

STATE OF MICHIGAN

**A REASSESSMENT
OF
EMERGENCY MEDICAL
SERVICES**

May 15-17, 2007

National Highway Traffic
Safety Administration
Technical Assistance Team

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TABLE OF CONTENTS

Subject	Page
BACKGROUND.....	4
ACKNOWLEDGMENTS.....	7
INTRODUCTION.....	8
MICHIGAN EMERGENCY MEDICAL SERVICES	9
A. REGULATION AND POLICY	9
Standard	9
Status.....	10
Recommendations	10
B. RESOURCE MANAGEMENT	12
Standard	12
Status.....	12
Recommendations	13
C. HUMAN RESOURCES AND TRAINING.....	15
Standard	15
Status.....	15
Recommendations	16
D. TRANSPORTATION	17
Standard	17
Status.....	17
Recommendations	18
E. FACILITIES	19
Standard	19
Status.....	19
Recommendations	20
F. COMMUNICATIONS	21
Standard	21
Status.....	21
Recommendations	22
G. PUBLIC INFORMATION, EDUCATION AND PREVENTION	23
Standard	23
Status.....	23
Recommendations	24
H. MEDICAL DIRECTION	25
Standard	25
Status.....	25
Recommendations	26
I. TRAUMA SYSTEMS	28
Standard	28
Status.....	28

Recommendations	30
J. EVALUATION	31
Standard	31
Status.....	31
Recommendations	32
K. EMERGENCY PREPAREDNESS.....	34
Status.....	34
Recommendations	34
L. CURRICULUM VITAE	35

BACKGROUND

Injury is the leading cause of death for persons in the age group one through 44 as well as the most common cause of hospitalizations for persons under the age of 40. The financial costs of injuries are staggering: injuries cost billions of dollars in health care and social support resources. In 1995, for example, the lifetime costs of all injuries were estimated at \$260 billion annually. These estimates do not include the emotional burden resulting from the loss of a child or loved one, or the toll of severe disability on the injured person and his or her family. Each year over 40,000 people lose their lives on our nation's roads, and approximately 70 percent of those fatalities occur on rural highways. The National Highway Traffic Safety Administration (NHTSA) is charged with reducing accidental injury on the nation's highways. NHTSA has determined that it can best use its limited resources if its efforts are focused on assisting States with the development of integrated emergency medical services (EMS) programs that include comprehensive systems of trauma care.

To accomplish this goal, in 1988 NHTSA developed a Technical Assistance Team (TAT) approach that permitted States to utilize highway safety funds to support the technical evaluation of existing and proposed emergency medical services programs. Following the implementation of the Assessment Program NHTSA developed a Reassessment Program to assist those States in measuring their progress since the original assessment. The Program remains a tool for states to use in evaluating their Statewide EMS programs. The Reassessment Program follows the same logistical process, and uses the same ten component areas with updated standards. The standards now reflect current EMS philosophy and allow for the evolution into a comprehensive and integrated health management system, as identified in the 1996 *EMS Agenda for the Future*. NHTSA serves as a facilitator by assembling a team of technical experts who demonstrate expertise in emergency medical services development and implementation. These experts demonstrate leadership and expertise through involvement in national organizations committed to the improvement of emergency medical services throughout the country. Selection of the Technical Assistance Team is also based on experience in special areas identified by the requesting State. Examples of specialized expertise include experience in the development of legislative proposals, data gathering systems, and trauma systems. Experience in similar geographic and demographic situations, such as rural areas, coupled with knowledge in providing emergency medical services in urban populations is essential.

The Michigan Department of Community Health, in concert with the Michigan Office of Highway Safety Planning, requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the Michigan Statewide EMS program. NHTSA developed a format whereby the EMS office staff coordinated comprehensive briefings on the EMS System.

The TAT assembled in Lansing, Michigan on May 15-17, 2007. For the first day and a half, over 25 presenters from the State of Michigan, provided in-depth briefings on EMS and trauma care, and reviewed the progress since the 1991 Assessment. Topics for review and discussion included the following:

General Emergency Medical Services Overview of System Components

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

The forum of presentation and discussion allowed the TAT the opportunity to ask questions regarding the status of the EMS System, clarify any issues identified in the briefing materials provided earlier, measure progress, identify barriers to change, and develop a clear understanding of how emergency medical services function throughout Michigan. 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 Michigan Emergency Medical Services Trauma Systems Section, public and private sector providers, and members of the medical community, the TAT sequestered to evaluate the current EMS System as presented and to develop a set of recommendations for system improvements.

When reviewing this report, please note that the TAT focused on major areas for system improvement. Unlike the State's initial assessment that contained many operational recommendations, several of which were identified as a priority, this report offers fewer yet broader recommendations that the team believes to be critical for continued system improvement.

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

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ACKNOWLEDGMENTS

The TAT would like to acknowledge the Michigan Department of Community Health and the Michigan Office of Highway Safety Planning 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 Michigan. 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 Robin Shivley, (MDCH) and her staff, and all the briefing participants for their well-prepared and forthright presentations. In addition, the Team applauds the well-organized, comprehensive briefing material sent to the team members in preparation for the reassessment.

Special thanks also to Michigan Office of Highway Safety Planning for supporting this process and providing special assistance to the TAT while in Michigan.

INTRODUCTION

Michigan, a land of diversity, a land of beauty, a land of hard work and relaxation. Michigan has struggled through the difficult years with the Tigers and the Lions, but always rests comfortably atop Ohio, its seat to the south. The home of Francis Ford Coppola and Steven Segal, Michigan has a strong history from which to draw. Yoopers and Trolls alike are proud of their history.

The 2007 NHTSA reassessment team is honored and grateful that you have invited us to your state and we hope your system continues to be strong and to it we pledge our support. Now is a time of struggle in Michigan, recent economic downturns present an interesting opportunity for lawmakers and leaders to solve financial woes present in the current government administration. To this end, the State EMS Office and the EMS System face uncertainty as to their future.

The recent passage of trauma legislation provides a bright spot in the future of Michigan's EMS System. There remains a need for stable funding for a trauma system in its infancy and an EMS System struggling to bear its burdens while woefully understaffed. During lean financial times, it has been the extraordinary efforts of extraordinary individuals willing to carry the load, which has allowed EMS to make system wide improvements. While important cornerstones have been laid, much work remains to complete the framework of a solvent, comprehensive EMS System.

Since the 1991 initial assessment, there have been great strides in the provision of ALS and LALS services across Michigan. However, to date, there has been no real comprehensive needs assessment to determine the level of service remaining unfulfilled. The dedication of the State EMS Office staff and the many volunteers has provided a mechanism to support EMS services to this point. Only in recent months have services begun to close and leave citizens without access to pre-hospital care.

During the course of the briefings the assessment team was very impressed with the dedication of not only the EMS Office staff but also the leaders in the Medical Control Authorities (MCAs) located throughout Michigan. Clearly, there is a passion for a comprehensive EMS System, which is not only functional but efficient and timely. The grassroots support for the State EMS Office is overwhelming. Now is the time for the Legislature and Governor to fully fund and staff the EMS Office and support the EMS and trauma care system.

MICHIGAN EMERGENCY MEDICAL SERVICES

The TAT revisited the ten essential components of an optimal EMS System that were used in the *State of Michigan: An Assessment of Emergency Medical Services*, in 1991. These components provided an evaluation or quality assurance report based on 1989 standards. While examining each component, the TAT identified key EMS issues, reviewed the State's progress since the original report, assessed its status, and used the 1997 Reassessment Standards as a basis for recommendations for EMS System improvement.

A. REGULATION AND POLICY

Standard

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

Status

Michigan has comprehensive enabling legislation (Part 209 of P.A. 378), which provides for a lead EMS agency and governs Michigan's EMS System. In addition, in May 2004, two sets of administrative rules were enacted. The passage of this legislation and adoption of rules provides a strong foundation for a true EMS System, which will meet current and future needs. Even with this legislative achievement, there is a need for additional action to assure the future growth and strength of the EMS office and system.

It is clear there is a need for additional financial and staff support for the EMS Office to meet all of its statutory and system obligations. The TAT understands the financial problem the state is currently addressing but there is a need for full commitment from state leadership to focus on this essential service. Other than licensure fees, there is no dedicated state funding supporting EMS, and the Office is overly dependent on Federal grant programs. As the Federal dollars continue to be reduced, it is important to understand the concern for State support is real.

Legislative action required formation of the Medical Control Authorities (MCAs), staffed largely by volunteers. These 65 MCAs serve as a support arm of the EMS Office and provide leadership and direction to local EMS Systems. There was testimony given by the State Office as to the great value of the MCAs to the Office and the System. There was an identified need for evaluation of MCA's to ensure more uniformity throughout the State.

The development of statewide trauma system administrative rules is near completion and should be a priority to State leadership, EMS Office, hospitals, EMS providers and to the residents that live and in visit the State of Michigan.

Recommendations

- **Obtain dedicated funding to support the Michigan EMS office and the continued development of the State Trauma system.**
- **Increase staffing in the EMS office to allow for the office to meet the legislative requirements of ensuring a quality, effective system of emergency medical services and to centralize the EMS functions of the EMS Office.**
- Develop an evaluation process of the Medical Control Authorities to ensure statutory compliance and greater uniformity across the State.

- Evaluate the feasibility of integrating MCAs into the 8 Regional planning districts that are consistent with the proposed Regional Trauma Networks.
- Introduce legislation to give authority to the state EMS Office to direct dispatch, pre-arrival instructions with medical oversight. This should include ground and air units.
- Evaluate the feasibility to reinstate a “certificate of need” (CON) program or other form of evaluation to include ground and air units as written in the 1991 recommendations.

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 activities. A central statewide data collection (or management information) system is in place that can properly monitor the utilization of EMS resources; data is available for timely determination of the exact quantity, quality, distribution and utilization of resources. The lead agency is adequately staffed to carry out central coordination activities and technical assistance. There is a program to support recruitment and retention of EMS personnel, including volunteers

Status

The Office of Emergency Medical Services is again incorporated within the Michigan Department of Public Health, after having been separated since the 1991 assessment. As was the case in the 1991 assessment, Michigan has maintained a decentralized approach to the management of many of the administrative functions of the EMS office.

The EMS Office continues to contract with private third party vendors to carry out many of the administrative duties of the office including but not limited to the inspection of ambulance agencies and the testing of student candidates for certification and licensure. As was the opinion of the 1991 team, the passage of P.A.378, Part 209, should require a more centralized approach to program development and regulation. In review of the current organizational structure it is very clear the EMS Office is grossly understaffed. The current staff, dedicated to the profession, is simply too overtaxed to carry out all the functions and duties of the office. Clearly, as the population continues to age, undefined threats continue to emerge and the needs of a stressed EMS System continue to increase, the Office of EMS must be adequately staffed. There is a real need to employ sufficient staff to work with the local MCA organizations, carry out the statutory obligations placed on the office, and plan for the needs of a growing EMS and trauma system. Other than additional administrative staff, there is also a desperate need for a State level EMS Medical Director that might also serve as the medical director for a budding Trauma System.

Once the office is fully staffed, there are several projects, which must be undertaken to bolster the resource management aspect of the system. Since the 1991 plan, there has

been one update of the State EMS plan in 2001. In order for the Michigan EMS Office to fulfill fiduciary and programmatic responsibilities there must be a model developed which will allow for a maximum of five years between reviews of the State EMS plan.

Additionally, a comprehensive study/survey must be undertaken to identify the overall needs of the EMS System, basic demographics of licensed and certified personnel, and the utilization of resources within the system. This information may best be collected through the institution of a data collection system, which links patient care report (PCR) reporting with licensure and certification data in the office.

Following a comprehensive study/survey and needs assessment, the State Office must become involved in the recruitment and retention of field level EMS personnel. Recruitment and retention efforts must focus on a regional approach to personnel shortages.

The 65 MCA's throughout Michigan play a major role in the provision of EMS services. In the spirit of cooperation, and the overall provision of EMS services, Michigan should consider a more regional approach to medical control and protocol implementation, especially within the eight established regions. A plan should be developed to standardize the provision of services and protocols within a region, which would allow street level providers the opportunity to learn one set of protocols rather than having to consider for whom they are working each day. Encouraging the local MCAs to regionalize the system will work to insure the appropriate utilization of resources.

Recommendations

- **Staff the EMS Office with sufficient state employees to implement the provisions of P.A 378, Part 209 and the administrative regulations. Staffing should include a full complement of administrative personnel and a State EMS/Trauma Medical Director.**
- State employees must carry out all the statutory functions of the State EMS Office.
- **Develop and implement a process to review and update the State EMS plan at least once every five years.**
- Develop and implement a comprehensive study/survey, which will identify the overall needs of the EMS System, a demographic study of the individuals providing services, and utilization of the resources including personnel and equipment, as well as track the effectiveness of protocol based procedures utilized in the field.

- Develop a plan for the recruitment and retention of EMS personnel.
- Establish guidelines which encourage the regionalization of protocols and resources within local MCAs and established regions and enfold the current 65 MCA structure into eight MCA regions

C. HUMAN RESOURCES AND TRAINING

Standard

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

Status

The Michigan Department of Community Health has the statutory responsibility for the licensing of pre-hospital EMS personnel. The Department is responsible for the approval of all education programs, content and testing. The State requires registration with the National Registry of Emergency Medical Technicians as verification of meeting the competency requirements of licensure. Michigan currently has 8,450 Medical First Responders, 11,070 Emergency Medical Technicians, 1,200 Emergency Medical Technician Specialists, 7,500 Paramedics and 930 Instructor Coordinators. Subject matter experts and qualified instructors are able to provide education opportunities for EMS providers. Continuing education is available for the providers in many formats throughout the State. All of Michigan's EMS education is provided by approved Education Program Sponsors and there is a comprehensive application approval process to ensure quality programs.

Currently there is no process in place to know if the number of licensed providers meets the needs of the System or how many providers are active within the State. The total lack of data on the specialty courses, tracking of courses and how many providers are taking these courses is problematic for future planning to know if the system will meet educational needs.

Testimony was given that there is a 30% provider non-compliance rate in meeting the

education requirements for re-licensure, in spite of the fact that the State's CE requirements are minimal. This statistic gave the team great cause for concern and the TAT strongly believes a non-compliance issue of this magnitude must be researched.

The TAT also received testimony on several different models for skills verification before students stand for the licensing test. There are regions within the State where timely practical testing is not available. This is causing a delay in State licensure and work force availability. There were suggestions to continue conducting the testing through the State Office or by the Education Program Sponsors using state evaluators.

Recommendations

- **Immediately increase staffing in the EMS Office to centralize the EMS education function, including verification of education sponsors.**
- Develop a fee schedule for the State EMS Office to process verification of education sponsor's applications and courses.
- **The EMSCC state model protocols should be the standard for all MCAs to ensure uniformity of care throughout Michigan and to allow for movement and reciprocity between MCA's for EMS providers.**
- **Conduct criminal background checks for all individuals before licensure and re-licensure.**
- The EMS Office should validate licensure of any provider listed on Life Support Agency Rosters before licensing or re-licensing the agency.
- Evaluate the feasibility of linking data between patient care records, agency and provider licensure, and provider continuing education sponsors.
- **Conduct a comprehensive education survey to review the needs of the individuals and the agencies, to ensure the providers have the skills and knowledge required.**
- Include data concerning non-compliance with education requirements of EMS providers in the comprehensive education survey.
- Basic practical testing for state licensure should be completed by the education program sponsors. Evaluators at test sites will be certified through a State evaluator's training program.
- Update State EMS website to provide information on testing sites, dates and other pertinent information.

D. TRANSPORTATION

Standard

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

Status

While the State of Michigan has made improvements in the area of transportation since the 1991 assessment, the lack of staff in the EMS office has prevented the implementation of the overall recommendations of the 1991 group. Clearly as the population of Michigan continues to age, other unidentified threats continue to emerge and the need for the provision of services increases daily, many issues still plague the overall system. Due mainly to the drastic economic downturn experienced by the state in recent years, areas of Michigan are beginning to find it difficult to continue to provide EMS services and in fact at least three areas of the state have discontinued service placing the population in grave danger.

Without a current State EMS Plan there is no identified ambulance placement or response unit strategy that is based on patient need. Additionally, there is no mechanism for the routine evaluation of transport services and the need for modifications, upgrades, or improvements based on the changes in the current EMS climate. Providers across the State expressed a need for guidance from the State EMS

Office related to a more systematic approach within the designated regions and they would like to encourage the State to consider providing guidance to the regionalization of EMS services in order to better serve the citizens of Michigan. Additionally, providers expressed concerns related to the lack of a response unit strategy process for the implementation of an ambulance service within a geographic area. Without a formal response unit strategy process there is no formal way for the State EMS Office to insure the proper institution of new ambulance resources.

In Michigan, residents of the Upper Peninsula and the upper, Lower Peninsula, remain largely underserved especially by air medical services. This prevents the appropriate and timely transfer of patients to higher levels of care. Resources must be identified to provide timely transfer of critical patients to definitive care facilities, but more importantly to insure the provision of basic and advanced life support for everyone in these areas.

Recommendations

- **Continue work to implement the recommendations of the 1991 assessment, in particular the review and renewal of a State EMS plan including a component on transportation. The addition of a transportation section must address the need to mandate a local plan to insure the provision of transporting EMS agencies for the jurisdictions within the region or MCA.**
- **Pursue legislation, which will require counties or a collaboration of counties within a region or MCA to insure the provision of pre-hospital emergency medical care by a transporting unit.**
- Pursue legislation, which will require a new transporting ambulance service to demonstrate a need for the service in the area proposed which mirrors the CON process current utilized to place air medical services.
- Within the transportation section of the State EMS Plan the EMS office must consider the utilization of fixed wing services in the Upper Peninsula.

E. FACILITIES

Standard

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

Status

There are a total of 181 licensed health care facilities throughout the 83 counties of the State of Michigan, 140 of which are licensed for Emergency Department care. A few counties do not have the benefit of a medical facility. Thirty-four facilities are licensed as Critical Access Hospitals. The facilities are widely dispersed in the rural Upper Peninsula and Upper Lower Peninsula and more closely distributed in the southern areas of the state, particularly in the densely populated southeast. Apparently, there are few hospital based EMS services.

All facilities are offered the opportunity to participate in the administrative support of their respective MCA, and most of the facilities have opted to do so. Through their involvement in the MCA Board, the facilities are involved in selecting the MCA Medical Director, coordination of EMS services in the region, and in the development of triage, transport and destination protocols.

Currently, the EMS guidelines are to deliver the patient to the closest “appropriate” facility but there is no information as to how this process affects initial patient

stabilization, transfer, definitive care or outcome.

At the present time there is no mechanism to assess the facilities as to their clinical care capabilities and emergency department staffing, their status in the transport and triage process and their involvement in the MCA process.

The issue of hospital overcrowding, delayed patient admission, Emergency Department overload and diversion has been recognized in certain regions of the state. This has led to delays in patient care, and inappropriate utilization of EMS resources.

Recommendations

- **Inventory all medical care facilities in the state as to:**
 - **Provision of Emergency Department Services.**
 - **Emergency Department staffing.**
 - **Clinical capabilities.**
 - **Trauma center verification status.**
- Assure that all EMS services and MCAs are aware of the capabilities of the facilities in their service area, and this information also be provided to the Office of Public Health Preparedness.
- **Standardize the criteria for going on divert, create a process for returning to service as early as possible, develop a process to inform EMS of divert status and assure not all facilities in a region are on divert simultaneously.**

F. COMMUNICATIONS

Standard

A reliable communications system is an essential component of an overall EMS System. The lead agency is responsible for central coordination of EMS communications (or works closely with another single agency that performs this function) and the state EMS plan contains a component for comprehensive EMS communications. The public can access the EMS System with a single, universal emergency phone number, such as 9-1-1 (or preferably Enhanced 9-1-1), and the communications system provides for prioritized dispatch. There is a common, statewide radio system that allows for direct communication between all providers (dispatch to ambulance communication, ambulance to ambulance, ambulance to hospital, and hospital to hospital communications) to ensure that receiving facilities are ready and able to accept patients. Minimum standards for dispatch centers are established, including protocols to ensure uniform dispatch and standards for dispatcher training and certification. There is an established mechanism for monitoring the quality of the communication system, including the age and reliability of equipment.

Status

The EMS and Trauma Section has statutory authority to plan, develop, and administer a statewide EMS communications system. In 2006, Michigan updated the state communications plan called MEDCOM, which mandates communications requirements for EMS and Hospital providers. The MEDCOM plan was developed with broad input from constituents. To monitor and implement the requirements, the state has hired Brent Williams as a state communications consultant. Mr. Williams inspects the radio equipment in the EMS vehicles and hospitals every two years and assesses compliance of providers and hospitals to the MEDCOM requirements. All EMS providers must meet the MEDCOM requirements as a condition of licensure.

In 1991, enhanced 9-1-1 served 75% of the population. Currently, the state has enhanced 9-1-1 available in all but one county.

Emergency Medical Dispatch is locally controlled with no State governance. In addition, there is a conflict between the state EMS statute and the 9-1-1 legislation. Medical Control Authorities have the responsibility "to assure the appropriate dispatching of life support agencies." The 9-1-1 legislation duplicates this responsibility to each 9-1-1 center bypassing medical oversight by the MCAs.

Several communications issues remain since the initial NHTSA assessment. There

continues to be no state minimum training standard for emergency medical dispatchers. There is also no state minimum requirement for medical priority dispatch systems. Many dispatch centers use vendor driven medical priority dispatch systems but without medical oversight. Tiered dispatching protocols including air medical activation are determined locally rather than using standardized statewide protocols. Performance Improvement for EMS dispatch is inconsistent with little case review and sparse medical oversight.

On a positive note, the state maintains an FCC license to cover all mobile and portable radio use of two frequencies for EMS providers. The on-scene coordination is operated on the 155.355 frequency. Every ambulance and hospital in the state is equipped for operation on a single radio system using the 155.340 frequency. The state also has established a statewide 800 MHz system through the State Police, which enhances communication from virtually anywhere in the state with a mobile radio. Some EMS agencies are making this their primary means of communication, as funding becomes available, however, the cost is preventing many agencies from utilizing this system.

Recommendations

- **Modify the 9-1-1 legislation so the MCAs have the authority for direct medical oversight for EMS dispatching.**
- **Establish administrative rules, to support mandatory and uniform emergency medical dispatcher certification and education for all EMS dispatch centers.**
- **Establish administrative rules, which require dispatch centers to utilize medical priority dispatch systems with pre-arrival instructions, which have been reviewed and approved by the State.**
- Continue to pursue and support interoperability communications plans and capabilities between EMS providers, law enforcement and fire response at the county and regional levels.
- Develop and encourage linkages between dispatch data systems and the pre-hospital data collection system.

G. PUBLIC INFORMATION, EDUCATION AND PREVENTION

Standard

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

Status

Since the 1991 assessment, little has been done to ensure the public is informed about the EMS System and how to access the system. The State EMS and Trauma Section does not have a dedicated staff for the provision of injury prevention activities. No self-help or bystander care training has been provided by the State. In addition, the pre-hospital and trauma registry have not been fully implemented to facilitate the assessment of injury prevention needs.

The 2004 draft State Trauma Plan has identified injury prevention activities as a criteria for trauma centers at all levels. The plan urges the statewide injury prevention efforts to be coordinated between the EMS and Trauma Section and the Injury Prevention and Violence (IPV) program. The plan also outlines a program where EMS instructor coordinators will be utilized to educate teenage drivers in the schools. In addition, a pilot project has been initiated with the Injury Prevention and Violence program, OHSP and EMS and Trauma section for EMS recruitment and retention.

The EMS and Trauma Section has an outstanding relationship with the Office of Highway Safety Planning and the MDCH Injury Prevention and Violence program which

has been very successful in initiating numerous injury prevention programs throughout the state. They have established a state injury prevention plan, work with coalitions and utilized a surveillance system to drive priorities and initiatives. MDCH is the lead agency and has a Safe Kids program to address the issue of unintentional injury. The IPV program has established 8 Safe Kid coalitions and 24 chapters statewide. A bicycle helmet program is in place to distribute helmets to health departments, law enforcement and the Safe Kids coalitions.

With support of OHSP, the IPV successfully implemented a Child Passenger Safety Education program, which includes child safety seat checks and the dissemination of the educational materials for parents and caregivers. They also initiated a fall prevention program for older adults.

Recommendations

- Update and implement an EMS public information and education program component to the State EMS plan, which is a comprehensive and aggressive public information and education program. Also, ensure the program component outlines the use of public service announcements, injury prevention activities and promotes public access to EMS.
- Seek funding to implement a bystander care training program.
- Encourage coordination of EMS providers and hospitals with the implementation of injury prevention initiatives.
- **Increase public awareness of EMS Week activities and recognition of EMS personnel.**
- **When established, use the pre-hospital and trauma data to assess potential problem areas for the development of focused IP initiatives.**
- Conduct a survey to assess current injury prevention activities of local EMS agencies and hospitals to avoid duplication, improve coordination and inform providers of the availability of these programs for use within their communities.

H. MEDICAL DIRECTION

Standard

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

Status

There is no State EMS/Trauma Medical Director. A number of medical oversight functions appear to be handled by the State EMS Coordinating Committee (EMSCC) and the Quality Assurance (QA) Subcommittee of the EMSCC. The QA Subcommittee has authored a set of State Model Protocols. Physicians are heavily involved in both the EMSCC and the QA subcommittee.

The State places the responsibility of medical oversight onto the 65 MCAs. Each MCA is operated by a Board, which consists of representation from the hospitals in the MCA region. MCAs have a number of functions required by statute. Included in these tasks is appointment of a Medical Director and implementation of protocols. An MCA may adopt the State Model Protocols or develop its own set of protocols, which must then be approved by the State QA Subcommittee. Air medical transport agencies do not participate in the MCA process and air medical protocols do not have to be approved by the State. Some providers expressed frustration over protocol variation and recommended there be a single set of statewide protocols.

There is currently no funding generated for the MCAs and Medical Directors. A few MCAs are able to hire staff (including an Executive Director and/or the Medical Director) through voluntary funding from the hospitals. As a result of this system, there is a wide variety of functionality to the MCAs and the State has no evaluation process to

determine if the MCAs are meeting their statutory requirements. In addition, some MCAs have additional requirements for licensed personnel to provide care (e.g. extra testing/training). Some MCAs are very active in transportation plans, such as which levels of care an agency must provide and destination protocols.

Although MCAs are required by statute to perform quality improvement (QI), it is unknown by the State what QI processes are performed by the individual MCAs. The standard calls for monitoring of indicators of optimal performance, but there is no State guidance as to what those indicators are. Some MCAs rely only on agency specific QI processes and collect no system-wide data. There is no statewide QI data collection. The previous assessment called for statewide data collection. The State is in the process of letting an RFP for a NEMSIS-Gold compliant EMS Information System, which will become mandatory. The linkage between QI data, if any, and education is not clear.

On-line medical control (OLMC) appears to be an area of concern. Some MCAs have training and guidelines as to who may provide OLMC. In other MCAs, there are no guidelines. The State has no standard qualification as to who may provide OLMC and what training is required. The quality of OLMC throughout the state is unknown. The philosophy when to use OLMC is not consistent throughout the State.

The MCAs are required by statute to have medical protocols regarding appropriate dispatch life support. However, the dispatch centers throughout the State have no mandate to implement protocols. This has placed the MCAs and Medical Directors in the untenable position of statutory responsibility with no authority. In addition, there appears to be no requirement for certification of call-takers and dispatchers.

The EMS provider scope of practice is recommended by the EMSCC and implemented by EMS Office. There was some discussion that the State's scope is very close to the National Scope of Practice Model, however the EMSCC may revisit the current scope of practice.

The State EMS for Children (EMS-C) Committee has become more active and has a number of initiatives in place, including permanent funding for an EMS-C Coordinator and greater input into the EMSCC. The previous assessment included a recommendation to resolve problems with prehospital DNR. Since then, legislation has passed and a State Model Protocol implemented to address this issue in adults. There is currently no legislation or protocol regarding DNR orders in the pediatric population.

Recommendations

- **The State should create and fund the position of State EMS/Trauma Medical Director. This position would provide medical oversight to the office. In**

addition, the EMS MD would provide oversight guidance, including QI priorities directly to the MCAs. The MCAs should be accountable to the State EMS/Trauma Medical Director.

- **The MCAs should continue consolidation of protocols and requirements so the same protocols, standards, and destination protocols exist throughout each Region. The MCAs should continue to consolidate to mirror the Trauma and Emergency Preparedness Regions. There should still be a balance to provide for local medical oversight components.**
- **A mechanism should be identified to fund the proposed Regional MCA's infrastructure, including compensation for Medical Direction.**
- The State Office should be funded to evaluate the individual MCAs, in order to determine their level of compliance with statutory responsibilities.
- **The State should institute education and standards regarding the provision of on-line medical control.**
- Legislation should be passed requiring all 9-1-1 dispatch centers to have medical oversight from their Regional MCA. Dispatchers should be required to receive emergency medical education and maintain certification. All dispatch centers should perform dispatch prioritization and pre-arrival instructions approved by the State.
- Air medical transport agency protocols should also be approved by the State. Due the specialty nature of air medical transport, adherence to the State Model Protocols is not recommended. Consideration should be given to a single, statewide Air Medical MCA.
- The State should adopt the National Scope of Practice Model and add skills to each level as required.
- Legislation should address the persistent problems regarding pediatric Do Not Resuscitate orders in the prehospital setting.
- A Board Certified Pediatric Emergency Physician position should be added to the EMSCC.

I. TRAUMA SYSTEMS

Standard

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

Status

Michigan sustains about 5200 deaths due to trauma per year, the majority being unintentional with many of those involving motor vehicle crashes. There continues to be a significant number of suicides, especially in the 1-44 year age range. For each death there is estimated to be three individuals with permanent disability and a large number of injuries with complete recovery. With this information known, it has become a priority to develop an organized Trauma System to assure optimal care and enhanced prevention measures.

Over the past years, there has been voluntary activity to enhance trauma care, starting with the Michigan Trauma Coalition, and involving the MI Committee on Trauma (MI COT), the MI Trauma Nurses and the Trauma Registrars Group. This Coalition represented the Verified Hospitals and, along with a Southeastern Medical Control Authority developed triage criteria so all trauma activation patients were transported to one of the four trauma hospitals in that Region, the first formal trauma triage criteria.

During the last seven years there has been an acceleration in trauma system related activities; a Governor's Commission was appointed; a report written; trauma enabling legislation passed, creating a State Trauma Advisory Committee (STAC). The Governor's Trauma Commission has created a draft Trauma System Plan and draft

Administrative Rules. Although a wide array of EMS and Trauma Stakeholders were involved in this process, it appears that the MI COT was minimally involved. Most recently, a funding mechanism through the Crime Victim Commission has been proposed and a tentative agreement has been reached, although legislative action will be required.

However, there does not yet exist a Michigan Trauma System per se, as none of the designated components described have been put in place except for the Trauma Advisory Committee. There is no trauma system registry, no instituted designation process, no statewide trauma PI, no Trauma Medical Director and no trauma specific prevention program.

The process of developing the Trauma System has utilized the recommendations of the American College of Surgeons Committee on Trauma (ACSCOT) publication Resources for Optimal Care of the Trauma Patient, which is used as a reference for many of the system's functions. It should be noted, the latest edition of this publication no longer includes the list of criteria to which there has been reference in defining trauma hospital capabilities. The legislation defines the Lead Agency, recognizes ACSCOT Verification, allows for Designation, defines Trauma Regions, institutes data collection and processing through a Trauma Registry, allows for statewide P.I. and evaluation, and provides for a Trauma Director. Performance Improvement data appears to be protected by defining the PI process as a Professional Standards Review Organization. The system, defined as "all inclusive", allows all facilities to participate at a level to which the facility itself commits, and specifically does not allow the exclusion of a facility from the system.

As the momentum for a Trauma System has accelerated, there has been an increase in the number of ACSCOT Verified facilities. There are approximately ten Level I, nine Level II, and one Level III verified hospitals in the state at this time. Most important, one new level II hospital is located in the Upper Peninsula and one new Level II in the upper Lower Peninsula, markedly improving the commitment to improved care in the rural areas.

Recommendations

- **Finalize dedicated funding for support of the Trauma System.**
- Increase the involvement of the MI COT and MI ACS State Chairman in the further development of the system.
- Enlist the expertise of active Trauma Coordinators in further system development.
- Educate hospitals in the UB 92 trauma team activation fees for hospitals to stimulate interest in trauma system participation.
- Define the current trauma capabilities and verification status of the Michigan facilities.
- Assess the Trauma Regional Networks in their relation to actual patient flow.
- **Select a statewide trauma registry and define requisites for hospital based registries.**
- Institute phased initiation of Data Resources as described in the Trauma Plan.
- Assure consolidation of MCA's into and funding of the Regional Trauma Networks.
- **Institute a Hospital Designation Process as described in the Trauma Rules.**
- Appoint a Trauma Medical Director as needed.
- Develop statewide trauma treatment, triage, transfer and transport protocols for implementation by Regional Trauma Networks.

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 systems, emergency department and trauma system data; optimally there is linkage to databases outside of EMS (such as crash reports, FARS, trauma registry, medical examiner reports and discharge data) to fully evaluate quality of care. The evaluation process is educational and quality improvement/system evaluation findings are disseminated to out-of-hospital emergency medical care providers. The lead agency ensures that all quality improvement activities have legislative confidentiality protection and are non-discoverable.

Status

The years since the previous assessment have seen a maturation of some of the MCAs, but with continued decentralization of the State oversight responsibilities. This is very evident in the evaluation process. The current system depends on program evaluation to occur at the MCA level. There is a State QA Subcommittee of the EMSCC that sets the State Model Protocols, approves individual protocols, and occasionally reviews individual incidents/complaints, but does not create a comprehensive, statewide QI program. The State does not set standards or

requirements for quality improvement and there is no State EMS/Trauma Medical Director to help develop statewide QI priorities. Many MCAs actually depend on individual agency QI process and may not collect any data at the MCA level. No QI data is collected at the state level. Some MCAs appear to have a good QI process, but these processes are not exported to other MCAs. Although the hospitals operate the MCAs, there persists frustration from the providers and Medical Directors on the lack of outcome data available from the hospitals.

There have been relatively unsuccessful attempts to create a statewide data set. There is currently an RFP in process to create a statewide EMS Information System, which will be NEMSIS-Gold compliant. All agencies shall provide data to this system. As a strength of the process, the State will supply the NEMSIS module to all agencies who request it. A number of agencies are already using computerized charting, some from a homegrown system, their initial attempt at an EMSIS. Ideally, a single information system could tie together individual licensure, agency licensure and patient care reporting.

Due to lack of staffing in the EMS Office, there has been no evaluation of the individual MCAs and their ability to perform their required duties. In addition, the State has delegated a number of functions to contractors (e.g. ambulance and education program inspections), but there was no evidence given of any evaluation of the performance of those contractors.

There is no statewide trauma registry, although some ACS verified hospitals participate in a voluntary registry. Trauma legislation has since passed, with administrative rules in draft form and a possible mechanism for funding the system. Included in the proposed trauma system, is a statewide trauma registry. The Office of Highway Safety Planning has recently undertaken an improvement in their traffic records data collection and is working well with the EMS Office to eventually include outcome measures as part of the overall traffic record reporting. OHSP is supporting implementation of MI EMSIS.

The previous assessment recommended the creation of an EMS plan and updating it every five years. Following the previous assessment, a plan was created in 2001 and has not yet been updated.

Recommendations

- **Continue with implementation of the NEMSIS-Gold compliant, statewide EMS Information System. Strongly consider the ability to track provider licensure, agency licensure and patient care reporting into one system.**

- The State should create and fund the position of State EMS/Trauma Medical Director who would set the plan and priorities for a statewide QI system.
- **The MCAs should be evaluated regarding their ability to provide their statutory responsibilities.**
- The State should require hospitals participating in the MCA to provide outcome data to the MCA and the State.
- Review and update the most recent State EMS plan and provide the EMS Office with resources to update the plan every five years.
- **If long-term contractors remain a part of the system, their performance should be evaluated on a regular basis.**

K. EMERGENCY PREPAREDNESS

Status

As has been the case throughout so much of Michigan's EMS history, the nation should again look to Michigan for innovation in the area of public health preparedness. Clearly, there has been much work with this area and the collaboration with EMS and other agencies in this area has provided Michigan with a preparedness model that should be the envy of the nation.

It is apparent a well thought out, well-exercised plan exists in Michigan in which the State EMS Office has played a significant role in developing. It is encouraging to see the amount of funding pushed to the regional and MCA level for the enhancement of EMS preparedness and the amount of local input garnered to develop this impressive system.

The reassessment team would like to give special recognition to the Office of Public Health Preparedness for its diligent work on the development and implementation of the inventive response program.

Recommendations

- Continue the collaboration efforts with other agencies to insure system preparedness for major events.
- Continue to encourage and provide guidance for the combining of local MCA's into highly efficient patient oriented regionalized MCA's that correspond with the established emergency preparedness and regional trauma network regions.
- Continue to develop, implement and coordinate efforts in the provision of educational courses, training, and exercises for all types of responders.
- **Begin now to consider future funding mechanisms to sustain these programs as Federal dollars are reduced or gone.**
- **Develop legislation, which will provide liability protection for health care workers and EMS agencies responding to disasters as a part of the Michigan disaster organization.**

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American Heart Association, Lexington Kentucky
Board of Directors

Governors Executive Committee on Highway and Traffic Committee for Kentucky

Teen Safe Drivers Committee for Kentucky, Chair

EMS-C committee for the National Association of State EMS Officials, Chair

National Registry of EMTs, test writing committee

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National Association of State EMS Directors (1979-1996)
 Past President
 Past Chairman, Government Affairs Committee
National Association of EMS Physicians, Member
American Trauma Society
 Founding Member, Past Speaker House of Delegates
ASTM, Former Member, Committee F.30 on Emergency Medical Services
Institute of Medicine/National Research Council
 Pediatric EMS Study Committee, Member
 Committee Studying Use of Heimlich Maneuver on Near Drowning Victims,
 Member
World Association on Disaster and Emergency Medicine
 Executive Committee, Member
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Diplomate, American Board of Surgery
Montana Trauma Registry Task Force
Montana EMS Advisory Council, Chair
Montana ATLS, National Faculty
Rocky Mountain Rural Trauma Symposium
Program Director
American College of Surgeons, Fellow
MT Committee on Trauma, Chairman 1978-1988
ACS Committee on Trauma 1986-1996
ATLS Committee/National Faculty
AD HOC Committee for Revision of Optimal Resources Document
Past Chairman, Emergency Services/Prehospital Subcommittee
Past Chairman, AD HOC Committee on Rural Trauma
Centers for Disease Control, Consensus Committee on Trauma Registries
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States of Alaska, Iowa, Nebraska, Tennessee, West Virginia, Indian Health Service,
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USDOT, NHTSA EMS Reassessment Program, Technical Assistance Team, Member,
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National Association of EMS Physicians, Board of Directors
National Registry of EMTs, Board of Directors
Oregon State Trauma Advisory Board
American College of Emergency Medicine
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Medical Director, Lake Oswego Fire Dept
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ORGANIZATIONS/APPOINTMENTS

Pennsylvania EMT-I since 1994
Pennsylvania EMT since 1983
Pennsylvania Firefighter since 1974

National Association of State EMS Officials
Bucks County Operation Heartbeat
Southeast Terrorist Task Force
Bucks County Network of Victim Assistance

- *Emergency Response Team to New Jersey/New York September 2001*

Bucks County Safe Kid's Coalition
Fire Professionals Aiding Children
PA Emergency Health Services Council
PA Fire and Emergency Services Institute
Bucks County Local Emergency Planning Committee
Bucks County Highway Safety Council
Coalition Against Bigger Trucks, LLC
Bucks County Hero Scholarship Fund
Bedminster Township Emergency Management Agency Director
Dublin Regional EMS
Dublin Fire Department
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Chair-elect National Council of State Trauma
Systems Managers
NASEMSO liaison for the ACS Trauma System
Planning and Evaluation Executive Committee
NHTSA EMT Refresher Course Curriculum Development
HRSA Rural Trauma Grant Reviewer
Utah Public Health Association, Member
American Trauma Society, Member
Task Force Chair for Utah Trauma System Development
Air Ambulance Rules Task Force, Chair
Member of Utah Emergency Managers Association
Appointed to Governor's Council on Blood Services
Previous member of State EMS Training Coordinators Council
CLEAR Certified Inspector
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member