

STATE OF KANSAS

**A REASSESSMENT
OF
EMERGENCY MEDICAL
SERVICES**

July 17-19, 2007

National Highway Traffic
Safety Administration
Technical Assistance Team

Brian K. Bishop
David W. Bryson
Bill Jermyn, DO, FACEP
W. Dan Manz
Stuart A. Reynolds, MD, FACS
P. Scott Winston

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BACKGROUND

Injury is the leading cause of death for persons in the age group one through 44 as well as the most common cause of hospitalizations for persons under the age of 40. The financial costs of injuries are staggering: injuries cost billions of dollars in health care and social support resources. In 1995, for example, the lifetime costs of all injuries were estimated at \$260 billion annually. These estimates do not include the emotional burden resulting from the loss of a child or loved one, or the toll of severe disability on the injured person and his or her family. Each year over 42,000 people lose their lives on our nation's roads, and approximately 70 percent of those fatalities occur on rural highways. The National Highway Traffic Safety Administration (NHTSA) is charged with reducing accidental injury on the nation's highways. NHTSA has determined it can best use its limited resources if its efforts are focused on assisting States with the development of integrated emergency medical services (EMS) programs which include comprehensive systems of trauma care.

To accomplish this goal, in 1988 NHTSA developed a Technical Assistance Team (TAT) approach which permitted States to utilize highway safety funds to support the technical evaluation of existing and proposed emergency medical services programs. Following the implementation of the Assessment Program NHTSA developed a Reassessment Program to assist those States in measuring their progress since the original assessment. The Program remains a tool for States to use in evaluating their Statewide EMS programs. The Reassessment Program follows the same logistical process, and 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 Kansas Board of Emergency Medical Services (KBEMS), in concert with the Kansas Department of Transportation's Bureau of Traffic Safety, requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance program to provide a technical reassessment of the Kansas Statewide EMS program. NHTSA

developed a format whereby the EMS Board staff coordinated comprehensive briefings on the EMS system.

The TAT assembled in Topeka, Kansas on July 17-19, 2007. For the first day and a half, over 35 presenters from the State of Kansas provided in-depth briefings on EMS and trauma care and reviewed the progress since the 1994 Assessment. Topics for review and discussion included the following:

General Emergency Medical Services Overview of System Components

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

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

Following the briefings by presenters from the KBEMS, public and private sector providers, and members of the medical community, the TAT sequestered themselves to evaluate the current EMS system and to develop a set of recommendations for system improvements.

When reviewing this report, please note the TAT focused on major areas for system improvement.

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

Brian Bishop

Bill Jermyn, DO, FACEP

W. Dan Manz

Stuart A. Reynolds, MD, FACS

P. Scott Winston

ACKNOWLEDGMENTS

The TAT would like to acknowledge the KBEMS and the Kansas Department of Transportation's Bureau of Traffic Safety 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 Kansas. 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 Robert Waller, Chief Administrator, KBEMS, and his staff and all the briefing participants for their well-prepared and forthright presentations.

Special thanks also to Pete Bodyk and John Schneider, Kansas Department of Transportation and the Bureau of Traffic Safety, for supporting this process and providing special assistance to the TAT while in Kansas.

INTRODUCTION

The motto of Kansas is *Kansas – as big as you think*. This idea embodies both the challenges and opportunities which face the State's EMS system in coming years.

Kansas is at least as big as most people think. The State's land mass includes 81,815 square miles making it the 15th largest state in the nation. It is bordered on the north by Nebraska, on the east by Missouri, on the south by Oklahoma and on the west by Colorado. Almost three million people live in the State with approximately 71 percent of Kansans residing in urban clusters. Kansas has 105 counties and 627 incorporated cities. A significant portion of the counties are classified as rural or frontier.

The challenges for the Kansas EMS system are also as big as you think. Since an original EMS system assessment in 1994, thirteen years have passed with predominantly cosmetic changes to the system. Bringing about change in any state EMS system requires leadership, consensus, cooperation, resources, and an organizational structure which will follow through until the job is done. If any of these elements are missing, progress is diminished. In the case of the Kansas EMS system, it appears that one or more of these elements has been missing at many points along the way.

The task of leading EMS change in Kansas is not clearly assigned to anyone. The Kansas Board of Emergency Medical Services (KBEMS) is the most likely candidate for this assignment, but it has not to date accepted that charge. During a day and a half of testimony to the technical assistance team (TAT), only two of thirteen KBEMS board members were present at any time to hear the outlooks, opinions, hopes and aspirations for the system which KBEMS oversees. KBEMS appears to have a dedicated staff that represents a mix of experience and institutional memory with the energy and intellectual curiosity of recent converts to the cause. Lee Iacoca said, "Lead, follow, or get out of the way." The time has come for KBEMS to consider this directive.

In Kansas, there is no reason the success of the EMS system cannot be as big as you think. The assessment team identified no fatal flaws which cannot be corrected through leadership, consensus, cooperation, resources, and an organizational structure that follows through until the job is done. Throughout a day and a half of testimony, the TAT was impressed with the knowledge, dedication, and spirit of the presenters. There are components of the EMS system, trauma care as one example, where progress is occurring and there appears to be momentum in a positive direction.

The citizens of Kansas should reasonably expect that key stakeholders commit to a common vision of a comprehensive EMS system which is reliable and delivers high level emergency care across the spectrum of community settings. Turning this idea into

reality will mean the Kansas legislature supports the EMS system with funding and appropriate statutory and regulatory authority. Physicians will need to come together agreeing on statewide EMS protocols and regimens for medical oversight of all system components. New approaches will need to be found for linking a disparate hodge-podge of communications. EMS providers will need to embrace the regulation of non-transporting agencies and participate in the developing system of electronic incident reporting to build the capacity for true system evaluation.

A world class EMS system? The dream is not too big for Kansas.

KANSAS EMERGENCY MEDICAL SERVICES (EMS)

The TAT revisited the ten essential components of an optimal EMS system which were used in the 1994 *State of Kansas: An Assessment of Emergency Medical Services*. 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 Council (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

While Kansas Statute 65-6102 establishes the KBEMS as the lead EMS agency in Kansas, there appear to be many holes in the current design which weakens the overall system. Currently, the Board has an EMS staff, including a Chief Administrator. The KBEMS staff is very dedicated and has worked enthusiastically since the last assessment.

Despite their efforts, progress has been modest.

Testimony given the TAT described the regulatory responsibilities of KBEMS which includes; certification of attendants and instructor/coordinators, approval of training programs, and licensure of services and vehicles. While these areas are important, KBEMS does not have statutory authority to regulate all components of the EMS system including 9-1-1 dispatch centers, certification of dispatchers, medical oversight for dispatch centers, licensing of non-transporting agencies, approval of protocols and scopes of practice, instruction and approval of instructor coordinators and specific regulations for air ambulance services. Additionally, KBEMS lacks the statutory authority to categorize, organize, and deploy resources across Kansas for intra and inter state response to disasters.

Most glaring as a deficiency in the system is the ability of any physician, regardless of specialty, licensed to practice in Kansas, not only having the ability to serve as a medical director for an ambulance service but also having the power to authorize any individual to provide patient care regardless of training or background. Currently, KBEMS has no authority to enforce an EMS scope of practice, monitor the field personnel's standard of care, or assure the health and safety of the citizens of Kansas. The TAT was provided the 2005 KBEMS strategic plan currently being considered by the Board. There is still no formalized statewide EMS plan which addresses the needs of the EMS system. The Strategic plan appeared to be a plan for the Board and has little to do with the overall development of the Kansas EMS system.

From the testimony provided, the KBEMS is the entity regarded by providers as the lead agency for EMS. However, KBEMS lacks the necessary desire, strength and unified vision to lead the EMS system in Kansas.

A decision must now be made. KBEMS must either publicly perform their role as the lead EMS agency, directing staff in the regulation and management of the EMS system in Kansas or be reorganized to serve in an advisory capacity to the Chief Administrator who would report directly to the Governor. We strongly encourage the Governor and Legislative leadership to monitor progress towards implementing one of these choices. From this point forward in the report, we will refer to KBEMS as the lead EMS agency irrespective of which approach is selected.

Recommendations

- **The Governor and Legislative leadership must monitor progress towards KBEMS publicly performing their role as the lead EMS agency and directing staff in the regulation and management of the EMS system in Kansas or reorganize KBEMS to serve in an advisory capacity to the Chief Administrator.**
- The Legislature should complete the necessary statutory and regulatory changes to establish KBEMS as the single lead agency for all components of the EMS system to include authority to categorize, organize, and deploy EMS resources.
- **KBEMS should abolish the independent ability of a licensed physician to institute protocols which exceed the EMS personnel's authorized scope of practice.**
- KBEMS should develop standards for medical directors of ambulance services, non-transporting agencies, training institutions, and dispatch centers.
- KBEMS must develop and implement regulations for licensing of non-transporting agencies.
- The Legislature should establish and fund the position of a State EMS Medical Director for KBEMS.
- KBEMS in cooperation with the Kansas Air Medical Society (KanAAMS) should promulgate specific regulations for air ambulance services based upon the standards set forth by the Commission on the Accreditation of Air Medical Transport Services (CAAMTS).
- KBEMS should consider national guidelines and reflect contemporary terminology in any new statutes and regulations.

B. RESOURCE MANAGEMENT

Standard

Central coordination and current knowledge (identification and categorization) of system resources is essential to maintain a coordinated response and appropriate resource utilization within an effective EMS system. A comprehensive State EMS plan exists which is based on a statewide resource assessment and updated as necessary to guide EMS system activities. A central statewide data collection (or management information) system is in place which 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

Since the 1994 assessment, little progress has been made in the area of resource management. KBEMS continues to operate under Kansas General Statute 65-6102. The law does not provide for authority to coordinate all components of an EMS system.

Through the KBEMS licensing program and other sources of information, there is data about some of the State's EMS resources. From a demographic perspective, the Kansas EMS system has approximately:

- 11,000 certified EMS personnel at various levels
- 170 licensed ambulance services categorized as ALS, BLS, or Not Subject to Public Call
- 7 air ambulance services
- 856 ambulance vehicles
- 125 hospitals including 83 Critical Access Hospitals and 5 ACS verified trauma hospitals

In the absence of a process for centrally coordinating EMS resources, EMS organizations have evolved in size and number apparently in response to local demands and commitments of funding rather than in response to any uniform identification of need. The result is a distribution of EMS resources which appears to favor the larger population centers and leave the more rural or frontier counties challenged in terms of preparedness for interfacility transfers, mass casualty response and other needs beyond foundation level emergency response.

Non-transporting EMS agencies are an important EMS response resource which is currently outside of EMS regulation. The result is KBEMS has little formal knowledge about how many of these agencies exist, their staffing models, and response capabilities. From a public perspective, there is no assurance these agencies who are

answering public calls for emergency medical assistance meet any standard for training, equipment, operations, QA/QI, medical oversight, communications, or other essential capabilities to provide safe and effective care.

The Kansas Department of Health and Environment (KDHE) has made admirable progress on organizing a trauma system for Kansas. This effort has included the verification of 5 trauma hospitals at Levels I, II, and III. The implementation of the trauma system is proceeding logically and is working in the direction of meeting the needs of seriously injured patients at the nearest appropriate facility.

Several presenters spoke about the need to recruit and retain a more robust EMS workforce. This need was identified across the spectrum of volunteer and career ambulance services operating in both rural and urban settings.

Recent natural disasters have demonstrated the need to move EMS assets from one part of the State to another for the purpose of supporting overwhelmed local resources. A group of EMS managers has come together to build a Major Emergency Response Group (MERGe) which coordinates the movement and management of EMS assets for large scale disasters. This initiative currently includes participation from three of the six EMS regions. The willingness of individual services to come together and create this capacity is admirable.

The absence of a statewide communications system has made coordination of ambulance services for major events difficult. KDOT is taking several steps including the implementation of an 800 MHz trunked radio network and support for communications on wheels (COW) trailers. The Kansas Highway Patrol (KHP) is also developing some capabilities to coordinate communications on different radio spectrums.

Recommendations

- KBEMS must establish the authority in statute to centrally identify, categorize and coordinate all assets within the EMS system including ambulance services, non-transporting EMS agencies, dispatch-communications centers, EMS personnel, ambulance vehicles, and hospitals.
- KBEMS should evaluate the MERG concept in the development of a statewide strike team approach to disaster management.
- **KBEMS must continue with the implementation of a statewide electronic incident reporting system. This system is essential to obtaining the data which will support system evaluation.**
- KBEMS must assume leadership in system evaluation, needs assessment, and improved resource management strategies.

- KBEMS should develop and distribute to all ambulance services a statewide communications inventory which includes the contact numbers, frequencies, and similar data for dispatch centers, hospitals, and other communications assets to facilitate communications during interfacility transfers and large scale EMS responses.
- **KBEMS must develop a statewide EMS plan which includes details about the characteristics and capabilities of the EMS system. The current KBEMS plan describes a vision for Board operations but does not adequately address the State's EMS system.**

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 EMS personnel have access to specialty courses such as ACLS, PALS, BTLs, PHTLS, ATLS, etc., and a system of critical incident stress management has been implemented.

Status

KBEMS is responsible for the approval of all training and continuing education programs for attendants, instructor-coordinators and training officers. In addition, KBEMS approves methods of examination for initial and ongoing certification of these EMS personnel. Recently KBEMS decided to reinstitute the use of the National Registry of EMTs (NREMT) written examination for initial certification of attendants. Since the 1994 NHTSA assessment, KBEMS changed the recertification period for attendants from one year to two years.

In 1994, it was reported there were approximately 9,200 certified attendants in Kansas. As of July 2007, there are approximately 11,000 certified attendants in the State. Specifically, there are 1,025 first responders; 6,214 EMTs; 1,138 EMT-Is; 82 EMT-Ds; and 1,929 Mobile Intensive Care Technicians (MICTs); 192 instructor/coordinators and 523 training officers I and II.

The number of hours of documented and approved continuing education (CE) for each attendant level is established by KBEMS. However, they do not mandate what training must be completed. For the most part, ambulance service directors and/or medical advisors dictate the content and topics for their respective CE programs. It was reported that activities and training remotely related to patient care are routinely submitted and approved for CE credit by KBEMS. Several presenters reported the autonomy to determine how CE requirements are met is important to EMS agencies operating in rural areas of the State with limited personnel resources.

Involvement of medical advisors in training and quality assurance programs varies widely across the State. Medical treatment protocols are developed locally and are approved by the local Medical Society or the medical staff of the hospital to which the ambulance service transports most of its patients. Establishing statewide EMS protocols appeared desirable although potentially highly charged.

KBEMS was praised by several presenters for establishing a full-time Education Manager position to help guide and direct the development of education and training programs. It was noted staff rarely attend to verify and monitor the quality of training programs. During testimony, several individuals stated their training records have never been audited by KBEMS. It was reported by staff the Education Manager has recently begun visiting educational programs and offering technical assistance to instructors. Examples of problems identified during these visits include required topics and procedures and techniques which appear on the class schedule but are frequently not taught.

Kansas has an Education Incentive Grant program to defray the cost of EMS training for volunteer EMS personnel. The goal of this program is to ensure an adequate supply of EMS personnel.

On a number of occasions testimony reflected the need for funding to improve the access and availability of specialty training programs (ACLS, PALS, ITLS, PHTLS, ATLS, etc.).

The Kansas legislature recently established an EMS enhancement grant to provide funding to EMS regional councils and ambulance services to purchase necessary equipment, supplies, and support EMS with specialized training programs. Pass through funding and competitive grants to ambulance services will be administered by KBEMS. According to testimony, the supply of equipment and vehicles is adequate and a significant portion of these new monies should be earmarked for training.

There remains a perceived shortage of EMS personnel throughout Kansas. Some testimony suggested this is due to low salaries. No formal needs assessment has ever been performed to determine actual staffing requirements for the system. Approximately 55% of certified EMS personnel are not affiliated with an ambulance service. An unknown number of certified personnel are associated with industrial brigades (manufacturing, oil refinery, etc.) or similar agencies. Ambulance service managers reported long distance interfacility transfers place a burden on local squads working to maintain 9-1-1 coverage.

Staffing shortages at rural hospitals are expanding the expectations of rural EMS providers as they are more involved in patient care while in the emergency department.

Recommendations

- KBEMS should embrace the EMS Education Agenda for the Future as the template for improvements to the EMS education system in Kansas.
- **KBEMS should establish statewide EMS treatment protocols which must align with a statewide scope of practice.**
- Service managers should perform a needs assessment of personnel to staff their local system and these findings should be reported to KBEMS to assist with a statewide strategic plan for workforce development. ■
- **KBEMS must update its CE requirements to enable providers to maintain National Registration while preserving maximum flexibility at the local level.**
- KBEMS should develop standards which require EMS Instructor Coordinators to assure appropriate medical oversight and participation in course offerings.
- KBEMS should continue the Education Incentive Grant program as a workforce development initiative.
- KBEMS should institute a process to routinely monitor and evaluate the performance of instructor coordinators.

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

The Citizens of Kansas currently have access to 173 ambulance services which fall into three types I, II, and V with a total of 648 vehicles in the fleet. Ambulance transportation is provided by a combination of public, private, and volunteer services. Statewide minimum staffing levels have been established by KBEMS; however, non-transporting response agencies remain unlicensed. Licensed ambulance services, both ground and air are inspected annually. Testimony provided to the TAT suggested roughly half of all ambulance vehicles are inspected each year.

Since the 1994 assessment, there has been a decrease in the total number of ambulance services. Testimony provided to the TAT suggested a better coverage pattern for the system despite this loss. There appears to have been a combination of services in some rural areas.

Based on the information provided to the TAT, no statewide transportation plan exists. On a regional level, some work has been done to discuss the appropriate utilization of transportation resources in rural areas especially in the area of inter-facility patient transports.

There seems to be a general feeling among providers, especially rural providers, suggesting ambulances are sometimes utilized for long distance transports in reaction to staffing shortages at rural hospitals.

There was a request by some of the air ambulance services to have separate regulatory requirements for their particular services. This request originates as an effort to better

define the standards for providing air transport in Kansas and a desire to utilize national guidelines. Additional testimony suggested five of the seven current air ambulance services are accredited through CAAMTS.

Throughout much of Kansas there is a perceived shortage of EMS personnel. A statewide workforce development initiative would be beneficial to the system as a step towards alleviating the perceived manpower shortage in much of rural Kansas.

An Emergency Vehicle Operators Course (EVOC) has been developed and made available. Although, it is not a statewide requirement ambulance attendants participate in an EVOC course, some local services provide EVOC training for their personnel.

Recommendations

- KBEMS in cooperation with professional EMS associations should develop a statewide transportation plan.
- **KBEMS in cooperation with stakeholders must develop and implement regulations for non-transporting agencies.**
- **KBEMS must inspect and license non-transporting services.**
- KBEMS should develop and implement updated regulations for air transport services.
- The service directors in cooperation with the Kansas Hospital Association (KHA) should promote recruitment activities for ambulance services.
- KBEMS should mandate EVOC or equivalent training statewide for all EMS personnel operating emergency vehicles.

E. FACILITIES

Standard

It is imperative 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 which 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 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

To a great degree, the recommendations of the 1994 TAT have been addressed.

There are currently 125 hospitals in Kansas, of which 83 are Critical Access Hospitals and two are Burn Centers. Additionally, there is a Pediatric Center in Kansas City, MO. It appears the specialty needs of the State are met by currently available facilities. Five hospitals have closed in the past 10 years. Utilizing trauma hospital criteria, there are three with Level I capabilities, one with Level II capabilities and six with potential Level III capabilities, one in each of the EMS/Trauma Regions. It is estimated there are twenty-five facilities which have full time, in-house physician coverage in the Emergency Department, which includes all of the Level I, II and potential III facilities.

Both the KHA and the American Hospital Association “assess” hospital assets in Kansas, but none of the information is used to categorize emergency department capabilities, using non-proprietary information which is available to the public. Therefore, there is currently no categorization information generated by the KHA available to the EMS community to develop broad triage and transfer protocols even though there is KHA representation on the Board. It appears out-of-hospital triage guidelines have been developed regionally, based on local “common knowledge”, but it is unclear as to the degree this has occurred.

Since 1994, the Trauma System has evolved extensively and there are now three ACS

Verified Level I, one Level II and one Level III hospitals in the State with plans to upgrade five more hospitals to Level III status, one in each of the remaining five EMS regions.

Recommendations

- The KBEMS Medical Advisory Committee (see last recommendation on page 26) should:
 - Examine and evaluate the existing regional triage and transfer protocols for appropriateness and correlation with facility care capabilities;
 - Arrange a multiregional representative meeting to develop cross regional minimum standards for triage and transfer.
- KBEMS should work with the KHA to obtain information regarding emergency department capabilities of all Kansas hospitals and utilize this information in the development of triage protocols.

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 which 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 which allows for direct communication between all providers (dispatch to ambulance communication, ambulance to ambulance, ambulance to hospital, and hospital to hospital communications) to ensure 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

Since the 1994 assessment, little has changed in the structure of the Kansas EMS communications network.

All of Kansas except one county is reported to have 9-1-1 coverage with a growing percentage of the State having enhanced 9-1-1 and wireless enhanced 9-1-1 capabilities.

There remains no requirement in Kansas for the training of EMS dispatchers or medical oversight in the provision of pre-arrival instructions.

EMS radio communication in Kansas is not a statewide system but rather a patchwork of many local subsystems. At the municipal and community levels, communications are reported to work reasonably well in support of dispatch and operations. These local subsystems break down when there is a need to coordinate EMS resources from outside the area which operate on different radio spectrums. Examples of this include mutual aid, long distance interfacility transfers, and mass casualty incidents.

All presenters agreed a single system solution was unlikely to work given the cost of replacing existing infrastructure.

KDOT is working to establish an 800 MHz trunked radio system which can support EMS communication needs along with KHP and KDOT applications. Barriers to this

approach include the cost of the radios, the pace of the rollout and lack of commitment to install the system in the western side of the State. These are significant limitations to the model as it is proposed. The northwestern region has embarked on the creation of a common VHF system to assure a communications pathway among participating counties.

The Governor's office has recently appointed leadership charged with the development of a statewide interoperability plan. A significant amount of federal funding is available if an appropriate plan can be written quickly.

Recommendations

- KBEMS should develop and distribute to all ambulance services a statewide communications inventory which includes the contact numbers, frequencies, and similar data for dispatch centers, hospitals, and other communications assets to facilitate communications during interfacility transfers and large scale EMS responses.
- KDOT should reassess its plans for rollout of the 800 MHz trunked radio system. Where possible, adjustments should be made to address the concerns of EMS providers about radio costs, timeframes for implementation, and statewide system coverage.
- The KBEMS Chief Administrator should participate actively in the development of the statewide interoperability plan to assure representation of EMS needs and capabilities.
- The Statewide Interoperability Committee needs to make statewide EMS communications a priority.
- **KBEMS must establish training and certification requirements for EMS dispatchers and the medical oversight of pre-arrival instructions.**

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 consistent, structured PI&E programs are in place and 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 which potentially results in injury/illness prevention.

Status

Little has been done to address the recommendations made in the 1994 assessment report. The KBEMS web site has been updated and revised and a listserv has been established to disseminate information to interested persons.

The presenters acknowledged the public's awareness of EMS is rising; however, there remains much room for improvement. KBEMS is not engaged in planning or providing PI&E.

A number of local and regional educational programs to enhance the public's knowledge of EMS, CPR, and AED programs have been developed and implemented across the State. There is no evidence of a coordinated statewide effort to promote public education and information about EMS. There are currently a number of separate efforts by State agencies and organizations in Kansas to manage and disseminate information to the public (i.e., Emergency Management, Fire, KDHE, etc.)

The KDHE, Office of Health Promotion has been successful in initiating a number of public education and information programs. At the present time, KDHE works more closely with local EMS agencies on PI&E initiatives than does KBEMS. KDHE has established a State injury prevention plan which will be updated in 2009.

The EMS for Children program was established 13 years ago. Safe Kids Kansas is a nonprofit coalition of 67 statewide organizations and businesses dedicated to

preventing unintentional injuries to Kansas children. There are five local Safe Kids Coalitions and 33 local chapter affiliates.

Public Information and Education activities are frequently not a priority for ambulance services. Rural ambulance services often have one full time service director who is responsible for staffing, billing, and responding to EMS calls. When time permits, efforts to teach CPR in public schools and educate the public about how to access 9-1-1 services are conducted. It was stated there is a need to provide information to EMS organizations on how to access resources about public education and injury prevention.

Within the last several years, KBEMS has offered several NHTSA PIER courses in the State. Approximately 20 to 25 individuals attended each training program and provided positive feedback.

Recommendations

- KBEMS should work more closely with KDHE and other stakeholders to identify initiatives and develop a statewide plan for public information, education and injury prevention.
- KBEMS should support information dissemination to EMS agencies, providers and the public about EMS in Kansas and how to properly access and utilize the system.
- KBEMS should continue to disseminate information to EMS agencies about EMS Week and other initiatives.
- KBEMS should collaborate with the Governor's Council on Homeland Security and encourage ambulance service directors to become involved in the developing Public Information Officer network.
- KBEMS should facilitate ongoing offerings of the NHTSA PIER training program.

H. MEDICAL DIRECTION

Standard

EMS is a medical care system which 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 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

Since the 1994 assessment, little progress has been made in the evolution of the medical advisor role.

The Governor appointed a KBEMS medical advisor; however, this position has limited influence on the quality of care provided within the EMS system.

Local physician Medical Advisors (MAs) are tasked with the oversight of quality of care at the service level. The MA is not required to have an EMS knowledge base. The job description and duties of the MA are not well defined at the State level and vary by service. There is regulation requiring MA approval of protocols (vide infra) and involvement with quarterly quality improvement (QI) activities.

The local MA may expand the State authorized scope of practice for the personnel functioning under their license. Coupled with the lack of specific EMS knowledge of many MAs, this establishes a model where the scope of practice of some personnel appears to exceed generally accepted safeguards and principles. It is not clear if the QI process functions well enough to ensure the citizens of Kansas are consistently receiving optimal care.

No formal training mechanism for MAs is currently available for those who are interested. The Medical Advisor's course was presented last in 1999, and seems to have lost momentum. From the 1994 NHTSA assessment, *"There is no communication between the MAs and the KBEMS regarding responsibilities of the MA, information*

regarding Kansas EMS, and activities of KBEMS.” This appears unchanged today.

Local medical societies or hospital staffs are required to approve medical protocols proposed by the MA. This seems a cumbersome system which has the potential for significant conflict between two factions who may have diverse goals and subject knowledge.

The TAT received information suggesting involvement and leadership was sometimes lacking at the local MA level. This lack of involvement extended to primary and continuing education training programs as well as daily ambulance operations. It was pointed out busy family practitioners in small towns do not have the knowledge, time, and (in some cases) interest to provide the leadership to the local EMS service or training entity.

Similarly, physician on-line medical control seems to suffer outside of the urban/suburban areas. The lack of emergency physicians in many of the smaller hospitals, coupled with spotty communications results in many systems which operate from off-line medical control only. The danger is most evident in the number of long distance transfers when crews are out of communication with any physician for extended periods of time. Often these transfers involve critical patients who are the most likely to require medical advice not covered by standard “primary response” protocols.

KBEMS has no means to ensure MA EMS competency or involvement. KBEMS has limited authority to investigate or discipline individuals acting outside the “authorized activities” under approved protocols from the MA. The only recourse is physician discipline by the Board of Healing Arts which is misdirected and potentially unfair.

There is no requirement for non-transporting agencies in their provision of care or dispatch agencies providing pre-arrival instructions, for a medical advisor to oversee their practice of medicine. This leaves a large spectrum of the patient’s care, from 9-1-1 contact until a transporting service arrives, completely without physician oversight.

Recommendations

- **KBEMS must institute the recommendation of the 1994 TAT which was, *“Redefine the medical Consultant position as the State EMS Medical Director for the KBEMS. Roles and responsibilities for the medical director should be developed, including medical input into protocols and all issues related to the care of EMS patients. The medical director should serve as a medical resource and provide leadership to local EMS medical directors.”***
- **KBEMS must define roles, responsibilities, and qualifications of MAs which include oversight of QI programs, 9-1-1 medical functions, and all medical aspects of EMS operations.**

- KBEMS should reinstitute a formal training program for new and established MAs based on national guidelines.
- **KBEMS must require all patient care to be supervised by an MA. All EMS agencies, regardless of transporting status, must have a qualified MA.**
- **KBEMS must abolish the provision of local medical societies or hospital staffs having approval authority over EMS protocols.**
- KBEMS must establish statewide EMS protocols which reflect minimum patient care standards.
- KBEMS should adopt statewide scopes of practice for all levels of personnel based on the National Scope of Practice Model. There should be no local variations in the scopes of practice without specific approval from KBEMS
- KBEMS should work with stake holders to encourage better planning for the on and off-line medical control of interfacility transports.
- The KBEMS State EMS Medical Director should chair a medical advisory committee with regional participation to oversee statewide EMS medical policy.

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

At the time of the 1994 Technical Assessment Team visit there was not a Trauma System, State Designation of Trauma Centers, a statewide Trauma Registry, essentially no prehospital trauma triage criteria and trauma patient death autopsies were not mandated. Three facilities were verified by the American College of Surgeons (ACS) as Trauma Centers.

During the next five years, with strong input from the Kansas Committee on Trauma, recommendations were made to create a Kansas Trauma Advisory Committee and to proceed with the development of a formal trauma system. In 1999, legislation was passed initiating the system by creating the Kansas Advisory Committee on Trauma (ACT) and its associated six Regional Trauma Advisory Councils, designating the KDHE as the administering agency, and implemented a statewide Trauma Registry. By 2001, the ACT had developed the Kansas Trauma Plan, instituting an inclusive, voluntary system, delegating most development activities to the Regional Councils.

During the following six years, a statewide trauma registry has been adopted and instituted, with current participation by all but two hospitals. All of the regions, with surgical input, have completed comprehensive Regional Trauma Plans and two more hospitals have been verified by the ACS (for a total of 3 Level Is, 1 Level II and 1 Level III). In addition, there are two American Burn Association certified burn centers in the State. Trauma registry data is being processed, clinical care patterns for 10 registry generated indicators analyzed, and feedback to the facilities instituted on a quarterly basis, with the capability of returning comparative care performance data to hospitals on request. With regional support, there are 11-12 ATLS courses offered annually, with

good participation by physician extenders who staff CAH facilities. ITLS/PHTLS continue to be offered to prehospital personnel, and the ACS TEAM course has been instituted for the outlying smaller hospitals. The Regional Trauma Plans include trauma triage and transfer guidelines and Regional Quality Assessment programs. The lack of standards and medical control for dispatch centers has proven problematic for utilization of trauma triage guidelines.

Legislatively, a dedicated funding source has been instituted based on a small percentage of Kansas court docket fees, confidentiality has been strengthened, and broader use of information in QA has been allowed.

The process for State Trauma Center Designation of Level I, II, and III hospitals has been formulated and is ready to be instituted. Level I and II facilities will be designated through ACS Verification and Level III facilities will be designated by the State using slightly modified ACS criteria. The lack of surgical manpower coverage in two of the potential level IIIs may be problematic for designation. The designation process does not allow for inclusion of out of State referral facilities in the Kansas trauma system. There is, as of yet, neither a plan nor criteria for the designation of Level IV facilities. State and regional Trauma Peer Review Committees are now being developed with the goal of instituting Quality Assurance activities within the year.

Immediate and future initiatives include a Trauma System Assessment by the ACS Committee on Trauma, support for development of Trauma Programs within the remaining 5 potential Level III facilities, and Designation of these hospitals.

Other activities include development of designation criteria for Level IV facilities and their designation. These small facilities exhibit universal interest in participating in the trauma system.

Recommendations

- The Advisory Committee on Trauma should seek additional dedicated funding to:
 - Fund the development of trauma programs in the Level III facilities
 - Fund completion of the designation process of the Level III facilities
 - Fund consultation visits and designation of the Level IV facilities
 - Fund ongoing improvements to the statewide system infrastructure
 - Continue funding of Regional Trauma Advisory Councils
- KDHE should develop a process to include out of state receiving hospitals in the Kansas trauma system.
- The ACT should work with the KBEMS to develop standards for dispatch centers to include EMD training and medical advisor oversight.
- **The ACT should complete Level III designation within one year, as planned.**

- **The ACT must begin designation of qualified Level IV facilities as soon as possible.**
- The ACT should seek statutes or regulations to require mandatory autopsy of all trauma deaths.

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 which 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 which 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 which are needed to exceed the standards and a mechanism to measure the impact of the improvements once implemented. Patient outcome data is collected and integrated with health system, emergency department and trauma system data; optimally there is linkage to data bases outside of EMS (such as crash reports, FARS, trauma registry, medical examiner reports and discharge data) to fully evaluate quality of care. The evaluation process is educational and quality improvement/system evaluation findings are disseminated to out-of-hospital emergency medical care providers. The lead agency ensures all quality improvement activities have legislative confidentiality protection and are non-discoverable.

Status

The lack of information is significantly hampering the efforts of the KBEMS and local EMS services in evaluating the effectiveness and safety of their systems. It is hoped the Kansas Emergency Medical Information System (KEMIS) program will significantly help alleviate this dearth of data.

The current QI program has been supported by KBEMS through a training program for service administrators. The requirement for quarterly QI reviews is monitored closely by KBEMS personnel as part of the annual ambulance service review. EMS records are reviewed and a link to the service's QI process is sought if any problems are identified. Reports to the TAT suggested this process was working quite well.

Trauma Registry data is now being collected by almost every hospital in Kansas. It is

hoped this increased data collection will support refinements to the system. Trauma autopsy data remains a difficult problem in most of the State.

One identified area of potential improvement was in linking the trauma system database with the KEMIS data.

KBEMS has addressed the 1994 TAT's concern about out-of-hospital information being left at the receiving facility.

The overall goal of both the trauma system and the EMS system is to have a functional evaluation process. Both proposed systems are too new or under development and it is too early to make any reasonable assessment of their effectiveness.

Recommendations

- **KBEMS must continue the QI training sessions for both service administrative personnel and for medical advisors.**
- **KBEMS should work with the KHA to provide an encouraging structural framework to share outcomes data with out-of-hospital agencies.**
- EMS agencies should support data collection efforts to facilitate EMS research, needs assessments, and further refinement of the EMS system.
- Data collection efforts should support the ability of the individual service to benchmark itself against "like" services within the State.
- The ACT should work in conjunction with KBEMS to develop a common identification system for all interfacility transfer patients.

K. DOMESTIC PREPAREDNESS

Status

Without the direction of the Board, providers in Kansas have looked to themselves for much of their preparedness efforts. A group of EMS providers have come together to develop a MERGe. Outside of this group, little appears to have been done in the categorization and organization of resources across Kansas from an EMS perspective. While KDOT and the KHP have worked together on the development of the COW concept for communication, there is no deployment strategy for EMS resources in intra or inter state disasters.

Recently, there has been an increase in the amount of participation of EMS providers in Homeland Security planning activities and funding requests. How this increase in participation benefits the preparedness of the overall EMS system remains unclear.

Without strong leadership from KBEMS, providers are left to develop and implement a patchwork solution to local and regional disasters which have become more common.

Recommendations

- KBEMS should use their local inspection data to categorize and organize a complete inventory of all State EMS assets.
- KBEMS should evaluate the MERGe concept in the development of a statewide strike team approach to disaster management.
- KBEMS and KDEM should develop a rapid deployment strategy of assets to intra and inter state disasters.
- KBEMS should be recognized as the single lead agency for the deployment of EMS assets in times of disaster.

L. CURRICULUM VITAE

Brian K. Bishop

Executive Director
Kentucky Board of Emergency Medical Services,
2545 Lawrenceburg Road
Frankfort, Kentucky 40601
(859) 256-3565
FAX: (859) 256-3590
Brian.bishop@ketes.edu

Organizations/Appointments

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

David W. Bryson

EMS Specialist
U.S. Department of Transportation
National Highway Traffic Safety Administration
1200 New Jersey Ave, SE (NTI-140)
Suite W44-320
Washington, DC 20590
(202) 366-4302
FAX (202) 366-7721
dave.bryson@dot.gov

EMS Specialist
DOT, National Highway Traffic Safety Administration
(May 1995 - to Present)

Assistant Chief and Life Member
Fairfax Volunteer Fire Department, Inc.
City of Fairfax, VA
(April 1989 - Present)

ORGANIZATIONS/APPOINTMENTS

National EMS Education Agenda for the Future: A Systems Approach
National EMS Core Content
National EMS Scope of Practice Model
National EMS Education Standards
Emergency Medical Technician- Intermediate & Paramedic Revision Project
NHTSA Liaison to:
 National Registry of Emergency Medical Technicians
 International Association of Fire Chiefs
 International Association of Fire Fighters
 NASEMSO – Training Coordinators Council
Fairfax Volunteer Fire Department, Inc.
 Assistant Chief of Operations
 Board of Directors
 Life Member

Bill Jermyn, DO, FACEP

State EMS Medical Director
Bureau of EMS, Missouri Department of Health
1116 B Charm Villa Drive
Jefferson City, MO 65109
(573)526-0723
FAX: (573) 751-6348
Bill.jermyn@dhss.mo.gov

ORGANIZATIONS/APPOINTMENTS

Instructor, Division of Emergency Medicine, Washington University in St. Louis
American College of Emergency Physicians (ACEP)

EMS Committee, Chair

EMS/Prehospital Section, Chair,

Awards Committee, Trauma Care and Injury Control Committee, Member

Steering Committee

Commission on Accreditation for Ambulance Services, Board of Directors

Missouri College of Emergency Physicians, past-president, Chair EMS Committee

Missouri State Advisory Council on EMS, Chair

EMS, Gathering of Eagles Coalition, member

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

W. Dan Manz

Director
Emergency Medical Services Division
Department of Health
Box 70, 108 Cherry Street
Burlington, VT 05402
(802) 863-7310
FAX: (802) 863-7577
dmanz@vdh.state.us

ORGANIZATIONS/APPOINTMENTS

National Association of State EMS Directors
Past President
Past Treasurer
Executive Committee
Past Member Clearinghouse Management Committee
New England Council for EMS
President
Executive Committee
Vermont Trauma System Development Committee
Co-Chair
EMS Agenda for the Future
Co-Chair
EMS Agenda for the Future Implementation Guide Committee Member
Vermont State Firefighters Association
National Registry of EMTs, Board Member
Essex Rescue, EMT-I Captain
Health Care Finance Administration Negotiated Rule Making, Committee Member
National Scope of Practice Model Project – Principal Investigator
American College of Surgeons – Trauma System Assessment Team Member
HCFA Negotiated Rule Making – NASEMSD Representative
EMSC Grant Review Team Member
USDOT, NHTSA EMS Assessment Program, Technical Assistance Team, Member,
States of Delaware, Texas, and North Dakota
USDOT, NHTSA EMS Reassessment Program, Member, States of Colorado, Alaska,
Connecticut, Delaware, Mississippi, and Oregon.

Stuart A. Reynolds, MD, FACS

General Surgeon, Northern Montana Hospital
120 Thirteenth Street
Havre, MT 59501
(406) 265-9785
FAX (406)265-9785
Stumt@hi-line.net

ORGANIZATIONS/APPOINTMENTS

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

P. Scott Winston

Assistant Director
Virginia Department of Health
Office of Emergency Medical Services
109 Governor Street
Suite UB-55
Richmond, VA 23219
(804) 864-7600
FAX (804) 864-7580
scott.winston@vdh.virginia.gov

ORGANIZATIONS/APPOINTMENTS

Assistant Director, VDH, Office of EMS (Sept. 1997 - to Present)
Manager, Licensure and Certification, Virginia Department of Health.
Office of EMS, May 1989 – Sept. 1997
Deputy Emergency Services Coordinator
City of Roanoke, VA
Office of Emergency Services
Oct. 1985 – April 1989
Nationally Registered EMT-Paramedic
Aug. 1985 – March 1993
Virginia EMT-Paramedic
Nov. 1985 - present
Atlantic EMS Council
Alliance for Emergency Medical Education and Research
National Association of State EMS Officials
Virginia Corps State Council
Virginia Recruitment and Retention Coordinators Network