STATE OF OKLAHOMA

A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

November 17-19, 2009

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 37,000 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 accidental injury on the nation's highways. NHTSA has determined it can best use its limited 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 new 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 Oklahoma State Department of Health, Emergency Systems requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the Oklahoma Statewide EMS program. NHTSA developed a format whereby the OEMS staff coordinated comprehensive briefings on the EMS system.

The TAT assembled in Oklahoma City, Oklahoma, on November 17-19, 2009. For the

first day and a half, over 20 presenters from the State of Oklahoma, provided in-depth briefings on EMS and trauma care, and reviewed the progress since the 1992 Assessment. Topics for review and discussion included the following:

General Emergency Medical Services Overview of System Components

- Regulation and Policy
- Resource Management
- Human Resources and Training
- 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 Oklahoma. The team spent considerable time with each presenter so they could review the status for each topic.

Following the briefings by presenters from the Oklahoma EMS, 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 Oklahoma State Department of Health, Emergency Systems for their support in conducting this assessment.

The TAT would like to thank all of the presenters for being candid and open regarding the status of EMS in Oklahoma. 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 R. Shawn Rogers, EMS Director, Emergency Systems, Oklahoma State Department of Health, his staff and all the briefing participants for their extraordinary efforts and well-prepared presentations. In addition, the Team thanks the University of Oklahoma, Conference Pros for their work in arranging travel and hosting the team during its stay in Oklahoma.

INTRODUCTION

Oklahoma, the Sooner State, inspires images of cattle grazing on open prairies being herded by cowboys on slow moving horses. Fast forward to 2009. Oklahoma today is a diverse and vast State that is evolving in many ways. Today's migration is not towards the open plains and rich farmlands, but rather, into the major urban corridor extending from Lawton to Tulsa. While agriculture is still an important part of the State's economy, energy, aviation, biotechnology and telecommunications are also major contributors. The State is home to over 3.5 million residents, two major State universities, and a professional basketball team. The cost of living in Oklahoma is affordable compared to many other States and the economy has shown sustained growth even during the recent recession.

In the 1930s and 1940s, Mr. Odies Primrose operated a funeral home ambulance in Norman, as part of an unorganized non-system of transportation for the ill and injured. This was a common practice at the time. Today, the State is served by a much more sophisticated EMS system that includes community based resources aimed at getting the right patient to the right hospital in the right amount of time. There is much pride in what has been accomplished. Other states would be envious of Oklahoma's EMS and trauma information system. The State is well on its way to implementing the EMS Education Agenda for the Future: A Systems Approach. Tobacco funds have created a substantial financial resource to compensate the costs of providing trauma care.

But, the spectacular Oklahoma sunsets are illuminating some concerning clouds. There have been a worrisome number of failures of rural ambulance services. A substantial number of Oklahoma citizens cannot access emergency medical care via enhanced 9-1-1. Many of the dedicated physicians who provide the medical oversight for the local delivery of EMS do not see themselves as part of a larger coordinated system of care.

The TAT was impressed with the commitment of system stakeholders to continue progress in building a sustainable, affordable and accountable EMS system that will meet the needs of Oklahomans today and for many years to come. State government, the medical community, EMS agencies, educators, and others have created the forums that bring them together to plan, analyze, debate and decide next steps. That willingness to seek a pathway forward together is a very optimistic sign that progress will continue.

On April 19, 1995, the collective heart of America skipped a beat as the Alfred P. Murrah Federal Building became the site of our nation's worst incident of domestic terrorism to date with the deaths of 168 people and injuries to hundreds more. That event thrust Oklahoma EMS into the public view in a way rarely seen. Lessons learned have reverberated throughout Oklahoma and the US in the years since.

Whichever route Oklahoma chooses in going forward to improve EMS is not without risk. Focusing on one area of need may divert attention and resources away from another. Good choices in the use of limited resources may enhance what can be achieved.

Oklahomans deserve nothing less than world class emergency medical care. With the foundation that has been built by the dedication and expertise of many wise leaders and a continuation of cooperative efforts, that vision is entirely possible.

OKLAHOMA EMERGENCY MEDICAL SERVICES (EMS)

The TAT revisited the ten essential components of an optimal EMS system that were used in the Oklahoma*: An Assessment of Emergency Medical Services*, in 1992. These components provided an evaluation or quality assurance report based on 1989 standards. While examining each component, the TAT identified key EMS issues, reviewed the State's progress since the original report, assessed its status, and used the eleven 2009 Reassessment Standards as the basis for recommendations for EMS system improvement.

A. REGULATION AND POLICY

Standard

Each State should embody comprehensive enabling legislation, regulations, and operational policies and procedures to provide an effective state-wide 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

Oklahoma has established comprehensive enabling legislation, regulations, and operational policies and procedures to provide an effective state-wide system of emergency medical and trauma care as follows:

> 63 OS 1-1201 et al, "***The Oklahoma Emergency Response System Development Act***", establishes the EMS program within the Oklahoma State Department of Health (the Department), and designates the Department as the lead EMS agency. 63 OS 1-2530, "***The Oklahoma Trauma Systems Improvement and Development Act***", establishes the trauma system and charges the Oklahoma State Board of Health with its development. Oversight of both systems is consolidated in the Department's Emergency Systems unit.

The Commissioner of Health is charged with licensing, regulating and developing the EMS system. The Oklahoma State Board of Health (the Board) is charged with developing the Trauma System including the designation of trauma care regions and distribution of the Trauma Fund.

The Oklahoma Emergency Response System Development Act (the Act) requires comprehensive EMS system planning and a state EMS plan. Oklahoma has not developed a comprehensive state plan to date, but in the last few years considerable attention has been focused on the problems of rural EMS and there is a growing awareness that the crisis will not abate without focused attention to the problem. Specific issues that challenge successful and sustainable ambulance service delivery in rural areas include fragmented dispatching, assuring qualified physician medical oversight, and economic inefficiencies associated with small call volumes.

Funding for the Department's Emergency Systems functions is primarily provided by Tobacco Tax monies directed into the "Trauma Fund" established in 63 OS 2001. Some state general fund money is also dedicated to support regulatory functions. Total annual funding is approximately $25 million: $22 million is distributed to providers of trauma care services, including $1.4 million to EMS, and $2.4 million is retained by the Department to fund system management and oversight.

Any collections over those amounts, up to $2.5 million, are accrued to the ***Oklahoma Emergency Response Systems Stabilization and Improvement Revolving Fund*** (OERSSIRF). This is the first year for OERSSIRF, and a little over $1.2 million is expected to be distributed. The distribution process is new as well, and will distribute development grants using a point system weighted to favor rural providers, collaborative projects, and projects with matching funds.

Submission of Prehospital data collection is required by law and rule, and the Department has been collecting statewide EMS data since 2001. Over 400,000 responses per year are collected by the Oklahoma EMS Information System (OKEMSIS), which was implemented this year using ImageTrend, a commercial web-based statewide data system compatible with the National EMS Information System (NEMSIS). The OKEMSIS software was purchased with a grant from the Oklahoma Highway Safety Office. Oklahoma has already started submitting quarterly NEMSIS uploads.

The Oklahoma Trauma Registry was implemented in the '90s, and has been refined into a research-quality data system. The Registry uses Collector software, which requires a "client software" installation at participating hospitals. Emergency Systems has dedicated 3 epidemiologists to manage the data systems and to develop OKEMSIS into a research-quality database. Training is conducted monthly for users, and a user group advises the Department on OKEMSIS system development.

Authority to establish minimum standards related to system elements such as personnel, services, specialty care facilities and regional systems is provided to the Department through the Oklahoma Administrative Code (OAC), section 310. Administrative penalties for regulatory noncompliance include fines and loss of licensure. The Department regularly pursues such administrative action if other efforts to correct deficiencies fail.

The Department has a "closest ambulance" rule that requires the nearest available ambulance to be dispatched in every case. The intent of this rule is excellent from a patient perspective although it leads to burdens on the responding ambulance services that end up subsidizing the costs and resource management for responses outside their primary service area.

The Department's Injury Prevention Service administers injury and trauma prevention and public education programs such as seat belt training, bicycle helmet distribution and smoke alarm distributions.

The Department works with the office of Emergency Medical Services for Children (EMSC) at the University of Oklahoma, to integrate the special needs of children and other special populations throughout the EMS system. EMSC works closely with OSDH staff to review rules and interpret data seeking opportunities to improve care to children.

While there is plenty of work remaining to be done in the area of regulation and policy, Oklahoma should be congratulated for establishing an excellent base that will serve the State well as it moves ahead in refining a maturing EMS system.

Recommendations

- The Department should establish financial incentives to support the closest ambulance dispatch policy.

- **The Department should realign the distribution of money from the Trauma Fund to support EMS system improvements and pay for readiness costs rather than primarily subsidizing uncompensated or under compensated trauma care.**

- The Department should assure that the Emergency Systems program is appropriately staffed and given the resources to plan, implement and manage a comprehensive ***EMS system*** that addresses the broad range of systematic responses to all time sensitive critical care diseases.

- **The Oklahoma legislature should provide statutory immunity from liability to EMS Medical Directors who meet training and certification requirements to be established by the Department.**

- The Department should expand the details in regulation for specialty care transportation and medical aspects of air-medical resources. Scopes of services provided, utilization, quality improvement processes and similar elements should be addressed.

- The Department should clarify the organization chart of the Emergency Systems program to identify the supervisory relationships of all staff including the EMS/ Trauma Medical Director.

- The Oklahoma legislature should establish in statute the responsibility of every county to assure primary and backup ambulance coverage.

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 events 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 victims 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

Emergency Systems within the Oklahoma State Department of Health is charged with identification, categorization, and coordination of resources necessary for establishment and operation of regionalized, accountable emergency care systems. There are eight recognized EMS regions in the state. Emergency Systems is responsible for technical assistance, inspections, planning and licensure of EMS providers and services in each region.

Oklahoma maintains a coordinated response to day-to-day emergencies as well as

mass casualty events or disasters. The State ensures resources are used appropriately through the Office of Emergency Management and the Department's Emergency Preparedness and Response Service. The Department maintains and operates a situation room, and has an extensively developed incident command system using National Incident Management System (NIMS).

Oklahoma has policies and regulations in place to assure equal access to basic emergency care for all victims of medical or traumatic emergencies, including rules requiring;

- The closest licensed ambulance must respond to any emergency request, without regard to jurisdictional or funding boundaries,
- Air providers to coordinate responses with other providers, and to work within the emergency care system
- All hospitals and ambulance providers to update their status on "EMResource", the state's on-line emergency medical resource management software
- All emergency ambulance services and hospitals to attend their Regional Trauma Advisory Board (RTAB) meetings and to follow their regional and state trauma care plans.
- All hospitals to be classified to reflect their emergency care capacity in one of 8 categories of emergency care, including trauma, cardiac, stroke, and pediatric care.
- Patient destination on high priority trauma is determined through consultation with the TReC system, which is funded using state general funds.

Oklahoma lacks a statewide EMS plan for the identification and utilization of EMS resources. As a result, there are areas of the state where certain resources are available in overabundance and also areas of the state where those same resources are limited or unavailable. This is particularly noticeable in the areas of air medical coverage, communication, transportation, medical direction, and dispatch.

Oklahoma EMS agencies are required as a condition of licensure to provide:

- Appropriate triage and transport of all victims,
- Appropriately licensed personnel trained at a minimum to the emergency medical technician [EMT] level
- Properly licensed, equipped, and maintained ambulances.

Oklahoma EMS providers are required as a condition of licensure to transport patients to facilities, including specialty care hospitals that are appropriately equipped, staffed and ready to administer care appropriate to the needs of that patient.

There are certain areas of the state where primary and secondary EMS response capabilities are not clearly defined. This is especially evident in rural areas, and can be attributed to a lack of available resources. There are areas in the state where primary ambulance coverage is described as "tenuous", and where the provider agency ability to remain in operation is in question.

Oklahoma statutes require the appointment of advisory councils such as the ***Oklahoma Emergency Response Systems Development Advisory Council (OERSDAC)*** and the ***Oklahoma Trauma Systems Improvement and Development Advisory Council (OTSIDAC).*** These councils provide broad-based input and guidance to the state EMS system, as well as a forum for cooperative action and for assuring efficient use of limited resources. Appointees include rural EMS providers, physicians, educators and other stakeholders. Trauma center coverage throughout the state is provided, with the notable need for an American College of Surgeons verified Level Two trauma center in Oklahoma City.

The Department coordinates with the Oklahoma Highway Safety Office (OHSO) 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. The "408" grants from OHSO, for example, were critical to establishing OKEMSIS, providing the funds to purchase and maintain the software. Other federal grants and resources are available for EMS system development and sustainment and should be more closely investigated.

Recommendations

- **Emergency Systems, in conjunction with stakeholders, should develop a statewide EMS plan that specifically addresses resource management, particularly in the areas of EMS transport, dispatch, airmedical resources, and medical oversight. The NASEMSO model plan may be a useful template.**

- The State should provide incentives for the consolidation of available EMS resources, promoting collaboration and sharing among communities, especially in the rural environment. By example, make demonstration grants from the State available to interested participants in rural regions in order to promote centralized and regionalized coordination of EMS assets.

- **The Department should conduct a study to determine the feasibility of realignment and reduction in the number of EMS/trauma regions to more closely fit routine referral patterns between EMS and hospitals. Balancing of volume and resources should be considerations in the assessment.**

Work to remove geopolitical barriers to improved EMS care and future system development.

- The Emergency Systems training coordinator should develop and administer a program that provides leadership training for EMS agencies and find ways to develop deeper agency infrastructure so that there is clear primary and secondary ambulance coverage statewide.

- The Department should explore opportunities and collaborate with additional federal programs that provide funding for EMS activities such as the Office of Rural Health and The Oklahoma Highway Safety Office (402 funds).

- The State should reallocate air resources and provide incentives for air coverage to underserved areas.

C. HUMAN RESOURCES AND TRAINING

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 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

Oklahoma licenses over 7000 EMTs at three levels: EMT (4400), EMT-Intermediate (750) and Paramedic (2000), as well as registering over 1000 EMRs. The state has worked to ensure that its EMS system has sufficient trained and certified/licensed persons to perform required tasks as first responders (e.g., police and fire), prehospital providers (e.g., emergency medical technicians and paramedics), communications specialists (EMD), physicians, nurses, hospital administrators, and planners.

The State has identified significant challenges in recruitment and retention of EMTs and providing sufficient training programs with effective local and regional support. The issues of assuring the availability of adequately trained and appropriately licensed EMS personnel to support the EMS system are reportedly most acute in the rural parts of the state.

As part of the OERSSIRF legislation, Oklahoma has identified the need for an ongoing state EMS personnel needs assessment that identifies areas of personnel shortage and tracks statewide trends in personnel utilization. No such program has been developed to date, however.

Oklahoma has established the EMT as the state minimum level of licensure for all transporting EMS personnel. EMRs may be used as emergency vehicle operators, with appropriate training, but may not be used as the patient attendant.

Emergency Systems is charged with routine monitoring of training programs to ensure uniformity, quality control and medical direction. The Department approves all training courses, and issues a Course Authorization Number (CAN) for each approved course. Initial and final rosters must be matched to the CAN, and all approved courses are listed on the OSDH website.

Oklahoma uses EMS education standards throughout the State that are consistent with the National EMS Education Standards. Oklahoma will implement the new national EMS scope of practice model as soon as the National Registry of EMTs examinations are available.

Oklahoma EMS educators and specialty care partners with interests in stroke, cardiac care and trauma are working to ensure availability of continuing education programs:

- Oklahoma EMSC works to provide pediatric emergency education such as PALS and PALS instructor courses
- American Heart Association (AHA) affiliates provide regular stroke training courses

- Trauma Centers such as the University of Oklahoma and Saint Francis Hospital provide annual Trauma symposiums.

Oklahoma EMT Instructors are required to meet State instructor qualification standards, including instructor courses and minimum hours of teaching requirements, and must recertify biennially.

The Department has prepared statutory language to ensure that the statutes and regulations support a system of EMS personnel licensure consistent with the EMS Education Agenda for the Future, the National EMS Scope of Practice Model and the National EMS Education Standards.

Oklahoma EMS rules require providers to monitor and ensure the health and safety of all EMS personnel, including:

- Vehicle operations training every two years
- United States Occupational Safety and Health Administration (OSHA) standards
- Specific safety requirements such as securing all equipment and passengers during transport.

Oklahoma EMS training institutions have launched some very innovative education programs, including distance learning programs through CareerTech and on-line education through the community college system.

Oklahoma appears to have an adequate EMS education infrastructure for delivering traditional EMS initial and continuing education. It is less clear that the system is prepared to meet the educational needs of other system constituents such as medical directors, agency managers and EMS communicators.

Recommendations

- **Emergency Systems should facilitate a human resources needs assessment as called for in the OERSSIRF legislation to determine if the Oklahoma EMS education infrastructure is adequately meeting the needs of the EMS system. Include in the assessment the educational preparation of EMS managers, physician medical directors and EMS communicators.**

- Emergency Systems should establish a mechanism to monitor the performance of EMS educators and programs as they begin to deliver education under the new EMS Education Standards.

- The Emergency Systems Education Coordinator should monitor the effects of requiring paramedic program accreditation on the availability of paramedic training.

- EMS education programs should address attrition rates for candidates entering initial education courses and program graduates not taking national certification testing. Similar attrition data should be gathered from EMS employers as part of the human resources needs assessment.

- **Emergency Systems in conjunction with other stakeholders should examine the needs for EMS manager education. Consider the possibility of educating EMS agency managers and medical directors jointly.**

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

Oklahoma is served by 195 licensed EMS providers: 160 ground ambulance services, 17 air ambulance bases, and 18 specialty care providers. Oklahoma identifies EMS service areas and integrates services through regionalized, accountable systems of emergency care through the ambulance service licensure process and the eight regional Trauma Advisory Boards.

Ambulance services, especially in rural Oklahoma, have struggled to exist. Some communities have been orphaned with no ambulance transport readily available.

However, a regulation is in place to ensure that when an EMS call is initiated, anywhere in the state, the closest ambulance must respond. Though this is not a popular requirement with licensed EMS agencies, they understand the need for such a regulation. Unfortunately, communities that have been left orphaned by failed EMS providers, have created a burden on neighboring communities and their licensed EMS providers to assume the fiscal responsibility for the costs associated with the readiness and provision of emergency medical services to the orphaned community.

Another challenge for rural EMS is the need to provide interfacility transport. The transports require advanced equipment and highly trained personnel. The interfacility transport also takes the EMS provider out of service to the community for an extended period of time, sometimes as much as 6-8 hours.

Emergency Systems licenses EMS agencies based on geographic services areas defined by the EMS agency applicant and approved by the local community. The Division has specific criteria established in rule to determine approval or denial of an EMS licensure applicant.

The State does not have a comprehensive EMS plan with a transportation component which can be utilized to identify and address service area issues and integration of regionalized emergency care.

Destination transport protocols have been established per region. Regulations, CQI and regional trauma plans are utilized to assess the effectiveness of the destination protocols.

Oklahoma has implemented regulations that establish regionalized, accountable systems of emergency care which provide for the systematic delivery of patients to the most appropriate specialty care facilities, including development of state-specific guidelines based on the most recent Trauma Field Triage Criteria of the American College of Surgeons-Committee on Trauma and the Centers for Disease Control. The eight Trauma regions were initially established based on the original Homeland Security regions. This approach did not take into account the provision of regionalized emergency health care based upon routine transfer or transport of patients. However, the Regional Trauma Advisory Boards (RTABs) have been established to address appropriate patient flow and transport for the most severely injured patients. The RTABs have established state specific guidelines based on national standards for the triage and transport of trauma patients.

Oklahoma does not have statewide standardized air activation protocols or guidelines for air to ground ambulance rendezvous. The availability of these guidelines would benefit the rural providers addressing the issue of rural providers leaving their service areas for lengthy periods of time. The Division is actively working on the development and integration of guidelines for additional time specific patient care needs like Stroke and STEMI.

Emergency Systems conducts routine, standardized inspections of all agencies, and licenses all emergency medical transport services and vehicles. Essential pediatric equipment and supplies are included in the minimum equipment lists. Emergency Systems has a routine inspection process in place to ensure the licensed EMS agencies have sufficient staff and equipment for the transport of injured and ill patients. The inspection process is conducted on an annual basis and is unannounced to the EMS provider. In the future, inspections will be conducted on a two year basis. However, Emergency Systems may perform inspections more frequently for licensed EMS agencies if issues with appropriate equipment or ambulance operations have been identified and through the complaint/investigation process. Emergency Systems has worked with the EMSC program and has ensured through the inspection process, that essential equipment is available to meet the needs of pediatric patients.

Oklahoma has established a minimum staffing standard for ambulances in rule: an EMR with Emergency Vehicle Operator (EVO) training is the minimum allowable emergency vehicle operator and a Basic EMT is the minimum attendant. A Paramedic attendant is the minimum staff allowed on specialty transport and air ambulance responses. Physicians, Nurses and other allied health providers may be used to supplement, but not replace, EMTs on ambulances. Oklahoma rules require coordination of all emergency transports within the EMS system, including public, private, or specialty (air and ground) transport. Communications centers may provide regional or statewide EMS transportation coordination - and medical direction if appropriate – as long as the following standards are met:

- The closest ambulance to any request for emergency service must be dispatched. If another agency is closer, the agency receiving the request must contact the closer agency.

- Air providers are required to contact the closest ground provider to any emergency response, and to coordinate air resources to ensure an appropriate response.

Oklahoma regulations require all emergency vehicle operators to complete an emergency vehicle operations course (EVOC) within 120 days of employment, with a refresher every two (2) years.

OSDH has participated in the series of meetings regarding the development of the state highway safety plan, and the OSDH EMS director is a participating member of the Oklahoma Traffic Records Coordinating Council.

Ambulance diversion is monitored on the EMResources system.

Through the individual protocol rule, an ALS provider may operate on an ambulance

that is not licensed for ALS if they meet specific requirements outlined in rule. This provides an opportunity for ALS to be provided in rural areas where the resources for ALS are scarce.

Recommendations

- Emergency Systems should establish standardized air ambulance activation and rendezvous protocols to assist in patient flow, especially in rural areas.
- The State should develop incentives for facilities to provide interfacility transport services to address rural EMS needs.
- Emergency Systems should ensure adequate medical direction and oversight is provided for all EMS personnel operating under the individual protocol rule.
- Emergency Systems should conduct a needs assessment to determine the resources needed to support and expand specialty care services.
- **The State should ensure through legislation, that there are no orphaned areas in the state without sufficient ambulance service coverage.**
- **The Department should use the authority provided under O.A.C. 641 310:641-3-38 to monitor air ambulance service utilization and medical benefit. State funding should be denied unless appropriate utilization can be demonstrated according to prospectively approved criteria.**
- Emergency Systems should consider a requirement for the licensing of non-transporting Emergency Medical Responder (EMR) agencies as a means of assuring data integrity and protection of the public for treatments rendered prior to the arrival of an ambulance service

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, etc.) 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 State of Oklahoma has 132 acute care hospitals that care for 3.6 million people. Most of the population is aligned along interstate corridors across the state with the three major population centers of Oklahoma City, Lawton, and Tulsa. Approximately 2.5 million people live within 50 miles of these three cities. The remaining million reside in rural settings and often frontier territory.

Forty-five percent of all hospitals have medical staffs of ten or less physicians. All hospitals must participate in the state trauma EMS system by state law. Those wishing to participate in trauma care are classified as trauma centers as levels I-IV. The

Oklahoma Department of Health classifies and verifies level II, III, and IV trauma centers.

There are currently 80 level IV trauma facilities, 25 Level III trauma facilities, two level II trauma facilities (one ACS verified), and one Level I trauma facility (ACS verified). Level I ACS verification is required by the State for trauma center designation at that level.

All hospitals can have a special designation category by notifying the State Department of Health. Specialty recognition is provided in areas including pediatrics, OB/Gyn, stroke, cardiac, burn, and trauma. State surveyors use clear regulatory requirements as the basis for classification decisions.

Hospitals with special designation are known to the prehospital community and licensed transport agencies by transport protocols developed by regional RTABs in the eight EMS regions throughout the state. Each region develops its own protocols to be approved by the state.

The hospital classification system is designed to see the injured and sick patients get to the closest appropriate facility for evaluation, stabilization and if necessary transport to a higher level of care. Hospital diversion issues have been largely resolved by using the EMResource and TReC to monitor hospital specialty capacity and status.

Hospitals in rural and frontier areas of the state often experience shortages of prehospital personnel and physicians.

Children require special attention to their medical needs and well organized access to care. Pediatric services that are available at specific centers in Oklahoma are known to EMS providers by their classification system. The two major pediatric centers are the University of Oklahoma in Oklahoma City and St. Francis Hospital in Tulsa.

There are three hospitals in the Native American community that do not participate in the State program since they are federally licensed and not State licensed. They do provide some patients into the system.

Recommendations

- **The State should further develop systems of care for time sensitive conditions such as stroke, STEMI, and pediatrics including standardized hospital capabilities.**

- **Emergency Systems should expand TReC to also manage resources for other time sensitive conditions in addition to trauma.**

- The State should use the Rural Trauma Team Development Course (RTTDC) to help educate Level III and IV centers on the necessity for stabilization and rapid transfer of trauma patients. Pursue additional federal funding resources to support these courses (e.g. FLEX funding through the Office of Rural Health).

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 9-1-1;
- Strive for quick implementation of both wire line and wireless enhanced 9-1-1 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 9-1-1 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, 9-1-1, 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

There are approximately 160 dispatch centers. Of those centers, 20% dispatch EMS ambulance resources. Few of the EMS providers dispatch for themselves. The majority of dispatch services are provided by law enforcement and PSAPs.

- In most of the state, a caller can begin with the universal system access number 9-1-1. There are still rural areas where 9-1-1 has not been implemented. Oklahoma has not achieved quick implementation of wire line or wireless enhanced 9-1-1 services statewide. New funds have been allocated to accelerate this process.

- There is not a state EMS communications plan nor has there been an assessment of existing EMS and hospital communications systems upon which a plan can be based.

- None of Oklahoma EMS dispatch systems currently auto-populate prehospital patient care reports with all relevant times from the public safety answering point (PSAP).

- Oklahoma has been working on a Statewide Communications Interoperability Plan (SCIP) for several years, but has not yet developed an updated interoperable system that enables communications from dispatch to ambulance, ambulance to ambulance, ambulance to hospital, hospital to hospital and ambulance to public safety communications. The 1977 "Hospital Emergency Access Radio" (HEAR) system is currently the only statewide interoperable EMS communications system.

- Prioritized dispatch of EMS and other public safety resources is only available in the largest markets in Oklahoma. Less than 20 Oklahoma agencies provide emergency medical dispatch (EMD) training and certification for all their EMS dispatchers. Most agencies obtain dispatch services through another agency such as local law enforcement. Few if any 9-1-1 call takers other than those employed by ambulance services have EMD training. Dispatcher training and certification standards are not standardized

- The current system does little to ensure that the receiving facility is ready and able to accept the patient, except to make "EMResource" information available to all dispatch centers.

- The statewide communications plan does not include effective, reliable interoperable communications systems among EMS, 9-1-1, emergency management, public safety, public health and health care agencies. The current system is a patchwork of frequencies and ambulances often require several radios to ensure they can communicate with all the providers in their service area.

- The statewide communications plan does not yet define the role of State government in EMS system communications. EMS providers are required by rule to maintain HEAR radios, but other systems are determined by local resources and authorities.

There are isolated examples of good communications systems within the state. EMSA, which has approximately 150,000 calls per year, has trained dispatchers that dispatch ambulances for their urban EMS services in Tulsa and Oklahoma City. They have been certified through the National Academy for Emergency Medical Dispatch. They also utilize the Medical Priority Dispatch System and status management system. EMSA has a CQI for dispatch and is tracking transfer times from the primary PSAP. Because of the challenges faced by rural providers, EMSA has started to take interest in providing outside dispatch services. They have certified instructors and have provided training throughout Oklahoma.

Few agencies and dispatch centers throughout the state are aware of pre-arrival instructions and their value. The public's expectations are that the closest ambulance will be dispatched and care will be provided through the situation until an ambulance arrives. This expectation and need is not being addressed and ignoring this aspect of emergency care can have dire circumstances.

In small rural areas of the state, dispatch services are provided by law enforcement. Dispatch centers serve many agencies and become conflicted. Training is often focused on law enforcement.

Other pervasive issues regarding the communications system include:

- No pre-arrival instructions
- Wrong addresses
- Calls are dropped
- Lines are busy and calls are forgotten

Another issue identified, was the communications system doesn't support the closest ambulance rule. This rule is predicated on the fact that an ambulance service will be dispatched that is the closest to the call. No system is in place to ensure that this

occurs.

Finally, there are no consistent addressing systems throughout the state. There are challenges with GPS systems in managing this issue as well.

The state communications plan requires all hospitals to have the HEAR (155.340) system. The 800 MHz system is costly and will not be able to support the entire state because of topography. Therefore, hospitals intend to maintain the HEAR system, which needs repair and enhancements.

Recommendations

- **The Department should establish minimum standards for emergency medical dispatch centers including priority medical dispatch and pre-arrival instructions.**

- **The Department in collaboration with the Council of Governments should establish regionalized dispatch centers based on the TReC model.**

- The Department should develop a statewide communications system that supports the "closest ambulance" rule.

- The Department should continue efforts to participate on the State Communications Interoperability Plan to ensure EMS is included in any statewide interoperability efforts.

- Emergency Systems should ensure medical direction and oversight of EMD programs in collaboration with stakeholders.

- The State should provide financial incentives for regionalized dispatch centers.

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

Public awareness and education about the EMS system are essential to a high quality system. Oklahoma has not developed or implemented a formal public information and education (PI&E) plan specific to EMS:

- The components and capabilities of an EMS system are defined in statute, rule and practice, but not in a P I& E plan.
- The public's role in the system is not specifically defined in any public documents;
- The public's ability to access the system is not formally defined in any planning documents.
- Oklahoma has no formal bystander care training programs. However, they do have CPR classes and First Aid courses offered by the American Heart Association and the American Red Cross.

- The Department and various interest groups do conduct education on prevention issues (e.g., alcohol or other drugs, occupant protection, speeding, motorcycle and bicycle safety), but rarely in association with EMS providers.

There has not been as assessment to determine the extent of involvement of EMS providers and hospitals in injury prevention programs and public outreach.

- There is no formal plan defining the EMS providers' role in injury prevention (IP) and control, and no resources articulate the need for dedicated EMS staff and resources for PI&E.

The EMSC program has developed a training program for EMS providers on Infant and Child Injury Prevention. The program includes the role of the EMT in Child Safety, Bicycle safety, Poison Prevention, Water Safety, and Pedestrian Safety. They have done an outstanding job in addressing the injury prevention needs of kids statewide. They also have shaken baby syndrome training, PEPP, and PALS training.

The Department of Health has a Violence and Injury Prevention program. However, coordinated efforts within the department for injury prevention remain fragmented. They do provide programs on bike safety and fire prevention. They are federally funded. There are no available funds or dedicated staff in Emergency Systems for IP activities.

Emergency Systems has participated in the development of the state IP plan.
The Trauma registry has been used to address the status of the EMS system and the rural crisis. The data has not been consistently utilized to address specific injuries and the development of IP programs. Emergency Systems has produced an annual trauma report and will include EMS data as the system matures.

Emergency Systems has worked with the media and sought opportunities to tell the story about the EMS crisis in rural Oklahoma. The Department of Health has a PIO, but little training has been provided to the Division staff for managing the media.

Emergency Systems does support activities such as EMS Week and Capitol Day which help to bring the importance and activities of EMS to the public's eye.

The state of Oklahoma does have primary prevention legislation in place for occupant safety, but only has helmet laws in place for motorcycles and ATVs for those 18 years or younger.

Recommendations

- In collaboration with the Violence and Injury Prevention Program, Emergency Systems should assess involvement of EMS and hospitals in injury prevention programs.
- The Department should seek funding from Highway Safety 402 funds for injury prevention programs or bystander care programs.
- **Emergency Systems should utilize trauma and EMS data to establish fact sheets and annual reports for the public, policy makers and providers.**
- Emergency Systems should continue partnerships with EMSC and VIPP programs on efforts to integrate EMS and the role of EMS in injury prevention programs.
- The Medical Facilities Service Chief and other Department leadership should address gaps in injury prevention coordination within the Department of Health.
- Emergency Systems staff should be encouraged to obtain PIO training.
- **Emergency Systems should integrate EMS and trauma data with any other Injury registry data available within the Department.**
- The Oklahoma Legislature should support primary prevention laws related to helmet use for motorcycles and ATVs for all riders.

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;
- On-line 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

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. Oklahoma requires physicians to be involved in all aspects of the patient care system, as follows:

- Physician oversight is required for any care delivery above the level of EMR. Any EMT working for any agency must have a defined state approved EMS medical director and state-approved treatment protocols from that medical director. The quality and intensity of medical direction greatly varies across the state with most rural agency medical directors having minimal education or involvement.
- Oklahoma benefits from the services of a State EMS Medical Director who is involved with statewide EMS planning, overseeing the development and modification of prehospital treatment protocols, and who assists with the

development of statewide EMS quality improvement programs, scope of practice issues and medical aspects of EMS provider licensing/disciplinary actions;

- Oklahoma statutes define and require a Medical Direction Subcommittee of the EMS advisory committee. This committee is composed of physician medical directors and meets quarterly to advise the Department.
- Oklahoma defines on-line and off-line medical direction and requires at least off-line medical direction for the provision of all emergency care, including pediatrics; however there is no requirement or standards for on-line medical direction.
- Oklahoma requires each EMS medical director to supervise a quality improvement program including audit and evaluation of patient care as it relates to patient outcome. This CQI program is part of the agency licensure process and is reviewed with required yearly state inspection.
- Oklahoma requires each approved training program to have medical director oversight to ensure appropriateness of training programs and ongoing quality improvement.

Recommendations

- Emergency Systems should consider a requirement for medical oversight of certified EMR agencies and personnel functioning at the EMR level.

- Emergency Systems should work with medical directors to increase the involvement of medical direction and CQI requirements for the "Individual Protocol" program to ensure quality of high risk procedures.

- The State should establish requirements that assure the availability of on-line medical control statewide.

- Emergency Systems should develop standards and training for clinicians providing on-line medical control.

- **Emergency Systems should develop a regionalized medical director program.**

- Emergency Systems should work with stakeholders to require medical oversight of EMD and dispatch protocols in rule.

- **The Oklahoma Legislature should provide statutory liability protection for off-line medical directors and clinicians providing on-line medical control. Include Director and Officer coverage.**

- **Emergency Systems should develop a mandatory training and certification program for agency medical directors**

- The State should clearly delineate in statute the responsibility and authority of the State EMS Medical Director.

- Emergency Systems should likewise clearly delineate agency Medical Director responsibilities and authority.

- Emergency Systems should develop statewide treatment protocols with related quality performance indicators.

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

Oklahoma has a well developed inclusive trauma system made up of multiple levels of trauma centers Level I-IV distributed throughout the state. The State mandates all hospitals participate in the trauma program. Each hospital participates at the level their resources allow for trauma classification. The Level I and II trauma facilities are located along large population centers in three cities; Oklahoma City, Lawton and Tulsa. Approximately 3700 trauma patients per year are seen by the level I and II's. Twenty five Level III and 80 Level IV centers are distributed throughout the cities and more rural parts of the state. The State is divided into eight trauma regions each with a Regional Trauma Advisory Board (RTAB). The regional boards meet every two months and review care in their region. The RTABs have legal protection for their quality assurance activities. Identified problems in patient care are referred to a Medical Audit Committee made up of 9 physicians. This committee reviews cases from the regions. Meetings are held every other month.

Patients are distributed to trauma centers by an EMS system with patient triage protocols and transfer protocols developed by the RTAB regions.

Level I trauma centers must be ACS verified. Levels II, III and IV trauma facilities are state verified. The Level I trauma center in Oklahoma City shares call with a local level

III trauma facility that is level II capable when staff is available. This allows volume loads to be reduced at the Level one center. The two level II centers in Tulsa share patients on odd and even days. Medical staffing at all centers has been deemed adequate. A city wide call roster has improved subspecialty coverage.

Trauma centers receive a great number of their patients from the rural areas through a TReC communication system currently located in Tulsa and Oklahoma City. Calls come to the center and based on location and availability of trauma resources the patients are directed to a trauma center.

Level III trauma centers in the rural areas are sometimes considered Level II when staffing meets the state standards for physician availability for Level II status. A program to promote the use of Level III facilities for higher level injured patients is being undertaken. When staffing is appropriate some hospitals will be asked to function at a higher level and decrease the flow of lesser injured patients to the Level I center.

Funding for the trauma system now comes from a tax on tobacco and from traffic violations. The funds distributed are approximately 20 million dollars a year. The majority of the money is spent on hospital costs of the seriously injured patients. Although substantial, the fund does not cover all uncompensated care costs. The EMS agencies and physicians are allocated a portion of the fund based on services and readiness costs.

Trauma education for Level III and IV centers is provided by the Level I and II centers by providing Rural trauma team development courses (RTTDC) in rural areas and ATLS (Advanced trauma life support) in the cities. These courses promote working relationships with the higher level centers.

Rehabilitation centers are an integral part of the continuum of care of the injured patient. Transfer agreements are necessary with trauma centers to provide the flow of care in some cases from hospital to home. These centers need to be part of fund distribution for trauma.

Collaboration on education is evident in the trauma system by presentation of educational seminars provided by the Level I and II centers in both Oklahoma City and Tulsa. These programs provide a forum for all trauma providers to exchange knowledge and experience.

A trauma system is driven by data collected about its performance in providing timely and appropriate care. The Oklahoma trauma system has a very mature trauma data system active in monitoring its performance. Yearly demographic data and reports are available to all trauma centers and the public, if requested. The data is currently being used for research papers related to trauma care. Oklahoma's trauma registry is compliant with the ACS national trauma data standard.

Recommendations

- The State should require that all level II trauma centers be ACS verified.
- Emergency Systems should assure careful monitoring via concurrent data when Level III facilities are functioning as a Level II facility.
- The Department should consolidate TReC in one location to be more efficient and utilized for other time sensitive conditions.
- **Emergency Systems should develop a trauma system plan based on national standards which outlines the systems operations, goals and performance objectives.**
- The State should arrange a trauma system consultation by the America College of Surgeons as a means of identifying opportunities for improvements of the current State trauma system.
- The State should integrate rehabilitation centers in those entities eligible for trauma fund allocation.
- **Emergency Systems should encourage a hospital within Oklahoma City to obtain ACS verified Level II status.**

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 9-1-1 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

Oklahoma is in the process of implementing a comprehensive evaluation program to assess effectiveness and to improve a statewide EMS system. The Trauma Registry and OKEMSIS are the core sources of data for the review and evaluation of patient care and system performance.

- The Oklahoma Highway Safety Office was instrumental in the funding of the OKEMSIS through grant funding.

- Oklahoma's trauma registry has been described as "one of the best in the country" by a recent NHTSA Traffic Records Assessment.

- Commitment to the level of epidemiologist involvement clearly benefits emergency data collection systems analysis.

- Each RTAB has developed a regional CQI program that addresses care of the trauma patient.

- Other than the trauma CQI process, no formal process yet exists to evaluate the effectiveness of prehospital treatment protocols, destination protocols and 9-1-1 protocols.

- Emergency Services enforces requirements for EMS organizations to collect NEMSIS compliant data through OKEMSIS.

- Oklahoma's trauma care statute provides protection from discoverability of trauma peer review data, although no such explicit protection yet exists for review of other time-critical medical cases.

- OKEMSIS assures that a solid EMS data-gathering mechanism exists, with system policies that facilitate linkage of data from different data sources through the use of common data elements.

- OKEMSIS also ensures compatibility and interoperability of data among local, State and national data analysis projects including the National EMS Information System and participation in the National EMS Database.

- Emergency Systems participates in statewide efforts to evaluate both process and impact measures of injury prevention, and public information and education programs.

- Emergency Systems participates in the State Traffic Records Council, 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.

Recommendations

- **The Oklahoma legislature should provide protection from discoverability for all peer-reviewed EMS data.**

- Emergency Systems should assure implementation and compliance of agency CQI programs.

- **Emergency Systems and the State EMS Medical Director should develop a state CQI plan including performance measures for statewide protocols, destination policies, and EMD/Dispatch protocols including specific measures for pediatric patients.**

- The RTAB CQI process should be expanded to include all time-sensitive medical conditions.

- Emergency Systems should utilize the trauma registry model for OKEMSIS to facilitate CQI, system improvements, and policy/legislative development.

- Emergency Systems should develop a unique identifier for patient tracking purposes through the medical system from prehospital through in- hospital care.

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.

Status

EMS is a critical component in the state's response to everyday medical emergencies as well as disasters. Building upon the day-to-day capabilities of the EMS system, Oklahoma has worked to ensure that EMS resources are appropriately dispatched and provide prehospital triage, treatment, transport, tracking of patients and documentation of care appropriate for the incident.

Oklahoma has clearly defined the role of the State Office of EMS in preparedness planning and response, including its relationship with the State's emergency management, public health and homeland security agencies, through the Emergency

Preparedness and Response Division and also the Regional Emergency Medical Services System (REMSS).

Oklahoma has made full use of available domestic preparedness funding through federal grants such as those provided by the Assistant Secretary for Preparedness and Response, the Department of Homeland Security, and Public Health Preparedness funds.

The development of REMSS provides a template for EMS resources to be used across jurisdictions, both intrastate and interstate. Oklahoma has conducted both exercises and NIMS training, and participated in Emergency Management Assistance Compact (EMAC) regional EMS planning. Oklahoma uses the National Incident Management System in all planning and exercises.

Through pan-flu planning and training, Oklahoma has identified strategies to protect the EMS workforce and their families during a biological disaster.

Oklahoma faces challenges in the area of domestic preparedness that are common to other states. These are related to ongoing funding, maintaining preparedness while dealing with other real world events, mission creep, short timelines and personnel burnout and apathy. There is concern about the tenuous situation of some local EMS agencies and their abilities to adequately participate in domestic preparedness response.

Better clarification is needed concerning the management of "AMR contracts", where in state private resources are contracted to assist with out of state events. The state must be able to ascertain the extent of these contracts and communicate with vendors on the details in order to ensure adequate EMS coverage in Oklahoma. As it currently stands, the State cannot control all of its EMS resources in event of emergency due to outside agreements.

There was also a need expressed for enhanced emergency communications for field providers during domestic preparedness events. This includes improved communications equipment for response staff from Emergency Systems.

Oklahoma's statewide model EMS protocols are being updated, and will include EMS assessment, triage, transport and tracking of patients during a disaster. They will be approved by the Medical Direction Subcommittee prior to distribution. Oklahoma has drafted and distributed a current statewide EMS pandemic influenza plan; and has also clearly defined the role of emergency medical services in public health surveillance.

Recommendations

- The Department should focus on building domestic preparedness capacity on a regional basis. Develop strategy for providing local and rural agencies with enhanced technical support surrounding surge capacity and coordination/sharing of resources to ensure adequate response. Ensure local EMS planning for domestic preparedness events and support additional training, cache development and capacity.

- **The State should seek better clarification of provider contracts that involve assets leaving the state in time of emergency to fulfill regional or federal commitments. Emergency Systems must be informed of these contracts.**

- The Department should enhance emergency communications for their field staff for use during domestic preparedness events. Purchase additional communications equipment for response staff to enhance real time communications and data management in a field environment.

- Emergency Systems should require common medical direction and treatment protocols for ambulance strike teams.

L. CURRICULUM VITAE

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ORGANIZATIONS/APPOINTMENTS

Fellow of American College of Surgeons, 1978
American Board of Surgery, 1975
Good Samaritan Regional Medical Center,
  Trauma Surgeon 1979 - 2008
  Director, Trauma Service 1983-1984 and 1998 - 2008
Medical Societies and Committees
  Southwestern Surgical Congress
  American Society of Abdominal Surgeons
  Society of Laparoscopic Surgeons
  Arizona Chapter American College of Surgeons
  ATLS-provider and instructor
  American Trauma Society
  Arizona State Committee on Trauma
  AEMS- Standing Medical Committee
  AEMS Board of Directors 1993
Medical Direction Commission, Governor's appointment, 1992-1995
National Surgical Adjuvant Breast/Bowel Project, Committee Clinical Oncology Program
Associate Clinical Professor of Surgery, University of Arizona
Associate Examiner American Board of Surgery 1997
Instructor, Phoenix Integrated Surgical Residency Program, 1976-Present
Arizona State Trauma Advisory Board
Arizona State Trauma Quality Assurance Committee, Chair
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Former Domestic Preparedness Committee Chair, NASEMSO
Appointee, Delaware Emergency Medical Services Oversight Council
Appointee, Delaware Statewide Interoperability Executive Council
Principal Investigator, Delaware Emergency Medical Services for Children Grant
Member, Delaware Traffic Records Coordinating Council
Member, Delaware Homeland Security Grant Program Steering Committee
Member, Delaware Highway Safety Planning Council
Member, Delaware Crash Outcome Data Steering Committee
Member, Delaware Trauma Systems Committee
Member, Atlantic EMS Council
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National Association of State EMS Directors
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Past President
Executive Committee
EMS Agenda for the Future, 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
Vermont State Firefighters Association
National Registry of EMTs, Board Member
Essex Rescue, EMT-I Captain
Health Care Finance Administration Negotiated Rule Making, NASEMSO, Committee Member
National Scope of Practice Model Project – Principal Investigator
American College of Surgeons – Trauma System Assessment Team Member
EMSC Grant Review Team Member
USDOT, NHTSA EMS Assessment Program, Technical Assistance Team, Member, States of Delaware, Texas, and North Dakota
USDOT, NHTSA EMS Reassessment Program, Member, States of Colorado, Alaska, Connecticut, Delaware, Mississippi, Oregon, Michigan, Kansas, North Dakota, American Samoa and Nevada.

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EMS Specialist
DOT, National Highway Traffic Safety Administration
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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, Member

Editorial Reviewer for *A Prehospital and Disaster Medicine*

Curtis C. Sandy, MD FACEP

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Portneuf Medical Center
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ORGANIZATIONS/APPOINTMENTS

American College of Emergency Physicians (ACEP), Fellow
- Immediate Past President, Idaho Chapter, 2009-pres
- President Idaho Chapter 2004-2009
- President Elect – Idaho Chapter 2003-2004
- Councilor - Idaho Chapter 2004-2005
- Academic Affairs Committee 2001-2003
- Alternate Councilor, Representative Council, Oct 2002

American Board of Emergency Medicine, Diplomate

Emergency Medicine Residents Association (EMRA)
- Board of Directors, Academic Affairs, Director, 2001-2003
- Board Liaison to the Council of Residency Directors 2001-2003
- Board Liaison to the Medical Student Committee of EMRA 2001-2003
- Participant in CORD Core Competencies conference, March 2002

National Association of EMS Physicians (NAEMSP)

Air Medical Physician Association (AMPA)

Idaho EMS Physician Commission, Board of Medicine Representative, 2006-pres

Idaho EMS Code Task Force – 2007- pres

Idaho Cardiac Level One Steering Committee 2009 – pres

Medical Director, Bannock County Ambulance/Pocatello Fire, Pocatello, ID 2007- pres

Medical Director, Ft. Hall Fire and EMS, Fort Hall, ID 2007- pres

Medical Director, Bannock County Search and Rescue 2007- pres

Medical Director, Portneuf, Life Flight, Pocatello, ID 2004- pres

Medical Director, BYU-Idaho Paramedic Program, Rexburg, ID 2008- pres

Tactical Physician, Bannock County Sheriff Southeast Idaho STAR, 2008-pres

Assistant Associate Clinical Medical Director, College of Southern Idaho Paramedic Program, Twin Falls, ID 2004-pres

Idaho State EMS Bureau Air Medical Utilization Task Force 2005

Medical Direction Subcommittee, Idaho EMS Advisory Committee 2005-2006

Affiliate Clinical Faculty: Idaho State University, Department of Family Medicine, Pocatello, ID, 2003-present.

USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member

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, Deputy Director
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
Member of Utah Emergency Managers Association
Appointed to Governor's Council on Blood Services
Previous member of State EMS Training Coordinators Council
CLEAR Certified Inspector
Utah Emergency Managers Association, Member
ACS, State Trauma System Assessment, Team Member, States of Alaska, Minnesota, Colorado and Louisiana.
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member, State of Michigan