STATE OF ALASKA

A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

SEPTEMBER 7-9, 1999

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 1990, for example, the lifetime costs of all injuries were estimated at $215 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 nearly 50,000 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 Alaska Emergency Medical Services Office in concert with the Alaska Highway Safety Office requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the Alaska Statewide EMS program. NHTSA developed a format whereby the EMS office staff coordinated comprehensive briefings on the EMS system.

The TAT assembled in Anchorage, Alaska, on September 7-9, 1999. For the first day and a half, over twenty five presenters from the State of Alaska, 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, 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 Alaska. 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 Alaska Emergency Medical Services Office, 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 which 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 Alaska Highway Safety Office and the Alaska Department of Health and Social Services, Division of Public Health, Section of Community Health and Emergency Medical Services, 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 Alaska. 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 Matt Anderson, Alaska State EMS Director and his staff, and 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 Mark Johnson, Chief, Section of Community Health and EMS, Romayne Kareen, Alaska Highway Safety Office, and Ronni Sullivan, Director of the Southern Region EMS Office for providing assistance to the TAT.

INTRODUCTION

Alaska is a world of striking contrasts. Majestic mountains rise above expansive coastlines. Land area far larger than any other state in the nation is home to one of America's smallest resident populations. Long summer days give way to the perpetual darkness of winter. And, a few warm months transition to some of the most inhospitable winter conditions found on this earth.

Many of the same elements that attract the rugged, determined individualists to the sprawling, geographically diverse State of Alaska contribute to the difficulties in creating and maintaining a quality EMS system for the State.

EMS needs and resources vary widely from urban areas to small villages. The State's wide expanses, diverse geography and scant population in many remote regions combined with brutally severe weather conditions create problems uniquely Alaskan. A variety of other issues influence response time, scene time, transport time, and procedures including distances between providers and those served, the volunteer nature of much of the EMS service in the state, variation in training as well as language and cultural diversity. While recognizing inherent limitations in any system which attempts to provide efficient EMS services to a population who chooses to live in remote and relatively inaccessible areas, Alaska EMS professionals continue to strive to improve the system.

Many EMS resources are under stress. Solitary Emergency Trauma Technicians, with little on-line medical support, respond to travelers, friends, family and neighbors. Not only does this volunteer effort take time from families and primary occupations but it also takes a heavy emotional toll in treating close friends and family members. Recruitment and retention of these critical volunteers is vital to the survival of the system in its current form.

The daunting task of developing a comprehensive statewide EMS system is made even more difficult at a time of diminishing resources. There is wide variation in funding ranging from the generously supported North Slope Borough Fire Department to the opposite end of the spectrum in Yukon Kuskokwim EMS. The limited availability of state funds, inconsistency in local revenue sources and the recent changes in Indian Health Services fund distribution combine to create significant challenges for the future.

Despite the obstacles, the spirit of Alaska is embodied in its EMS system. All members of the community work together from military pre-hospital resources, to full-time dedicated EMS professionals, to Native Alaskan's, to volunteers who care for their villages as well as travelers without regard to extrinsic rewards. Challenges are met with ingenuity, creativity, energy and dedication.

Alaskans can be justifiably proud of the system now in place. Common sense, community spirit, a respect for culture and a willingness to adapt national standards to meet the unique challenges of Alaska have combined to serve the system well. In the same way that the survival of Native Alaskans has depended upon their ability to meet basic human needs such as food, warmth and shelter, the survival of Alaska's EMS system now requires an identification of and a focus on the

system's highest priorities.

The Technical Advisory Team performing this review is honored to have been invited for a glimpse of the many faces of Alaska. There is much to do while the sun shines as "termination dust" is falling on the mountain tops.

ALASKA EMERGENCY MEDICAL SERVICES (AEMS)

On September 7-9, 1999, the TAT revisited the ten essential components of an optimal EMS system that were used in the *State of Alaska: An Assessment of Emergency Medical Services*. These components provided an evaluation or quality assurance report based on 1992 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.

Progress on Meeting 1992 Recommendations

- Since the 1992 assessment, Alaska has passed updated EMS legislation and new EMS rules.

- An "Alaska EMS Goals" document identifies expected standards for the state EMS system and provides a foundation for linking work expectations with the funding of regional contracts.

- Communications between the state EMS office and the regional EMS councils has improved to a level of cooperative collaboration.

- Some of the traditional funding sources for EMS system development have been examined

and found to be unfeasible while other non-traditional sources have been determined unconstitutional.

Status

The Alaska Department of Health and Social Services, Emergency Medical Services Unit has been designated as the official lead agency for development of the state's EMS system. In addition to professional staff, the office contracts with two physicians who function as State EMS Co-Medical Directors. The structure and role of the EMS Unit is clearly defined and well understood by the significant system constituents. The approach of the EMS Unit has been to strive for consensus among system stakeholders.

Significant progress has been made over recent years in the area of legislation and regulation. Layperson Rescuer AED, Good Samaritan, and Comfort ONE/DNR legislation have all been enacted. Regulations have been passed to address EMS Dispatcher training, trauma care, patient information and certification of training programs. An historical aberration of the regulatory process requires the Department of Health and Social Services to obtain the approval of the Department of Public Safety before changing any EMS rules, but this has not as yet proven to be a problem.

The EMS Unit works in close cooperation with the Governor’s appointed Alaska Council on Emergency Medical Services (ACEMS) that functions in an advisory capacity. The EMS Unit relates to a series of regional councils and sub-regional groups for program development and implementation functions.

The EMS Unit provides substantial funding through annual contracts to the regional and sub-regional groups, but in recent years, there has been a decline in the level of funding available for state distribution. This decline in state funding has been compounded by the process of “compacting” within the Indian Health Service which represents the possibility that funds historically applied to EMS may be reallocated to other segments of the health care system.

The Alaska State Medical Board has the responsibility for licensing Paramedics while the EMS Unit handles certification of all other levels of EMTs and other regulatory functions in the EMS system. A Commission on Post-secondary Education within the Department of Education has broad regulatory authority over most post-secondary offerings. That may represent a conflict with the EMS Unit’s oversight of EMS training programs.

Recommendations

The State EMS office should:

- Amend the existing law to eliminate the need for Public Safety Department approval of EMS regulatory changes.

- Clarify the involvement of the Commission on Post-secondary Education in EMS training programs. If the Commission actually has authority over EMS training programs, seek a transfer of that authority to the EMS Unit.

- **Ensure adequate funding for State EMS activities. Investigate resources from:**
  - **Medicaid administrative claiming funds**
  - **Welfare to work funds**
  - **Tobacco settlement funds.**

- **Establish a multi-disciplinary Governor's task force to monitor the effects of IHS compacting on the EMS system. The task force should:**
  - **Identify regional and sub-regional effects**
  - **Identify any cost shifts to state funding**
  - **Engage the IHS and the Native Regional Corporations in an analysis of the effects of compacting on the EMS system**
  - **Work collaboratively to implement solutions to identified problems**

- **Define the role, authority and working relationships of the State EMS Medical Director, the Regional EMS Medical Directors, and local EMS Medical Directors.**

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.

Progress on Meeting 1992 Recommendations

- An "Alaska EMS Goals" document and a strategic plan have been developed.
- Communications and sharing of information has improved among the regions.
- Alaska continues to implement the goal of ensuring that an EMT-I is in every village/community.
- More Community Health Aides are being trained to the Emergency Trauma Technician (ETT) level with many moving to the EMT-I level.

Status

The lead agency for the development of the statewide EMS system is the Alaska Department of Health and Social Services, Division of Public Health, Section of Community Health and Emergency Medical Services, EMS Unit. The EMS Unit staff are located in the state capitol of Juneau. The lead agency is responsible, by statute, for the development, implementation, and maintenance of a comprehensive statewide emergency medical services system. By providing grants and overall program direction, the Unit works through the regional EMS Councils and non-profit health corporations to coordinate air and ground ambulance agencies and other prehospital care with hospital care, native health corporations, and other related organizations.

The EMS Unit has current knowledge of the system resources available throughout Alaska. Utilizing input from local, regional, public and private entities and the Alaska Council on EMS (ACEMS) the Unit has updated or developed several important documents including "Alaska EMS Goals: A Guide for Developing Alaska's Emergency Medical Services System", "Code Blue--Resuscitating Rural Emergency Medical Services Agencies in the Last Frontier", a Strategic Plan for Alaska's Emergency Medical Services Program, and a 5 year strategic plan for Emergency Medical Services for Children (EMSC). The EMS Unit continues to work toward implementing a statewide data collection system.

Alaska is committing significant resources to maintaining the state, regional and local EMS system. However, during the recent reorganization of state government, the EMS Unit lost the state EMS training coordinator position. The team heard from several presenters that the loss of this position reduced the ability of the EMS Unit to meet educational needs.

The EMS Unit has added a part time (40%) EMSC Coordinator as a result of an EMSC grant. This part time position will increase to 80% beginning in October of this year. A commitment to pediatric emergency care is visible throughout the EMS system.

The EMS Unit is to be commended for the outstanding efforts it makes to coordinate activities with other organizations throughout the state.

ACEMS is a body of eleven members appointed by the Governor to advise the Department on the overall development of a statewide, comprehensive EMS system. ACEMS also includes liaison representatives from various positions and organizations. Policies, guidelines, and regulations are developed in cooperation with the State Advisory Council on EMS and its various subcommittees and task forces.

The EMS Unit uses the EMS Regions to provide a decentralized approached to the delivery of EMS in Alaska. This decentralized approach is effective given the vast land mass and varying needs of the state. The regions are quite diverse and committed to quality patient care. They are proactive advocates for continued improvement of EMS within their regions or sub areas. Communication and sharing of information among regions is greatly improved since the original assessment.

In light of these improvements, it was surprising that the IHS, the park service, the military and other stakeholders were not involved in the reassessment process.

Recommendations

The State EMS office should:

- Conduct an analysis of the utilization of all regional resources including military, park service, etc. Ensure the optimal utilization of available resources.

- Integrate existing planning documents into a single comprehensive statewide EMS plan with implementation priorities.

- **Through the Department of Health and Social Services reestablish and fill the state EMS training coordinator position.**

- Continue the exploration and use of new and appropriate technologies to support EMS system development and operations.

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 ACES, PALS, BLS, PHTLS, ATLS, etc., and a system of critical incident stress management has been implemented.

Progress on Meeting 1992 Recommendations

- The State EMS Agency has adopted the National EMT-Basic curriculum, and is committed to the adoption of the National EMT-Paramedic curriculum.

- The State has approved and reestablished an EMT-P training program through a privately operated training academy (Aurora North Emergency Services Academy).

- The Regions have expanded the locations for EMT training.

- The training program for Community Health Aides incorporated EMS training into the curriculum. Many CHA's are trained to the ETT level and some have received additional training as an EMT-I.

- The State has completed a blood borne pathogen protocol meeting OSHA standards and has incorporated it into the training programs and service provider requirements.

Status

EMS training remains a high priority for the Alaska EMS system. There are a multiplicity of State approved training programs including first responders trained as ETT, Emergency Medical Technician I (EMT-Basic), Emergency Medical Technician II (EMT Intermediate), EMT-III (Cardiac Technician), and EMT-Paramedic. In addition to these traditional training programs there are standardized training programs for Air Medevac providers, and national certification programs such as ACLS, PALS, BTLS, ATLS, PHTLS and training for EMS Dispatchers. EMS training is conducted by State certified instructors. An extensive program (80 hours) for training instructors has been implemented and concern for maintaining this program at this level of

commitment was expressed. This instructor level training has been instituted in lieu of a regular program of instructor monitoring. To further compliment the EMS training component there is an active State training committee. This committee assists the State and regions in developing and implementing EMS training programs specific to the Alaska area. There is no current program of quality management for training programs approved by the State and conducted by the regions. Some distant learning opportunities have been incorporated into the training programs, however this option for EMS education has not been utilized to its fullest potential. The distance learning program on Behavioral Emergencies is exceptional and the use of this type of technology to reach EMS providers including those in distant locations is commended. Guidelines for cold water emergencies, burn care, trauma, mass casualty response, and a certifying officer's manual have all been adopted by the State EMS agency.

The regional availability of EMT training has resulted in several thousand EMS trained personnel within the State. It is not known how many of these previously trained personnel continue to practice their skills within the organized system of response. However, these skills may remain available to the community through individual response outside the organized system. Transporting agencies currently staff with at least one EMT I.

Human resources are variable across the State. Rural, isolated volunteer providers have significant issues with recruitment and retention, while in the more urban areas these issues are somewhat more stable. Because of the vast geographic areas requiring EMS coverage there remains a maldistribution of EMS human resources throughout Alaska. The use of Community Health Aides continues to provide a supplement to EMS service providers not found elsewhere. The incorporation of these practitioners has been of benefit to the residents of rural Alaska. Continued efforts at incorporating other providers such as Park Service, Forest Service, and Law Enforcement was not discussed.

Recommendations

The State EMS office should:

- **Survey the current population of inactive EMS personnel (volunteer and career) to analyze their reasons for leaving EMS service.**

- **Conduct exit interviews with those EMT's that retire from service.**

- **Merge the information from the analysis of EMS personnel retention with the information from the resource utilization survey to determine action strategies to correct identified issues and needs.**

- Incorporate findings of the surveys into the comprehensive EMS Plan as part of a quality improvement program.

- Consider the establishment of a program for EMT-P's or physicians to serve as mentors to basic and intermediate providers in rural areas.

- Consider the development of a volunteer “Locum Tenens” program for ALS personnel to serve in rural areas particularly in the summer months.

- Review the new EMT Intermediate curriculum with an eye toward using those components of the curriculum that apply to Alaska.

- Extend the use of Community Health Aides to villages that are not part of the current IHS system.

- **Through the Department of Health and Social Services, reestablish and fill the state EMS training coordinator position.**

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 unannounced "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.

Progress on Meeting 1992 Recommendations

- The State has adopted uniform trauma triage, transport, and transfer guidelines, however, these have not been translated into specific local or regional prehospital or interfacility protocols.

Status

Much of the NHTSA standard applied to assess transportation capabilities in Alaska is unmet. It may be that the circumstances in Alaska require a different set of transportation benchmarks.

The team recognizes the need for Alaska EMS providers to be very creative in using alternative modes of transportation to overcome the many geographic complications in the local application of emergency transport. The team also recognizes that the current utilization of transportation resources (both ground and air) is of concern in that it does not appear to match patient needs with system resources. Over and under utilization of transport resources may be occurring and a better, more efficient system of utilization may be needed. As in many areas of the country, urban resources are more stable and reliable than rural resources.

Important and significant improvements have been made in Air Medical resources throughout the State and their incorporation into point of entry/system access is apparent. Reports from Regions and State personnel indicated that there are:

Ground Services - 5 Basic Life Support Services (BLS)
45 BLS/Advanced Life Support Services (ALS)
37 ALS Services, and
Air Medical Services- 10 Medevac
10 Critical Care
1 Specialty Air Service

Of the ground vehicles, 41 of 125 ambulances are over 15 years old creating a potential danger to rescuers and patients. Because of the aging of the fleet some areas have increased local contributions for ambulance funding. The State capital equipment program has been discontinued leading to deterioration of ground transport resources in rural areas. This is further affected by the compaction of IHS funds that may divert previously allocated EMS revenues to other health care priorities.

A program for licensing of ground ambulance resources is in place but not uniformly applied (14 services have not been licensed). All air resources have been certified, and equipment and training standardized. Inspection of ambulances is not currently in place and the licensing program is one of self assessment and reporting.

Recommendations

The State EMS office should:

- **Conduct an assessment and analysis of transportation resources paying specific attention to;**
  - **how and when transport resources are utilized,**
  - **the distribution (resource mapping) of vehicles throughout the state,**
  - **the use of emergency vehicles for non-emergency patients, and**
  - **the use and incorporation of alternative transportation (e.g. snow machines, dog sleds, trucks) to deliver emergency patients to higher levels of care.**

- Use the resource map to ascertain where additional transport capability is needed and target grant or other revenue opportunities to correct those deficiencies.

- Review, differentiate and make a distinction between emergency and non-emergency transportation and report on utilization of resources within those two parameters.

- **Consider using a regional approach (such as regional hubs) for the purchase, replacement, and maintenance of EMS vehicles, taking advantage of shared or pooled resources to solve common problems.**

- Evaluate the different dispatch systems and resource allocation methodologies to ensure that the correct resources are being utilized to transport patients.

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.

Progress on Meeting 1992 Recommendations

- The Department has categorized the various communities in Alaska as Villages, Sub-regional Centers, Regional Centers, and Urban Centers based on previously defined criteria.

- Facilities, per se, have not been categorically described.

- ACS Criteria for Trauma Hospitals have been adopted as part of the Trauma Certification process.

- Trauma Triage and Transfer guidelines have been adopted.

Status

There are now twenty-four hospitals in the state, fifteen civilian, six Alaska Native, one Native Consortium, and two Military, after the closure of one military hospital. The characteristics of the hospitals and the services offered have not changed significantly since 1992. Patient flow and transfer patterns appear not to have changed over the past seven years and are still being based on perceived capabilities and existing demographic and economic relationships. There does appear to have developed an improved trend toward direct transport to higher level institutions without an interim stop at smaller hospitals, when beneficial to the patient. There is no local or regional transfer, triage or bypass protocol based on patient need and hospital capabilities. Transfer guidelines for trauma and burn patients have been adopted as part of the trauma plan but their utilization is not known. A formal evaluation of transfer and patient flow patterns has not been done.

The capabilities of facilities providing emergency care has not been determined nor have the resources necessary for optimal care in each facility been defined.

The Alaska EMS Unit has received a grant to explore the Medicare Rural Hospital Flexibility Program (MRHFP) for those eleven small, isolated hospitals that are potentially eligible. If adopted, MRHFP would allow creation of Critical Access Hospital's in isolated areas where physician recruitment is difficult and hospital economic survival unlikely, allowing use of mid-level practitioners and narrowed services, preserving emergency care in underserved areas. These facilities will be able to network with larger hospitals and may be able to support prehospital care programs in the region, possibly with an expanded prehospital scope of care where needed.

Recommendations

The State EMS office should:

- **Assess the resources and capabilities and categorize each of the hospitals and clinics providing emergency care.**
- Determine mid-level practitioner or physician (and speciality) availability in each facility.
- Identify facility emergency response capability.
- Describe how each entity responds to emergencies.
- Define the appropriate resources for optimal care in each type and size facility.
- **Evaluate the current patient transfer and flow patterns, with consideration for time to definitive care.**

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.

Progress on Meeting 1992 Recommendations :

- Efforts have been taken to support and pursue a statewide enhanced 9-1-1 telephone system.
- A survey of EMS communications capabilities across the state has been completed.
- A State EMS Communications Plan has been developed.
- The state has reviewed new technology applications (e.g. land/mobile satellite systems) to address special communications challenges in the state.
- Emergency Medical Dispatch training has been initiated.

Status

Within Alaska, as most other states, EMS, police, fire and emergency services need to meet their respective communications needs, which are often overlapping. They also need to communicate with one another, especially in mass casualty or disaster situations. An effective communications system which can benefit all users would be more cost effective and therefore more likely to receive necessary levels of funding. In Alaska, the Telecommunications Office is responsible for planning, design, frequency coordination, installation, and maintenance of state communications systems.
A comprehensive state EMS communications plan has been developed and $500,000 has been identified to start implementing the plan. However, significant additional funding is necessary to completely implement the plan. Such funding is currently not available. Over 90% of Alaska's population is covered by 9-1-1. With few exceptions almost all level II, III, and IV communities

have 9-1-1 coverage, yet some villages have only satellite phone and some even more limited communications. There are 120 microwave wireless radio links comprising the backbone of the communications system along Alaska's major highways, but the system is incomplete. There are 12 call boxes along the major highways. The EMS Unit pays for the operational cost of four of the 12 call boxes. To complete the call box system along the major highways would require another 347 call boxes.

50 Iridium satellite phones have just been purchased to address "black holes" in some of Alaska's rural villages.

The state has instituted a charge back system to user agencies for using the state communications system. This unfunded mandate has increased communications costs to the EMS Unit from $146,000 in 1994 to $236,000 in 1999. This increase in cost to EMS has been incurred with no additional funding from the state to offset this increase. This has created a serious problem for the EMS Unit. They are currently facing a $65,000 budget shortage due to this cost. EMS is charged the full cost for the use of four call boxes even though utilization is not only to initiate EMS response.

There are currently 35 Emergency Medical Dispatchers trained in the state but there are no standards for dispatch centers. The TAT heard from some presenters that calls were slow to get to EMS in some cases because of delays in public safety referring the calls to EMS.

There is no common mutual aid frequency and some rural areas have no radios at all. Other areas only have access to CB radios.

Recommendations

The TAT is concerned that a communications crisis is currently facing EMS and other public safety users of the state communications system. Given our belief that the communications infrastructure is in danger of collapse the TAT believes that only two recommendations are warranted. While there are many other communications needs, any additional recommendations regarding EMS communications and dispatch are inconsequential unless the following two recommendations are implemented.

The Department of Health and Social Services should:

- **Join with other public safety and public health users to approach the Alaska legislature to obtain funding support for a comprehensive communications system, including medical dispatch, that will meet the current and future needs of all users.**

- **Seek relief from the unfunded mandate of charge backs for use of the state owned communication system.**

G. PUBLIC INFORMATION, EDUCATION AND PREVENTION

Standard

To effectively serve the public, each State must develop and implement an EMS public information and education (PI&E) program. The PI&E 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 PI&E 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 PI&E 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.

Progress on Meeting 1992 Recommendations

- Alaska's EMS System has a strong commitment to Public Information and Education. Since the 1992 NHTSA TAT assessment, progress or success on each of the original recommendations has been made. An Injury Prevention Plan and a Childhood Injury Prevention Plan have been written.

- The statewide trauma registry is actively used as the basis for public awareness efforts on trauma as a leading cause of death in Alaska.

- The EMSC program and a variety of regional/local initiatives have targeted PI&E efforts in schools for children.

Status

The PI&E effort in Alaska is vigorous and visible, in significant part due to the commitment and leadership of the EMS Unit. The quality of the effort to date is commendable and should serve as a model for others. The Alaska Highway Safety Office has been and continues to be a true partner in many of the PI&E initiatives as well as providing support for other important aspects of the EMS program. Also, the Southern Region EMS is a leader in many of the successful PI&E initiatives.

PI&E efforts are supported by a full time staffer at the state level, various part time staff in the regions and a network of local volunteers. The Internet and other electronic media have

supported sharing and communications between these persons.

Planning in the area of PI&E has centered around the Alaska EMS Goals, the Injury Prevention Plan and the Childhood Injury Prevention Plan. The statewide trauma registry has been utilized to identify injury prevention needs and priorities. The EMSC program has been a major contributor to PI&E initiatives.

A number of specific programs have been developed and deployed, some in conjunction with partner agencies. These include, but are not limited to:

The Anchorage Safe Communities Program
The Alaska SAFEKIDS initiative with several regional coalitions
The Kids Don't Float Program
Little Ones in the Dark
PACE
Regional deployment of interactive ambulance robots

Preliminary PI&E efforts are beginning to address the major EMS system issues of funding and volunteer personnel recruitment/retention. Web clips, brochures and videotapes have been produced.

A primary enforcement child safety restraint law is in place. A secondary enforcement adult safety restraint law is in place. There is no helmet legislation. The legal drinking age is 21, but underage drinking is perceived as a significant injury problem.

Recommendations

The State EMS office should:

- **Continue support for the existing PI&E personnel and initiatives currently in place.**
- Continue to build a network of partners to participate with EMS in PI&E initiatives.
- **Once the analysis of volunteer personnel recruitment and retention issues has been completed, develop or refine PI&E products to address the identified issues.**
- Use EMS evaluation system information as it becomes available to identify PI&E needs.
- Evaluate the marketability of Alaska's PI&E programs to other states as a means of recovering a portion of their development costs.

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).

Progress on Meeting 1992 Recommendations

- The EMS Medical Director's Manual was updated in 1996 and nationally recognized standards for medical direction were considered in its development. However, the format is confusing and the roles and responsibilities of the Medical Directors are not clearly articulated.

- Treatment guidelines for specialized areas including trauma care and cold water emergencies have been developed, but comprehensive BLS and ALS treatment protocols on the State level have not been implemented.

- Progress has been made in the development of a job description for off-line State, Regional and Local EMS Medical Directors but clear lines of responsibility, authority and reporting relationships are not defined.

- A statewide standardized run form has been created and electronic data entry is planned. However, system-wide collection of data and appropriate feedback to individual Medical Directors are lacking.

- Appropriate liability protection for EMS medical direction has been analyzed and ensured.

- The State has adopted a minimum scope of practice for all EMS providers. A formal procedure for expanding the scope of practice for individual EMS services or providers does not exist.

Status

Currently in Alaska the medical care system involving the oversight of medical practice as delegated by physicians to non-physicians is required only for Advanced Life Support. The current system requires no oversight for BLS and oversight for ALS is inconsistent from service to service.

The role of the State Medical Director for EMS is defined legislatively but the position is not well defined as to its responsibilities or authority. There are two state co-Medical Directors who function primarily as technical advisors to the EMS Unit.

A comprehensive system of medical direction for all out-of-hospital medical care providers (including BLS) is not in place to evaluate the provision of medical care relating to patient outcomes, appropriateness of training programs and medical direction. Although medical directors should monitor training and on-line medical control, no standardized approach is utilized.

Treatment protocols (off-line) for both adults and pediatric patients have been developed, however, they are not yet in use. On-line medical direction is the exception rather than the rule for all of Alaska increasing the need for comprehensive standing orders system-wide. Similarly a standardized data set, which is essential for continuous quality improvement efforts, has been adopted but is not utilized in a system-wide manner.

Continuous quality improvement efforts are generally left up to the discretion of the local or regional medical director without a standardized approach.

The current physician medical directors are to be commended for their dedicated and largely volunteer efforts.

Recommendations

The State EMS office should:

- Clearly define State, Regional and Local Medical Director's roles, responsibilities and working relationships with clear lines of authority established. Re-evaluation of the technical advisory nature of the State Medical Directors is recommended. Medical Directors should have a demonstrated knowledge and interest in EMS.

- Update the Medical Director's Handbook/Manual to reflect the clearly delineated roles of each level of Medical Director. The Manual should be reorganized for easier reference by physicians pertaining to their responsibilities.

- Implement as soon as possible standardized adult and pediatric treatment protocols and a standardized run form.

- **Analyze the impact and feasibility of a State requirement for medical direction for all**

BLS services.

- Explore funding options for paid medical direction beyond the two State Medical Directors.

- Develop a standardized procedure for expanding the scope of practice for EMS providers. Incorporate a demonstrated need and a risk/benefit analysis to this procedure. Any expanded scope of practice should be monitored closely by the CQI process.

- **Establish formalized CQI program standards to be used by the Regional and State Medical Directors. At a minimum this should include adherence to standardized protocols, training, certification and testing standards, and evaluation of standardized run data, as well as evaluation of triage, delivery and transport of patients. Review activities may be delegated but the final evaluation and recommendations should be physician directed.**

- In addition to the meeting of the Medical Directors at the annual symposium, periodic and regular contact or communication between Medical Directors at all levels is strongly suggested.

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.

Progress on Meeting 1992 Recommendations

- A NHTSA Development of Trauma Systems (DOTS) workshop was completed in 1994.
- Several hospitals, including all potential Level II institutions, have undergone state sponsored ACS/COT consultation visits.
- Statutory authority for Trauma Center certification and Trauma Registry maintenance by
- the EMS Unit is complete.
- The statewide Alaska Trauma Registry continues to enjoy voluntary participation by all Alaska hospitals and the information obtained utilized for EMS policy and prevention activities.
- Trauma triage and management guidelines for EMTs and MIC-Ps have been created.
- An Alaska rehabilitation resources guideline is now available.

Status

There has been remarkable activity in the development of enhanced trauma care since the last visit of the TAT, as evidenced by the progress list above. Statutory authority is available to the EMS unit for the “certification” of Level I-IV trauma hospitals based on ACS/COT criteria. Level I-III certification is based on ACS Verification and Level IV on a certification visit by an in state team. The statutory authority for the statewide trauma registry, which enjoys support of all Alaska hospitals, whose data is being entered in a timely fashion, is being disseminated to all hospitals in a useful fashion, and is being used effectively in planning, policy and prevention decisions. Unfortunately, the statutory authority does not include development of a State Trauma Care Plan or the authority for Trauma System Development.

The Alaska Rehabilitation Guidelines appear to have enhanced rehab development and utilization, with the exclusion of some reimbursement problems, whose resolution will have to await trauma system statutes. Triage and transfer guidelines for trauma patients have been created, and there is activity in the development of transfer agreements with major hospitals, but the extent of use of the guidelines is unclear at this time.

Within Anchorage, there has been a marked increase in trauma care activity, resulting in increased direct transport from rural areas, enhanced training of rural personnel and Anchorage prehospital providers by the hospitals, and categorization of trauma patients in the field. One Anchorage hospital, the Alaska Native Medical Center warrants congratulations for attaining ACS/COT Level II verification (application for State Level II certification is pending). Providence Medical Center is pursuing the same verification. It is unclear as to whether trauma team activation is occurring based on prehospital information, and it appears that severely injured patients are not being triaged to the verified center.

As previously noted, it is apparent in some sectors that there is little understanding of the character and goals of modern trauma system development, particularly the requirement for commitment . As noted in the 1992 assessment there continues to be little evidence of recognition of the importance of commitment to system development on the part of most general surgeons in Anchorage.

As would be expected, triage of severely injured patients to Harborview (Seattle, Washington Level I Trauma Center) from the southeast region is continuing since this is the appropriate destination for these patients due to distance and available trauma expertise at Harborview. There have been some reported conflicts with the Health Care Finance Administration (HCFA) over this referral pattern, which should be addressed by the trauma system plan.

Recommendations

The State EMS office should:

- **Obtain statutory authority to develop and implement a comprehensive trauma system plan as a component of the state EMS plan.**
  - **The plan should be inclusive of all hospitals, critical access hospitals, and clinics.**
  - **Severely injured patients must be triaged and transferred preferentially to the highest level certified hospital.**

- Develop and implement prehospital injury severity criteria in the Anchorage urban area.

- Consider initiating triage of all severely injured patients to the currently Certified Level II hospital.

- **Utilize trauma registry data for ongoing trauma CQI. Focus initially on trauma care outcomes in Anchorage.**

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.

Progress on Meeting 1992 Recommendations

- A plan is currently in place to utilize submission of the NHTSA minimum data set or a standardized run form to be left routinely at the receiving facility. This plan recognizes the diversity of the various regions. The collection and analysis of this data has not yet been implemented system-wide.

- Feedback from regional centers to referral hospitals is currently being provided through the Trauma Registry, a significant accomplishment. This feedback will provide assistance for evaluation and correction of identified problems while allowing for system improvements.

- Once the comprehensive plan is in place for conditions other than trauma, pre-hospital performance can be judged against current standards i.e. effectiveness of airway management or transport and scene times from remote areas.

- Trauma Registry data is being effectively utilized to guide education and to drive appropriate preventive measures.

- The EMS system has been very successful in the pursuit of Section 402 dollars to analyze deaths and injuries related to highways. The combined efforts of EMS and the Alaska State Highway Safety Office are to be commended in this regard.

- Statutory protection of trauma registry/data has been ensured and applicability for other CQI activities is being evaluated.

Status

A comprehensive evaluation or continuous quality improvement program is essential to measure the success and impact of a statewide EMS system. Deficiencies cannot be corrected nor improvements made unless the program is comprehensive in scope. Currently a comprehensive evaluation program does not exist. However, the voluntary Trauma Registry is an example of a major success in data collection and evaluation. Although only the one certified Trauma Center is required to submit data, all hospitals voluntarily participate. Smaller hospitals are given grants to assist in data collection. Comprehensive participation occurs because of the quality of the feedback to the hospitals.

Data collection does not occur for EMS patients other than trauma because a mandatory uniform EMS run form or the NHTSA minimum data set has not yet been implemented.

Medically directed pre-established standards, criteria and outcome parameters have not yet been agreed upon to evaluate resource utilization, scope of services, effectiveness of protocols, and patient outcomes.

Linkages of the trauma registry to data bases outside EMS such as crash reports, FARS, medical examiner reports and hospital discharge data have been established. However, until the EMS data collection system is comprehensive, there is limited value to these linkages. Once these systems are in place, valuable information can be disseminated to out-of-hospital emergency care providers for educational and quality improvement activities.

There is a confidentiality protection by state statute for the Trauma Registry. A request has been made of the Assistant Attorney General for a ruling on other EMS data.

The Annual EMS Survey has been devised and distributed resulting in a return rate of 85%.

Recommendations

The State EMS office should:

- **Implement the uniform EMS run form or the NHTSA minimum data set allowing for measurement of compliance with standards. Host a NHTSA EMS Information System Workshop.**

- **Outline the roles and responsibilities of State, Regional and Local EMS Medical Directors in the design and ongoing evaluation of the CQI process.**

- Build on the success of voluntary reporting achieved with the Trauma Registry in other components of the CQI program by providing meaningful feedback to hospitals and EMS services.

- Include tracks on CQI in future educational symposia.

- Design feedback loops to referral hospitals and EMS providers for education and quality improvement activities.

- Include the assessment of pediatric care by numbers, types of problems, field interventions and ED outcomes in the EMS data collection system. Incorporate the same feedback loop for pediatrics as for adults.

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ORGANIZATIONS/APPOINTMENTS

Director, North Carolina, Office of Emergency Medical Services, 1985-1999.
National Association of State EMS Directors (NASEMSD), Past President.
Executive Committee, various committee chairs, NASEMSD.
National Association of Governor's Highway Safety Representatives, Liaison 1990-1992.
National Association of EMS Physicians, Liaison.
Management Team, EMS Clearinghouse, NASEMSD 1986-1992.
National Association of State EMS Training Coordinators, Past Member Board of Directors.
North Carolina Division, American Trauma Society, Board of Directors.
North Carolina Governor's Task Force on Injury Prevention and Control.
North Carolina Medical Society Disaster and EMS Committee.
North Carolina Medical Society Bioethics Subcommittee, Advisor
ASTM F.30 Committee on Emergency Medical Services.
Initial Coordinating Committee National EMS Alliance (NEMSA), Chairman
Steering Committee EMS Agenda for the Future.
EMS for Children program site visit States of Hawaii, Virgin Islands, Minnesota, Maine, Oregon, and Florida.
DOT/NHTSA, Emergency Medical Services Assessment Program, Technical Assistance Team, Member, States of Louisiana, Arizona, Florida, Idaho, Kansas, Kentucky, New Jersey, Virginia, Vermont and West Virginia.
EMS Reassessement Program, Technical Assistance Team, Member, State of Minnesota.
Board of Directors, National Registry EMTs 1996-1999.
NREMT, EMT, EMPT, Practice Analysis Committee.
National EMSC Advisory Committee, Member.

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- San Diego County Safe Communities
  California Office of Traffic Safety, DOT/ NHTSA
- Partners for Progress, Alcohol Impaired Driving
  DOT/NHTSA

ORGANIZATIONS/APPOINTMENTS

San Diego County

Emergency Medical Care Committee	Drug Summit Partnership
Trauma System Medical Audit Committee	County Fire Chiefs Association
Youth Suicide and Homicide Task Force	Unified Disaster Council
Methamphetamine Task Force	Domestic Violence Fatality Rev.

State of California

Trauma System Regulatory Review
Emergency Medical Services Administrators of California
State and Local Injury Control Network
Region five Medical Disaster Management Committee

National, Department of Transportation

EMS Agenda for the Future Implementation Guide task force
Instructor, Development of Trauma Systems: A State and Community Guide
Instructor, Emergency Medical Services Information Systems
DOT/NHTSA, Emergency Medical Services,Technical Assistance Team, Member, states of Alaska, Colorado, Connecticut, Illinois, New Hampshire, Oklahoma, Pennsylvania and the Territory of Guam.
DOT/ NHTSA, Technical Reassessment Team, Member, state of Colorado

American College of Surgeons, Committee on Trauma, Trauma System Evaluation.

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National Association of State EMS Directors
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Past Member Clearinghouse Management Committee
New England EMS Council
Executive Committee
Fletcher Allen Health Care
Disaster Committee
Vermont Trauma System Development Committee
Co-Chair
EMS Agenda for the Future
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EMS Agenda for the Future International Guide Committee Member
Vermont State Firefighters Association
Essex Rescue, EMT-I Captain
Health Care Finance Administration Negotiated Rule Making, Committee Member
DOT/NHTSA EMS Assessment Program, Technical Assistance Team, Member, States of Delaware, Texas, and North Dakota. EMS Reassessment Program, Member State of Colorado.

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ORGANIZATIONS/APPOINTMENTS

National Association of State EMS Directors (1979-1996)
Past President
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National Association of EMS Physicians, Member
American Medical Association,
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American Trauma Society
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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
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Montana ATLS, National Faculty
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Program Director
American College of Surgeons, Fellow
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
Injury Prevention Conference, 1991 participant
USDOT, NHTSA EMS Program, Technical Assistance Team, Member, States of Alaska, Iowa, Nebraska, Tennessee, Virginia, Indian Health Service, and National Park Service.

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Oklahoma School of Medicine
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American College of Emergency Physicians
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Former Member, Board of Directors, Georgia Chapter
Former Member, Toxicology and Trauma Committees
Board of Directors, Oklahoma Chapter
Chairman, Trauma Committee
Physicians Advisory Board, City of Tulsa
Emergency Physician Chairman
Institutional Ethics Committee, St. Francis Hospital
Chairman
American Trauma Society
Board of Directors
Executive Committee
EMS Advisory Committee to OK State Health Department
Member
NHTSA Technical Assistance Team Member