

**STATE OF OREGON**

**A REASSESSMENT  
OF  
EMERGENCY MEDICAL  
SERVICES**

**March 14-16, 2006**

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 40,000 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 that 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 that include comprehensive systems of trauma care.

To accomplish this goal, in 1988 NHTSA developed a Technical Assistance Team (TAT) approach that 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 uses the same ten component areas with updated standards. The standards now reflect current EMS philosophy and allow for the evolution into a comprehensive and integrated health management system, as identified in the 1996 *EMS Agenda for the Future*. 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 Oregon Emergency Medical Services and Trauma Systems Section (OEMSTS), in concert with the Oregon Transportation Safety Division, requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the Oregon Statewide EMS program. NHTSA developed a format whereby the EMS office staff coordinated comprehensive briefings on the EMS system.

The TAT assembled in Portland, Oregon on March 14 -16, 2006. For the first day and a half, over 25 presenters from the State of Oregon, 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 and Prevention
- Medical Direction
- Evaluation

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

Following the briefings by presenters from the Oregon Emergency Medical Services Trauma Systems Section, 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 that the TAT focused on major areas for system improvement. Unlike the State's initial assessment that contained many operational recommendations, several of which were identified as a priority, this report offers fewer yet broader recommendations that the team believes to be critical for continued 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 TAT would like to acknowledge the Oregon Emergency Medical Service Trauma System Section and the Oregon Transportation Safety Division 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 Oregon. 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 should be made regarding the extraordinary efforts taken by Jeanne Arana, EMS Director, and her staff, and all the briefing participants for their well-prepared and forthright presentations. In addition, the Team applauds the well-organized, comprehensive briefing material sent to the team members in preparation for the reassessment.

Special thanks also to Troy Costales and Kelly Hampton, Oregon Transportation Safety Division, for supporting this process and providing special assistance to the TAT while in Oregon.

## INTRODUCTION

If someone was able to justify that they could absolutely predict an event in Oregon next year that would kill over 5000 citizens...the response would be predictable. The State leadership and the people of Oregon would instantaneously establish a massive mobilization of the resources necessary to prevent the event. If it was impossible to prevent it, Oregonians would do whatever necessary to minimize the death toll.

The technical assistance team can absolutely predict that...**next year**...over 5000 Oregonians will die from prehospital cardiac arrest or trauma! The **first** line of defense for this disastrous event is the **EMS system!**

EMS in the State of Oregon enjoys a great heritage. 9-1-1 was implemented early in Oregon. One of the earliest statewide trauma systems was developed in Oregon. One of the top medical schools for the training of Emergency Physicians and Trauma Surgeons is in Oregon.

In 1992, the Technical Assistance Team that reported the Oregon EMS Assessment did so with great anticipation for the future. It looked as if the State had a good EMS and trauma system on the verge of becoming great...possibly even a model for the country. The momentum for this to happen seemed, at that time, to be substantial and the optimism was palpable.

The 2006 Re-Assessment team looked forward to seeing all of the improvements and enhancements to emergency care in Oregon. However, the team was **dismayed** to find that, not only had the State not moved ahead in the provision of a comprehensive, well-planned statewide EMS system...indeed, there has been **dramatic** deterioration.

Great **problems** are solved by great **leadership**. However, the Oregon EMS and Trauma Systems Section has been:

- Lost in the basement of the State bureaucracy
- A revolving door for short-tenured State EMS Directors
- Experiencing erosion of the already inadequate funding for leadership, planning, and development of the EMS system.

The lack of EMS leadership from the State has put the citizens of Oregon at risk. If the remarkably committed local EMS professionals and agencies are unable to continue to hold their systems together, the death toll will only increase. The Technical Assistance Team (TAT) heard repeated testimony that, in many of the communities, simply caring for the citizens...let alone improving their care...is becoming more and more difficult.

Since specific recommendations were made in 1992 regarding the absence of meaningful EMS data, it was expected that robust data systems would now be available to evaluate whether the extant EMS system has an impact on patient outcomes. On the contrary, there remains no statewide data collection system that would allow evaluation of outcomes for the ill and injured of Oregon.

EMS in the Great State of Oregon is now a “Tale of Two ‘Systems’.”

- 1) Local delivery “systems”: At the street level, there is broad anecdotal evidence that the personnel and agencies are working diligently to provide excellent care to the citizens of the State. The team heard repeated testimony from remarkable people coming from many different geographic settings that showed stellar **commitment** to the provision of great patient care. However, because of lack of leadership and funding from the State, it remains unknown whether this **commitment** actually leads to a **positive impact!**
- 2) The State EMS “system”: The EMS system in Oregon is **not a system**. Essentially every attribute of an EMS system (e.g., leadership, personnel, medical direction, resource availability, training, continuing education, communications, transportation) varies **widely**. The team heard universal support for the new EMS and Trauma System Section Director. However, the absence of adequate **funding** for the **State** EMS leadership structure has led to dramatic inability to:
  - Develop and implement a statewide EMS Plan
  - Revise and implement a statewide Trauma Plan
  - Provide cogent overall medical direction for prehospital care in the State
  - Establish and implement standards of care
  - Provide leadership that enhances the ability of counties and local agencies to identify their needs, identify strategies to meet those needs, and identify funding sources to implement the strategies.

On a positive note, the leadership at the State is all relatively new and we believe that, if the recommendations in this report are implemented quickly, Oregon will be able to report “*A Tale of One System*.” One that provides uniformly excellent EMS care in every corner of the State; one that dramatically reduces the death toll of the sick and injured; one that continuously delivers high quality information that **proves** that EMS makes a difference; and one that allows the **ongoing** improvement of the System.

Even a cursory reading of the recommendations of this report will show that they don’t call for modest incremental improvements. They call for **immediate, dramatic change**.

The TAT is privileged to have had the opportunity to evaluate EMS in this great state. The team is particularly pleased to have had the opportunity to get to know so many of the dedicated people who have provided for the care of their neighbors. We are confident Oregon has the right people to make the changes that are

needed to make this state a model for EMS and Trauma care. The very fact that the State EMS and Trauma Systems Section and the Oregon Transportation Safety Division jointly called for this re-assessment is evidence that there can be a great future ahead. The team members are appreciative of the warm hospitality that was extended.

# **OREGON EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEMS (OEMSTS)**

The TAT revisited the ten essential components of an optimal EMS system that were used in the *State of Oregon: 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 1997 Reassessment Standards as a basis for recommendations for EMS system improvement.

## **A. REGULATION AND POLICY**

### **Standard**

To provide a quality, effective system of emergency medical care, each EMS system must have in place comprehensive enabling legislation with provision for a lead EMS agency. This agency has the authority to plan and implement an effective EMS system, and to promulgate appropriate rules and regulations for each recognized component of the EMS system (authority for statewide coordination; standardized treatment, transport, communication and evaluation, including licensure of out-of-hospital services and establishment of medical control; designation of specialty care centers; PIER programs). There is a consistent, established funding source to adequately support the activities of the lead agency and other essential resources which are necessary to carry out the legislative mandate. The lead agency operates under a single, clear management structure for planning and policy setting, but strives to achieve consensus among EMS constituency groups in formulating public policy, procedures and protocols. The role of any local/regional EMS agencies or councils who are charged with implementing EMS policies is clearly established, as well as their relationship to the lead agency. Supportive management elements for planning and developing effective statewide EMS systems include the presence of a formal state EMS Medical Director, a Medical Advisory Committee for review of EMS medical care issues and state EMS Advisory Committee (or Board). The EMS Advisory Committee has a clear mission, specified authority and representative membership from all disciplines involved in the implementation of EMS systems.

## Status

Little has changed since 1992 in meeting the standard for Regulation and Policy. Oregon's EMS statute is, in essence, authority for the regulation of ambulance services and EMS personnel rather than the oversight and development of a comprehensive EMS system. Leadership of the State EMS system has been undermined over a number of years by a series of relatively short tenured EMS Directors with an accompanying series of starts and stops on initiatives with little or no follow-through.

Until very recently, the EMS and Trauma Systems Section has been relegated to a low level status within the State Public Health Office. The newest Public Health Officer has taken steps to realign the EMS and Trauma System Section within the structure of the Public Health Department. While this change is to be applauded, it is just a beginning and does not go far enough.

The existing structure of statutes and administrative rules creates confusion and the possibility of conflict between the Office of Public Health, the Board of Medical Examiners and the Department of Education. While the relationship among the leadership of these organizations appears cordial, distributing EMS duties among these groups is emblematic of fragmentation that is pervasive within the Oregon EMS system. In addition to traditional EMS lead agency duties being divided between the Office of Public Health and the Board of Medical Examiners, there is a further subdivision of oversight at the County level via the approval for local ambulance service providers. This division of regulatory functions leads to poor coordination within the system. For example, there is no single accurate list of medical directors. While EMTs and Paramedics have a fairly clear process for certification, First Responder certification is inconsistent and differs from the other levels of EMS personnel. There are no established goals for all citizens in Oregon to receive any predetermined standards of care or system performance.

There is no State EMS Plan although the new EMS Director has taken steps to bring stakeholders together to begin the development of one.

There is enabling legislation for the trauma system, but enforcement of standards is not practical or possible today. It was reported that hospitals functioning as Level 4 institutions vary widely in their capabilities for trauma care. There is no statutory provision for a State Trauma Advisory Board (STAB), but in practice, this group exists and is referenced in administrative rule. Members of the STAB reported being unsure of how their input would be implemented.

Many of the EMS administrative rules are outdated and conflicts exist within rules. There is no provision for regulation of non-transporting EMS agencies including groups that provide ALS.

On a positive note, key stakeholders within the Oregon EMS system seem very motivated to cooperate and work for improvement. These dedicated professionals within both pre-hospital and hospital disciplines deserve a system structure that can promote their efforts to better the emergency care to the citizens and visitors of Oregon. An organized EMS system is essential to both the daily delivery of EMS and trauma care as well as preparedness for disasters and acts of terrorism.

Based on the input the TAT received, there is a strong feeling that EMS policy and regulation has eroded or become outdated to a point where a major revision of the infrastructure that defines Oregon's EMS system should be an urgent priority. The goals for such a major overhaul of the system are to improve coordination with key stakeholders and to establish the authority necessary to assure that the citizens of Oregon have a reliable, systematic response to medical emergencies from the moment of recognition through hospital discharge and rehabilitation as needed. Once established, the leadership of the EMS system must be supported with the resources necessary to achieve the development of that system.

## **Recommendations**

- **The Governor should take steps, within one year, to transfer the EMS and Trauma System Section from its current location within Public Health to the Office of Homeland Security and establish it at a level equivalent to the State Police, Fire Marshal, and Office of Emergency Management.**
- **The Governor should appoint a transition advisory team of key EMS and Trauma stakeholders to facilitate the transition from Public Health to Homeland Security. This team should include representation from groups such as the Oregon Hospital Association, fire based EMS, a trauma surgeon from the State Trauma Advisory Board, an emergency physician from the State EMS Committee, leaders of rural and urban EMS agencies, the legislature, the public, and the State EMS Director. Representatives from the Office of Homeland Security, the Oregon Department of Transportation- Transportation Safety Division, the Board of Medical Examiners, the Department of Education, the Office of Public Health, and Department of Administrative Services should also be assigned to the transition advisory team to provide technical assistance as necessary.**
- **All EMS related functions currently held by other State agencies should be moved to the newly formed EMS and Trauma System Office during the transition to Homeland Security (e.g., the Board of Medical Examiners and the Department of Education EMS functions).**

- The staff, budget and other resources of the EMS and Trauma System Section currently in Public Health, should transfer to the new EMS and Trauma System Office in Homeland Security.
- The EMS Director in conjunction with the transition advisory team should lead an effort to construct contemporary legislation and administrative rules to reflect the broad enabling authority necessary to plan, implement, and regulate a system of emergency medical and trauma care.
- The Oregon legislature should support the movement of the EMS and Trauma System Section to the Office of Homeland Security by monitoring and participating in the transition process, passing the needed enabling legislation and assuring an adequate budget to accomplish their mission as the lead agency.
- Once transition to the Office of Homeland Security has been achieved, the EMS Director should continue the efforts with stakeholders to develop, implement, and monitor the progress of a State EMS and Trauma Care Plan that addresses each element of an EMS system as described in the *EMS Agenda for the Future* and the *National Model Trauma System Planning and Evaluation Document*.

## **B. RESOURCE MANAGEMENT**

### **Standard**

Central coordination and current knowledge (identification and categorization) of system resources is essential to maintain a coordinated response and appropriate resource utilization within an effective EMS system. A comprehensive State EMS plan exists which is based on a statewide resource assessment and updated as necessary to guide EMS system activities. A central statewide data collection (or management information) system is in place that can properly monitor the utilization of EMS resources; data is available for timely determination of the exact quantity, quality, distribution and utilization of resources. The lead agency is adequately staffed to carry out central coordination activities and technical assistance. There is a program to support recruitment and retention of EMS personnel, including volunteers

### **Status**

The Oregon State EMS and Trauma System Section has neither the authority, funding, nor staffing to achieve centralized resource coordination of the state EMS system. This

lack of authority has prevented the office from performing an effective resource assessment and utilization study of the state's prehospital and hospital resources, developing a statewide EMS plan, and providing any type of program management and system planning to insure optimal prehospital care of the citizens of Oregon.

The lack of a statewide EMS plan has prohibited an assessment of needs related to the frontier, rural, and urban areas of the State and by default has created a disparity in available resources with no clear plan to enhance the resources of rural and frontier Oregon.

The EMS office lacks the authority to regulate non-transporting agencies resulting in the inability of the Office to assure quality care among those providers. The authority of county government to approve and inspect ambulance service providers versus the authority of state EMS office to license and inspect these same agencies has led to confusion and complicated statewide resource management.

Many dedicated healthcare providers at the local level have taken it upon themselves to develop multiple agency level plans for the utilization of local resources; however, there are no system performance measures to insure the effectiveness of these plans. The lack of funding and staff has prevented the State EMS office from exercising its authority to fully inspect the 142 licensed transporting agencies currently operating in Oregon.

## **Recommendations**

- **The legislature should pass a comprehensive legislative revision that establishes the Oregon EMS and Trauma System Office as the lead agency over all facets of EMS and should recognize the Office as the sole centralized resource coordination entity for the State EMS system. Instituting this authority should also include the necessary funding and staffing to carry out the responsibilities of this mandate.**
- The State EMS Director in cooperation with stakeholders should develop and implement a comprehensive state EMS and trauma plan. The plan should address the management of resources in the development of emergency operations plans at the state level and work to coordinate the state response plan with those developed locally. Additionally, a comprehensive EMS plan must integrate with the operational plans of other state level responders for interstate and intrastate response to disasters.
- The Office of Homeland Security should work with the State EMS and Trauma System Office to define the role of that Office in the management of resources during disasters.

## **C. HUMAN RESOURCES AND TRAINING**

### **Standard**

EMS personnel can perform their mission only if adequately trained and available in sufficient numbers throughout the State. The State EMS lead agency has a mechanism to assess current manpower needs and establish a comprehensive plan for stable and consistent EMS training programs with effective local and regional support. At a minimum, all transporting out-of-hospital emergency medical care personnel are trained to the EMT-Basic level, and out-of-hospital training programs utilize a standardized curriculum for each level of EMS personnel (including EMS dispatchers). EMS training programs and instructors are routinely monitored, instructors meet certain requirements, the curriculum is standardized throughout the State, and valid and reliable testing procedures are utilized. In addition, the State lead agency has standardized, consistent policies and procedures for certification (and re-certification) of personnel, including standards for basic and advanced level providers, as well as instructor certification. The lead agency ensures that EMS personnel have access to specialty courses such as ACLS, PALS, BTLs, PHTLS, ATLS, etc., and a system of critical incident stress management has been implemented.

### **Status**

Oregon's system of initial training, leading to the certification of EMS personnel at the EMT-Basic (EMT-B), EMT-Intermediate (EMT-I), and EMT-Paramedic (EMT-P) levels appears to be working reasonably well. Many presenters, particularly medical directors, spoke highly of the qualifications of the EMS providers who render care to the state's EMS patients. Most initial training for these levels is delivered through community colleges. The Department of Education has an accreditation process for the community college EMS programs. There is sharing of curricula and other educational resources leading to significant standardization of initial EMS course delivery. Oregon uses National Registry of EMTs certification at the EMT-B and EMT-P levels with good success on testing. EMT-Ps are required to have an associate degree and this level of preparation is well respected by presenting medical directors. However, this requirement has been implemented in a rigid way that does not consider previous academic preparation (e.g., other potentially related degrees).

There are also some challenges that the Oregon EMS system is facing in training and maintaining a sufficient EMS workforce. The system of training and certifying EMS first responders is fractured. The State EMS and Trauma System Section has elected to "contract" certification of this level to a number of different groups including some of the EMS response agencies. This approach is sub-optimal. States certify EMS personnel as a means of protecting the public. It is important to maintain a separation of duties to assure an independent determination of qualifications.

Continuing education for all EMS levels is not truly systematized. Continuing education courses are not uniformly available. Costs for training are sometimes high. The connection between identified quality improvement needs and continuing education as a performance improvement tool is weak.

The very rural and frontier areas of the state face challenges in accessing both initial and continuing education. Often providers face long drives and more limited offerings of programs compared to the urban areas. Funding cuts to the Area Health Education Centers (AHECs) have resulted in a pass through of higher course costs to individual students or their sponsoring EMS agencies. The associate degree requirement for Paramedics has made that level of ALS less accessible in low volume areas. The movement to a recently updated EMT-Intermediate level has been plagued with confusion over when the requirements would take effect. The cost of transitioning to the new level has been a challenge for many EMS agencies who utilize this level.

Beyond the training system, the EMS workforce as a whole is displaying some worrisome symptoms. There is little hard data on EMS personnel attrition from within the system. Accordingly, there is not a good foundation upon which to build recruitment and retention plans. There appeared to be widespread anecdotal agreement that it is becoming more difficult to recruit and retain volunteer personnel. The career fire agencies with higher call volumes and better salary/benefit packages report more success in filling their staffing needs with qualified personnel.

## **Recommendations**

- **The EMS and Trauma System Section should establish an educational task force to identify strategies for improving access to continuing education programs. It should also identify mechanisms to encourage a link between continuing education requirements and identified QI needs.**
- The EMS and Trauma System Section should consider certification of EMT-Ps with alternative academic preparation (e.g., other potentially related degrees). The goal should be to support professionalism of EMS personnel.
- The community colleges should formally assess EMS instructor needs and qualifications for both initial and continuing education courses. A plan should be developed for assuring an adequate cadre of qualified instructors.
- **The EMS and Trauma System Section should establish one approach to certifying First Responders. The approach should parallel that of other levels of EMS personnel.**

- The EMS educational task force should identify strategies to deliver training to EMS candidates in rural/frontier settings. Identify whether technology can be used to make programs more accessible in these settings.
- EMS provider agencies and their affiliated personnel need to finish the transition to the updated EMT-Intermediate program. This program was established with broad provider input and represents a reasonable evolutionary step in EMS system development.
- **The EMS and Trauma System Section should begin to gather data on what is happening to the EMS workforce. A needs assessment should be performed to identify how many personnel are needed at what level and in what locations of the state. The Section should follow up with EMS personnel who leave the system to determine why they left. It should create a system-wide plan with strategies for attracting new people into EMS, set goals for recruitment and retention, and monitor the progress towards these goals. It should also monitor the current national EMS workforce project for information that may be useful in Oregon.**

## D. TRANSPORTATION

### Standard

Safe, reliable ambulance transportation is a critical component of an effective EMS system. The transportation component of the State EMS plan includes provisions for uniform coverage, including a protocol for air medical dispatch and a mutual aid plan. This plan is based on a current, formal needs assessment of transportation resources, including the placement and deployment of all out-of-hospital emergency medical care transport services. There is an identified ambulance placement or response unit strategy, based on patient need and optimal response times. The lead agency has a mechanism for routine evaluation of transport services and the need for modifications, upgrades or improvements based on changes in the environment (i.e., population density). Statewide, uniform standards exist for inspection and licensure of all modes of transport (ground, air, water) as well as minimum care levels for all transport services (minimum staffing and credentialing). All out-of-hospital emergency medical care transport services are subject to routine, standardized inspections, as well as spot checks to maintain a constant state of readiness throughout the State. There is a program for the training and certification of emergency vehicle operators.

### Status

Oregon requires a comprehensive needs assessment to insure not just the quality of

pre-hospital care but the availability of that care to the citizens. In the absence of a State EMS plan, there has been no transportation needs assessment to insure uniform pre-hospital coverage.

Some presenters suggested that there are inadequate air and ground ambulance resources in rural and frontier Oregon. Additionally, there is no concrete evidence of a systematic mutual aid response plan for ground providers. Ambulance Service Areas designated at the county level may prevent the appropriate and quick response of ambulances across service area lines that would optimize EMS access and patient transport. The aforementioned issues coupled with the exemptions from licensing and inspection requirements by the timber industry and ambulances “operated by anyone licensed to attend to patients” represents a loophole to the assurance of quality pre-hospital care to patients across the State. Finally, the inconsistency of regulatory requirements and the lack of recognition of nationally accepted industry standards for both ground and air ambulances have hindered the State EMS and Trauma System Section’s ability to provide consistent regulation and enforcement for all forms of EMS Agencies.

## Recommendations

- **The State EMS and Trauma System Section should complete a comprehensive needs assessment and develop a regionally based plan for the coverage and utilization of EMS resources across the State for both ground and air ambulances. This plan should include mutual aid response for ground providers across Ambulance Service Area lines to improve access to the EMS system.**
- The State EMS and Trauma System Section should be designated as the sole authority for the inspection and licensure of all EMS agencies and have authority over all transporting agencies except those operated by the Federal Government or sovereign nations.
- The State EMS and Trauma System Section should be funded at a level that will provide the necessary staffing to insure the inspection of all ambulance services and vehicles at least bi-annually.
- The State EMS and Trauma System Section should set evaluation criteria for all EMS agencies and personnel. These should be consistent throughout administrative rules and should include the utilization of nationally recognized standards.

## **E. FACILITIES**

### **Standard**

It is imperative that the seriously ill patient be delivered in a timely manner to the closest appropriate facility. The lead agency has a system for categorizing the functional capabilities of all individual health care facilities that receive patients from the out-of-hospital emergency medical care setting. This determination should be free of political considerations, is updated on an annual basis and encompasses both stabilization and definitive care. There is a process for verification of the categorizations (i.e., on-site review). This information is disseminated to EMS providers so that the capabilities of the facilities are known in advance and appropriate primary and secondary transport decisions can be made. The lead agency also develops and implements out-of-hospital emergency medical care triage and destination policies, as well as protocols for specialty care patients (such as severe trauma, burns, spinal cord injuries and pediatric emergencies) based on the functional assessment of facilities. Criteria are identified to guide interfacility transport of specialty care patients to the appropriate facilities. 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 another facility. The lead agency has a method for monitoring if patients are directed to appropriate facilities.

### **Status**

As was true at the time of the last assessment, the basic standard seems to have been met, universally in the case of trauma hospitals and de facto for most of the non-trauma hospitals. In the Portland metropolitan area “common knowledge” of the non-trauma critical illness capabilities of the various hospitals reportedly results in EMS delivery of patients to an appropriate facility. The EMS Medical Director of a three county area in Area Trauma Advisory Board (ATAB) 5 has identified trauma and cardiac capabilities in the region and has assured appropriate EMS triage. Most other regions are predominantly rural. Geographic and time constraints dictate triage to a near-by facility for initial treatment of all critical illness patients.

Other than for trauma, there continues to be no formal categorization of facility specialty capabilities, formulation of triage/bypass/transfer protocols, nor the availability of a surveillance/data collection system to allow evaluation of the appropriateness of triage by EMS, or timeliness of transfer.

Following the events of 2001, and the resultant need for planning efforts to deal with

terrorist actions, disasters, and epidemic diseases, it is even more imperative to have available information about facility size, capabilities and emergency department availability. The Health Resources and Services Administration (HRSA) regional coordinators have identified this area as key to preparedness planning, but there has been no state EMS lead agency involvement in this process.

The shift of small hospitals to Critical Access Hospital (CAH) status has been noted as a major shift in hospital licensing and bed availability over the past several years. The impact of this shift on the quality of patient care has not been evaluated.

## Recommendations

- The EMS lead agency should evaluate, categorize, and share with EMS personnel and the HRSA regional coordinators, the critical non-trauma specialty capabilities and disaster response characteristics of all of the facilities within the state.
- **Develop and utilize a comprehensive EMS database to verify compliance with triage and transport standards and the resultant outcomes. (see Evaluation section)**
- Formulate triage and transfer guidelines for movement of non-trauma critical specialty care patients.
- Evaluate the impact of migration to CAH status on the adequacy of hospital capabilities in Oregon.

## F. COMMUNICATIONS

### Standard

A reliable communications system is an essential component of an overall EMS system. The lead agency is responsible for central coordination of EMS communications (or works closely with another single agency that performs this function) and the state EMS plan contains a component for comprehensive EMS communications. The public can access the EMS system with a single, universal emergency phone number, such as 9-1-1 (or preferably Enhanced 9-1-1), and the communications system provides for prioritized dispatch. There is a common, statewide radio system that allows for direct communication between all providers (dispatch to ambulance communication, ambulance to ambulance, ambulance to hospital, and hospital to hospital

communications) to ensure that receiving facilities are ready and able to accept patients. Minimum standards for dispatch centers are established, including protocols to ensure uniform dispatch and standards for dispatcher training and certification. There is an established mechanism for monitoring the quality of the communication system, including the age and reliability of equipment.

## **Status**

A universally reliable EMS communications system does not exist in Oregon. Frequency use within prehospital and hospital EMS, and the equipment to accommodate these operations, have evolved from the original VHF "HEAR" and UHF "med channel" system configurations to include 700 MHz, 800 MHz, cell phone, and ham capabilities. Their implementation was without benefit of statewide coordination or leadership.

"Dead spots" still exist where radio and cell phone transmission are eroded or blocked. Interoperability among providers reportedly exists in the urban/suburban areas that have adopted 700MHz and 800 MHz systems. This is less true in the more rural areas and in circumstances where EMS providers are traveling from their usual service area to other areas of the state. There is no single statewide EMS coordinating or tactical frequency. The Portland area is expecting to establish equipment capable of patching these disparate channels together on an ad hoc disaster basis.

There is no statewide EMS plan containing a comprehensive EMS communications plan. A State Interoperability Executive Committee (SIEC) has been established, and the EMS and Trauma System Section actively participates in that process. This activity has the potential to produce the elements of a comprehensive EMS communications plan as an SIEC product and/or as a part of a state EMS plan. The US Department of Homeland Security's SafeCom program has published a State Communications Interoperability Planning (SCIP) methodology which has worked well in some states. The SIEC has not yet considered the use of SCIP methodology.

A statewide microwave backbone system is being developed which has the potential to benefit EMS. The Office of Emergency Management has assisted 22 counties and one region to assess their interoperability status which should help to address some EMS issues in this regard.

Enhanced 9-1-1 is reported to exist universally throughout the state. However, it appears that while location addressing has been performed in support of this activity, mapping of new addresses has been left to local agencies. This may result in inconsistent and poorly shared maps among dispatch and response agencies and severely compromise the mission of E-9-1-1. Cellular E-9-1-1 is being developed but is

not complete.

It was reported that all Public Safety Answering Points (PSAPs) have Emergency Medical Dispatch (EMD) programs and dispatch training and standards which are coordinated through the Office of Emergency Management. It is not clear who certifies dispatchers.

There appears to be no quality improvement process for EMS communications or for monitoring the age of equipment.

## Recommendations

- The lead EMS agency should sponsor and staff an ad hoc committee process to consider the needs for future EMS communications. Participants should address future voice, data, video, imaging, and biotelemetry uses, and the bandwidth required to accommodate them (the SafeCom “Statement of Requirements” document, posted on its website, may help stimulate this discussion). The committee should also address the current mix of frequencies used for EMS across the state and what the ideal mix might be. Further addressed should be a single EMS coordination/tactical frequency and the elimination of “dead spots.”
- **Once these EMS communications needs are identified, they should be brought to the SIEC process by the lead EMS agency staff and strongly represented among other users’ needs. Staff should specifically pursue favorable consideration of EMS needs in bandwidth allocation and implementation of the microwave backbone system. The SIEC should be encouraged to consider employing SCIP methodology.**
- **The state EMS lead agency should evaluate the adequacy of comprehensive plans being developed by the SIEC. If those plans are adequately detailed for EMS system planning and coordination purposes, they should be included in the state EMS plan. If not, they should be adapted for such inclusion.**
- The state agency responsible for the implementation of Enhanced 9-1-1 should acquire GIS support to provide mapping services for local dispatch and response agencies so that anyone dispatching for or responding to an emergency will have uniform, accurate maps. This agency should also assure completion of Phase 1 and 2 cellular E-9-1-1.
- The responsibility for the continued review, development and implementation of EMD standards, and for the certification of EMD providers and agencies should be transferred to the state Office of EMS and Trauma. The Office should require

physician-supervised EMD QA programs as a condition of EMD agency certification.

## **G. PUBLIC INFORMATION, EDUCATION AND PREVENTION**

### **Standard**

To effectively serve the public, each State must develop and implement an EMS public information, education and prevention (PIEP) program. The PIEP component of the State EMS plan ensures that consistent, structured PI&E programs are in place that enhance the public's knowledge of the EMS system, support appropriate EMS system access, demonstrate essential self-help and appropriate bystander care actions, and encourage injury prevention. The PIEP plan is based on a needs assessment of the population to be served and an identification of actual or potential problem areas (i.e., demographics and health status variable, public perceptions and knowledge of EMS, type and scope of existing PIEP programs). There is an established mechanism for the provision of appropriate and timely release of information on EMS-related events, issues and public relations (damage control). The lead agency dedicates staffing and funding for these programs, which are directed at both the general public and EMS providers. The lead agency enlists the cooperation of other public service agencies in the development and distribution of these programs, and serves as an advocate for legislation that potentially results in injury/illness prevention.

### **Status**

There is no public information, education and prevention (PIEP) program as part of a state EMS plan.

There are state traffic safety education initiatives which may have contributed to a significant reduction in traffic-related mortality, an injury prevention program within the state Public Health program, and a number of laudable private prevention efforts (e.g. Safe Kids, Trauma Nurses Talk Tough). However, there is no evidence of any overall state coordination of such programming. There are neither plans nor leadership for carrying out any of the activities contained in the standard, nor are EMS lead agency staff or funding dedicated to support such initiatives. The state injury prevention program is not within the EMS and Trauma System Section of the Office of Public Health.

There is no annual public report on statewide EMS and trauma system activities and impact. A draft 2002-2003 biennial "Trauma Systems" report with a March, 2006 publication date (concurrent with the TAT visit) was presented. This is a great start to

such reporting but could be broadened to include a report on other aspects of statewide EMS system operations.

## Recommendations

- The EMS lead agency should incorporate the NHTSA Public Information, Education and Relations (PIER) curriculum into offerings for provider services. The EMS lead agency should sponsor ad hoc meetings with the Transportation Safety Division injury prevention staff, Public Health program's injury prevention staff, and independent injury prevention education program (e.g. Safe Kids, Metro Injury Protection Professionals, Trauma Nurses Talk Tough) staff to coordinate activities.
- Based on these meetings, the EMS lead agency should develop an overall plan for its role in on-going statewide PIEP activities.
- The EMS lead agency should develop strategies to implement the PIEP plan.
- **The EMS lead agency should publish reports for EMS and trauma system activities at least bi-annually.**
- The EMS lead agency should use the statewide EMS data system and trauma registry to evaluate the effectiveness of injury prevention efforts.

## H. MEDICAL DIRECTION

### Standard

EMS is a medical care system that involves medical practice as delegated by physicians to non-physician providers who manage patient care outside the traditional confines of office or hospital. As befits this delegation of authority, the system ensures that physicians are involved in all aspects of the patient care system. The role of the State EMS Medical Director is clearly defined, with legislative authority and responsibility for EMS system standards, protocols and evaluation of patient care. A comprehensive system of medical direction for all out-of-hospital emergency medical care providers (including BLS) is utilized to evaluate the provision of medical care as it relates to patient outcome, appropriateness of training programs and medical direction. There are standards for the training and monitoring of direct medical control physicians, and statewide, standardized treatment protocols. There is a mechanism for concurrent and retrospective review of out-of-hospital emergency medical care, including indicators

for optimal system performance. Physicians are consistently involved and provide leadership at all levels of quality improvement programs (local, regional, state).

## Status

The foundation of EMS medical direction in Oregon is based upon a relationship directly between the Medical Director and each individual EMS provider. There is enormous variability in the involvement of physicians with EMS personnel in various areas of the State and their relationship to the EMS agencies. There are some areas of the State that have highly involved, experienced EMS physicians providing intense and focused system medical direction. However, such a systematic approach to medical direction in the state is sporadic at best.

There is no State EMS Medical Director and no clearly defined role, authority, or responsibility for such a position. No consistent overall medical direction planning is occurring at the State level.

Except for the voluntary physician input via the State EMS Committee, medical direction at the **State** level is nonexistent. Due to the lack of state-wide medical direction, and since protocol development authority is vested in individual local Medical Directors, medical standards and protocols have been developed at the agency, county, and regional levels in loosely functioning networks. The only consistency between systems is accomplished by the voluntary sharing of information. Thus, there is significant variability of “standards” among different areas of the state.

From the state, regional, and county perspective, there is no **system** of medical direction. Evaluation of EMS providers, especially as it relates to patient **outcomes** is sporadic at best. No comprehensive plan exists at any level to link evaluation of outcomes to training and continuing education.

Medical direction is required for all levels of EMT. It appears that there has been improvement in providing medical direction for some first responders since the 1992 EMS Assessment. It is not clear that all personnel who respond to medical emergencies have the benefit of medical direction.

There is no EMS Medical Director training occurring in Oregon with the exception of that associated with the Emergency Medicine Residency and EMS Fellowship at the Oregon Health Sciences University.

The use of on-line medical direction and consultation appears to be infrequent, even in the parts of the state where it is logistically feasible. There is no uniform sense of need for on-line medical direction among EMS physicians, although there appears to be considerable

desire for it among rural physicians.

The audit and evaluation of EMS care in Oregon is exceedingly variable. This occurs with consistency in the very few counties that have highly motivated physicians. Review of EMS care is sparse throughout most of Oregon. In addition, review of indicators related to optimal **system** performance is rare.

With some notable rare exceptions, there is no consistent physician leadership in the development and accomplishing of Quality Improvement programs at any level. Some agencies do QI without involvement of the Medical Director. This seems to be related to the absence of available Medical Directors with sufficient time to devote to these activities. This is directly related to the lack of compensation for medical direction in the vast majority of counties. There are some individual agencies and one county that have invested significant resources in having active physician involvement in quality-of-care issues within the system.

Multiple physicians testified that the cost and availability of liability coverage for EMS medical direction is becoming a major issue. Failure to deal with this will lead to a shortage of EMS Medical Directors in Oregon.

## Recommendations

- **Legislation and funding should provide for a State EMS Medical Director who reports directly to the State EMS Director. The Medical Director, at a minimum, should meet nationally recognized standards for EMS Medical Directors established by the National Association of EMS Physicians and the American College of Emergency Physicians. The position should be at least half-time and include authority for the oversight and development of the following areas: (This list is not inclusive)**
  - a. **Medical standard and protocol development (Statewide minimum standards that may be enhanced and modified appropriately to meet the needs of specific local systems).**
  - b. **Determining the Scope of Practice of all levels of EMS personnel**
  - c. **System planning for the improvement of patient care.**
  - d. **Development of a state-wide EMS evaluation plan that is flexible enough to be applied across the spectrum of local systems. The plan should place a great emphasis on *patient outcomes* and not simply utilize process parameters.**
  - e. **Involvement in the EMS lead agency process for certification and decertification.**

- The EMS lead agency should develop a State EMS Medical Advisory Committee made up of appropriate physicians and other professionals to advise the State EMS Medical Director on issues such as:
  - Determining EMS scope-of-practice
  - System evaluation and performance
  - EMS system planning related to patient care
  - Medical protocol development
  - Quality improvement planning
- **The Oregon legislature should enact statutes that change the relationships between EMS Medical Directors and EMS personnel.**
  - This relationship should be directly between the EMS agencies and the local/regional Medical Director rather than tying them to individual EMTs.**
  - This would give the physicians a direct relationship to help lead and monitor the EMS system...rather than simply individual providers.**
  - The statutes should place responsibility on EMS agencies to respond to the guidance of the Medical Director in matters related to how the system responds to patients and how care is provided.**
- The EMS lead agency should adopt national guidelines for medical direction (e.g. ACEP, NAEMSP) for both indirect (off-line) medical direction and for the training and monitoring of direct (on-line) medical control physicians.
- The EMS lead agency should propose a model for county or multi-county/regional Medical Director positions and a funding mechanism. These Medical Directors should have authority for establishing:
  - Local adaptation of the statewide protocols and standing orders
  - Patient care standards customized to the local systems
  - QI programs in compliance with the state-wide QI plan
  - Evaluation of **system** performance in compliance with the state-wide evaluation plan.
- The EMS lead agency should develop a plan to enhance on-line medical direction availability statewide through communications system improvements (see Communications Section). On-line medical direction should be available throughout the state.
- The Oregon legislature should enact statutes limiting liability exposure for physicians when functioning as an EMS Medical Director.
- The EMS lead agency should be aggressively involved in identifying ways to aid in obtaining liability coverage for EMS Medical Directors.

## **I. TRAUMA SYSTEMS**

### **Standard**

To provide a quality, effective system of trauma care, each State must have in place a fully functional EMS system; trauma care components must be clearly integrated with the overall EMS system. Enabling legislation should be in place for the development and implementation of the trauma care component of the EMS system. This should include trauma center designation (using ACS-COT, ACEP, APSA-COT and/or other national standards as guidelines), triage and transfer guidelines for trauma patients, data collection and trauma registry definitions and mechanisms, mandatory autopsies and quality improvement for trauma patients. Information and trends from the trauma registry should be reflected in PIER and injury prevention programs. Rehabilitation is an essential component of any statewide trauma system and hence these services should also be considered as part of the designation process. The statewide trauma system (or trauma system plan) reflects the essential elements of the Model Trauma Care System Plan.

### **Status**

Following the last assessment, the trauma system continued to grow and mature, based on two Level I facilities in the Portland metropolitan area (with other metropolitan facilities excluded by design) and inclusion of essentially all other hospitals at level II, III, or IV designation. The registry was improved, and became the basis for evaluation of the system, selection of Area Trauma Advisory Board (ATAB) QA topics, reviewing over and under triage, and for generating timely reports.

Through the 1990s, the trauma program became integrated with the EMS system, participated in the collection of data on system function, reassessed the designated hospitals as required and proved to be of value in assessing EMS activities.

After this period of growth, the trauma program appeared to reach a plateau from which there has been a steady decline, possibly resulting from the frequent change of EMS Directors. Initial expectations for hospitals to be designated at their highest level have been relaxed, and four Level II facilities elected to reduce their designation to Level III and some Level III facilities have been required to drop to Level IV status as a result of losing sub-specialists.

Surgical sub-specialty physician participation in trauma care is problematic in many areas of the state. The uncertainty of the system leadership may also have contributed to the turnover of 23 trauma coordinators and registrars recently. The trauma registry has not been upgraded or modernized and has proven to be difficult for local facilities to

use. This has resulted in significant delays in data entry, and precludes the availability of timely, useful data for QA and for evaluating specific trauma care questions. Staffing of the trauma program has been reduced to three individuals. Concurrently, management of EMS-C and prehospital data collection have been added to the duties of the office, even when the staff is limited and the trauma registry based biennial report reflects data that is more than three years old. It is unclear whether the registry or the State Trauma Advisory Board (STAB) provides an annual report on the status of the system.

Today, the trauma system is well integrated into the EMS Section, participates in EMS activities in the form of data and training, and the ATABs support the QA and evaluation activities of EMS trauma care in their regions. The STAB continues to be active, supporting the EMS trauma program, but without statutory authority can only participate in an advisory capacity without the ability to generate change at the statewide level. Although still supportive of the trauma program, many of the early leaders have moved to other venues, and have been replaced with outstanding individuals with the same dedication to optimal trauma care.

The trauma program manager proposed replacement of the current DOS-based registry with a much improved web-based system. The prompt response and substantial leadership from the State EMS Director working with stakeholders has allowed for this improvement. The delay in data availability and the difficulty in performing issue-specific studies have resulted in great difficulty in assuring an adequate annual report to the participants, supporting a timely QA program, reviewing over triage and under triage, and identifying region-specific issues for case presentations at the ATAB meetings.

Although the trauma system has integrated into the EMS process, there remains no mandated requirement for trauma skills education for EMS personnel statewide beyond initial training and certification. The recent "revolving door" EMS Directors environment has created a sense of uncertainty among the dedicated volunteer trauma leaders, which in turn has resulted in some hesitancy to move forward with the program. Unfunded trauma care and the cost of reimbursing the members of the trauma call panel continue to be an issue in maintaining a trauma response in some communities. Widespread manpower and monetary issues make the development of a mandatory autopsy policy very unlikely.

## Recommendations

- **The Oregon legislature should establish statutory authority for the STAB to address state-wide trauma care issues.**
- The EMS lead agency should continue to pursue modernization of the trauma registry
  - Provide Training to the trauma hospitals in data entry.
  - Assure adequate staffing to provide timely data entry and information to the ATABs, STAB, and public on trauma issues.
  - Assure timely biennial reports.
  - Provide data for a biennial comprehensive report by the STAB.
  - Provide data to the ATABs for use in QA.
- The EMS lead agency should assure Oregon's participation in national trauma and EMS data systems including the American College of Surgeons National Trauma Data Bank.
- The STAB should reinstitute timely evaluation of appropriateness of trauma triage and transfer.
- The EMS lead agency should establish training standards for EMS personnel of all levels related to trauma care and transport.
- The EMS lead agency should establish a trauma coordinator/registrar training program in light of the turnover.
- **The STAB and the EMS lead agency should determine the number of trauma centers at various levels needed to support the volume of trauma patients in Oregon.**
- The EMS lead agency should develop a trauma plan using the Model Trauma System Planning and Evaluation document produced by HRSA.
- The STAB should review and revise the requirements associated with designation as a Level 4 trauma center in consideration of the evolving status of rural hospitals (e.g. CAHs).

## **J. EVALUATION**

### **Standard**

A comprehensive evaluation program is needed to effectively plan, implement and monitor a statewide EMS system. The EMS system is responsible for evaluating the effectiveness of services provided victims of medical or trauma related emergencies, therefore the EMS agency should be able to state definitively what impact has been made on the patients served by the system. A uniform, statewide out-of-hospital data collection system exists that captures the minimum data necessary to measure compliance with standards (i.e., a mandatory, uniform EMS run report form or a minimum set of data that is provided to the state); data are consistently and routinely provided to the lead agency by all EMS providers and the lead agency performs routine analysis of this data. Pre-established standards, criteria and outcome parameters are used to evaluate resource utilization, scope of services, effectiveness of policies and procedures, and patient outcome. A comprehensive, medically directed, statewide quality improvement program is established to assess and evaluate patient care, including a review of process (how EMS system components are functioning) and outcome. The quality improvement program should include an assessment of how the system is currently functioning according to the performance standards, identification of system improvements that are needed to exceed the standards and a mechanism to measure the impact of the improvements once implemented. Patient outcome data is collected and integrated with health system, emergency department and trauma system data; optimally there is linkage to data bases outside of EMS (such as crash reports, FARS, trauma registry, medical examiner reports and discharge data) to fully evaluate quality of care. The evaluation process is educational and quality improvement/system evaluation findings are disseminated to out-of-hospital emergency medical care providers. The lead agency ensures that all quality improvement activities have legislative confidentiality protection and are non-discoverable.

### **Status**

No state-wide plan for evaluation of EMS systems exists. The Oregon EMS delivery system and how it is evaluated varies greatly across the State. The absence of a systems approach to EMS in general has hampered the ability to plan for and accomplish useful system evaluation at the state level. No evaluation of patient outcome data occurs at the state and only limited evaluation occurs in a small number of agencies.

A minimum, uniform prehospital data set exists although it was unclear whether effective dissemination to EMS agencies has occurred. It is unknown whether these data are useful for measuring compliance with standards since so few systems actually analyze their data.

There is great variation in the way data is collected by local agencies. This is based upon the resources and decisions of the local/county EMS leadership and Medical Directors. In some systems, there is a county-wide prehospital database. However, linkage to hospital outcomes is non-existent. In most EMS systems, there is no consistent data analysis.

Apparently, there is no standard EMS incident reporting process statewide. There is no database allowing analysis of information from throughout the state. Some isolated systems are making attempts to collect and assess data within their jurisdictions. There are some notable and laudable efforts to develop and utilize EMS databases by several agencies, particularly in the more urban areas.

There are no standards established to allow conclusions about “what is,” versus “what ought to be” within the State.

A major deterrent to being able to identify whether EMS in the State of Oregon is meeting patient needs is the fact that reliable linkage to distal health outcomes is non-existent. There is no linkage of outcome data with EDs, discharge data, law enforcement, crash reports, FARS, etc. Even in the Trauma System, the ability to get meaningful information back that allows outcome evaluation is markedly compromised. Thus, it is impossible to know whether patients are receiving optimal care.

The affirmation that high quality care is being provided in Oregon was universal by the presenters. However, it was all anecdotal and negative reports from several national assessments were passed off as being inaccurate.

The quality improvement programs that exist are locally based. Individual agencies and their medical directors are responsible for quality evaluation activities. Some of these have implemented active programs. Examples were given from one system that showed a closed QI loop (Problem identification → root cause analysis → evidence-based conclusions → strategic plan for resolving the problem → implementation of the plan → continued surveillance to ensure that the problem was resolved). While this type of data collection and analysis are accomplished in a few settings, feedback of this information in a way that impacts training and continuing education does not exist anywhere in the state.

QI and evaluation are variable from agency to agency. Dissemination of QI findings is sporadic at best. In the typical setting, it is unclear whether the evaluation process is educational as opposed to disciplinary in nature.

There is statutory confidentiality protection and non-discoverability established for the QI process. Information outside of the QI process is discoverable.

## Recommendations

- **The EMS lead agency should develop a comprehensive plan to implement a statewide EMS evaluation program including provision for funding. This should establish the minimum data set for state-wide use based upon the most current version of NEMSIS (Available on [www.NEMSIS.org](http://www.NEMSIS.org)). The plan should include a process to insure accessibility of meaningful information to system Medical Directors and managers.**
- The EMS lead agency should submit statewide EMS data to the National EMS Database.
- **EMS agencies should participate in centralized state-wide data collection and reporting of EMS information for all patients who enter the EMS system as a requirement of agency licensure.**
- The EMS lead agency should lead an effort that includes all appropriate stakeholders to link EMS data with hospital and patient outcome information for evaluation of the impact of EMS care.
- **The EMS lead agency should develop a comprehensive evaluation process linked to outcome data that allows an assessment of the impact of EMS on patients throughout the State.**
- The EMS lead agency should develop standards to evaluate both individual patient care as well as **system** quality. Where available, national standards should be utilized.
- The EMS lead agency should develop requirements for QI processes for all levels (state, regional, county, local) of the EMS and trauma system. There should be a QI program requirement as a condition of agency licensure. The QI process at every level should provide reliable feedback of outcome information to individual EMS providers and agencies.

## **K. Domestic Preparedness**

### **Status**

Without the designation of the EMS and Trauma System Section as the EMS lead agency in the state for EMS system development there has been little done to establish a statewide EMS plan for disaster preparedness. There has been a fragmented approach in local communities to this issue. The lack of information related to available resources, their mobilization capacity, and systematic mutual aid agreements precludes optimal EMS disaster response. The EMS and Trauma System Section is not recognized among other response agencies such as the Office of Homeland Security, Office of Emergency Management, and the Office of Public Health as necessary players in preparedness activities. In fact, the EMS and Trauma System Section was explicitly excluded from attending meetings on related preparedness activities and grant opportunities.

### **Recommendations**

- The EMS lead agency should be given statutory authority to direct EMS-related preparedness activities.
- The State EMS Director should be recognized by State government as the authority on EMS related response issues such as triage, transport, and treatment in disaster response settings.
- The EMS lead agency should encourage EMS agencies to be involved locally in preparedness planning and associated funding opportunities.
- The EMS lead agency should encourage the ATABs to participate with the corresponding HRSA planning region in preparedness activities.
- The EMS lead agency should develop a regionalized Strike Team approach for interstate and intrastate response.
- The EMS lead agency should provide assistance to local EMS agencies in meeting Federal Department of Homeland Security's Targeted Capabilities List.
- The EMS lead agency should ensure that EMS agencies and personnel have knowledge of ChemPack, SNS, and the administration of prophylactic antibiotics.

## **L. CURRICULUM VITAE**

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### **Organizations/Appointments**

Kentucky Board of Emergency Medical Services,  
Executive Director  
American Heart Association, Lexington Kentucky  
Board of Directors  
Governors Executive Committee on Highway and Traffic Committee for Kentucky  
Teen Safe Drivers Committee for Kentucky, Chair  
EMS-C committee for the National Association of State EMS Officials, Chair  
National Registry of EMTs, test writing committee  
North Central Division of the NASEMSO to the executive committee, Alternate  
Representative  
USDOT, NHTSA EMS Reassessment Program, Member.

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National Association of State EMS Directors  
Past President

Past Treasurer  
Executive Committee  
Past Member Clearinghouse Management Committee  
New England Council for EMS  
President  
Executive Committee  
Vermont Trauma System Development Committee  
Co-Chair  
EMS Agenda for the Future  
Co-Chair  
EMS Agenda for the Future Implementation Guide Committee Member  
Vermont State Firefighters Association  
Essex Rescue, EMT-I Captain  
Health Care Finance Administration Negotiated Rule Making, Committee Member  
National Scope of Practice Model Project – Principal Investigator  
American College of Surgeons – Trauma System Assessment Team Member  
HCFA Negotiated Rule Making – NASEMSD Representative  
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 and Mississippi.

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National Association of EMS Physicians, Member  
National Association of EMTs, Member  
PHTLS, ACLS Faculty  
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USDOT, NHTSA EMS Assessment Program, Technical Assistance Team,  
Member, States of Arkansas, Alabama, Montana, and South Dakota.  
USDOT, NHTSA EMS Reassessment Program, Member, States of Montana

and South Dakota  
Maine EMS, State Trauma System Manager  
USDHS, SafeCom, Executive Committee  
National Public Safety Telecommunications Council, Governing Board  
ITS America, Public Safety Advisory Group  
Chair, Medical Subcommittee  
Joint National EMS Leadership Conference, Staff  
Federal Communications Commission, Media Reliability and Security Council  
Communications, Data and ITS Technology Liaison for NASEMO, NAEMSP, NAEMT,  
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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 Medical Association,  
Commission on Emergency Medical Services  
American Trauma Society  
Founding Member, Past Speaker House of Delegates  
ASTM 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  
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**ORGANIZATIONS/APPOINTMENTS**

Diplomate, American Board of Surgery  
Montana Trauma Registry Task Force  
Montana EMS Advisory Council, Chair  
Montana ATLS, National Faculty  
Rocky Mountain Rural Trauma Symposium  
Program Director  
American College of Surgeons, Fellow  
MT Committee on Trauma, Chairman 1978-1988  
ACS Committee on Trauma 1986-1996  
ATLS Committee/National Faculty  
AD HOC Committee for Revision of Optimal Resources Document  
Past Chairman, Emergency Services/Prehospital Subcommittee  
Past Chairman, AD HOC Committee on Rural Trauma  
Centers for Disease Control, Consensus Committee on Trauma Registries  
Task Force for Acute Care System, Trauma, HRSA  
USDOT, NHTSA EMS Assessment Program, Technical Assistance Team, Member,  
States of Alaska, Iowa, Nebraska, Tennessee, West Virginia, Indian Health Service,  
National Park Service, and American Samoa.  
USDOT, NHTSA EMS Reassessment Program, Technical Assistance Team, Member,  
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Fellow: American College of Emergency Physicians

EMS Medical Director-University Medical Center  
Medical Director: LifeNet Arizona Emergency Air Medical System  
National Association of EMS Physicians  
Society for Academic Emergency Medicine  
Air Medical Physicians' Association  
Association of Air Medical Services  
Promotion and Tenure Committee: University of Arizona Department of Emergency  
Medicine  
EMS Medical Directors Committee of Pima County  
Pima County EMS Council  
Chair: Southeastern Arizona EMS Council  
Arizona State EMS Medical Standards Committee  
Arizona State EMS Council: Arizona Department of Health Services  
Arizona State EMS Medical Direction Commission  
EMS Minimum Data Set Consensus Conference Planning Task Force:  
National Highway Traffic Safety Administration, U.S. DOT  
--National EMS for Children Advisory Board:  
Health Resources and Services Administration  
U.S. Department of Health and Human Services  
--Institute of Medicine: Committee on the Future of EMS in the United States  
--Editorial Board: Associate Editor, EMS Section: Annals of Emergency Medicine  
--Editorial Board: Prehospital and Disaster Medicine  
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