

STATE OF NEW JERSEY AN ASSESSMENT OF EMERGENCY MEDICAL SERVICES

October 19-21, 1993

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 1 through 44. Each year, nearly 40,000 people lose their lives on our nation's roads, and approximately 60 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 programs that include comprehensive systems of trauma care.

To accomplish this goal, NHTSA has developed a Technical Assistance Team (TAT) approach that permits states to utilize highway safety funds to support the technical evaluation of existing and proposed emergency medical services programs. NHTSA serves as a facilitator by assembling a team of technical experts who have demonstrated expertise in emergency medical services development and implementation. These experts have demonstrated leadership and expertise through involvement in national organizations committed to the improvement of emergency medical services throughout the country. Selection to 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 New Jersey Department of Health, Office of Emergency Medical Services, in concert with the New Jersey Department of Law and Public Safety, Division of Highway Traffic Safety requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical evaluation of the New Jersey Statewide EMS Program. NHTSA developed a format whereby the New Jersey Emergency Medical Services provided comprehensive briefings on the EMS system based on an outline developed by the Technical Assistance Team.

The Technical Assistance Team assembled in South Brunswick, New Jersey on October 19-21, 1993. For the first day and a half, over 45 presenters representing various components of the EMS system in the State of New Jersey provided in-depth briefings on emergency medical services and trauma care in New Jersey. Topics for review and discussion included the following:

General Emergency Medical Services Overview

System Components:

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

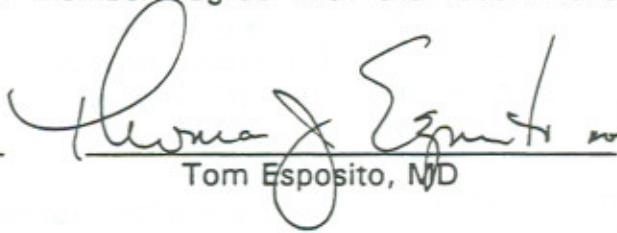
The forum of presentation and discussion allowed the Technical Assistance Team the opportunity to ask questions regarding the emergency medical services system, clarify any issues identified in the briefing materials provided prior to the visit, and develop a clear understanding of how emergency medical services function throughout New Jersey. The team spent considerable time with each presenter so that they could review the status for each topic.

Following the briefings by presenters from New Jersey EMS, public and private sector providers, and members of the medical community, the Technical Assistance Team sequestered to evaluate the current EMS system as presented and to develop a set of recommendations for system improvements.

When reviewing this report, please note the ***bold italics*** represent priority recommendations identified by the Technical Assistance Team.

The statements made in this report are based on the input received. Established standards and the combined experience of the team members were applied to the information gathered. All team members agree with the recommendations as presented.


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ACKNOWLEDGMENTS

The Technical Assistance Team would like to acknowledge the New Jersey Department of Law and Public Safety, Division of Highway Traffic Safety and the New Jersey Department of Health, Office of Emergency Medical Services, for their support in conducting this assessment.

The Team would like to thank all the presenters for being candid and open regarding the status of emergency medical services in New Jersey. Each presenter was responsive to the questions posed by the Technical Assistance Team which aided the reviewers in their evaluation.

Special recognition should be made regarding the extraordinary efforts taken by George Leggett, Chief Administrator, Office of Emergency Medical Services, and his staff, and the briefing participants for their well prepared and forthright presentations. Special appreciation to Deputy Commissioner Paul Langevin for his continued support for EMS and this project. In addition, the team applauds the well organized, comprehensive briefing packages sent to the team members in preparation for the assessment. The team acknowledges the special efforts of Sarah Matthews, and the entire EMS staff in the preparation of that document. Special thanks also to James Arena, Director, William Hayes, Deputy Director, and Nick Geiger, Principal Highway Safety Specialist, New Jersey Department of Law and Public Safety, Division of Highway Traffic Safety; and Claudia Knezek, and Joseph Orth of the Rutgers Center for Government Services for their efforts in the preparation and administrative support of the assessment.

INTRODUCTION

New Jersey is a state rich with cultural backgrounds and geographic diversity. Its EMS history is proud and longstanding. The State EMS Office (OEMS) and the EMS system can take pride in being an early leader in many areas.

There are many strengths in New Jersey's governmental, political, cultural, and EMS systems, which have served as building blocks and the foundation for EMS. However, over time, many of these have become barriers to further improvement and enhancement of the existing program. These double edged characteristics of the sociopolitical and EMS environment include: a strong history of "home rule" and local control; a lack of local or state mandates requiring the provision of EMS in all communities; strong commitment and participation by many volunteers but inconsistent EMS delivery due to their exemption from standards; OEMS' focus on regulatory activities at the expense of system planning and development.

In order to preserve the strong tradition of statewide provision of EMS and carry this program into the future, examination of the mission, philosophy, operation and priorities of the Department of Health and the Office of EMS must occur. The focus of such efforts must be on the quality of patient care rather than on parochial agendas. Emphasis must be given to local flexibility and the creative use of existing resources while maintaining statewide minimum standards that ensure uniform access to optimal and equitable care throughout the state. There is an appropriate role for all members of the current EMS community who must work together in a coordinated approach to building a statewide EMS system.

New Jersey can take pride in having an OEMS staff which is highly dedicated and capable, and who exceed the traditional expectations of public employees. However, they are limited in many areas by the lack of human and fiscal resources. Further, OEMS is not clearly designated in statute as the state lead agency for all aspects of EMS.

It is difficult to cultivate a vision and mission while meeting the overwhelming demands of daily operations and crisis management. However, "failure to plan" will de facto create a "plan to fail". The process of bringing the constituents together and developing a common vision for the future is more important than the planning document that will result. Developing a shared vision will enable the constituents to work with legislative and executive staffs to move the vision toward a new reality. The development of an overall EMS vision needs to encompass an EMS system plan that includes: trauma; communications; quality improvement; a better definition of the roles of OEMS, participant providers and agencies; identification of the fiscal resources needed to bring the vision to reality; and identification of options for obtaining these resources.

The assessment team is confident that, with proper identification, coordination, cooperation and use of existing resources within New Jersey, all citizens and visitors of this beautiful state can share in the benefits of an efficient, effective, coordinated, and quality EMS System.

NEW JERSEY EMERGENCY MEDICAL SERVICES (EMS)

The Technical Assistance Team reviewed ten essential components of an EMS system. For each component reviewed, the Technical Assistance Team identified key EMS issues or standards, assessed the status, and made recommendations for necessary changes.

A. REGULATION AND POLICY

Standard

To provide a quality, effective system of emergency medical care for adults and children, each EMS system must have in place comprehensive enabling legislation with provision for a lead EMS agency, as well as a funding mechanism, regulations, and operational policies and procedures.

Status

The State EMS office (OEMS) can take pride in being one of the oldest state level EMS agencies in the nation. They currently have a highly dedicated and capable staff who go beyond the traditional expectations of public employees. However, they are limited in many areas by a lack of human and fiscal resources. Further, they are not clearly designated in statute as the state lead agency for all aspects of EMS.

Significant areas that currently exist in law and subsequent regulation include the scope and oversight of advanced life support activities, a comprehensive inspection program for licensed services with an exemplary respiratory testing component, a comprehensive EMS for Children program, a state supported helicopter response program, an enhanced 911 system being implemented statewide, movement toward the creation of a coordinated trauma system, and an EMT training act that helps pay for volunteer training. In many of these areas, New Jersey has demonstrated leadership for the rest of the country to emulate. However, New Jersey does not have comprehensive EMS legislation covering all aspects of emergency care. While the state has addressed significant areas, many others require strengthening or are not addressed.

Current EMS legislation and interpretations of it, in some respects, impedes standardization and coordination of EMS delivery. There is no mechanism to assure that the delivery of basic life support is consistent and in compliance with nationally recognized minimum standards. There is no scope of care for a basic EMT outlined in statute. No government entity is required to assure the provision of EMS to their community. Finally, statewide medical leadership is minimal because there is no EMS medical director.

In 1988 the Governor appointed a Council on EMS to evaluate the status of the system and make recommendations on the directions it should take. Nationally recognized experts evaluated the system and made recommendations. While some of the recommendations have been implemented, the vast majority have not. Many in the EMS community look to the report and its 1990 update as the road map that should be taken in the development of their system but, little support has been realized from the state in implementing the recommendations. The reports remain valid documents and can serve as an outline for developing a comprehensive state EMS plan.

The state is to be commended for standardizing the training program for EMT's and emergency medical dispatchers. However, there is concern with the grandfathering of individuals, particularly dispatchers, who may never meet the minimum qualifications now expected.

New Jersey statutes create an EMS Advisory Council and outline its membership and responsibilities. It further identifies subcommittees of the council with responsibility for specific areas of EMS. The Council subcommittees have come into existence and some are actively addressing their specific areas but, the actual council itself has yet to be created. This has had a negative impact on a coordinated, comprehensive process to develop, expand and improve EMS in the state. Currently, multiple committees and special interest EMS constituency groups meet independently and set individual direction without considering the impact they may have on others or the system as a whole. While well intentioned, these groups are addressing their own interest, resulting in a fragmented approach to the development of EMS and its issues. The creation of a well structured statewide EMS Advisory Council can provide a forum for all constituents to meet, share their views and reach a consensus on how best to serve the citizens of the state.

Recommendations

- ◆ *Develop and implement comprehensive EMS legislation for all aspects of EMS delivery including a lead EMS agency, trauma system development, a state EMS medical director, a data reporting system, and equal access to standardized care for all of New Jersey's citizens and visitors;*
- ◆ *Implement recommendations from the 1988 and subsequent 1990 Governor's Council on EMS;*
- ◆ *Develop and implement a prioritized statewide EMS plan with input from all EMS constituents and the public at large;*
- ◆ *Designate a single lead EMS agency to consolidate medical direction,*

E911 activities, emergency medical disaster management, EMS for Children, trauma system development, data collection, licensure and certification, statewide EMS development and medical priority dispatching;

- ◆ *Immediately implement a single statewide EMS Advisory Council which incorporates the many current special interest committees;*
- ◆ Create legislation allowing for the reporting of potential infectious disease exposure, appropriate testing and follow-up for EMS personnel;
- ◆ *Define in statute and regulation the scope of practice of an EMT;*
- ◆ *Ensure and encourage participation of all EMS system constituents, the public and elected government officials in EMS development and management. No effort should be initiated by OEMS without representation and input from all constituents affected by that effort. Constituents should enter such activities in the spirit of cooperation and compromise with the overriding concern of the citizen's best interest;*
- ◆ Complete statewide implementation of the enhanced 911 system as quickly as practical;
- ◆ Establish medical direction for all levels of EMS delivery;
- ◆ Ensure that all who give prearrival instructions (including all those grandfathered), complete the New Jersey EMD training course within a reasonable period of time.
- ◆ Actively communicate with all constituent groups to maintain awareness of office and legislative activities to allow them a more active role in advocating EMS issues.
- ◆ *Consider an alternative, statewide system design. This may provide a more cost-effective, efficient system which optimizes patient care while continuing to allow participation of all segments of the EMS community.*

B. RESOURCE MANAGEMENT

Standard

The provision of centralized coordination to identify and categorize the resources necessary for overall system implementation and operation is essential to an effective EMS system. This is required to maintain a coordinated response and appropriate resource utilization throughout the State. It is essential that adult and pediatric victims of medical or traumatic emergencies have equal access to basic emergency care, including the triage and transport of all victims by appropriately certified personnel (at a minimum, trained to the EMT-Basic level) in a licensed and equipped ambulance to a facility that is appropriately equipped and staffed, and ready to administer to the needs of the patient.

Status

There are significant EMS resources throughout the State, some functioning very efficiently. However, there is a lack of central coordination of all EMS resources and of a clearing house of available resources. There are over 600 volunteer EMS agencies in the State. Invalid coaches, transport ambulances, emergency ambulances, MICU's and helicopters are licensed by OEMS but, volunteer providers and vehicles are exempted from meeting OEMS requirements. Since a large number of ALS transports and over 500,000 BLS transports a year are carried out by exempted providers, there appears to be inconsistent patient care from one area of the state to another and from one provider to another. It was also apparent to the team that an adversarial relationship often exists between the volunteer community and other participants within the EMS community.

There are twenty-two OEMS staff that are highly dedicated but overwhelmed with their current work loads. The OEMS budget is in excess of five million dollars but most of it is specifically earmarked, leaving insufficient funds for general operating expenses. OEMS routinely seeks federal funding sources and has recently been successful in obtaining a federal EMS-C grant and a HRSA trauma systems development grant.

Several areas of the state have developed consortiums to address issues such as air medical activities, trauma systems, MICU medical direction, etc. While some of these efforts are commendable, overall coordination of these activities appears minimal. The OEMS is a participant in the Atlantic EMS Council. There is no State EMS plan or interfacility ALS critical care ground transportation system in place.

Recommendations

- ◆ *OEMS should reexamine and prioritize the use of resources, both personnel and fiscal, within OEMS. A large portion of staff time is focused on regulatory activities, with little opportunity to focus on policy development, consensus building, leadership, and implementation of the State EMS Advisory Council. Consideration should be given to refocusing staff time to address priority areas, particularly to build cooperation among the EMS community within New Jersey and implement the State EMS Advisory Council;*
- ◆ Develop and conduct a statewide needs assessment as an initial step in EMS resource identification;
- ◆ *Develop a system to establish a minimum standard of care for all citizens and visitors to the state regardless of where their illness or injury occurs. The minimum of EMT level care at all times on all transport ambulances would be necessary to be consistent with the national minimum standard. The process to develop this system must include participation and input from all facets of the EMS community, including the volunteers. This should ensure appropriate utilization of all EMS resources within this system.*
- ◆ Develop a mechanism to provide for ALS interfacility ground transport services;
- ◆ *Develop a State EMS Plan addressing areas contained in the Governor's 1990 interim report.*

C. HUMAN RESOURCES AND TRAINING

Standard

EMS personnel can perform their mission only if adequately trained and available in sufficient numbers throughout the State. At a minimum, all transporting prehospital personnel should be trained to the EMT-Basic level. In addition, each prehospital training program should use a standardized curriculum for each level of EMT personnel. In an effective EMS system, training programs are routinely monitored, instructors must meet certain requirements, and the curriculum is standardized throughout the State. In addition, the state agency must provide a comprehensive plan for stable and consistent EMS training programs with effective local and regional support.

Status

Prehospital EMS training in New Jersey involves several different certification levels. OEMS records show there are more than 10,000 active First Responders, 16,000 Emergency Medical Technicians, 500 Emergency Medical Technician-Defibrillation Technicians, 1,100 Paramedics, and 900 EMT-Instructors. With the exception of the EMT-D training course, all training programs use DOT standard curricula.

For training purposes, 38 different training sites for EMT-A training exist. Paramedic training is conducted in two formats: one with didactic/clinical training integrated at a single medical facility; the other having didactic training completed at one of three county colleges followed by completion of clinical experience at one of the 23 MICU clinical sites. Special mention is to be made of the Paramedic training courses in New Jersey which exceed minimum standards as set by DOT.

New Jersey has long participated in the Atlantic EMS Council for the development of BLS and ALS examinations. Once tested, no statistical data is captured from certification examinations nor is feedback provided to instructors or students.

In November 1992, an "EMT-A Training Fund" was signed into law placing a \$0.50 surcharge on all motor vehicle moving violations. These funds are specifically aimed at financing EMT-A and EMT-D initial and refresher training for volunteers. The law also requires that an Advisory Council be formed whose purpose is to advise OEMS in administration of funds as well as several other specific charges mentioned in the law.

EMT-As entering New Jersey from New York and Pennsylvania, along with those holding National Registry credentials, may practice in the state without requesting reciprocity or legal recognition. Those from other states apply to enter the testing process based upon successful completion of a course meeting requirements of the

DOT curriculum. EMT-Paramedics from other jurisdictions who wish to practice in New Jersey must first obtain reciprocity.

The evaluation and monitoring of training program is shared by the Educational and Operations sections within the New Jersey OEMS office. Due to other directed job functions, staff has been unable to perform on-site inspections of either EMT or Paramedic training courses. First Responder courses are monitored infrequently.

To obtain EMT-Instructor credentials, interested certified EMTs must perform internships under other EMT Instructors who are course coordinators. With recommendation of the course coordinator, the EMT must then participate in an Instructor trainer course sponsored by OEMS. Recertification of Instructor credentials involves the teaching of a specified number of hours and completion of continuing education credits. No evaluation is performed post certification to assure quality of instructional abilities.

Emergency vehicle operators are not required to complete standardized training courses in emergency driving techniques.

A major source of training exists within the 33 hospital based MICU programs statewide. Representatives from the New Jersey Hospital Association reported local community hospital involvement in the form of CPR and the provision of speaker bureaus. Community outreach programs are also in place. The sole source of DOT First Responder training are the state approved police academies. OEMS and the American Red Cross are currently in the process of implementing its 44 hour "Emergency Responder" program.

Other available courses of training to New Jersey providers include ATLS, PHTLS, BTLS, PALS, APLS and several specialty programs (e.g., Trauma Nurse Core Course, Farmedic, HazMat courses, and short continuing education courses). The EMSC program within the OEMS office is preparing special training programs for field providers both at the ALS and BLS levels. These programs are scheduled for release in early 1994.

EMT-As and Paramedics are recertified through the use of an innovative continuing education program overseen by OEMS staff. New Jersey does not require a state written or practical examination for recertification.

Recommendations

- ◆ *Review policies and procedures for the certification of EMT Instructors to include:*
 - *development of prerequisites which involve standardized evaluation of both cognitive and psychomotor skills;*
 - *development and adoption of a standardized training curriculum;*
 - *recertification criteria which include periodic monitoring by OEMS staff, attendance at periodic seminars that focus on statewide objectives presented by OEMS staff, and final evaluation;*
 - *periodic presentations of publicized Instructor trainer programs;*
- ◆ *Perform on-site monitoring of instructional programs including initial, recertification, and CEU presentations;*
- ◆ Courses used for certification or recertification of individuals will only be those approved by the OEMS;
- ◆ *Develop and implement "EMT Training Fund" guidelines;*
- ◆ Provide for the training of operators of emergency vehicles;
- ◆ Analyze and employ data obtained from certification examinations, and implement procedures to provide written feedback to all tested individuals and instructors.
- ◆ Catalog and disseminate educational course offerings and resources available to all EMS providers.

D. TRANSPORTATION

Standard

Safe, reliable ambulance transportation is a critical component of an effective EMS system. Most patients can be effectively transported in a ground ambulance staffed by qualified emergency medical personnel. Other patients with more serious injuries or illnesses, particularly in remote areas, require rapid transportation provided by rotor craft or fixed wing air medical services. Routine, standardized methods for inspection and licensing of all emergency medical transport services is essential to maintain a constant state of readiness throughout the State.

Status

New Jersey is 7,836 square miles in area. The state is surrounded by natural waterways to the east, west and south with a series of mountain ranges 800-1,300 feet high running from northeast to southwest. New Jersey's population is concentrated in a corridor running from New York City to Philadelphia leading to heavy congestion and delays on area arteries. Highway usage is rated among the highest in the country with 4,300 vehicles per mile. All these factors tend to influence the transportation of injured within the state.

Ambulance transportation is made available in the state by four levels(classifications) of vehicles as specified in regulations. These four include the Invalid Coach, Transport, Emergency, and Helicopter. OEMS reports that Transport Vehicles are being phased out. Currently, there are no regulations governing fixed wing aircraft that operate in the state.

The Health Care Facilities Planning Act (N.J.S.A. 26:2H-1) and the "Manual of Standards for Licensure of Invalid Coach and Ambulance Services (N.J.A.C. 8:40-1.1) regulate all non-volunteer basic life support ambulance services including municipal agencies, commercial companies, hospitals and other health care facilities. In addition, N.J.A.C. 8:40 regulates the operation of helicopter air medical services.

The majority of prehospital vehicles (reported to number between 1,200 and 2,000) are operated by volunteer services. Vehicles operated by volunteer squads, as defined in New Jersey Highway Safety Act (N.J.S.A. 27:5F-18), are exempt from regulation and are therefore unlicensed within the state. OEMS records report a total of 1096 licensed vehicles, 72 of which are hospital based. The number of emergency vehicles within the state (based upon numbers provided) was calculated to be 1 vehicle per every 3.6 square miles.

Initial application for agency licensing and vehicle inspections are reported by OEMS staff to take between 3 and 6 months to process. Inspection of vehicles takes place

upon initial application for license and are reinspected every two to three years. OEMS staff report that this reinspection often fails to take place due to unavailable staff. Random, unannounced spot checks of vehicles also occur.

In New Jersey, only hospital based programs provide advanced life support care.

A representative from the Medical Transport Association of New Jersey reports that both municipal and commercial agencies are faced with reimbursement rates for medicare and medicaid far below minimum needed levels to meet the cost of service. Also of major concern is the inability to efficiently move ALS patients from one facility to another due to existing regulations. This creates problems for hospital staff who must send trained personnel with BLS ground units in order to accomplish these transports. In many cases helicopters are used due to a lack of ground transport resources.

A highlight of the state's transportation system are the two helicopter air medical services operated by West Jersey Health System in Voorhes, and University Hospital in Newark. This system is operated under health services grants from the Department of Health. The State Police provide the helicopters, pilots and maintenance while sponsoring hospitals provide medical crews.

Recommendations

- ◆ *Establish the capability to provide ground advanced life support inter-facility transports statewide;*
- ◆ *Develop an alternative statewide ground transport system design that allows all current services an appropriate role in the system;*
- ◆ *Restructure the ambulance inspection process to more efficiently utilize available OEMS staff;*
- ◆ Establish minimum regulations for fixed wing aircraft;
- ◆ Establish a minimum standard of care through the licensing of all prehospital EMS vehicles.
- ◆ *Investigate a more efficient and timely licensure process.*

E. FACILITIES

Standard

It is imperative that the seriously ill patient be delivered in a timely manner to the closest appropriate facility. This determination needs to consider both stabilization and definitive care. This determination should be free of political considerations and requires that the capabilities of the facilities are clearly understood by prehospital personnel. Hospital resource capabilities must be known in advance so that appropriate primary and secondary transport decisions can be made.

Status

There are 95 acute care facilities, 10 special facilities (e.g. ambulatory care facilities) and 12 rehabilitation facilities. A list of licensed facilities included in the background materials includes only 58 licensed hospitals, including general, special and comprehensive rehabilitation hospitals. Since the level of care provided by each facility is identified and approved only through the certificate of need (CON) process, the level of care and resources at 37 facilities may not be known. Monitoring of the operation of these facilities is the responsibility of the Division of Health Facilities Evaluation and Licensing, with the exception of the trauma center component, which is the responsibility of OEMS. It is unclear whether unlicensed facilities are currently receiving trauma or other emergency patients and which agency is responsible for tracking the volume and appropriateness of emergency care rendered at these facilities.

Eight of 95 acute care hospitals are trauma centers. A designation process exists which employs American College of Surgeons (ACS) verification. All eight designated centers have been initially verified. Several, but not all, have been re-verified. Information provided to the Assessment Team and CON legislation for trauma center designation convey that trauma centers are re-evaluated at scheduled intervals. The mechanism and process by which this occurs is not stated. The CON legislation mandates evaluation for compliance, including minimum volume, no later than 24 months after initial designation. No data were presented to confirm that OEMS is carrying out this function. Some information presented suggest minimum volume requirements are not being met at some centers.

There is currently no provision of standards for initial management and timely transfer of appropriate patients to definitive care facilities. This is most notable for trauma patients and injured, as well as non-injured, children.

Prehospital triage criteria are merely guidelines and are variably adhered to by prehospital providers throughout the state. There is no mechanism to track the rate of compliance or its impact on patient outcome. The practice of hospital diversion

exists and, while published guidelines have improved this situation, it is reported that problems remain in some areas.

Likewise, interfacility transfer agreements exist and are more formalized. While generally perceived to have a greater compliance rate variability also may occur here. No mechanism of monitoring and evaluation exists statewide.

Thirty three of 95 acute care hospitals sponsor MICU programs and 42 hospitals provide medical command. The fact that some medical command hospitals are not trauma centers reportedly results in some degree of mistriage of trauma patients, the magnitude of which is not known.

There is a poison center within the state which is well funded and performing in an exemplary fashion.

There are no state designated burn centers in New Jersey. One acute care hospital has been identified as having a burn "unit" which is specifically noted not to comprise a burn center. A number of patients are transferred to this facility for definitive burn care. Specialized burn care services are reportedly being provided at other hospitals in the state. However, the nature and volume of these services is not known. Many local hospitals are reported to have the capability to treat "minor and moderate" burns. A definition of minor and moderate burns, as well as the resources necessary to treat them, are not articulated in the trauma system draft plan or elsewhere in the supporting documentation. Burn center acute care in surrounding states is utilized.

A National Institute of Disability and Rehabilitation Research (NIDRR) funded model system of spinal cord injury care exists in New Jersey operating out of Kessler Hospital. Acute treatment occurs for varying periods of time at other facilities, many of which are trauma centers as best as is known. A standard protocol for transfer into this model system does not exist. There is also discrepancy between UB82 data and the Spinal Cord Injury (SCI) registry data kept by Kessler highlighting a potential problem in identifying and tracking SCI patients in the state. Information captured by the SCI registry is minimal and not linked to any acute care trauma registries at this time.

Treatment of traumatic brain injury (TBI) varies according to the severity and type of injury. All designated trauma centers are reported to be capable of caring for head injured patients. However, data to support this on a statewide basis were not presented. The severity and volume of head injured patients not treated at trauma centers is not known. Standards and outcome of acute and follow up care for patients with mild TBI treated throughout the state are also not known.

The Eastern Traumatic Brain Injury Network links resources in New York, New Jersey, and Connecticut with each other and with a vocational rehabilitation agency in each

state and Puerto Rico. Facilities in New Jersey which are members of this network and uniform methods of access to this network are not documented or addressed in the draft state trauma system plan.

Perinatal services are provided at 70 facilities which participate in eight maternal and child health consortia. There are three facilities designated as pediatric acute care childrens hospitals. These are Children's Hospital of New Jersey, Robert Wood Johnson University Hospital/St. Peter's Hospital Center and Cooper Hospital. The EMSC program has taken a leadership role in coordinating and standardizing pediatric emergency care.

Emergency departments are staffed by a combination of Emergency Medicine trained and board certified physicians as well as physicians from other specialties who do primary emergency department (ED) care. No data was presented to document the number of and specialty of ED physicians. Recently, regulations have been upgraded to require successful ACLS and ATLS training of all ED staff physicians within 12 months of assignment. Those board certified in Emergency Medicine are exempt. There is no mention of the need for recertification or the need to keep these certifications current. There are no corresponding requirements for nurses or other personnel except that one RN in the ED must have ACLS certification.

There is an overwhelming need to have hospital and ED capabilities known to prehospital providers and to the public. The state hospital association has apparently been included in, and is a facilitator in, other similar initiatives and should be integrally involved in these efforts.

There are two organ transplant agencies: one based in New Jersey and the other in Philadelphia. Referral patterns have been established. Problems with the organ procurement programs were not expressed.

Inpatient rehabilitation facilities have not been fully categorized for services and have not been integrated into the EMS and trauma system. Outpatient rehabilitation facilities have not been inventoried. Triage and treatment predicated on pre-existing assurance of reimbursement are serious problems which have been identified as impacting patient care and system performance which must be addressed.

Recommendations

- ◆ Define the role and responsibilities of ambulatory care facilities in the trauma and EMS system;
- ◆ *Establish a minimum level of trauma education for ED nursing and ancillary staff;*

- ◆ *Define and standardize specialty facility (e.g. burns, pediatric, SCI, , cardiac, etc.) triage and transfer protocols for prehospital and hospital personnel;*
- ◆ Define the process, schedule and then commence reevaluation and re-designation of trauma centers.

F. COMMUNICATIONS

Standard

An effective communications subsystem is an essential component of an overall EMS system. Beginning with the universal system access number, the communications network should provide for prioritized dispatch, dispatch to ambulance communication, ambulance to ambulance, ambulance to hospital, and hospital to hospital communications to ensure adequate EMS system response and coordination.

Status

Legislation has been enacted to implement E911 statewide. Currently, 14 of 21 counties have implemented E911 and all counties are scheduled to have E911 by June 1994. The Department of Law and Public Safety, Office of Emergency Telecommunications Services (OETS) is charged with the implementation of E911 and the state is providing funding for the system. The legislation requires TDDs in every PSAP.

There is a state EMS Communications Plan. However, it was last updated in 1981. The plan specifies frequencies for various types of communications and requires that all MICUs have UHF, telemetry and VHF capabilities. BLS licensed ambulances are required to have VHF radio capabilities. Cellular phones are used in some areas for back up communications. There is central dispatch in some areas of the state but not all. "Home rule" has been an impediment to the expansion of central dispatch in some areas. The APCO EMD program has been modified to 24 hours for the state of New Jersey and EMD certification is required for all PSAP personnel. However, there is a grandfather clause (based on previous experience) for current dispatchers. Certification of Emergency Medical Dispatchers is a function of the Office of Emergency Telecommunications Services. Minimal audits of EMD activity are currently being done.

According to testimony received by the Technical Assistance Team, radio interference from other states and local communications systems is the greatest problem facing EMS communications in New Jersey.

Recommendations

- ◆ Update the EMS Communications Plan to include current issues and technologies such as 800 MHZ, Emergency Medical Radio Service (EMRS), FCC refarming, etc;
- ◆ Investigate the use of new technology and redistribution of frequencies to reduce radio interference;
- ◆ Designate a lead person in OEMS to coordinate EMS communications activities with the Office of Emergency Telecommunications Services;
- ◆ ***Complete the statewide implementation of E911 system;***
- ◆ Investigate creation of additional central, coordinating dispatch centers throughout other areas of the state;
- ◆ Petition the FCC to require global positioning capabilities for personal communications systems (PCS) to ensure future effectiveness of E911.

G. PUBLIC INFORMATION AND EDUCATION

Standard

Public awareness and education about the EMS system is essential to a quality system and is often neglected. Public information and education efforts must serve to enhance the public's role in the system, its ability to access the system, and the prevention of injuries. In many areas, EMS personnel provide system access information and present injury prevention programs which ultimately lead to better utilization of EMS resources and improved patient outcome.

Status

Although PI&E activities are inconsistent and fragmented, OEMS staff and members of the EMS community are providing some positive PI&E products for the citizens of New Jersey on a limited basis. Of particular note are the activities of the EMS for Children program which has the financial resources to positively impact the well being of New Jersey's children.

There are spotty PI&E "islands of excellence" at the local and state level. Some examples include trauma centers conducting PI&E in primary prevention and the Injury and Emergency Care Chapter of the draft State Health Plan which is an exemplary document.

For the most part, PI&E is not considered a priority within OEMS or in the EMS community at large. No individual in OEMS is dedicated to accomplishing PI&E goals although there is expertise in the office. There are limited funds and resources available for OEMS to conduct PI&E programs. No evidence presented discussed PI&E activities at the local level.

OEMS has limited methods of communicating on a regular basis with its licensed services and certified personnel. Frequently, members of the EMS community encounter OEMS staff in their regulatory role.

Recommendations

- ◆ *Allow OEMS staff to attend annual EMS constituency group meetings and other opportunities (such as the League of Municipalities meeting) where they can advocate or serve to coordinate EMS issues;*
- ◆ *Establish a quarterly newsletter for all services and certified personnel;*
- ◆ *Both OEMS and individual EMS providers should dedicate personnel and financial resources to PI&E activities;*
- ◆ *OEMS should regularly communicate with constituency groups which can advocate EMS issues;*
- ◆ *Develop and implement a statewide PI&E plan;*
- ◆ *Investigate alternative funding and resources to conduct PI&E activities;*
- ◆ *Establish PI&E as a priority. Time and resources spent on PI&E activities can yield even greater resources to accomplish other EMS goals;*
- ◆ *PI&E activities should be used to educate public officials;*
- ◆ *Utilize other states, agencies and organizations as PI&E resources in developing New Jersey's own program.*

H. MEDICAL DIRECTION

Standard

EMS is a medical care system that includes 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, it is the physician's obligation to be involved in all aspects of the patient care system.

Specific areas of involvement include the following:

- planning and protocols
- on-line medical direction and consultation
- audit and evaluation of patient care.

Status

Medical direction in New Jersey is structured primarily around local medical direction activities for ALS level care. Off-line medical direction at the state level is provided by the Commissioner of Health who, by law, is a physician; there is no State EMS Medical Director. In some cases, the Chairman of the State MICU Advisory Committee serves in the capacity of an Emergency Medicine consultant to the Office of EMS. This activity is potentially outside the scope of responsibility of that committee and the chairman.

Medical direction in New Jersey is required, by law, for EMT-D and ALS programs; there is no requirement for medical direction for other areas of prehospital care, specifically Basic Life Support or Emergency Medical Dispatch programs. The qualifications of medical directors of MICUs and EMT-D programs are defined in legislation as are very general roles and responsibilities of those medical directors. In addition to regular run review activities, the medical directors are responsible for certifying the clinical care capabilities of the paramedics functioning with the MICU.

Concurrent medical direction focuses strongly on on-line radio interaction between MICU personnel and base physicians. Requirements of base station physicians providing that on-line direction are also defined in legislation. However, other than requirements of either Board certification in Emergency Medicine or training in ACLS and ATLS, consistent training for base station physicians does not currently exist. Base station training is available through a course offered by a physician within the state. The capability of telemetric transmission of ECG rhythm strips is available throughout the state. Although some acknowledged concern regarding the quality of such transmissions, the need to maintain such capability was expressed during testimony. ALS protocols contain limited standing orders allowing for minimal patient care activities prior to the initiation of base station contact. Consideration is being given to incorporating additional ALS standing orders for the stabilization of

immediately life-threatening conditions prior to base station contact. BLS protocols have been developed and approved as guidelines; implementation is expected in early 1994.

Quality assurance activities are required for only EMT-D and MICU programs. As there is no medical direction for BLS agencies or EMD programs, there is no requirement for quality improvement activities for those levels of service. Testimony was presented of situations in which BLS transporting agencies would ignore or potentially override directions of MICU personnel or on-line medical direction regarding care or destination directions for critical patients. Medical direction must have final authority over those patient care issues.

Liability coverage for medical direction is generally considered to fall within the context of the medical director's clinical practice responsibilities. There is no evidence of legislative support for limited immunity for those providing medical direction for prehospital providers. Compensation for medical directors also appears to be related to the physician's clinical emergency department activities, although some physicians do receive some administrative compensation.

Physician involvement in EMS activities at the local level was strongly supported by New Jersey Chapter of the American College of Emergency Physicians. Some areas of the state hold regular meetings of MICU Medical Directors in the region. Additionally, there appears to be outstanding physician involvement in the development of the EMS-C initiative in the State. New Jersey ACEP, ACS-COT and AAP are all valuable potential resources to the EMS community.

Recommendations

- ◆ *All levels of EMS activities (e.g. BLS, ALS, EMD, etc.) should fall under the umbrella of medical direction. It is the responsibility of the medical director, working cooperatively with EMS personnel and agencies, to establish the policies, procedures and protocols under which all levels of prehospital personnel function. This level of medical direction will ensure consistency in the quality of care provided to the citizens of New Jersey while maintaining the unique character of the EMS system in the state;*
- ◆ *Establish a position of State EMS Medical Director to provide direct medical input and direction to the Office of EMS;*
- ◆ Implement the BLS protocols to define the standard of care at the BLS level;
- ◆ Clarify the roles and responsibilities of BLS providers in the medical care

and patient transport decision making process;

- ◆ Implement base station physician training programs for all physicians providing on-line medical direction. Quality improvement programs for on-line medical direction activities should be developed and initiated;
- ◆ *Continue with the development and implementation of additional standing orders for ALS care in life-threatening emergencies. Re-evaluate the requirement for telemetry transmission for MICU programs;*
- ◆ *Develop and implement quality improvement activities for BLS and EMD programs;*
- ◆ Consider the implementation of limited immunity legislation for prehospital EMS personnel and those providing on-line and off-line medical direction;
- ◆ Investigate ways to ensure appropriate compensation of 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. Enabling legislation should exist for the development of the trauma system component of the EMS system. This should include Trauma Center designation (using ACS-COT, APSA-COT and other national standards as guidelines), triage and transfer guidelines for trauma patients, data collection and trauma registry definitions and mechanisms, mandatory autopsies, systems management, and quality assurance for the systems effect on trauma patients. Rehabilitation is an essential component of any statewide trauma system.

Status

Currently, an organized, integrated trauma system which deliver optimal care consistently throughout the state and across the continuum of trauma care does not exist in New Jersey. This is due, in part, to features of the state EMS system which are not conducive to supporting a trauma system which meets the optimal standard. Most notably, there is no state EMS plan which incorporates a trauma system plan. An Injuries and Emergency Care Chapter is contained within the draft State Health Plan. This is an excellent document which contains a voluminous amount of pertinent information, identifies current shortcomings and makes recommendations. It is an exemplary white paper. However, there is no concrete delineation of action steps or time tables which will lead to the implementation and actualization of recommendations.

Likewise, a draft state trauma system plan has been developed along the lines of the National Model Trauma Care System plan. This is more of an assessment of current care and recommendations for potential improvement. It was not formulated in conjunction with all participant agencies, including OEMS. It does not represent a working document which provides a blueprint for each system component, how the components should be integrated and ultimately how the system is intended to function. Furthermore, there is no firm timetable for implementation of a state trauma system plan.

Legislative language pertaining to various components of an EMS and Trauma System is divided among a number of different statutes and/or regulations. There is no comprehensive trauma system legislation. Hence, there has been piecemeal enactment of the trauma system. There are plans for such a comprehensive legislative initiative, but these await convocation of the EMS Advisory Council. The issues of uncompensated care and dedicated funding for system and lead agency operations are also potential considerations in this legislation.

The OEMS is not currently able to fully assume its role as lead agency for the trauma system. This is due to lack of enabling and truly empowering legislation, lack of adequate resources and the resolve to allocate existing resources to trauma system development as a priority issue.

A process of trauma center designation exists in statute and in practice. Currently, there are three Level I trauma centers and five Level II centers which appear to cover the entire state. Designation is based on verification by the American College of Surgeons. While any hospital is free to seek verification by the ACS at any level, OEMS is not obligated to designate such hospitals. Presently, there is a moratorium on designation of any further trauma centers pending information on current system operation and patient care.

Non-designated hospitals continue to receive and treat trauma patients, a significant number of which have been identified as meriting care at a trauma center. Currently, no mechanism exists for consistent monitoring of this under triage and its ultimate affect on patient outcome. A working model of a more inclusive system which incorporates non-trauma centers apparently exists in the Central New Jersey Trauma Network. The intent is perceived as moving toward an inclusive, rather than exclusive, system statewide. However, this is not clearly articulated in the draft trauma system plan. Level III and IV designations are not currently anticipated.

Triage and transfer guidelines have been formulated and promulgated. However, these are inconsistently adhered to by both ALS and BLS providers. Furthermore, there is no consistent and effective mechanism for monitoring non-compliance with prehospital triage guidelines. There is grave concern regarding the unregulated nature of some segments prehospital transport agencies and continued interpretation of legislation with a "home rule" bias. This has resulted in a dearth of information on prehospital patient care and the inability to assess over and under triage as well as the effectiveness of individual triage criteria. This has a significant negative impact on the ability to optimize patient care and allocate resources appropriately.

Air medical services are available statewide. Although criteria for initiating air medical scene response are not well defined, the impression seems to be that over and under utilization of services has not been a major issue. Data to support this impression, however, were not readily available. Over utilization of air medical resources for interfacility critical care transports for cases where ground transport may be more feasible and cost effective, is a major concern.

Significant numbers of seriously injured patients continue to be transported to non-trauma centers. There are plans to revise emergency department regulations. These revisions will create a classification of "trauma qualified emergency departments". This will be voluntary rather than mandated. Other than mention of following ED criteria for transfer of "severely injured patients " to a trauma center, no criteria or

protocols for initial resuscitation, evaluation and treatment are mentioned in supporting documentation. Apparently, information will not be sought on patients who are not transferred. This concept is seemingly promulgated in lieu of the Level III and IV trauma center concept. The trauma system draft plan does not contain mention of standards for such facilities, a verification process, or an estimate as to the number of such ED's which are necessary and/or anticipated. There is also no sense of hospital association knowledge or endorsement of such plans.

Acute care interfacility transfers to trauma centers are currently initiated by physicians at local hospitals. Although, a great number of these physicians are reportedly ATLS trained, there is no sense that identification of patients requiring transfer occurs consistently in a standardized fashion or that the appropriate hospital is contacted to accept the transfer. Ground transport of critically ill patients requires use of local voluntary or proprietary ambulance services in conjunction with the transferring hospitals' specialty staff. This contributes to variation in transport care and is of great concern. OEMS reportedly intends to develop guidelines for interhospital transfer. However, these are not mentioned in an EMS or trauma system plan.

Transfer from acute trauma center care to rehabilitation facilities are governed by written transfer agreements. It is not clear that these transfer agreements are based on an appropriate match of patient needs and rehabilitation facility services available. These may be based on geographic patterns, customary affiliations or financial issues. The financial aspect is a serious one which has been recognized, but not yet addressed.

Trauma data collection exists through a number of mechanisms including individual and network trauma registries, UB-82 data and highway traffic safety records. The medical examiners office has only recently permitted release of autopsy records to Level I trauma centers but not Level II's. Institution of a statewide trauma registry to be developed and operated by OEMS has been identified as a priority initiative. 1.5 FTE's have been dedicated to this project through grant funding. Support for these positions beyond the grant period is not clear and puts state trauma registry development and implementation in a precarious position.

A mission statement, data elements, proposed nature, frequency and distribution of standard and ad hoc reports have not been articulated in supporting documentation or the trauma system plan. Data from the ME's office and prehospital providers continues to be difficult to obtain. A state registry QA program to assure accuracy and completeness of data has not been formulated. Likewise, a statewide trauma system CQI/TQM program potentially involving a medical audit committee has been addressed only by mentioning the lack of such programs.

Integration of trauma within the EMS system and other services has occurred on a limited basis. There is a strong EMSC program in the state. However, there is concern

that this is developing separately and in isolation from the adult EMS and trauma system. There are many prevention resources available throughout the state sponsored by various organizations and individual trauma centers. There is apparently no central clearinghouse or networking program for these activities. This may lead to redundancy and "reinventing the wheel" by many community organizations as well as OEMS.

The visibility of the OEMS and the importance of its work in injury control may not be clear to the public or the legislature. A coordinated PI&E program within the department does not currently exist due to lack of staff and funds, yet it may be the most important initiative to obtain such resources. A strategy for building advocacy among trauma system constituents, utilization of their resources and a change in focus of OEMS away from regulator to facilitator do not seem to exist.

Recommendations

- ◆ *Institute a statewide EMS plan which incorporates a similarly definitive trauma system plan;*
- ◆ *Prioritize all recommendations of the 1990 Governor's Interim Committee report enacting time tables and specific actions to bring these to fruition;*
- ◆ *Convene the recommended EMS Advisory Council immediately;*
- ◆ Facilitate appointment of recommended subcommittees and charge them with recommended assignments;
- ◆ Charge the legislative subcommittee with the task of reviewing, consolidating and drafting any appropriate new EMS and trauma legislation in an attempt to organize and centralize legislation and authority for EMS and trauma issues;
- ◆ Develop an action plan for introduction and passage of comprehensive EMS/trauma system enabling legislation;
- ◆ Consider trauma system development efforts from other states as potential models (e.g. legislation, triage protocols, modified ACS standards, etc) which will meet the unique needs of New Jersey and its EMS resources while avoiding redundant efforts at system development and implementation;
- ◆ Encourage the prehospital data set concept to include both trauma and non-trauma related EMS elements;

- ◆ *Develop clearly defined roles and responsibilities agreed upon by consensus and taking into account available resources, capabilities and commitment for nondesignated hospitals;*
- ◆ Conduct an inventory of rehabilitation resources within New Jersey and surrounding states as a basis for developing standard acute care/rehabilitation transfer protocols;
- ◆ Formulate a mechanism which will standardize critical care interfacility transfer via ground ambulance;
- ◆ Collaborate with all concerned trauma care system contributors to formulate a mutually agreeable mechanism for consistent prehospital data collection and submission and compliance with prehospital triage guidelines;
- ◆ Formulate and operationalize a mission statement for OEMS as the lead trauma system and EMS agency.

J. EVALUATION

Standard

A comprehensive evaluation program is needed to effectively plan and implement a statewide EMS system. Each EMS system must be responsible for evaluating the effectiveness of services provided adult and pediatric victims of medical or trauma related emergencies. The statewide EMS system should be able to state definitively what impact has been made on the patients served by the system. EMS system managers must be able to evaluate resource utilization, scope of service, patient outcome, and the effectiveness of operational policies, procedures, and protocols. An effective EMS system evaluates itself against pre-established standards and objectives, so that improvements in service, particularly direct patient care, can occur. These requirements are part of an ongoing quality assurance (QA) system to review system performance. The evaluation process should be educational and ongoing. QA reviews should occur at all phases of EMS system management, so that needed policy changes or treatment protocol revisions can be made.

Status

Members of OEMS staff acknowledge that the evaluation components of the system are fragmented and limited. Current evaluation activities include the collection and transmission of minimal data collected to OEMS (on a monthly basis) by MICU, EMT-D and air medical programs. Local MICU medical directors conduct routine audits of 10% of the MICU runs. Some programs have established additional audit programs. OEMS conducts annual inspections of MICU programs, including vehicle and equipment compliance and patient care audits (e.g. protocol compliance for cardiac arrests, multiple trauma and medical emergencies); these inspections use a physician consultant for evaluation of the patient care aspects of the program. It was noted that the respiratory equipment component of the inspection process has been used as a model for other states.

There is no requirement or mechanism for collection or reporting of data to OEMS from BLS agencies. Spot inspections and audits of licensed BLS agencies can occur; most audits, however, are complaint-based. Some licensed BLS agencies have voluntarily established their own QA programs.

There is no minimum data set established for collection of common data elements at the BLS level. The only data collected on monthly reports from other agencies relates to demographic information. There is no patient care information database. Response time standards have not been established in the state nor is there any attempt to collect and evaluate response times at either the BLS or ALS level. Additionally, there does not appear to be any integration of the information which is available among the various providers caring for a particular patient. Several individuals testified about

extreme difficulty obtaining follow-up information from Medical Examiner offices. Hospital quality improvement activities (and, therefore, MICU quality improvement activities) seem protected from external discovery. As there are no requirements for QA at other levels, it is unclear if those activities (when they exist) would be similarly protected.

Recommendations

- ◆ *Establish and capture minimum data elements and items for all prehospital patient encounters;*
- ◆ Inventory and integrate these data elements and items at all levels of the EMS System;
- ◆ *Develop and implement a Continuous Quality Improvement plan at state and local levels to include the identification and evaluation of standards which currently exist and the development of patient care indicators which may be needed;*
- ◆ Develop mechanisms to obtain needed follow-up information from the Medical Examiner's offices;
- ◆ *Investigate mechanisms to ensure the confidentiality of quality assurance and quality improvement activities at all levels;*
- ◆ Investigate mechanisms to ensure linkage of information contained in all registries which contain information regarding patients cared for by the EMS system.
- ◆ Ensure financial and other resource support for continued development and implementation of a state trauma registry.

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Liaison
National Association of EMS Physicians, Liaison
Management Team, EMS Clearinghouse, NASEMSD
National Association of State EMS Training Coordinators
Past Member Board of Directors
National EMS Alliance
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North Carolina Division, American Trauma Society
Board of Directors
Governor's Task Force on Injury Prevention and Control
North Carolina Medical Society Disaster and EMS Committee
North Carolina Medical Society Bioethics Subcommittee
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Past Director, Emergency Medical Services
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EMS Committee
Federal Interagency Committee on EMS
Past Chairman, Provider Subcommittee
National Rural Health Association
EMS Task Force
National Registry of Emergency Medical Technicians
Board of Directors
Standards and Exam Committee
Journal of Wilderness Medicine
Editorial Review Board
Aeromedical Research Foundation
Board of Directors, Ex-Officio
National Blueprint for EMS Education and Practice
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Critical Illness and Trauma Foundation,
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Prehospital Trauma Life Support Course (PHTLS)
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National Board of Medical Examiners
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American Association for the Surgery of Trauma
American Trauma Society
Pan American Trauma Society
Society of Critical Care Medicine
State of Washington Trauma Advisory Committee
The University of Washington Harkins Surgical Society
National Association of EMS Physicians
American Public Health Association
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ORGANIZATIONS/APPOINTMENTS

National Council of State EMS Training Coordinators

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Vice Chairperson, 1991-1993

Treasurer, 1990

Liaison, American Red Cross

Staff, Skill and Knowledge Retention Project

Staff, Equivalency/Reciprocity Committee

Virginia EMS Instructor Trainer

Staff, EMS Hazardous Materials Training Course

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Representative to the Commission on Accreditation of Air Ambulance Services
EMS Management Academy
Board Member since 1990
Commission on Accreditation of Ambulance Services
Board Member 1991-1993
Commission on Accreditation of Air Ambulance Services
Board Member since 1991
ASTM F.30 Committee on Emergency Medical Services
Member since 1991
Congressional Fire Services Institute
State Liaison
Tallahassee Memorial Regional Medical Center
Former Director of Emergency Services
Tallahassee Community College Paramedic Program
Advisory Board Member
Emergency Magazine Editorial Board
National EMS Alliance
Organizing Member
NHTSA Public Information, Education and Relations (PIER) Project
Contributing Author
Model Uniform Fixed Wing Air Ambulance Regulation Project
Coordinating Author
Florida Fire Chief's Association
Voting Member
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