



MICHAEL R. PENCE, Governor
STATE OF INDIANA

INDIANA DEPARTMENT OF HOMELAND SECURITY
302 West Washington Street
Indianapolis, IN 46204

September, 2015

Dear EMS Colleague:

I am pleased to present to all EMS stakeholders the Final Report from the July 7, 8, and 9, 2015 National Highway Traffic Safety Administration, EMS Office (NHTSA) reassessment of our State's EMS System. The previous NHTSA EMS Systems Assessment was performed in 1989.

The TAT consisted of EMS subject matter experts consisting two (2) State EMS Directors, a Deputy Director from a State EMS Office, a Trauma Surgeon and an EMS Medical Director with support and coordination from the NHTSA EMS office.

All TAT members were provided background and resource information prior to their arrival including copies of Statutes, Rules and Regulations, description of current policies and procedures as well as information on current EMS resources and education standards and programs.

During the day and a half of gathering information, nearly 30 Indiana EMS stakeholders attended and made presentations to the TAT on their perspective of eleven system components regarding Indiana's EMS System.

Attached is a copy of the Final Report of Finding and Recommendations of the Technical Assistance Team. The Final Report includes nearly 60 recommendations for your consideration. We are working to prioritize the recommendations. With the EMS Commission, we will be developing a plan and implementation schedule.

Please take the time to review the attached report. We have begun working with the EMS Commission to review and prioritize the recommendations and begin the development of implementation plans. Thank you again for your work in this successful endeavor.

Thank you,

Michael S. Garvey, EMS Director



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STATE OF INDIANA



A REASSESSMENT OF EMERGENCY MEDICAL SERVICES

July 7- 9, 2015

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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.

The Center for Disease Control and Prevention reports that in 2012 the cost of crash injuries totaled \$18 billion in lifetime medical costs. In addition, work lost because of crash injuries cost an estimated \$33 billion. 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 33,000 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 death and injury on the nation's highways. NHTSA has determined it can best use its limited EMS 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 now uses the same ten component areas plus the area of preparedness with updated standards. The standards now reflect current EMS philosophy and allow for the evolution into a comprehensive and integrated health management system, with regional accountable systems of care, as identified in the 2006 Institute of Medicine (IOM) Report on the Future of Emergency Care. 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 Indiana Department of Homeland Security and the Indiana State Fire Marshal requested the assistance of NHTSA. NHTSA agreed to utilize its technical assistance

program to provide a technical reassessment of the Indiana statewide EMS program. NHTSA developed a format whereby the EMS staff coordinated comprehensive briefings on the EMS system.

The TAT assembled in Indianapolis, Indiana, on July 6-9, 2015. For the first day and a half, over 30 presenters from the state provided in-depth briefings on EMS and trauma care. Topics for review and discussion included the following:

General Emergency Medical Services Overview of System Components

- Regulation and Policy
- Resource Management
- Human Resources and Education
- Transportation
- Facilities
- Communications
- Trauma Systems
- Public Information and Education
- Medical Direction
- Evaluation
- 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 Indiana. The team spent considerable time with each presenter so they could review the status for each topic.

Following the briefings by presenters from the Indiana EMS, 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 the TAT focused on major areas for system improvement.

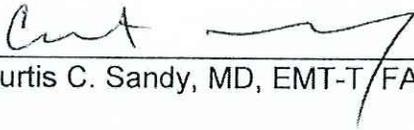
The statements made in this report are based on the input received. Pre-established standards and the combined experience of the team members were applied to the information gathered. All team members agree with the recommendations as presented.



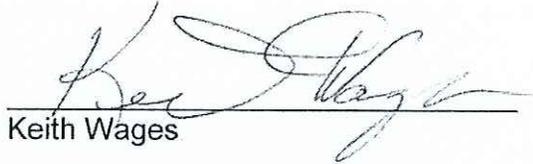
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ACKNOWLEDGMENTS

The Technical Assistance Team (TAT) would like to acknowledge the Indiana Department of Homeland Security and the Indiana State Fire Marshal for their support in conducting this assessment and the State Highway Safety Office for participation in the assessment process.

The TAT would like to thank all of the presenters for being candid and open regarding the status of EMS in Indiana. 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 go to EMS Branch Director, Michael Garvey, Indiana Department of Homeland Security and his staff for their logistical support and gracious hospitality. Thanks also to all the briefing participants for their extraordinary efforts and well-prepared presentations.

The EMS Assessment team would like to extend a special thank you to the Indiana Department of Homeland Security, State Fire Marshal's Office, and the EMS Branch for supporting our assessment. In addition the team would like to offer a special thanks to Professional Fire Firefighter's Union of Indiana, the Indiana Hospital Association and the Rural Health Innovation Collaborative for providing beneficial networking opportunities.

INTRODUCTION

Indiana, nicknamed the "Crossroads of America", is known for farmland, basketball and its renowned auto race, the Indy 500, held annually on Memorial Day weekend at the famed Indianapolis Motor Speedway. While internationally known for racing, basketball is the official sport of the Hoosier State and Indiana's passion for basketball has been observed and written about by the game's inventor, James Naismith. In 1925, Naismith, after attending the Indiana high school basketball championship with 15,000 passionate fans, wrote that "while the game of basketball was invented in Massachusetts, it has its origin in Indiana, which remains the center of the sport." Through the years, basketball has remained one of Indiana's passions, whether at the high school, college or professional level, and it has enjoyed much success at all three levels.

Both of these sports offer an apt analogy for the provision of EMS and the future development of the EMS system in Indiana. While the fame of the moment is often given to the likes of Foyt, Unser and Penske when they pull into Victory Lane, that last drive would not be possible without the mechanics that changed the tires or refilled the gas tank at the crucial moment, with speed and expertise. Of what value is a Larry Bird if he has no one to pass him the ball? And would a team be as successful on the court without the leadership and direction of someone like Bobby Knight or Digger Phelps?

While it may not appear in a written document, a state statute or formal rule, Indiana has applied this same concept to another of its great passions; its commitment to public service and almost 7,000,000 people that proudly bear the title of "Hoosier".

During the recent visit by the NHTSA State EMS Assessment Team, that passion and commitment, that dedication to teamwork, was demonstrated by representatives from a cross section of EMS providers from throughout the state. From the small, rural volunteer services, to the suburban departments, to the sophisticated urban system in Indianapolis, the people responsible for Indiana's EMS and trauma system are pressing towards Victory Lane, and envisioning that moment when the trophy is presented.

While it is true that in building vibrant, relevant EMS and trauma system we are never able to say, "We finished the race" or "We are the champions" the call to continuously pursue that success never diminishes. The people of Indiana have heard this call. They are in the game. They are striving towards Victory Lane.

We salute the people of Indiana for their efforts, and hope that our efforts in providing this assessment are of value in plotting the course of development of this integrated system of care. All of the team members realize fully the challenges Indiana will face in developing this system in the near future, and we are grateful for the opportunity to assist our colleagues and partners. Thank you for this opportunity to collaborate, and whether a Bulldog, a Cowboy, a Cavalier, a Wildcat, a Colonial, Terrapin or a Seminole, we are grateful for the opportunity to be a "Hoosier" for a very brief time.

A. REGULATION AND POLICY

Standard

Each State should embody comprehensive enabling legislation, regulations, and operational policies and procedures to provide an effective statewide system of emergency medical and trauma care and should:

- Establish the EMS program and designate a lead agency;
- Outline the lead agency's basic responsibilities and authorities including licensure and certification including the designation of emergency medical services regions;
- Require comprehensive EMS system planning;
- Establish a sustainable source of funding for the EMS and trauma system;
- Require prehospital data collection which is compatible with local, State and national efforts such as the National EMS Information System (NEMSIS) and evaluation;
- Provide authority to establish minimum standards related to system elements such as personnel, services, specialty care facilities and regional systems and identify penalties for noncompliance;
- Provide for an injury/trauma prevention and public education program;
- Integrate the special needs of children and other special populations throughout the EMS system; and
- Integrate pediatric EMS needs into State statutes, rules and regulations.

All of these components, which are discussed in different sections of this guideline, are critical to the effectiveness of legislation, regulations or policies/procedures which are the legal foundation for a statewide EMS system.

Status

The Indiana Department of Homeland Security (IDHS), Division of Fire and Building Safety, EMS Branch is the lead agency for the state's EMS system development activities as established by Indiana Code Chapter 16.

The Indiana State Department of Health (ISDH) is the lead agency for Trauma System Development and Injury Prevention.

In order to fulfill the obligations as the lead agencies, both IDHS and ISDH work in conjunction with the Indiana EMS Commission (IEMSC), a statutorily-established commission with authority to promulgate EMS rules and regulations. Additionally, the IEMSC is supported by the Technical Advisory Committee (TAC), a broad-based group of EMS stakeholders from throughout the State of Indiana.

While the lead agency structure is somewhat unique, staff from the IDHS and ISDH as well as members of the IEMSC and TAC all demonstrated a commitment to working together to assure a seamless EMS and Trauma system.

The EMS Branch is comprised of seventeen fulltime staff, including the recent addition of a State EMS Medical Director. The State of Indiana is divided into 10 regions based on public health districts and regional activities are supported by four EMS District Managers.

In addition to the fulltime EMS staff, the IDHS provides additional support to the EMS program through its fiscal, planning, public information, and legal services divisions.

The enabling legislation in Chapter 16 is comprehensive and inclusive of most necessary elements to conduct system planning, implementation and data collection.

Minimum standards for all levels of EMS personnel have been established, consistent with the National Education Standards. A state examination is being utilized at the EMR and EMT levels and the National Registry of Emergency Medical Technicians (NREMT) examination is being utilized at the Advanced EMT and Paramedic levels. Currently, there is no statutory authority to conduct FBI fingerprint-based criminal background checks on candidates for licensure at any level. Instead, the state relies upon self reporting and disclosure during the application and recertification/licensure process.

Significant progress has been made in the area of trauma system development and trauma registry data; however, at this time there has been limited progress made in the other time-sensitive conditions such as stroke and STEMI.

EMS providers are required to provide data from patient care reports to the IDHS utilizing NEMSIS version 2 and to conduct audits in conjunction with the local medical director and supervising hospital. Plans are underway to transition to NEMSIS version 3 effective January 2016. Currently, approximately 75% of the licensed EMS transport providers are routinely submitting data and efforts are currently underway to increase both the number and quality of the submissions.

Indiana has a robust injury prevention and public education program through a collaborative effort between the Indiana Criminal Justice Institute (ICJI)/Traffic Safety Division and the IDHS public information team led by John Erickson. In addition to including EMS articles in state newsletters and messaging via social media, the public information team provides assistance to local EMS agencies and state EMS

associations in developing articles and press releases on a wide range of topics related to EMS, prevention and safety.

Recommendations

- **The IDHS and the Indiana EMS Commission should seek explicit statutory authority to conduct FBI fingerprint-based criminal background checks for all candidates for licensure at the EMR, EMT, Advanced EMT and Paramedic levels.**
- The Indiana EMS Commission should promulgate rules and regulations to utilize the NREMT for the initial licensing of candidates at the EMR, EMT, Advanced EMT and Paramedic levels.
- **The State of Indiana should enact legislation and/or promulgate rules and regulations to formalize stroke and cardiac (STEMI) systems of care to include facility designation and data collection.**
- The IDHS, ISDH and IEMSC should clarify the legal aspects related to Community Paramedicine/Mobile Integrated Healthcare and seek to enact legislation and/or promulgate rules and regulations as necessary.

B. RESOURCE MANAGEMENT

Standard

Each State EMS lead agency should identify, categorize, and coordinate resources necessary for establishment and operation of regionalized, accountable EMS and trauma systems. The lead agency should:

- Maintain a coordinated response to day-to-day emergencies as well as mass casualty incidents or disasters and ensure that resources are used appropriately throughout the State;
- Have policies and regulations in place to assure equal access to basic emergency care for all victims of medical or traumatic emergencies;
- Provide adequate triage, including trauma field triage, and transport of all patients by appropriately certified personnel (at a minimum, trained to the emergency medical technician [EMT] level) in properly licensed, equipped, and maintained ambulances;
- Provide transport to a facility that is appropriately equipped, staffed and ready to administer to the needs of the patient including specialty care hospitals (section 4: Transportation);
- Appoint an advisory council, including pediatric EMS representation, to provide broad-based input and guidance to the state EMS system and to provide a forum for cooperative action and for assuring maximum use of resources; and
- Coordinate with State Highway Safety Agency and other State Agencies in the development of the Strategic Highway Safety Plan to ensure that EMS system information is used to evaluate highway safety problems and to improve post-crash care and survivability.

Status

Housing of the State EMS Branch within the Indiana Department of Homeland Security (IDHS) contributes to the inclusion of emergency medical services in the state's disaster and public health emergency planning and management efforts. This same structure presents challenges for the EMS Branch in its efforts to collaborate and coordinate with other partners, such as public health entities, in addressing their broad range of responsibilities. The State EMS Director is included as a member of the state incident management team and the State Emergency Operations Center (SEOC).

A previous initiative through IDHS established a District Response Task Force (DRTF)

in each of the 10 regions. This can offer a robust response and coordination capability within the State. It does not appear that this capability is being utilized to its full potential or that coordination is occurring between all response stakeholders. The DRTFs do not appear to have access to continued funding through IDHS or to other preparedness resources such as the State's Hospital Preparedness Program's (HPP) Healthcare Coalitions or the Public Health Emergency Preparedness (PHEP) programs.

Indiana Code 16-31-1(a) establishes that EMS is a matter of "vital concern" of the people of Indiana, and further establishes that "The provision of emergency medical service is an essential purpose of the political subdivisions of the state". (IC 16-31-2). This reflects the high degree of importance placed upon the development of the EMS system by the Indiana General Assembly. However, there does not appear to be a clear understanding of which political subdivision the General Assembly intended to shoulder this responsibility, nor is there a clear definition of the term "essential purpose".

The promulgation of administrative rules for system development is lagging behind and they have not been updated to match current demands and functions of the EMS provider organizations.

The Emergency Medical Services Commission has clear, statutory authority under the provisions of IC § 16-31-1 to establish a fee structure for the provision of licenses, but has not acted upon this authority. The failure to establish a fee structure prohibits the state's EMS system and EMS Branch from being fully funded as intended by the Indiana General Assembly.

The decision to transition the EMS data system to the IDHS from the ISDH appears to have been difficult for both entities. While the transition does place the data system in the purview of the regulatory agency, the IDHS does not appear to have a plan regarding how the data will be aggregated, analyzed, and then applied in improving the system. The Indiana EMS system is large and complex, with an enormous amount of data housed within the data system. The demands for performance based measurement of EMS will only continue to increase, and the analysis of collected data is not a simple task. With the efforts expended in establishing a robust Trauma and Injury Prevention Division within the Department of Health, the IDHS has an opportunity to avail itself of existing resources that are already familiar with the software system and EMS data. This cooperation would continue to build the relationship between these two departments, both of whom will have responsibility in managing a statewide disaster or public health emergency.

Indiana has placed a tremendous amount of effort and realized numerous successes in the development of its trauma system, to include the adoption of a protocol for the triage and transport of trauma patients that is based largely on the most current standards of the American College of Surgeons (ACS). As mentioned previously, there has not yet been a concerted effort in developing other vital systems of care to address other time sensitive emergencies such as stroke and ST elevation myocardial infarction (STEMI)

patients. Decisions related to the transport destinations of patients other than trauma are made locally, but there are no quantifiable measures at the state level to determine whether these decisions are being made appropriately.

Similarly, there is a wide disparity of resources between the urban and rural areas. This is particularly evident in the reliance upon volunteer and partially compensated EMS in the rural areas, which are estimated to account for 40-45% of the state's EMS provider organizations. This high percentage of volunteerism represents a subsidy of the EMS System in the form of free or discounted labor. As in other rural states that rely upon volunteer EMS, Indiana's rural EMS system is likely not sustainable. As this subsidy continues to dwindle, the State will have to develop alternative delivery models. This presents a tremendous challenge for the state's system that will continue to impact its development. It is critical that as the local urban systems continue to evolve, the entire state system continues its planning with deliberate consideration to the unique challenges of rural healthcare.

There is a statutory requirement for the appointment of a Technical Advisory Committee (TAC) by the Emergency Medical Services Commission. This committee does have representation for the care of pediatric patients. There is no language in the administrative rules that structures this committee or its functions. This lack of formality may be contributing to the slow decision making process. The EMS Branch is to be particularly commended for the establishment of the EMS Education Working Group.

The State EMS Director participates in the Traffic Records Coordinating Committee, and the EMS system receives appropriate support from the Highway Safety Office.

Recommendations

The Department should:

- **Request that the Attorney General's Office or General Assembly provide an interpretation or further statutory definition of both "essential purpose" and "political subdivision".**
- Establish a Memorandum of Understanding with the ISDH that utilizes the epidemiological resources of the ISDH to analyze EMS data, and provide linkages with other relevant data sources.
- Develop a plan for sustainability of the DRTFs. This plan should provide for the inclusion of the DRTFs in the coordination efforts of the HPP and PHEP programs.

The Commission should:

- Consider the creation of other advisory groups (for example rural EMS, and air medical) to ensure that specific interests and stakeholders are given adequate consideration;
- Revise the administrative rules relevant to the definitions and operations of the EMS provider organizations to match current practices and demands;
- **Establish a fee structure for provider and personnel licensing that meets the intent of the Indiana General Assembly;**
- Consider the creation of a rural EMS task force to clearly identify issues of concern for the more rural portions of Indiana, and develop long term solutions for sustainability; and
- Promulgate rules that clarify the relationship between the Commission and the TAC.

C. HUMAN RESOURCES AND EDUCATION

Standard

Each State should ensure that its EMS system has essential trained and certified/licensed persons to perform required tasks. These personnel include: first responders (e.g., police and fire), prehospital providers (e.g., emergency medical technicians and paramedics), communications specialists, physicians, nurses, hospital administrators, and planners. Each State should provide a comprehensive statewide plan for assuring a stable EMS workforce including consistent EMS training and recruitment/retention programs with effective local and regional support. The State agency should:

- Ensure sufficient availability of adequately trained and appropriately licensed EMS personnel to support the EMS system configuration;
- Assure an ongoing state EMS personnel needs assessment that identifies areas of personnel shortage, tracks statewide trends in personnel utilization and which establishes, in coordination with local agencies, a recruiting and retention plan/program;
- Establish EMT as the state minimum level of licensure for all transporting EMS personnel;
- Routinely monitor training programs to ensure uniformity, quality control and medical direction;
- Use standardized education standards throughout the State that are consistent with the National EMS Education Standards;
- Ensure availability of continuing education programs, including requirements for pediatric emergency education;
- Require instructors to meet State requirements;
- Assure statutory authority, rules and regulations to support a system of EMS personnel licensure that meets or exceeds the national EMS Scope of Practice Model, new National EMS Education Standards, as they are available, and other aspects of the EMS Education Agenda for the Future; and
- Monitor and ensure the health and safety of all EMS personnel.

Status

In June of 2015, the EMS Branch initiated an EMS Labor and Market Analysis survey with the support and assistance of the Rural Health Innovation Collaborative. This is an impressive step by the EMS Branch that reflects its willingness and ability to collaborate with other healthcare partners, and the EMS Branch is particularly commended for this effort. As this tool continues to evolve, we are confident that it will provide valuable information regarding the developing system, which should be applied to planning efforts.

Indiana benefits from a robust network of training sites, codified through administrative rule. These training sites represent a variety of delivery models ranging from secondary education institutions to local programs, yet some stakeholders in the rural areas report a lack of access to education within some areas of the state. Despite this educational network, the EMS system continues to see a loss of licensed personnel. The education system has only been able to match the pace of attrition in the workforce. Preliminary results from the labor and market analysis indicate the demand for qualified personnel is exceeding supply.

Paramedic programs report difficulty in finding qualified program directors, since few persons within the EMS community have earned a Bachelor's degree.

The EMS Branch utilizes its District Managers to perform a variety of compliance tasks to include the review of educational programs. Currently, one of the District Managers has taken on additional administrative duties within the EMS Branch. This creates the possibility that other responsibilities of the EMS Branch may be neglected.

The National EMS Education Standards (NES) have been adopted as the foundation for EMS education, although it does not appear that there has been much effort in training and transitioning the cadre of educators to utilize and implement the NES. The adoption of the NES, the requirement of accreditation for paramedic programs by the Commission on Accreditation of Allied Health Education Programs (CAAHEP), and the adoption of the National EMS Scope of Practice Model were significant steps for Indiana in aligning the state's EMS system with current EMS practice. Full implementation of this alignment will require the utilization of the NREMT exams as the basis for licensure at all levels as well as updating the administrative rules.

The continuing medical education (CME) requirements for the renewal of individual licenses are established through administrative rule. The preliminary results of the Labor and Market Analysis indicate a high degree of interest from EMS personnel in receiving a greater degree of CME through distributed and online sources. However, there is no apparent limitation on the application of CME gained through these methods, and the validation of this education by the EMS Branch or the local provider is perfunctory at best. This should be of concern to the state as the quality and accuracy of online CME programs is difficult to verify. Additionally, CME gained through a

diversity of sources and delivery models provides a higher quality educational experience. While requiring accreditation of these courses is not a complete guarantee, it will provide some degree of quality assurance.

Criteria for certification as an EMS instructor are codified in the administrative rules, but the structure of the language allows inconsistency in the criteria regarding who may actually provide instruction. The EMS Branch has no assurances that the persons providing instruction are qualified to do so. There are no criteria or specifications provided for other EMS educational providers such as adjunct faculty. This is problematic for the system, since at all levels of EMS instruction, EMS educators need to be prepared to address the needs of their students.

Administrative rules require notification and reporting to the EMS Branch of any incident involving an ambulance that results in the generation of a police or traffic crash report. Included in this reporting is a declaration of whether any EMS crewmember was injured. This offers a foundation for the establishment of a health and safety monitoring program for EMS, but that opportunity has not yet been realized.

The EMT level is established as the minimum level of staffing.

Recommendations

The Department should:

- Continue to refine the Labor and Market Analysis survey. Data from the survey should be incorporated into strategic planning efforts;
- Provide training and education for EMS educators to ensure they understand and are able to utilize the NES;
- **Fully staff all positions within the EMS Branch;**
- Require that any CMEs achieved through distributed or online sources be accredited through the Continuing Education Coordinating Board for EMS (CECBEMS);
- **Establish requirements for EMS instructors should be standardized with additional specifications detailing criteria for other EMS educational roles, such as adjunct faculty, lab aides, and clinical preceptors;**
- Analyze the gaps in the education system, particularly in the rural areas and develop alternative solutions such as virtual classrooms, to fill those gaps; and
- Build upon the existing relationship with the Trauma and Injury Prevention Division of the ISDH to fully establish an EMS workforce safety program. This

program should align with the HPP and PHEP responder safety and health efforts.

The Commission should:

- **Adopt the National Registry testing process for all levels.**

D. TRANSPORTATION

Standard

Each State should require safe, reliable EMS transportation. States should:

- Develop statewide EMS transportation plans, including the identification of specific EMS service areas and integration with regionalized, accountable systems of emergency care;
- Implement regulations that establish regionalized, accountable systems of emergency care and which provide for the systematic delivery of patients to the most appropriate specialty care facilities, including use of the most recent Trauma Field Triage Criteria of the American College of Surgeons/Committee on Trauma;
- Develop routine, standardized methods for inspection and licensing of all emergency medical transport services and vehicles, including assuring essential pediatric equipment and supplies;
- Establish a minimum number of personnel at the desired level of licensure on each response and delineate other system configuration requirements if appropriate;
- Assure coordination all emergency transports within the EMS system, including public, private, or specialty (air and ground) transport and including center(s) for regional or statewide EMS transportation coordination and medical direction if appropriate; and
- Develop regulations to ensure ambulance drivers are properly trained and licensed.

Status

The IDHS is responsible for enacting and enforcing the rules promulgated by the IEMSC in accordance with IC 16-31-2-7 which includes “developing and promoting, in cooperation with local public and private organizations, agencies, and persons, a statewide program for the provision of emergency medical services.”

Indiana’s EMS system covers a vast area of urban and rural communities with a goal of providing good medical care to the patient and getting the patient to the right hospital. Approximately, 40% - 45% are volunteer organizations, most of which are fire department based. Overall, 70% of all EMS providers are fire department based in Indiana.

The service delivery model in Indiana has historically developed under local jurisdictions and includes several certification levels (EMR, EMT, Advanced EMT and Paramedic) for EMS personnel. As a result, the system is lacking in state level plans for managing mass casualty incidents and does not address all 11 components of an EMS system as defined by NHTSA. With increasing emphasis on regionalization at both the federal and state levels, the increasing pressure to develop plans and procedures to support quality of care in the delivery of EMS on a day to day basis, as well as large-scale incidents, the need for a statewide review of the current system is evident.

Each local jurisdiction is to develop an emergency action plan and take into account community needs, utilization of appropriate resources, and should also assess how the plan is meeting the needs of patients including special populations. The plan should also include a provision of ALS care and an accounting of resources including personnel, vehicles and facilities. Though there is no state EMS transportation plan, the data from these assessments can help to identify gaps in the system and help to promote optimal integration between service providers.

There are regulations in place to facilitate triage of injured patients to trauma centers. Several years ago, the state adopted the Trauma Field Triage and Transport Destination protocol. Currently, there is no statewide transportation plan for other time critical diseases such as STEMI and stroke.

IDHS does not directly coordinate patient transports within the state system. There are 92 counties in Indiana representing separate EMS systems. There appears to be no mechanism in place for IDHS to assure all areas of the state are covered. There are 90 of 92 counties covered by paramedic services. The counties that were identified that did not have ALS services were Ohio and Vermillion. However, one county is in the process of moving up to AEMT.

Generally, the coordination and collaboration between providers within the individual districts in Indiana is limited with a few exceptions. A few districts have been able to develop a more effective regionalized approach regarding trauma and emergency care. However, to assure the coordination of emergency transport within each county EMS system, IDHS requires each service provider to have an EMS mutual aid agreement. The purpose of the agreement is to ensure an organized response to EMS incidents is provided within defined service areas.

The IndyTRAC User Group provides advice and feedback to the MESH Coalition on the implementation of the IndyTRAC software system throughout Indiana District 5. IndyTRAC is a district-wide asset paid for and operated by the MESH Coalition on behalf of the citizens of Marion and the surrounding counties. IndyTRAC provides information to first responders, healthcare organizations and others on the diversion status of healthcare facilities and provides situational awareness to response partners. Used in combination with WebEOC and other state-designated programs, IndyTRAC is a useful way to share information and increase preparedness capacity. Authorized

service providers are required to have a medical director, and an agreement with a supervising hospital which is responsible for logistical and educational support of the system.

There are 16 counties in Indiana that do not have a hospital resulting in potentially greater distance and longer patient transport times to a medical facility. This presents a greater challenge for the provision of timely delivery to definitive care.

IDHS has an established method for conducting inspections of EMS service providers. There are four EMS District Managers who conduct inspections every two years on all 802 service programs. These inspections coincide with the re-authorization of the service programs. During a re-authorization inspection, not all vehicles are verified for compliance. The service provider is able to attest vehicles meet applicable standards but are subject to inspection by the District Managers at any time. EMS District Managers inspect ambulances, issue initial authorization for new providers, any upgrade in provider service, or complaint against provider. Routine audits are at the discretion of service providers and personnel are conducted at the discretion of the District Manager. There is a minimum equipment list however; additional equipment carried on the ambulance is at the discretion of the medical director based upon the agency protocols and the level of service provided.

The EMS Branch is partially funded by revenue generated by fire and building compliance program permits. It was reported that the EMS Branch of IDHS is under-resourced for the responsibilities that must be completed. There is no revenue generated by inspections or the authorization process despite the ability of the Commission to charge fees. There are also no fees charged for the certification or licensure of personnel.

IDHS, EMS Branch staff reported that ALS and BLS providers in Indiana must carry essential pediatric elements referenced in 836 IAC 1-3-5.

Currently, there are 21 certified air medical provider organizations operating 28 helicopters, including programs that operate in Indiana that are based in Cincinnati, Chicago, Louisville, and southern Michigan. The state is richly resourced with air medical services and EMS providers frequently utilize these services to transport patients from more rural areas of the state to urban centers with multiple medical facilities. There is no statewide standard for activation of air medical services and appears to vary from district to district.

The minimum standard for ambulance staffing in Indiana is one EMT and a currently licensed driver. ALS staffing is an EMT and a Paramedic. However, the commission has issued a small number of waivers allowing staffing exceptions. There is no clear definition of critical care/specialty care transport or appropriate staffing model. No vehicle specifications or equipment requirements for specialty care units.

Individuals that operate ambulances in Indiana are not required to complete training in emergency driving techniques. In spite of this, many service providers require EVOC training to comply with requirements set by insurance companies that provide accident and liability coverage for their vehicles. IDHS staff indicated EVOC instructor training is provided by their agency to service providers that wish to attend. Any accident that results in a traffic report must be reported to the Department by the service provider.

The Trauma Field Triage and Transport Destination protocol allows for diversion to non-trauma centers based on personnel judgment. There is no process to evaluate the appropriateness of this diversion or any untoward outcomes due to delay in transfer to a trauma center.

Most incidents are handled on a local level and through local mutual aid agreements with neighboring providers. For larger scale incidents there is a statewide mutual aid plan in place. Responses to major incidents can be augmented by the DRTFs. However, funding and large scale training opportunities for the DRTFs have been limited.

Recommendations

The Department should:

- Establish a state EMS transportation plan including inventory of current resources.
- Fund DRTF program to improve response capabilities in the event of a disaster.
- **Further develop and support regionalized system development within the individual districts.**
- **Develop a review process for all deviations from the trauma field triage and transportation destination protocol as part of an overall statewide quality assurance program.**

The Commission should:

- Assess fees for inspections and authorization processes to provide funding for EMS system technical assistance, regional system planning and compliance

E. FACILITIES

Standard

It is imperative that the seriously injured (or ill) patient be delivered in a timely manner to the closest appropriate facility. Each State should ensure that:

- Both stabilization and definitive care needs of the patient are considered;
- There is a statewide and medically accountable regional system, including protocols and medical direction, for the transport of patients to state-designated specialty care centers;
- There is state designation of specialty medical facilities (e.g. trauma, burns, pediatric, cardiac) and that the designation is free of non-medical considerations and the designations of the facilities are clearly understood by medical direction and prehospital personnel;
- Hospital resource capabilities (facility designation), including ability to stabilize and manage pediatric emergencies, are known in advance, so that appropriate primary and secondary transport decisions can be made by the EMS providers and medical direction;
- Agreements are made between facilities to ensure that patients, including pediatric patients, receive treatment at the closest, most appropriate facility, including facilities in other states or counties;
- Hospital 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 appropriate facilities.

Status

There are 129 acute care hospitals in Indiana, nearly all with an emergency department. While many of these hospitals are clustered around major population centers including Indianapolis, Fort Wayne, Evansville, and South Bend, all but 16 of the state's 92 counties have a hospital. Overall, 42% of the state's hospitals are located in rural areas. Thirty-five of the rural hospitals are designated as critical access hospitals and an additional 19 hospitals, although rural, do not qualify or have not pursued this designation.

The ISDH has established criteria for the classification of trauma centers drawn from the ACS Committee on Trauma classifications for the level I, II, and III centers. The ISDH decided against the inclusion of level IV trauma centers in the state trauma system although many of the rural hospitals would likely meet these level IV criteria. Currently,

there are 11 ACS verified trauma centers in Indiana. There are also 3 American Burn Association verified burn centers in the state. Reportedly, stroke centers are classified as well. Neither trauma, burn, nor stroke centers are presently designated by Indiana Code.

In 2012, the EMS Commission approved a statewide trauma field triage and transport destination protocol that addresses triage of injured patients from the scene. There are no similar transportation plans for other specialty care centers including STEMI, stroke, burn or pediatrics. The trauma transport protocol does not address interfacility transfers.

Although there has been work by state stakeholders to ensure availability of appropriate pediatric equipment and identify pediatric resources in Indiana hospitals, the state does not as yet designate pediatric facilities.

Regarding the monitoring and communication of bed availability and diversion status of hospitals to EMS providers, a system is in use in District 5 to provide this information to first responders, hospitals and the state. This product, IndyTRAC, is an innovative system produced by a non-profit, public-private partnership that enables healthcare providers to effectively respond to emergency events and remain viable through recovery. Although in use in the Indianapolis and surrounding areas for 5 years, it has yet to be expanded into a statewide system.

Recommendations

The Department should:

- **Develop standards for the designation of specialty medical facilities including trauma, stroke, burn, STEMI and pediatric facilities;**
- **Consider extending trauma verification and designation to level IV rural facilities as well;**
- Develop an interfacility transfer guideline for sick and injured adults and children to help assure that patient needs, mode of transport and hospital resources are well matched; and
- Develop a statewide system to track hospital bed availability and diversion status.

F. COMMUNICATIONS

Standard

An effective communications system is essential to EMS operations and provides the means by which emergency resources can be accessed, mobilized, managed, and coordinated. Each State should assure a comprehensive communication system to:

- Begin with the universal system access number 911;
- Strive for quick implementation of both wire line and wireless enhanced 911 services which make possible, among other features, the automatic identification of the caller's number and physical location;
- Strive to auto-populate prehospital patient care report (NEMSIS compliant) with all relevant times from the public safety answering point (PSAP);
- Provide for emergency medical dispatch training and certification for all 911 call takers and EMS dispatcher;
- Provide for priority medical dispatch;
- Provide for an interoperable system that enables communications from dispatch to ambulance, ambulance to ambulance, ambulance to hospital, hospital to hospital and ambulance to public safety communications;
- Provide for prioritized dispatch of EMS and other public safety resources;
- Ensure that the receiving facility is ready and able to accept the patient;
- Provide for dispatcher training and certification standards;
- The statewide communications plan includes effective, reliable interoperable communications systems among EMS, 911, emergency management, public safety, public health and health care agencies; and
- Each State should develop a statewide communications plan that defines State government roles in EMS system communications.

Status

The ability to effectively communicate is critical to ensure a safe and secure Indiana.

Radio communications across the state are as diverse as the systems that provide EMS. Dispatch and tactical communications are achieved generally through either VHF

or 800 MHz radio. Some EMS providers utilize cellular. Communications with medical direction and between hospitals and EMS is done via VHF, UHF, 800 MHz or cellular.

Indiana first responders have access to a statewide platform for interoperable communications. Project Hoosier SAFE-T, completed in 2007, is an 800 megahertz (MHz) trunked voice and data communications system which provides mission critical interoperability for Indiana local, state, and federal first responders and public safety officials. Hoosier SAFE-T supports analog and digital radios, providing 95 percent mobile and portable radio coverage statewide using 153 communications sites. Recent coverage tests confirm this contractually-guaranteed standard is being met or exceeded.

All ambulances are required by rule to be equipped with VHF communications equipment with a common frequency utilized for ambulance to hospital and ambulance to ambulance communications, however there is a provision in the same rule for the providers to utilize 800 MHz if all of the receiving facilities that they transport to have that capability as well. Because some service providers have been permitted to utilize regional or municipal 800 MHz systems in lieu of the Indiana Statewide 800 MHz system, they are not interoperable with either the Indiana Hospital Emergency Radio Network (IHERN) or the Indiana Statewide 800 MHz system. Therefore, the potential exists for ambulances operating outside their immediate service area to be unable to communicate with PSAPs and other ambulances in that area.

ALS providers are required to have an agreement with a supervising hospital and both are required to have UHF, cellular, or 800 MHz communications for medical control/direction.

Indiana updated its Statewide Communications Interoperability Plan (SCIP) in December 2013 and it was approved in February 2014. The vision of the SCIP is to enable Indiana's first responders to share data and communicate at optimal efficiency, in real time, across jurisdictions and disciplines, enabling more effective response during day-to-day operations and catastrophic events. The State has also implemented a statewide multi-agency, multi-jurisdiction police, fire and Emergency Medical Services (EMS) computer aided dispatch and records management system (CAD/RMS).

The State's E911 system consists of 134 primary or secondary public safety answering points (PSAP) across 92 counties that handle both landline and wireless 911 calls for the citizens of Indiana. All 92 counties have the capability of accepting wireless enhanced 911 phase II service which includes the caller's location by longitude and latitude. It was reported that over 80% of calls received by PSAPs in Indiana are received through cell phones operating on a wireless network.

The State of Indiana provides a statewide Emergency Services Internetwork (ESInet) known as the IN911 network that connects all primary PSAPs and allows the processing

of 9-1-1 calls throughout the state. The IN911 network is the first large scale ESInet deployment in the country, and one of the largest in existence.

Over time, the network has grown to include the delivery of text services, IDACS, wireline 911, CAD, database and disaster recovery systems as the needs of local 911 authorities have changed.

The Indiana Statewide 911 Board has finalized the extension of the IN911 network across state boundaries into Michigan, Illinois, Ohio and Kentucky. This will enable wireless 911 calls to be transferred across state lines and keep the caller's location information associated with the call. This promotes improved public safety for Indiana residents and visitors.

In May 2014, a statewide deployment of text to 911 (texTTY) was implemented by the Indiana Statewide 911 Board to PSAPs. The texTTY application allows the general public to send text messages to 911 from any cellular device with an active SMS service plan. Text-FROM-911 has improved communication capabilities between 911 centers and the general public.

The Indiana Statewide 911 Board has some responsibilities over PSAP's; however, the ultimate authority over PSAP's rests with the boards of local units of government. Emergency Medical Dispatch (EMD) is provided by local governments, public/private partnerships; including hospital emergency departments, and private ambulance services.

Indiana has made great strides to improve the access to EMS care to the public through the E911 system since its initial state assessment in 1989. However, no statewide training and certification standards exist for telecommunicators. State law (IC 16-31-3.5) requires PSAPs that provide EMD to use telecommunicators that have received some training. The lack of promulgated rules prohibit analysis of data and enforcement of the EMD requirements. It is estimated by IDHS staff that in excess of 95% of the PSAPs voluntarily comply with IC 16-31-3.5. The extent of medical director involvement with EMD systems in Indiana varies and is not guaranteed.

Telecommunications training is offered in part by the Indiana State Police, in conjunction with the Indiana Integrated Public Safety Commission. A variety of EMD training programs are utilized in the State, including APCO, Power Phone and Priority Dispatch.

Indiana is in the assessment phase for First Responder Network Authority (FirstNet) and consultation is scheduled for late August 2015. At this time IDHS is considering their options to participate in this network.

Recommendations

The Department Should:

- **Evaluate and revamp current EMD program standards including dispatcher certification and medical direction oversight;**
- Expand public outreach and education regarding the appropriate use of the EMS system;
- **Enforce the existing statewide communication interoperability plan to ensure seamless field communication; and**
- Ensure EMS Branch involvement in updating SCIP.

G. PUBLIC INFORMATION AND EDUCATION

Standard

Public awareness and education about the EMS system are essential to a high quality system. Each State should implement a public information and education (PI&E) plan to address:

- The components and capabilities of an EMS system;
- The public's role in the system;
- The public's ability to access the system;
- What to do in an emergency (e.g., bystander care training);
- Education on prevention issues (e.g., alcohol or other drugs, occupant protection, speeding, motorcycle and bicycle safety);
- The EMS providers' role in injury prevention and control; and
- The need for dedicated staff and resources for PI&E.

Status

The EMS Branch utilizes resources and staff from the IDHS PIO section for all public information and education needs. The PIO section is very supportive and provides great assistance in educating and informing the public about EMS in Indiana. The PIO staff recognizes the great story EMS has to tell and works with the EMS Branch on educating the public on when and why to call 9-1-1, what resources and capabilities exist in Indiana to respond to emergencies and how the public can support their local EMS providers. IDHS utilizes multiple social media channels and maintains a webpage which identifies services, staff and programs. There is no statewide EMS public information and education plan developed by the EMS branch of IDHS.

An annual report on the EMS system in Indiana is developed by the PIO section of IDHS and is part of a more comprehensive report on the activities and accomplishments of the entire Department of Homeland Security. IDHS assists EMS providers with prepared press releases, and information to recognize EMS Week on an annual basis. IDHS also publishes a monthly newsletter called *The Hoosier Responder* that is available to all public safety personnel in the state.

There appear to be opportunities for partnerships, both internally and externally, between the IDHS PIO Division and EMS associations, organizations and key stakeholder groups to enhance public information and awareness about EMS and injury

prevention.

The Traffic Safety Division, Indiana Criminal Justice Institute has developed a communications plan to address highway traffic safety and injury prevention activities in the state. A number of injury prevention and public information efforts have been conducted in the state including motorcycle safety and awareness, child passenger safety technician and instructor training and safety inspections, pedestrian and bicycle safety. These efforts are designed to provide learning experiences that facilitate voluntary actions that lead to positive health choices.

Over the last three to four years the Trauma and Injury Prevention Division of the Indiana State Department of Health (ISDH) has conducted summer "Trauma Center tours" to raise public awareness about the trauma system in Indiana. The general public, EMS providers and personnel and hospital officials are invited to attend.

Near the end of 2014 the Indiana EMS Association made a commitment to the EMS Commission that they would develop information for the public about EMS. The association is awaiting approval of an application requesting the creation of an Indiana EMS license plate and proposes to allocate one-third of the income from these plates to public information.

Several simple public information segments on YouTube have been developed and are on the association's web site as well as a request for suggested topics for future installments which will be released on a monthly basis. Suggestions for topics can be submitted to education@indianaems.net.

The EMS for Children program is housed in the School of Medicine at Indiana University and works collaboratively with ISDH, IDHS and the EMS branch. The EMS for Children Coordinator is a member of the Technical Advisory Committee of the Indiana EMS Commission. An EMS for Children Technical Advisory Committee has been formed and is working on initiatives related to school nurse programs, pediatric readiness and emergency department capabilities and provides support and technical consultation to organizations interested in developing a pediatric care coordinator role.

The EMS for Children program also was instrumental in recommending pediatric pulse oximetry equipment for ambulances.

Recommendations

The Department should:

- **Work with the Division of Trauma and Injury Prevention to create an injury prevention coordination coalition to work with internal and external partners to develop a clearinghouse for injury prevention programs;**
- **Work with ISDH, Division of Trauma to utilize EMS and trauma registry data to develop fact sheets that provide the public and policymakers with information on targeted issues;**
- Ensure a listserv exists for medical directors and key EMS stakeholder groups to disseminate and coordinate information;
- Develop and implement an annual public information and education (PI&E) plan for EMS, with attention to special populations including pediatrics; and
- Work with internal and external associations and organizations to develop a strong marketing campaign to promote EMS and educate the public on important targeted issues.

H. MEDICAL DIRECTION

Standard

Physician involvement in all aspects of the patient care system is critical for effective EMS operations. EMS is a medical care system in which physicians oversee non-physician providers who manage patient care outside the traditional confines of the office or hospital. States should require physicians to be involved in all aspects of the patient care system, including:

- A state EMS Medical Director who is involved with statewide EMS planning, overseeing the development and modification of prehospital treatment protocols, statewide EMS quality improvement programs, scope of practice and medical aspects of EMS provider licensing/disciplinary actions;
- Online and off-line medical direction for the provision of all emergency care including pediatric medical direction, when needed and the authority to prevent and EMS provider from functioning based on patient care considerations; and
- Audit and evaluation of patient care as it relates to patient outcome, appropriateness of training programs and quality improvement.

Status

Indiana has just recently hired a full-time State EMS medical director. This is a new position and his role and responsibilities are still being developed. It is anticipated the medical director will provide leadership for quality improvement programs, medical director education and overall system development.

Each EMS provider is required to have a medical director and many medical directors provide oversight for several service providers. Medical directors are responsible for overseeing day-to-day medical operations of the organization, participate in an audit and QA program, establish protocols, and serve as liaison to the medical community. However, the medical director does not have the authority to restrict a licensed or certified personnel's practice. There is also no liability immunity for medical directors for medical or civil liability.

Medical directors are required to have an "active role in the delivery of emergency care" but there is great variability in the experience and involvement of medical directors across the state. Some medical directors have difficulty with protocol and audit and QA program development. It was reported that dissemination of information from the commission or state departments to the medical directors was also lacking or delayed. There is no required education or orientation program for medical directors though there is an online training program available from International Association of Fire Chiefs

(IAFC) and an annual statewide medical director conference was started last year and reported to be a good success. A future focus will be on the collaboration, coordination and professional development of medical directors on a regional basis.

Recommendations

The Department should:

- **Formalize the role, responsibility and authority of the state EMS medical director;**
- Develop a formal medical director education and orientation program that is required for all medical directors;
- Continue to support and expand the annual statewide medical directors conference;
- **Develop a regionally-implemented statewide quality assurance program utilizing EMS Compass-National EMS Performance Measures as appropriate; and**
- Incorporate the National Model EMS Clinical Guidelines into development of regionalized protocols or best practice guidelines.

The Indiana General Assembly should:

- **Provide liability protection for EMS provider medical directors; and**
- Provide for medical director restriction of certified or licensed personnel's practice.

I. TRAUMA SYSTEMS

Standard

Each State should maintain a fully functional trauma system to provide a high quality, effective patient care system. States should implement legislation requiring the development of a trauma system, including:

- Trauma center designation, using American College of Surgeons Committee on Trauma guidelines as a minimum;
- Trauma field triage and transfer standards for trauma patients;
- Data collection and trauma registry definitions for quality assurance, using American College of Surgeons Committee on Trauma National Trauma Data Standards, as soon as practicable;
- Systems management and quality assurance; and
- Statewide Trauma System Plan, consistent with the Health Resources and Services Administration Model Trauma System Planning & Evaluation Document.

Status

Trauma system development remains a critical need for Indiana. Traumatic injuries are the number one killer of Hoosiers under the age of 45. Befitting Indiana, with the state motto "The Crossroads of America," injuries suffered in motor vehicle collisions is the leading cause of death for Indianans between the ages of five and 24. Although formal trauma system development in Indiana began late, as was commented by American College of Surgeons (ACS) Committee on Trauma state system reviewers in 2008, "You are closer than you think."

Progress has been made toward system development. Presently, there are 11 verified trauma centers in Indiana, up from seven in 2008. These verified trauma centers include three level I centers, six level II centers, and three level III centers. There presently are an additional eight provisional level III trauma centers working toward verification. These 19 centers provide access for 78% of Indiana's 6.5 million inhabitants who live and work within a 45 minute drive of these centers, up from 58% in 2012. When the air medical providers are included, this coverage is even greater.

Other notable progress includes development of an EMS Commission approved state field triage and transport destination protocol, ACS State Trauma System Consultation, development of a regional trauma system in the Evansville District 10 area, requirement for submission of trauma registry data from all hospitals in Indiana of which 97 of

approximately 120 hospitals are presently submitting, and the creation of a state trauma registry with dynamic and resourceful staff who are already analyzing the data and returning reports to the trauma system stakeholders. These efforts establish the groundwork to ensure “the right patient is brought to the right facility at the right time.”

Opportunities remain. There is yet no state trauma system plan. Development of regional trauma systems is in its infancy. There is no process by which the state designates trauma centers. Funding for many of the critical functions of the trauma system rely solely on grants. There remain no trauma centers in rural areas of the state. Indiana residents who are cared for in Illinois, Kentucky, Ohio and Michigan due to the proximity of these out of state trauma centers are not tracked by the Indiana trauma registry. These needs are complicated by separation between the ISDH who oversees the trauma system and the IDHS who is responsible for the EMS system. These and other recommendations made during the Trauma System Consultation still remain unrealized.

Recommendations

The Indiana Health Department should:

- **Develop a detailed budget proposal for support of the state trauma system infrastructure;**
- **Work collaboratively with state trauma stakeholders to formalize a statewide trauma system plan, including development of rules regarding designation of state trauma centers;**
- Revise the state field triage and transport destination protocol to reflect best practices;
- Implement the recommendations made by the ACS state trauma system consultation;
- Develop further regional trauma systems similar to District 10 to facilitate trauma system and EMS performance improvement, as well as for hospital preparedness; and
- Integrate the naturally overlapping elements of the state EMS and trauma systems at every opportunity to maximize the collaboration and minimize conflict.

J. EVALUATION

Standard

Each State should implement a comprehensive evaluation program to assess effectively and to improve a statewide EMS system. State and local EMS system managers should:

- Evaluate the effectiveness of services provided to victims of medical or trauma-related emergencies;
- Define the impact of the system on patient care and identify opportunities for system improvement;
- Evaluate resource utilization, scope of service, patient outcome, and effectiveness of operational policies, procedures, and protocols;
- Evaluate the operation of regional, accountable emergency care systems including whether the right patients are taken to the right hospital;
- Evaluate the effectiveness of prehospital treatment protocols, destination protocols and 911 protocols including opportunities for improvement;
- Require EMS operating organizations to collect NEMSIS compliant data to evaluate emergency care in terms of the frequency, category, and severity of conditions treated and the appropriateness of care provided; Assure protection from discoverability of EMS and trauma peer review data;
- Ensure data-gathering mechanism and system policies that provides for the linkage of data from different data sources through the use of common data elements;
- Ensure compatibility and interoperability of data among local, State and national data efforts including the National EMS Information System and participation in the National EMS Database;
- Evaluate both process and impact measures of injury prevention, and public information and education programs; and
- Participate in the State Traffic Records Coordinating Committee (TRCC) – a policy-level group that oversees the State’s traffic records system, to develop and update a Statewide Traffic Records System Strategic Plan that ensures coordination of efforts and sharing of data among various State safety data systems, including EMS and Trauma Registry data.

Status

Indiana has both a statewide trauma registry and EMS registry. Both are ImageTrend products, which more readily allows for linkage of common patient data. All EMS providers, except BLS non-transport, are required to submit run data monthly and approximately 75% of the providers are in compliance with this mandate. BLS non-transport agencies constitute 55% of EMS providers in the state and are not required to submit run data. This raises questions regarding the accuracy and completeness of the data submitted. The transition to NEMSIS 3 is scheduled for January 2016.

Hospitals and rehabilitation centers are required to submit data quarterly to the trauma registry. There has been a large increase in the number of hospitals, 20 to 97, submitting data to the trauma registry over the last two years due to an increased effort to promote reporting by the ISDH. Through the Blue Sky project, hospital trauma data can be submitted electronically from the hospital's trauma registry software to the state trauma registry.

Historically, the IDHS collected EMS data through legacy and Firehouse programs but found this to be quite cumbersome and difficult due to interface limitations. However, the trauma registry, housed in the ISHD, was upgraded in the last two years to include the ImageTrend EMS service bridge and EMS providers started submitting run data to this registry in 2013. As of July 1st, management of the ImageTrend EMS registry was transferred to the IDHS.

The ISDH has two staff dedicated to the trauma registry as well as a full-time epidemiologist to provide analysis. Some of the funding for trauma registry management has come from Traffic Safety Division at ICJI. With the recent transfer of the EMS registry to the IDHS, the exact resources available for data analysis within IDHS are not clear, especially an epidemiologist. Continued collaboration with the ISDH and their epidemiologists will be vital to ensure seamless integration between EMS and trauma registries analysis.

ISHD provides quarterly trauma reports on a statewide, district and provider level. This allows districts and providers to evaluate their services individually. Responsibility for quality assurance and audits is at the provider level and a statewide QA program has not been developed. There is an effort with the new State EMS Medical Director to help standardize the provider audit and QA processes and focus more on a regional approach to quality assurance. It was noted that peer review for EMS is not protected from discovery and may be an area of risk for providers.

There has been an increase in the number of air medical providers and aircraft in the state over the past decade. There has been no effort to evaluate the appropriate utilization of these resources or the impact their utilization has had on patient transport or outcomes.

The State Traffic Records Coordinating Committee, including representation from EMS, manages the crash outcomes data through a partnership with Purdue University, though this data is not yet directly linked to the EMS or Trauma Registry.

Recommendations

The Department should:

- **Develop a comprehensive regionalized program evaluating the effectiveness of out- of-hospital care and patient outcome with particular focus on destination protocols for time sensitive emergencies including trauma, STEMI and stroke patients;**
- **Enact legislation to extend hospital peer-review protection to EMS QA activities;**
- Ensure continued epidemiologic support for EMS registry analysis and integration and coordination of trauma registry data analysis with the ISDH;
- Require all EMS providers, including BLS non-transport submit data to the EMS information system; and
- Evaluate air medical utilization on patient outcome.

K. PREPAREDNESS

Standard

EMS is a critical component in the systematic response to day-to-day emergencies as well as disasters. Building upon the day-to-day capabilities of the EMS system each State should ensure that EMS resources are effectively and appropriately dispatched and provide prehospital triage, treatment, transport, tracking of patients and documentation of care appropriate for the incident, while maintaining the capabilities of the EMS system for continued operations, including:

- Clearly defining the role of the State Office of EMS in preparedness planning and response including their relationship with the State's emergency management, public health and homeland security agencies;
- Establishing and exercising a means to allow EMS resources to be used across jurisdictions, both intrastate and interstate, using the Emergency Management Assistance Compact and the National Incident Management System;
- Identifying strategies to protect the EMS workforce and their families during a disaster;
- Written protocols, approved by medical control, for EMS assessment, triage, transport and tracking of patients during a disaster;
- A current statewide EMS pandemic influenza plan; and
- Clearly defining the role of emergency medical services in public health surveillance and response.

Status

As a unit of the Indiana Department of Homeland Security (IDHS), the EMS Branch is actively involved in preparedness planning and response. As a key member of the state's incident management team, the State EMS Director maintains a position in the Indiana State Emergency Operations Center and represents the agency on the ISDH's Hospital Bioterrorism Preparedness Committee and Bioterrorism Advisory Council. In addition, the EMS Section Chief is the Commander for the Disaster Portable Mortuary Unit, which is a deployable asset within IDHS and functions as the Operations Section Chief in the State EOC during activations.

Indiana has access to a tremendous resource within the Muscatatuck Urban Training Center. Response partners would benefit from maximizing the use of this facility for training.

While the Indiana State Department of Health (ISDH) is the lead agency for health and medical issues, staff members of the EMS branch have participated in the development of protocols for assessment, triage, transport and tracking of patients during a disaster as well as the development of a statewide influenza pandemic plan and public health surveillance program.

In the ten EMS Districts, the IDHS has worked to establish multi-agency EMS strike teams that can be activated and deployed to major events in the state or in other states. Examples of past responses by IDHS include the response to the Southern Indiana floods in 2008, the Southern and Southeastern Indiana tornadoes in 2012 and to Super Storm Sandy in New Jersey in 2012.

Recommendations

The Department should:

- **Work jointly with the ISDH to develop a comprehensive plan for managing emerging infectious diseases. The planning process should include hospitals, EMS agencies and other responders and address the identification, treatment and transportation of patients with serious infectious diseases.**
- **Conduct joint training with the ISDH on Indiana's influenza pandemic and public health surveillance plans and jointly exercise those plans to evaluate effectiveness and identify gaps.**

The Department of Health should:

- **Ensure that its HPP and PHEP programs are working in close conjunction with the IDHS and the EMS Branch.**

L. CURRICULUM VITAE

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Banner Trauma Advisory Council, Banner Health, Co-Leader
Arizona Emergency Medical Systems, Inc., Board Member
Inspire 2 Heal, Board Member
Brain Injury Alliance of Arizona, Advisory Council
Arizona Task Force 1, Urban Search and Rescue, Federal Emergency Management Agency
Air Evac, PHI Air Medical, Medical Director
Trauma and Emergency Medical Services Performance Improvement Committee, Arizona Department of Health Services, Member
Eastern Association for the Surgery of Trauma, Senior Member
American Association for the Surgery of Trauma
Society of Critical Care Medicine
4th Medical Battalion, USMC, Chief of Professional Services, 2010-11
Philadelphia FBI SWAT Team, Medical Support 1998-2008
The Reading Hospital and Medical Center, Reading, PA, Trauma Program Director, 2005-08
Hospital of the University of Pennsylvania, Department of Surgery, Trauma and Critical Care Surgeon, Assistant Professor 1997-2008
USDOT, NHTSA EMS Reassessment Program, Technical Assistance Team, Member, Alaska.

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National Association of State EMS Officials (NASEMSO)
National EMS Management Association (NEMSMA)
NASEMSO Board Member – Western Region Representative, Government Information
Committee, Air Medical Committee, Rural and Frontier EMS Committee (Vice-chair)
Continuing Education Coordinating Board for EMS (CECBEMS) – Board Member (Vice-
chair)
EMS Supervisor, Hamilton County Emergency Medical Service – Chattanooga, TN
Chattanooga State Technical Community College, Adjunct Faculty, Emergency Medical
Services Department
EMS Supervisor, Memorial Hospital EMS, Chattanooga, Tennessee
Paramedic, White Rose Ambulance, York, Pennsylvania
Commander – Wyoming Medical Detachment
Operations and Training Officer – DENCOM DIMA
Executive Officer- 278TH ACR Convoy Security Company
Executive Officer- 278TH Brigade Medical Company
Assistant Brigade Medical Operations Officer – 190TH SBDE
Medical Platoon Leader
Flight Medic-Combat Enhanced Capability Aviation Team (CECAT)
Medic – Field Artillery Battalion – 181ST FA
Medic – Ambulance Company – 583rd Med. Co. (AMB)

SUSAN D. McHENRY, MS

EMS Specialist

U.S. Department of Transportation
National Highway Traffic Safety Administration
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Washington, DC 20590

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EMS Specialist
DOT, National Highway Traffic Safety Administration
(March 1996 - to Present)

Director, OEMS
Virginia Department of Health
(1976 to March 1996)

ORGANIZATIONS/APPOINTMENTS

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, Former Member
Editorial Reviewer for *A Prehospital and Disaster Medicine*, (former).

CURTIS C. SANDY, MD, EMT-T, FACEP

EMS Medical Director
777 Hospital Way
Pocatello, ID 83201

Chair, Idaho EMS Physician Commission

208-705-7752

Email: ccsandymd@gmail.com

ORGANIZATIONS/APPOINTMENTS

American College of Emergency Physicians (ACEP), Fellow
Immediate Past President, Idaho Chapter, 2009-2011
President Idaho Chapter 2004-2009

American Board of Emergency Medicine, Diplomate, EMS Sub-specialty

National Association of EMS Physicians (NAEMSP)

Air Medical Physician Association (AMPA)

National Association of State EMS Officials (NASEMSO)-Medical Director Council

Idaho EMS Physician Commission, Board of Medicine Representative,

Idaho Time-Sensitive Emergencies Task Force

Idaho EMS Code Task Force

Idaho Cardiac Level One Steering Committee

Idaho State EMS Bureau Air Medical Utilization Task Force

Medical Direction Subcommittee, Idaho EMS Advisory Committee

Medical Director, Bannock County Ambulance/Pocatello Fire

Medical Director, Ft. Hall Fire and EMS, Fort Hall, ID

Medical Director, Bannock County Search and Rescue

Medical Director, Portneuf, Air Rescue, Pocatello, ID

Medical Director, BYU-Idaho Paramedic Program, Rexburg, ID

Medical Director, Bureau of Land Management, Idaho,

Medical Director, Power County EMS,

Director of EMS, Portneuf Medical Center,

Tactical Physician, Bannock County Sheriff Southeast Idaho STAR,

Assistant Associate Clinical Medical Director, College of Southern Idaho Paramedic
Program, Twin Falls, ID

Affiliate Clinical Faculty: Idaho State University,

Consultant, SafeTech Solutions, LLP –

- Principal Author – A Guide to Medical Direction in North Dakota
- Principal Author – A Guide to Medical Direction in South Dakota

Vice Chair, Southeast Idaho Regional TSE Committee

PALS Training Center Development, Republic of Georgia, 2014

USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team Member,
States of Oklahoma, Missouri, Ohio, Wyoming, Alaska and Iowa.

JANICE D. SIMMONS

Technical Document Editor
Administrative Consultant

1285 Ketch Court
Annapolis, Maryland 21403

410-693-7167

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Organizations/Appointments

USDOT, NHTSA, Assessment and Reassessment Programs, Technical Assistance Team, Technical Document Editor, Administrative Consultant, 1992-Present

- Emergency Medical Services
- Impaired Driving Program
- Occupant Protection Program
- Motorcycle Safety Program
- Drivers Education
- Traffic Records
- Pedestrian Safety
- Standardized Field Sobriety Testing

Enforcing Underage Drinking Laws (EUDL), Program Review
States of Nevada, Maine, and Oregon, 2011

Impaired Driving Advisory Update, 2010

Drivers Education Assessment, Pilot Program, 2010

R. KEITH WAGES

Director

Georgia Office of EMS and Trauma
Georgia Department of Public Health
2600 Skyland Drive
Atlanta, GA 30319

404.679.0547- Office
404.679.0526 - Fax

robert.wages@dph.ga.gov

Director
Georgia Office of EMS and Trauma
(2010- Present)
(1990-1996)

Executive Director
Minnesota EMS Regulatory Board
(1996-1998)

Organizations/Appointments/Awards

National Association of State EMS Officials

President-elect	2014- Present
Board of Directors	2011-Present
South Central Chair	2011-2014

Georgia Public Health Association
NREMT EMS Physician Fellowship Course Faculty - 2012 - Present
Governor's Public Safety Award for Outstanding Contributions - 2013
Dr. John B. O'Neal, III Pioneer Award - 2007
Georgia Association of EMS Chairman's Award - 2008
USDOT, NHTSA, EMS Assessment and Reassessment Program, Technical Assistance
Team Member, States of Ohio, South Carolina and Tennessee.

P. SCOTT WINSTON

Assistant Director
Virginia Department of Health
Office of Emergency Medical Services
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Glen Allen, Virginia 23059

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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
National Association of State EMS Officials
Virginia Corps State Council
Virginia Recruitment and Retention Coordinators Network
Former Chair, Office of EMS IT Executive Committee OEMS Staff, State EMS Advisory
Board, Legislation and Planning Committee
EMS Workforce Development Committee
VDH, Health Workforce Advisory Committee
State Rural Health Plan, Healthcare Workforce Council
Chair, EMS sub-group, Access Council, State Rural Health Plan
National Traffic Incident Management Coalition (NTIMC) representing National
Association of State EMS Officials (NASEMSO)
Highway Incident and Transportation Systems Committee, NASEMSO
VDH, OEMS Internal Agency Oversight Committee for EMS Registry
FHWA, Stakeholder Meeting for State Transportation Safety and EMS Representatives,
Washington, DC, June 23-24, 2011
Virginia Heart Attack Coalition/Mission Lifeline Steering Committee
NASEMSO, Model Interstate Compact for EMS Licensure Drafting Team member
Virginia Association of Governmental EMS Administrators
Alliance for Emergency Medical Education and Research, Advisor
USDOT, NHTSA, EMS Reassessment Program, Technical Assistance Team, Member,
State of Kansas.