appointed to Governor's Council on Blood Services
Previous member of State EMS Training Coordinators Council
CLEAR Certified Inspector
Utah Emergency Managers Association, Member
Certified EMT-I, 1983.
ACS, State Trauma System Assessment, Team Member, States of Alaska, Minnesota, Colorado and Louisiana, Texas.
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member, States of Michigan, Oklahoma, Delaware, Missouri, Ohio, Wisconsin and Wyoming.
IOM Crisis Standards of Care Committee, Member
Planning Committee's member for IOM Rural EMS Workshop and Panel Discussion Chair.