

Pennsylvania's Emergency Medical Services Systems Assessment

A "Model" Provided by The National Association of State EMS Officials

April 2009

**With Support From:
Office of Emergency Medical Services
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BUREAU OF EMERGENCY MEDICAL SERVICES

Dear EMS Partner:

Thank you for taking time to assist us in the assessment of our EMS system, your “view” of Pennsylvania's EMS system is important to the success of this statewide project.

You are participating in Phase One of the project which is the “assessment” component. A Pennsylvania Emergency Health Services committee has revised the content of a national document to produce the “Pennsylvania EMS Systems Assessment”. This document was created by the National Association of State EMS Officials in an effort to assess EMS systems by reviewing standard EMS system components and considering them at varying levels of compliance. The revision of this national document was done in an effort to provide clarity to general areas and concepts by using Pennsylvania terminology.

We have established a method to complete the “assessment” portion of the project, which will consist of utilizing regional level focus groups and a state level focus group. **Your participation in a focus group is paramount to the success of the project.** The assessment portion of the project will utilize a facilitator to assist each focus group in developing a group consensus on each of the indicators. The scoring data will be collected via an on-line process. The final combined data of all of the focus groups will be distributed to a working group of the Pennsylvania Emergency Health Services Council (PEHSC). This working group is composed of regional EMS council directors, regional EMS council staff, Bureau of EMS staff, and volunteers from PEHSC; representing service managers, field personnel, and hospital/trauma center personnel. This working group will utilize the results of the “PA EMS Systems Assessment” to develop an updated Commonwealth EMS plan. The same data will be used to assist Regional EMS councils to

develop their regional plan. The Commonwealth and Regional EMS Plans will be written to reflect local and statewide EMS system needs for the next 3, 5 and 10 years beginning July 1, 2010.

As another facet of the “assessment,” we will be soliciting field input in regard to system components. This input will be managed via an on-line process where individual providers can share their thoughts in regard to the same statewide system components as considered by the focus groups. The information from this process will then be forwarded to the PEHSC working group for review and consideration as they develop the state plan language.

Should any portion of the “assessment” cause confusion, you may seek the assistance of the site facilitator to clarify the issue. Please try to assess each indicator appropriately by reading each statement and selecting the most appropriate score. Please remember that the “assessment” is NOT an evaluation of the system, it is simply a method to determine “where we are” in the process of achieving the “model” system indicators.

On behalf of the Department of Health and the 53,000 EMS practitioners who provide caring, essential emergency medical services to our citizens and visitors, I want to personally thank you for your participation in this very important project. We value the input of our partners in order to meet the EMS needs of our communities now and in the future.

Should you have any questions concerning this process, please feel free to contact your regional EMS council, the staff of the PEHSC, or me. (see the appendix for contact information).

Sincerely Yours,

Joseph W. Schmider, Director
Bureau of EMS

Pennsylvania EMS Systems Assessment

Overview of National Document as provided by the NASEMSO and NHTSA

Note of Thanks: The National Association of State EMS Officials (NASEMSO) and the National Highway Traffic Safety Administration (NHTSA) depended on a volunteer Steering Panel to guide this project (see list of members in Appendix B, page 78) and volunteer state EMS agencies in Florida, New Hampshire, and Pennsylvania to pilot the Self-Assessment tool. We are deeply grateful for their significant assistance.

Introduction and Purpose

Milestone documents in the early development of Emergency Medical Services Systems (EMS System) have included the National Academy of Sciences-National Research Council White Paper “*Accidental Death and Disability: The Neglected Disease of Modern Society*”, the federal Highway Safety Act of 1966, and the federal Emergency Medical Services (EMS) Systems Act of 1973. They guided the first thirty years of booming Emergency Medical Services System growth on the local, regional and state levels. Assisting in organized regional and, to a lesser degree, state system growth was significant funding provided by a large federal Health and Human Services (USDHHS) emergency medical services agency under the 1973 EMS System Act. Both the EMS agency and its categorical funding for EMS were eliminated in the early 1980’s.

The National Highway Traffic Safety Administration’s Emergency Medical Services program (NHTSA EMS) has provided state and local system development support since the late 1960’s. It has innovated programs such as the state EMS System Technical Assistance Team evaluation process and, with its federal partners, created the visionary 1996 *EMS Agenda for the Future*. The “EMS for Children” and the “Trauma System” programs in USDHHS have also provided system development support over the years.

This history contributed to an environment of varying focus of resources and guidance on the development of state EMS system. As a result, state systems have evolved inconsistently across the country. Some have mature networks of leadership connecting state, regional and local systems with broad responsibility for all aspects of emergency care. Others have narrow responsibility for the regulation of certain aspects of prehospital EMS providers.

A recent report by the Institutes of Medicine (IOM) underscores that:

“In states and regions across the country, there is substantial variation among emergency and trauma care systems. These systems differ along a number of dimensions, such as the level of development of trauma systems, the effectiveness of state EMS offices and regional EMS councils, and the degree of coordination between fire, EMS, hospitals, trauma centers, and emergency management.”¹ And, as a result:

“...today the system is more fragmented than ever, and the lack of effective coordination and accountability stand in the way of further progress and improved quality of care.

EMS has an opportunity to move toward a more integrated and accountable system through fundamental, systemic changes. Or it can continue on its current path and risk further entrenchment of the fragmentation that stands in the way of system improvement.”²

The premise of the Model State Emergency Medical Services System Project accepts the challenge of these observations.

The 1973 EMS System Act described an “EMS system” very broadly to include a system for preventing emergent illness and injury and, where these could not be prevented, for mitigating their impact through emergency, acute and rehabilitative patient care including all subsystems of care such as emergency cardiac and trauma care. This original definition has become less clear with time. Some have come to define EMS as essentially only the prehospital phase of emergency care.

The Project’s Steering Group recognizes the IOM’s concept of “emergency care system” as being in essence what the EMS Systems Act construed to be the broadly defined “EMS system”. One purpose of the Project is to reinforce this broader definition of EMS system and the notion that state offices of EMS can be broadly effective leaders of such systems. This is especially important as EMS evolves and innovates to meet the changing needs of an aging population.

Process

The Project approaches these challenges through a multi-year process of developing the following products to assist in state EMS system development:

- **First Year Assessment**
 - **Model State Emergency Medical Services System (page 10-31).** This is a description of the idealized state emergency medical services system. It is organized in ten subsystems which generally reflect the evolution of thinking about the components and attributes of the EMS system. These have ranged from the original “15 components” of the EMS Systems Act of 1973 through the 10 components of the NHTSA Technical Assistance Team state EMS evaluation process, and the 14 components or attributes of the 1996 *EMS Agenda for the Future*. Each subsystem is then considered by the three core functions of public health system planning: assessment processes, policy processes, and assurance processes. The descriptions of each core function are based on the “highest” scoring (“5” on a “0 to 5” scale).
 - **State Emergency Medical Services System Self-Assessment (page 32-76).** This is a guide to rating the strengths and weaknesses of the state emergency medical services system. For each subsystem, indicators have been developed and arranged by the three core public health functions (assessment processes, policy processes, and assurance processes) and by the “ten essential services” of public health which have been adapted for this tool (for more information on public health planning applications in

EMS, please see the USDHHS Trauma Program document *Model Trauma System Planning and Evaluation*). These indicators recognize that a state EMS system should be a planned and coordinated organization of local, regional and state EMS capabilities on a statewide basis. Therefore, the indicators are broad in some respects (e.g. statutory authorization of the state system and its lead agency) and very specific in others (e.g. use of performance indicators, and performance against certain performance standards such as treatment rates).

I. A “Model” State Emergency Medical Services System

What is a “Model” System?

This document depicts a “model” EMS system as a benchmark for conducting an assessment. The following pages detail each of the 10 EMS system components. Each component describes the specific concepts of a “model” State EMS system. In simple terms, the “model” system as detailed in this document can be described as the “ideal” State EMS system.

Components

The model state EMS system broadly encompasses the emergent illness or injury event from its prevention, where possible, to its mitigation. Its mitigation includes not only prehospital phases of intervention, but care in the emergency department as well as specialty and rehabilitation facilities. It includes an array of specialty care disciplines such as trauma, cardiac, pediatric, and mass casualty care. The system's goal is to reduce morbidity, mortality, long-term impact, and cost to society.

The model state EMS system is organized into ten subsystems. These ten reflect a natural evolution of thinking about the components and attributes of the EMS system starting with the "original 15 components" of the EMS System Act of 1973. Other updates of the "original 15" include the NHTSA Technical Assistance Team State EMS evaluation process with 10 components, and the 14 components or attributes of the 1996 *EMS Agenda for the Future*. The ten subsystems include:

1. System Leadership, Organization, Regulation & Policy Subsystem
2. Resource Management Subsystems – Financial
3. Resource Management Subsystems - Human Resources
4. Resource Management Subsystems – Transportation
5. Resource Management Subsystems – Facility and Specialty Care Regionalization
6. Public Access and Communications Subsystems
7. Public Information, Education and Prevention Subsystem
8. Clinical Care, Integration of Care, and Medical Direction
9. Information, Evaluation, and Research Subsystem
10. Large Scale Event Preparedness and Response Subsystem

Overview

The model state EMS system described in this section is organized in this format.

The "core functions" derive from the public health model and its three core functions and ten essential services. The definitions and inclusion of these have been remodeled somewhat to address the issue of "square pegs and round holes" in trying to shoehorn some EMS concepts into the current public health definitions. These new definitions include:

1. **Assessment Process** - The regular and systematic collection and analysis of data (monitoring) from a variety of sources to diagnose the status and cause of a problem and to identify potential opportunities for interventions.
2. **Policy Process** - Using the results of the assessment process in an organized manner to inform and organize stakeholders to develop policies intended to achieve specific goals to improve the public's health.
3. **Assurance Process** – The enforcement of policies (administrative dictates, regulations and laws), provision of direct services, and evaluation of the

effectiveness of that enforcement and those services to achieve specific goals to improve the public's health.

Note: The system component content as listed in this document may not be applicable in Pennsylvania. However, the goal of all State Systems within the United States should be to meet the descriptions of each component as presented.

10 “Model” EMS System Components - Descriptions

“Model” EMS System Component #1 - Leadership, Organization, Regulation & Policy Subsystem

Overview

A single state agency is statutorily charged with the comprehensive leadership, development and regulation of the Emergency Medical Services System. It has developed the EMS system based on statewide regionalized, coordinated and accountable systems of emergency care and has the authority and funding to lead these. It utilizes a multi-disciplinary, multi-agency, broadly representative stakeholder body and committee structure in the development of the EMS system. The agency has routine and direct access to its cabinet level policy-maker.

Components

A. Assessment Process

There are clearly defined statewide regionalized, coordinated and accountable systems of emergency care. These have regional infrastructures established uniformly under the state EMS system lead agency by statute, rules, regulations, protocols or other policies to guide and monitor care. These regionalized, coordinated and accountable systems of emergency care routinely and uniformly report on care performance through the EMS System lead agency.

There is an independent external assessment of the EMS system at least every five years. In substitution for this, a broad-based statewide quality improvement process may be employed on an on-going fashion. Whichever process is used utilizes the Model EMS system self-assessment as a basis. The assessment process is linked with a strategic planning process to update the EMS system plan.

B. Policy Development Process

The lead agency has brought together multiple stakeholder groups and other state agencies to assist with, and make recommendations on, the development and implementation of the EMS system. Ideally, this is accomplished through a statewide, statutorily authorized, multidisciplinary, multi-agency body acting in an advisory or authority capacity. There is evidence that the needs of pediatric and other special populations have been integrated into state statutes, rules, and regulations and are represented on this body.

The lead agency, state EMS director, and state EMS medical director are identified in state statute. The lead agency is authorized to plan, develop, lead, monitor and regulate a comprehensive statewide EMS system. This system is specified as including a statewide organization of regionalized, coordinated and accountable systems of emergency care with the component subsystems described in the model EMS system. The lead agency is required to regularly report to government and the public on the progress and effectiveness of system implementation based on a quality improvement process.

The lead agency regularly reviews, through established committees and stakeholders, the rules/regulations governing system performance, including policies and procedures for system operations at the State, regional, and local levels.

The lead agency has adopted clearly defined EMS system standards (e.g., facility standards, triage and transfer guidelines, data collection standards) and has sufficient legal authority to ensure and enforce compliance. These EMS system performance standards are in place and compliance is being actively monitored and enforced through well-defined policies and procedures.

Lead agency leaders, in consultation with their statewide multidisciplinary, multi-agency body, have established measurable program goals and outcome-based, time-specific, quantifiable, and measurable objectives that guide system effectiveness and system performance.

A comprehensive EMS system plan has been developed and adopted in conjunction with all key EMS system stakeholders, and includes the integration of all subsystem components. This plan is linked to 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.

C. Assurance Process

The EMS system lead agency maintains ongoing EMS system performance improvement processes and enforces prehospital agency compliance with all rules, regulations, or protocols (e.g., taking patients to the correct facility in accordance with pre-existing destination protocols).

The EMS system lead agency provides an array of services addressing system needs such as leadership, planning, coordination, implementation, response and technical assistance. It performs an internal or external examination of the EMS system including an assessment of needs for such services at least every five years. Such an assessment may be replaced by a system of performance improvement which generates data sufficient to evaluate needs and update services on an on-going basis.

Comprehensive annual reports on the status of the statewide EMS system, including the effectiveness of all subsystems, are written by the lead agency in conjunction with providers and other stakeholders. These routinely report state emergency medical services system information system (EMSIS) data and performance measures derived from this self-assessment tool and integrate comparisons with similar states through National Emergency Medical Services Information System (NEMSIS) data.

“Model” EMS System Component #2 - Resource Management Subsystems – Financial

Overview

The EMS system infrastructure, including its lead agency, is adequately funded. Mechanisms exist to assure adequate payment for emergency care and to maintain the prehospital EMS safety net. There is effective integration of emergency care, primary care, specialty care and other patient preventive and treatment services and the mechanisms for reimbursement for these services provides incentives for this integration.

Components

A. Assessment Process

The lead agency routinely utilizes strategic planning processes, with broad-based stakeholder representation and participation, to develop its budget for the EMS system and its subsystems. The strategic planning processes utilize data from state EMS system evaluations and/or specific statewide needs assessment processes. Regardless of which of these sources of overall baseline information is used, the planning process utilizes on-going system performance improvement data to make budgetary decisions.

Financial data are routinely derived from the EMSIS, insurers, emergency department, hospital discharge, death certificate and rehabilitation data and, along with data on general EMS system infrastructure costs, are used to assess cost/benefit of the system. A method exists to investigate, diagnose and intervene in problems identified.

B. Policy Development Process

The legislature has identified and appropriated infrastructure funding from general fund and non-lapsing sources for the lead agency which is consistent with its legislated responsibilities.

C. Assurance Process

The annual reporting cited in model section 1.C includes system financial reporting.

“Model” EMS System Component #3 - Resource Management Subsystems - Human Resources

Overview

Organized processes exist for work force assessment, recruitment, retention, education as needed, and for identification and deployment of emergency medical care providers within the state for routine and large scale event operations.

Components

A. Assessment Process

A performance standard has been established for the turnover rate of prehospital licensed/certified personnel. The NHTSA Performance Measures (PM) Indicator “2- Annual Turnover Rate” or a similar measure has been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.

B. Policy Development Process

Written evidence exists that EMS education opportunities are routinely impacted by regular reviews of EMS system performance.

The EMS system lead agency has adopted scopes of practice consistent with the National EMS Scope of Practice and these have been implemented with accompanying guidance and requirements.

The EMS system lead agency requires national certification for state licensure/certification of all levels of EMS personnel. “National certification” implies a testing process similar to that of the current National Registry of EMTs.

The EMS system lead agency requires national accreditation of paramedic education programs. It has an internal mechanism for approving other levels of education programs or courses until such time as national accreditation is available at one or more of these levels. This internal mechanism includes standards that are consistent with the National EMS Education Standards. The lead agency has committed to requiring national accreditation within two years of accreditation availability. “National accreditation” implies a qualifying process similar to that of the current Commission on the Accreditation of EMS Programs (CoAEMSP).

C. Assurance Process

The EMS lead agency maintains clear procedures for enforcing personnel compliance with laws, regulations, and policies pertaining to provider licensure/certification. These include processes for adequate review and due process in enforcement.

The EMS system lead agency assures an on-going needs assessment for areas of personnel shortage, trends in statewide personnel utilization, and for health/safety issues specific to the EMS working environment. Based on this on-going needs assessment, the lead agency has either documented actions to address human resources needs in the state

or has documented that no significant workforce needs or provider agency management issues exist.

A structured mechanism exists to educate personnel in new protocols and treatment approaches, as adopted by medical direction, in a timely manner. There is a method to monitor compliance with new procedures as they are instituted.

“Model” EMS System Component # 4 - Resource Management Subsystems – Transportation

Overview

A mechanism exists to identify and assure adequate deployment of ground, air, and water response and transportation resources. These resources must meet specific standards of quality, to assure timely and appropriate response scaled to the nature of an event. There is an ability to monitor safety and response time issues.

Components

A. Assessment Process

A performance standard has been established for response, scene, and transport time intervals by both mean and 90th percentile measures. The NHTSA Performance Measures (PM) Indicators “**10.1-** Mean Emergency Patient Response Interval”, “**10.2-** 90th Percentile Emergency Response Interval”, “**10.3-** Mean Emergency Scene Interval”, “**10.4-** 90th Percentile Emergency Scene Interval”, “**10.5-** Mean Emergency Transport Interval”, and “**10.6-** 90th Percentile Emergency Transport Interval”, or similar measures, have been adopted as statewide PM indicators and data contributing to them are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

B. Policy Development Process

The lead EMS system agency has established standards, drawing upon national or otherwise evidence-based standards where possible, for the equipping and operation of ground and water ambulances and other EMS vehicles, and for the clinical operations of air medical services. Performance standards have been established as policy for the indicators in section 4.A. There is a policy to inspect vehicles and/or review performance measures on a regular basis.

C. Assurance Process

The lead EMS system agency conducts on-going performance improvement and/or regularly inspects vehicles utilizing the standards and performance indicators it has established. The agency has enforcement authority, including well-defined due process procedures, to take timely and effective action when inadequacies are discovered that may pose a hazard to patients or the public.

The EMS system lead agency is responsible for and has the authority to lead EMS system operations in statewide disaster planning and in mass casualty events that exceed local EMS agency and hospital mutual aid capabilities. It is empowered to provide (directly or through contract) EMS coordinating, patient care, and transportation services in areas where usual and customary EMS services have been withdrawn, or otherwise do not exist, and have been determined to be necessary.

“Model” EMS System Component #5 - Resource Management Subsystems – Facility and Specialty Care Regionalization

Overview

Regional, accountable subsystems of emergency medical care are effectively integrated into the statewide EMS system and formally designated by the lead agency. These subsystems are organized to identify, treat and route critically ill or injured patients who would benefit from immediate trauma, cardiac, pediatric, burn or other types of specialty care. The EMS system lead agency must be authorized and adequately funded to supervise the activities of these statewide, contiguous regionalized, accountable systems of care.

Components

A. Assessment Process

A performance standard has been established for “Major Trauma Triage to Trauma Center Rate”. The NHTSA Performance Measures (PM) Indicator “**5**- Major Trauma Triage to Trauma Center Rate” or a similar measure has been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

A performance standard has been established for “STEMI Triage to Specialty Center Rate”. The NHTSA Performance Measures (PM) Indicator “**9**- STEMI Triage to Specialty Center Rate” or a similar measure has been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

B. Policy Development Process

The lead agency has two or more on-going committees with broad stakeholder representation meeting regularly to develop and implement specialty care subsystems (e.g. trauma, cardiac, stroke, pediatric, burns). These are formally organized as multidisciplinary, multi-agency subcommittees of the state EMS system body. Their plans are integrated effectively into the statewide EMS system plan and its on-going review and improvement. Subsystem components coordinate well through the lead agency and its representative body (e.g. medical direction subsystem development of prehospital protocols draws upon representatives of specialty care subsystems for protocols in those areas).

There is a legislatively authorized process for the designation of specialty care facilities that is governed by the EMS system lead agency and its specialty care subsystem committees. The lead agency is actively designating and monitoring specialty care facilities as components of at least two subsystems (e.g. trauma, cardiac, pediatric, burn).

A standard definition of transferring a “qualifying patient” and statewide processes to implement transfers based on it are in place for two or more specialty care subsystems.

These are linked to performance improvement and medical direction review subsystems, and updated as needed on a statewide basis.

State EMS system-wide prehospital triage criteria are in place for two or more specialty care subsystems (e.g. the ACS/COT Trauma Field Triage Criteria for any trauma system). These are linked to performance improvement and medical direction review for appropriateness in identifying qualifying patients and in ensuring that they are transported to the appropriate specialty care facility. Sensitivity and specificity (over- and under-triage rates) of the criteria used are regularly reported through the EMS system lead authority. Updates to the triage criteria are made as necessary to improve system performance.

Specialty care center designation processes in two or more specialty care subsystems are mature. “Natural” regions, based on the geographic organization of those facilities and patient flow around them, have become apparent. The EMS system lead agency has developed a participatory, representative process for the designation of regional, accountable systems of care, including the ability to negotiate regional boundaries as necessary, and has designated these. It has included emergency management, emergency health preparedness, and public safety partners in these discussions in order to coordinate regional response organization. Where necessary, the EMS system lead agency has established processes and administrative infrastructure, to support planning, implementation and coordination of regional system development.

The Emergency Medical Services for Children (EMSC) specialty care subsystem is mature as reflected by the existence of an EMSC specialty care subsystem committee of the lead agency, a legislatively authorized facility recognition system for pediatrics, a formal definition of “qualifying pediatric patient” for the purpose of transfer to a facility more highly recognized for pediatric care, and prehospital triage criteria for pediatrics.

C. Assurance Process

Facilities are represented in the regional, accountable systems of care performance improvement processes, and benchmark their performance against local and national standards. Issues of noncompliance are monitored and addressed as part of the regional performance improvement process. De-designation is reserved only as a final public health safeguard and is delegated to the regions by the lead agency.

There is authority, budget, and job description for a full-time EMS system medical director and one is in place. The job description includes requisite education, experience and certification for this position.

There is evidence to show a well-integrated program of rehabilitation is available for all EMS system patients. Rehabilitation programs are included in the EMS system plan, and specialty care centers work closely with rehabilitation centers and services to ensure quality outcomes for EMS system patients.

“Model” EMS System Component #6 - Public Access and Communications Subsystems

Overview

A subsystem exists to organize wire-line, cellular, voice over internet protocol, automatic crash notification, patient alerting system device and other public 9-1-1 access to the Emergency Medical Services System. The EMS system utilizes all voice, video, telemetry, and other data communications as necessary to best enhance real-time information management for patient care. Medically directed systems of emergency medical dispatch (EMD) and communications are in place to adequately support the statewide regionalized, accountable systems of care.

Components

A. Assessment Process

There is a regularly updated statewide index of EMS agencies, emergency medical dispatch centers, and hospitals listing (as appropriate) their emergency access type (9-1-1, E-9-1-1, other), direct ten-digit dispatch number, ten-digit business number, dispatch voice frequency, dispatch data frequency, field to hospital frequency/ies, hospital to hospital frequency/ies, EMS tactical frequency/ies, broadband or wideband frequency/ies and purpose. The index also lists major communications system assets (at least fixed radio consoles and mobile units, towers, base stations, and recording equipment) by date and type.

B. Policy Development Process

A statewide interoperability executive committee (SIEC)³ or similarly named and functioning body with EMS system representation produces and disseminates a public safety statewide communications interoperability plan (SCIP)⁴ integrating the EMS system communications system plan. In addition, a “system users guide” is produced which explains NIMS and SafeCom compliant policies and procedures for participation in the public safety communications interoperable system (e.g. use of interoperability channels in major events and plain language usage at all times).

There is an authorized, adequately funded SIEC within the executive branch to plan, coordinate, implement, manage, and enforce policies for interoperable communications including instate frequency coordination. The EMS system is actively represented on the SIEC.

C. Assurance Process

EMD protocols have been developed with statewide coordination and with EMS system medical direction oversight. It is recognized that EMD protocols for resource dispatch must be specific to the resources present in any given locale and decisions on these protocols must reflect input of those locales. There are established procedures to involve representatives of EMD staff in EMD and EMS system performance improvement and a “feedback loop” to change protocols or to update dispatcher education when appropriate. These protocols include, but are not limited to, which resources to dispatch (for example, Advanced Life Support (ALS) versus Basic Life Support (BLS), use of lights and sirens

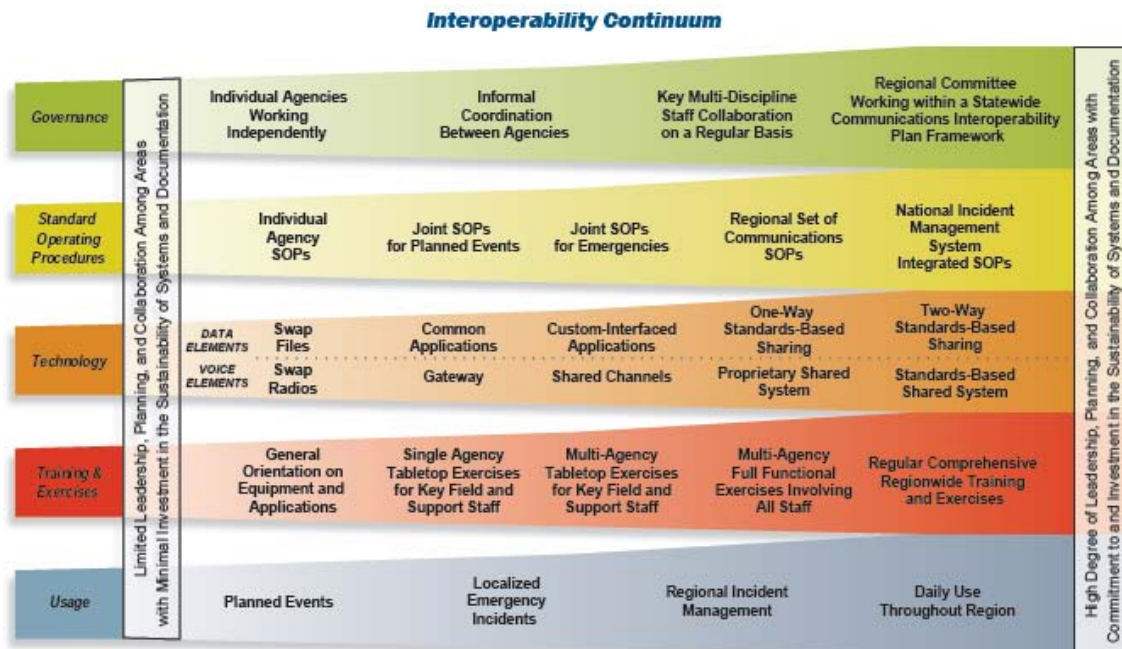
mode, early notification of the air medical and specialty facility resources, pre-arrival instructions, and other procedures necessary to ensure resources dispatched are consistent with the needs of emergency patients.

All emergency callers to PSAPs are assured of interaction with EMD certified staff in a facility whose EMD program has a medical director and has been reviewed and approved/certified by the EMS system lead agency.

State-of-the-art electronic, seamlessly linked citizen access (specifically E-9-1-1 and wireless E-9-1-1) and dispatch communication systems are available within all jurisdictions and utilize state-of-art EMD and other dispatch procedures routinely evaluated in an on-going performance improvement program.

State-of-the-art electronic communication systems are available within all jurisdictions and are coordinated by an SIEC or similar body. The systems constitute a linkable statewide system, ideally coordinated in a single EMS state communications center or through linked, statewide regional communications centers, that is utilized for day to operations and is effective in all-hazards responses. The system is linked to public health and other nontraditional partners. The system is routinely evaluated on a statewide basis and affords narrowband, wideband and broadband solutions to EMS agencies and facilities in all jurisdictions. All jurisdictions are at least at mid-point, and most are at the far right on the Interoperability Continuum (below). The maturity of statewide EMS system communications interoperability is as a whole at the far right as defined by the USDHS SafeCom Interoperability Continuum.

Table 1



“Model” EMS System Component #7 - Public Information, Education and Prevention Subsystem

Overview

A subsystem exists which is organized to monitor and identify the public’s health care needs that can be addressed by the Emergency Medical Services System (as integrated with the primary care and other systems of care). Specific public information and education components should include the public’s familiarity with the Emergency Medical Services System and appropriate access to that system, self-help and bystander care.

Components

A. Assessment Process

There is a written descriptive, graphic, and tabular comparison of the *top ten* leading causes of emergent illness and injury death using local, regional, statewide, and national data. An attempt is made to compare data to EMS system improvement efforts.

The public health epidemiologist, along with EMS system leaders, is involved in the development of emergent illness/injury reports. There is clear evidence of data sharing, data linkage, and well-defined reporting roles and responsibilities.

The EMS system conducts a scientific consumer poll on a periodic basis to gauge expectations about the EMS system such as access, speed of response, and level and type of care expected. Results are utilized to focus certain public information and education activities and system service development.

B. Policy Development Process

A well-orchestrated and continuing EMS system media campaign is evident. There is clear evidence that key policy makers at the state, regional, and local levels are keenly aware of the benefits of the EMS system and of the importance of emergent illness/injury prevention programs.

C. Assurance Process

The EMS system lead agency has developed a formal technical assistance package for communities which includes a detailed explanation of community EMS system evaluation methods and informed self-determination processes⁵. It has developed or adapted its own informed self-determination program (generically, a process through which communities are encouraged to evaluate their local EMS system, learn about alternative levels and type of EMS response and their comparative costs and then determine the type of system and level of public cost they prefer), and provides a range of staff support, guidance materials and subsidies to encourage adoption of the program.

The EMS system lead agency routinely distributes PIER support materials to provider agencies, publicizes this availability, and provides staff technical assistance as requested. This program includes not only robust resources on raising the profile of the local EMS system and emergency illness/injury prevention efforts in the community, but enables

agency leaders to explore opportunities to become involved in directly meeting preventive health, primary care and other needs in the community in order to strengthen the clinical base and response capabilities of the agency. This effort encourages consideration of EMS based community health services (“community paramedicine”)⁶, or other programs appropriate to the health needs of the state’s various community types, and offers technical assistance in approaching issues such as medical direction and training for such services.

“Model” EMS System Component #8 - Clinical Care, Integration of Care, and Medical Direction Subsystem

Overview

This subsystem identifies and guides the organized relationships among local, regional, and state providers of medical direction, their mechanisms and authority for clinical oversight and the establishment of medical and operational protocols, for the clinical services of EMS system providers and their integration within other community systems of care.

Components

A. Assessment Process

The NHTSA Performance Measures (PM) Attributes “17.1- Call Complaint Distribution” and “17.2 – Call Complaint Rate” have been adopted as statewide PM attributes and data contributing to them are routinely collected, results analyzed at all levels and system planning interventions sought where necessary on a local, regional, and state level (e.g. better matching resources to call types experienced).

A performance standard has been established for prehospital relief of pain. The NHTSA Performance Measures (PM) Indicators “6.1- Pain Relief Rate”, “6.2- Pain Worsened Rate”, and “6.3- Pain Unchanged Rate” have been adopted as statewide PM indicators and data contributing to them are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

A performance standard has been established for “EMS Cardiac Arrest Survival Rate to Hospital Discharge”. The NHTSA Performance Measures (PM) Indicator “18.2- EMS Cardiac Arrest Survival Rate to Hospital Discharge” has been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

A performance standard has been established for at least one additional indicator of system interest in expanding its role to meet the changing needs of the patient population. This measure might involve the rate of red light and siren use (indicating changing response practice and/or call urgency), the rate of non-transport by patient complaint (indicating greater frequency of non-emergency care) or some other indicator of the EMS system adapting to meet other patient needs. Data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

B. Policy Development Process

There is a clear-cut organization and division of legal authority and responsibility for medical direction and for information flow involved in the processes of protocol adoption, performance improvement, and restricting the practice of prehospital care providers. As dictated by the size and complexity of the statewide, regional and local systems there are medical committees at appropriate levels to encourage and facilitate the flow of information and input to fuel these processes and to serve as deliberative bodies in these processes. Ultimate authority and responsibility for medical direction is specified in statute and extends from the state medical director through the statewide medical committee to regional medical directors to regional medical committees to local medical directors and providers as appropriate.

There is clearly defined legal authority and responsibility for the EMS system medical direction subsystem including the authority and responsibility to adopt protocols, to implement a performance improvement system, to credential the practice of prehospital care providers, and to generally ensure medical appropriateness of the EMS system. There is a paid statewide EMS system medical director from whom this statutory authority and responsibility extends, and with its limitations on liability, to regional and, where applicable, local medical directors. The system for creating protocols lies at the state level but is the responsibility of the state and regional medical directors as a group with input from local medical directors, other physicians and EMS providers and with opportunities for local variation approved by the lead agency.

C. Assurance Process

The EMS system lead agency enforces, utilizing well-defined standards, policies, procedures, and authority, all prehospital clinical practice. It employs a documented, effective system of performance improvement which has specific points of integration with and separation from disciplinary and other licensure/certification actions and is coordinated well with the statewide medical direction system. In all enforcement practices, the lead agency has well-defined procedures for adequate review and due process.

The EMS system lead agency requires medical directors to be credentialed. The EMS system lead agency credential requires a specific initial training program and on-going continuing education.

“Model” EMS System Component #9 - Information, Evaluation, and Research Subsystem

Overview

This subsystem assures the collection of accurate data on EMS system activity, including a NEMSIS compliant and integrated patient care/call reporting (PCR) subsystem with 100% provider participation, a regionalized subsystem of performance improvement, and a mechanism to encourage research to improve patient care and EMS system operations.

Components

A. Assessment Process

Death certificate data, by E-code, are used as part of the overall assessment of EMS system care, including statewide rural and urban preventable mortality studies.

All EMS system data stakeholders (including insurance carriers, FARS (Fatality Analysis Reporting System, and rehabilitation, in addition to typical EMS system resources) have been identified, data access agreements executed, hardware and software resources secured, and the staff allocated to deterministically and probabilistically link, analyze, and report a variety of data sources in a timely manner and this occurs routinely.

There is a comprehensive written policy and demonstrated compliance concerning data management and governance including an evaluation of the quality, timeliness, and completeness of data, with confidential protection of records ensured while allowing appropriate access for research purposes.

B. Policy Development process

The EMS system lead agency routinely utilizes NHTSA Performance Measures (PM) and their own created indicators (including outcome measures) and attributes to gauge the effectiveness of the EMS system at all levels and against state and national results. The lead agency provides these to the public with appropriate explanation and system improvement suggestions.

A well-integrated emergent illness/injury reporting system exists. Evidence is available to demonstrate how system providers routinely use EMS information system (EMSIS) data to identify program needs, to develop strategies on program priorities, and to set annual goals for emergent illness/injury prevention. There is specific monitoring of work-related illnesses and injuries for the EMS workforce.

The statewide multidisciplinary, multi-agency EMS system (advisory or authority) body formally delegates by rule to a statewide medical direction committee, or other similar body, the responsibility to complete regular reviews of annotated EMSIS data reports to determine and recommend the need for system modifications. This committee meets regularly with stakeholders and reviews EMSIS data reports to assess system performance over time, looking for ways to improve system effectiveness and patient outcomes.

General statewide, regional, and jurisdictional/local agency EMSIS data reports are generated by the EMS system (or by regional/jurisdictional bodies as appropriate) no less than once per year and are made available to EMS system leaders on all levels and to other stakeholders and the public as appropriate to evaluate and improve system performance.

There is a legislative mandate that an EMSIS is implemented and maintained by the lead agency, and that all EMS system provider agencies provide data electronically on a regular, timely basis. EMS system hospitals and other facilities facilitate real-time data linkage and transmission for operational and clinical purposes (e.g. field access to patient history; on-line medical direction access to field data on patients and resources) and outcome evaluation. The EMSIS is NEMSIS-compliant and sends data to NEMSIS.

There is a statewide performance improvement (PI) plan implemented and mandatory at the state, regional, jurisdictional, and local agency level with dedicated, specified medical oversight. There is legislated protection from discoverability of all EMS data. This plan includes a mechanism for reporting patient care/treatment errors.

EMS system lead agency policies for educational programs require that familiarity with the scientific literature, appropriate research principles, and the value of initiating and participating in research to produce evidence-based advancement of the field are included in EMS education content.

C. Assurance Process

The state EMS lead agency enforces provider agency participation in the EMSIS and statewide performance improvement (PI) system, as well as facility participation in EMSIS for operational, clinical, and outcome evaluation purposes.

“Model” EMS System Component #10 - Large Scale Event Preparedness and Response Subsystem

Overview

A National Incident Management System (NIMS) compliant subsystem exists to enable the scaling up of day-to-day operations to meet the needs of larger, all-hazards events. Threat and capabilities assessments have identified the likeliest events to occur in the state and the capabilities required and available to address them. It is essential that mass casualty responses involve logical expansion and extension of daily practices and not the establishment of new practices reserved for large scale events. Equipment, human and other resources are described in a manner compliant with NIMS resource typing definitions.

Components

A. Assessment Process

There is a resource assessment of the EMS system’s ability to expand its capacity to respond to mass casualty incidents (MCIs) in an all-hazards approach. The written inventory of trauma system-wide MCI capacity has been shared with, and incorporated into, broader statewide planning efforts for all-hazards responses.

The EMS system has completed a gap analysis based on the resource assessment for EMS system emergency preparedness and on system resource standards adopted.

B. Policy Development Process

The EMS system plan has established clearly defined methods of integrating with other emergency preparedness plans (all-hazards). The EMS system plan addresses the lead agency coordination among EMS, public health, public safety and emergency management. Plans are well integrated and include annual multidisciplinary exercises to test this capability using scenarios based on risk vulnerability assessment and Homeland Security Exercise and Evaluation Program (HSEEP) guidelines. Results from drills and live responses are used to further improve the plans and processes. The plan describes means to allow EMS resources to be used across jurisdictions, both intrastate and interstate, using the Emergency Management Assistance Compact and NIMS.

The EMS system plan includes identification of additional resources (both manpower and equipment) necessary to respond to a mass casualty. EMS leaders coordinate with emergency management officials to accomplish this. The plan utilizes NIMS compliant resource typing definitions to describe these. There is a well-drafted and rehearsed EMS system plan, along with sufficient caches of equipment and backup personnel, that ensures the rapid deployment of additional resources during mass casualty incidents. The plan has specific provisions for a pandemic influenza event.

C. Assurance Process

The EMS system, through the lead agency, has access to additional equipment, materials, and personnel for large-scale events. The lead agency has acquired additional equipment and materials for both the prehospital and hospital response to all-hazards events.

A deployment mechanism to share personnel resources has been developed and tested in both the prehospital and hospital settings (e.g., mutual aid, precredentialing of practitioners, and rapid assignment of privileges). The system routinely tests its capabilities in this area.

There has been an assessment of need for protective resources (including vaccinations, prophylaxis, and personal protective equipment) for prehospital providers and their families. All of the resources identified as being needed have been made available. There is a system for routinely reassessing need for protective resources and for identifying new providers as they enter the EMS system.

II. Pennsylvania's System Self Assessment by EMS Component

Overview of Pennsylvania Process

The state EMS system self-assessment tool has 67 indicators. In each indicator, the element of the system and subsystem being considered may be judged from “0” to “5” based on the completeness and maturity of that element. The lower the score, the less complete or mature that element of the system is judged to be (or “0” is given if the element’s status is not known). The statements associated with a “top” score of “5” have been designed by the Project Steering Group to reflect the most mature and complete status for that element of the system. Therefore, the following “model” state EMS system description is based on compiling those highest scoring statements of the 67 indicators organized by the 10 subsystems of the state EMS system. The model description has been altered somewhat from the specific scoring statements in the self-assessment tool for readability.

In order to complete the assessment scoring your focus group will be directed to an on-line scoring center so that your group rating can be entered. Each group will develop a consensus-based score for each indicator and the group facilitator will enter each score online. The group score will then be combined with the other focus groups statewide to generate an “average” score for each indicator. Your facilitator will explain the process in more detail during your meeting.

Each Indicator has a description attached to it for scoring purposes. Please consider the statements below in an effort to assist in the selection of a score. You may want to mark this page for future reference.

Scoring Scale:

- 0- Means – Unknown
- 1- Means – There is little or no known effort in this area
- 2- Means – There is a system in place but not recognized or functioning
- 3- Means – There is a system in place and it is recognized
- 4- Means – There is a system in place and is recognized and functioning
- 5- Means – Reflects the most mature and complete status for that element of the system.

1. System Leadership, Organization, Regulation & Policy Subsystem

Indicator 1.a	Scoring
Regions have accountable systems of care and are established and monitored.	0. Not known.
	1. There is no formal sub-state structure of care other than local EMS services.
	2. Individual trauma, cardiac or other specialty subsystems have evolved but are not formally recognized in Pennsylvania's EMS Act, rules, regulations, protocols or other policies.
	3. Individual trauma, cardiac or other specialty subsystems have evolved and have some functional meaning in Pennsylvania's EMS Act, rules, regulations, protocols or other policies. Some systems of accountability have been developed within regional EMS councils.
	4. There are clearly defined specialty subsystems of care with regional EMS councils established uniformly under the Pennsylvania DOH, Bureau of EMS by statute, rules, regulations, protocols or other policies to guide and monitor care.
	5. There are clearly defined specialty subsystems of care with regional EMS councils established uniformly under the Pennsylvania DOH, Bureau of EMS by statute, rules, regulations, protocols or other policies to guide and monitor care. These regional systems of care routinely and uniformly report on care performance through the Pennsylvania DOH, Bureau of EMS, which routinely monitors these regional, accountable systems of care.

Indicator 1.b	Scoring
Strategic planning process exists to develop or update the state EMS system plan supported by external review or PI process.	0. Not known.
Performance Improvement (PI) = Quality Improvement (QI) or Quality Assurance (QA)	1. No external examination of the EMS system or individual components has occurred.
	2. An internal or external examination of the EMS system is scheduled within the next 6 months or has been conducted by the Pennsylvania DOH, Bureau of EMS.
	3. An internal review has been conducted by the Pennsylvania DOH, Bureau of EMS utilizing the "Model" EMS System Self-Assessment and a strategic planning process has been employed to develop or update the state EMS system plan.
	4. A formal evaluation has been conducted by outside EMS system "experts", at a minimum utilizing the "Model" EMS System Self-Assessment indicators and format, and a strategic planning process has been employed to develop or update the state EMS system plan. .
	5. Independent external reassessment occurs regularly, at least every five years, and/or a broad-based statewide quality improvement process is employed on an on-going fashion. Either employs the "Model" EMS System Self-Assessment as a basis, and is linked with a strategic planning process to update the EMS system plan.

Indicator 1.c	Scoring
The Pennsylvania DOH, Bureau of EMS demonstrates that it can bring organizations together to implement and maintain an EMS system which integrates the needs of special populations.	0. Not known.
	1. There is no evidence of partnerships, alliances, or organizations working together to implement and maintain a comprehensive EMS system .
	2. There have been limited attempts to organize groups, but to date no ongoing system committees meeting regularly to design or implement the EMS system.
	3. The Pennsylvania DOH, Bureau of EMS has multiple committees meeting regularly to develop and implement a comprehensive EMS system plan.
	4. The Pennsylvania DOH, Bureau of EMS demonstrates, through its various committees, an ability to bring together multidisciplinary groups interested in developing, implementing, and maintaining a comprehensive EMS system plan which addresses the needs of special populations. Multiple stakeholders for various disciplines are routinely recruited to participate in system operational issues and refinement depending on expertise needed.
	5. The Pennsylvania DOH, Bureau of EMS has brought together multiple stakeholder groups, and other state agencies to assist with, and make recommendations on, the development and implementation of the EMS system, preferably through a statewide, statutorily authorized, multidisciplinary, multi-agency body acting in an advisory or authority capacity (PEHSC). There is evidence that the needs of special populations have been integrated into state statutes, rules, and regulations, and are represented on this body.

Indicator 1.d	Scoring
Legislative authority (state regulations, rules and/or statute) identifies the Pennsylvania DOH, Bureau of EMS, director, and medical director, and authorizes system development and oversight responsibilities.	0. Not known.
	1. There is no specific legislative authority to plan, develop, implement, manage, and evaluate, or fund, the EMS system and its component parts.
	2. There is legislative authority for establishing an EMS system, and specific timelines for adoption are being drafted and reviewed by emergency care constituencies.
	3. The Pennsylvania DOH, Bureau of EMS is identified in State statute and is authorized to plan, develop, lead, and regulate a comprehensive statewide EMS system including the component subsystems described in the Model EMS system Plan.
	4. The Pennsylvania DOH, Bureau of EMS is identified in State statute and is authorized to plan, develop, lead, and regulate a comprehensive statewide EMS system including the component subsystems described in the Model EMS System Plan, and is required to report on

	the progress and effectiveness of system implementation.
	5. The Pennsylvania DOH, Bureau of EMS, state EMS director, and state EMS medical director are identified in State statute. The Pennsylvania DOH, Bureau of EMS is authorized to plan, develop, lead, monitor and regulate a comprehensive statewide EMS system. This system is specified as including a statewide organization of regionalized, coordinated and accountable systems of emergency care with the component subsystems described in the model EMS system. The Pennsylvania DOH, Bureau of EMS is required to regularly report to government and the public on the progress and effectiveness of system implementation based on a quality improvement process.

Indicator 1.e	Scoring
Administrative rules/regulations direct the development of operational policies and procedures at the State, regional, and local levels.	0. Not known.
	1. There is no legal authority to adopt administrative rules/regulations regarding the development of the EMS system at the State, regional, or local levels.
	2. There is legal authority, but there are no administrative rules/regulations governing EMS system development, including component subsystems of the EMS system.
	3. There are drafts State, regional, or local rules/regulations for the different subsystem components of EMS system development.
	4. There are existing statewide administrative rules/regulations for planning, developing, and implementing the EMS system and its subsystem components at the State, regional, and local levels.
	5. The Pennsylvania DOH, Bureau of EMS regularly reviews, through established committees and stakeholders, the rules/regulations governing system performance, including policies and procedures for system operations at the State, regional, and local levels.

Indicator 1.f	Scoring
The Pennsylvania DOH, Bureau of EMS has adopted clearly defined EMS system standards (e.g., facility standards, triage and transfer guidelines, data collection standards) and has sufficient legal authority to ensure and enforce compliance.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not have sufficient legal authority and has not adopted or defined EMS system performance and operating standards, nor is there sufficient legal authority to do so.
	2. Sufficient authority exists to define and adopt standards for EMS system performance and operations, but the Pennsylvania DOH, Bureau of EMS has not yet completed this process.

	3. There is sufficient legal authority to adopt and implement operation and performance standards, including enforcement.
	4. The authority exists to fully develop all operational guidelines and standards; the stakeholders are reviewing draft policies and procedures; and adoption by the Pennsylvania DOH, Bureau of EMS, including implementation and enforcement, is pending.
	5. The Pennsylvania DOH, Bureau of EMS has adopted clearly defined EMS system standards (e.g., facility standards, triage and transfer guidelines, data collection standards) and has sufficient legal authority to ensure and enforce compliance. These EMS system performance standards are in place and compliance is being actively monitored and enforced through well-defined policies and procedures.

Indicator 1.g	Scoring
The Pennsylvania DOH, Bureau of EMS has adopted and uses goals and time-specific, quantifiable, and measurable objectives for the EMS system.	0. Not known.
	1. There are no goals or time-specific, quantifiable, and measurable objectives for the EMS system.
	2. The Pennsylvania DOH, Bureau of EMS leaders have met to discuss time-specific, quantifiable goals.
	3. The Pennsylvania DOH, Bureau of EMS leaders are beginning the process of identifying measurable program goals and outcome-based, time-specific, quantifiable, and measurable objectives.
	4. The Pennsylvania DOH, Bureau of EMS leaders have adopted goals and time-specific, quantifiable, and measurable objectives that guide system performance.
	5. Pennsylvania DOH, Bureau of EMS leaders, in consultation with their statewide multidisciplinary, multi-agency board (PEHSC), regions and stakeholders have established measurable program goals and outcome-based, time-specific, quantifiable, and measurable objectives that guide system effectiveness and system performance.

Indicator 1.h	Scoring
The Pennsylvania DOH, Bureau of EMS has adopted an Emergency Medical Services System Plan.	0. Not known.
	1. There is no EMS system plan, and one is not in progress.
	2. There is no EMS system plan, although some groups have begun meeting to discuss its development.
	3. An EMS system plan was developed and adopted by the Pennsylvania Bureau of EMS. The plan, however, has not been endorsed by EMS system stakeholders.
	4. An EMS system plan has been developed with stakeholders adopted, and endorsed by those groups.

	5. A comprehensive EMS system plan has been developed and adopted in conjunction with all key EMS system stakeholders, and includes the integration of all subsystem components. This plan is linked to 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.
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Indicator 1.i	Scoring
The Pennsylvania DOH, Bureau of EMS ensures that prehospital care is provided by licensed agencies (services).	0. Not known.
	1. There is no evidence that the state ensures appropriate agency licensure and compliance.
	2. The Pennsylvania DOH, Bureau of EMS refers complaints concerning issues of prehospital agency performance to another agency charged with prehospital EMS regulation.
	3. The Pennsylvania DOH, Bureau of EMS resolves complaints involving prehospital agencies.
	4. The Pennsylvania DOH, Bureau of EMS monitors compliance of prehospital agencies with rules, regulations, and protocols.
	5. The Pennsylvania DOH, Bureau of EMS maintains ongoing EMS system performance improvement processes and enforces prehospital agency compliance with any rules, regulations, or protocols (e.g., taking patients to the correct facility in accordance with pre-existing destination protocols).

Indicator 1.j	Scoring
The Pennsylvania DOH, Bureau of EMS ensures that prehospital care is provided by certified personnel.	0. Not known.
	1. There is no evidence that the state ensures appropriate agency certification and compliance.
	2. The Pennsylvania DOH, Bureau of EMS refers complaints concerning issues of prehospital personnel performance to another agency charged with prehospital EMS regulation.
	3. The Pennsylvania DOH, Bureau of EMS resolves complaints involving prehospital personnel.
	4. The Pennsylvania DOH, Bureau of EMS monitors compliance of prehospital personnel with rules, regulations, and protocols.
	5. The Pennsylvania DOH, Bureau of EMS maintains ongoing EMS system performance improvement processes and enforces prehospital personnel compliance with any rules, regulations, or protocols (e.g., taking patients to the correct facility in accordance with pre-existing destination protocols).

Indicator 1.k	Scoring
The Pennsylvania DOH, Bureau of EMS provides an array of system services to EMS system agencies, receiving facilities, and others based on identified needs.	0. Not known.
	1. No process for assessing the needs of EMS system participants or others has been conducted or is planned.
	2. An internal or external examination of the EMS system including, leading to, or for the sole purpose of a needs assessment is scheduled within the next 6 months.
	3. An internal or external examination of the EMS system including, leading to, or for the sole purpose of a needs assessment has been performed. An array of service needs has been identified and plans to develop or update those services are being pursued.
	4. An internal or external examination of the EMS system including, leading to, or for the sole purpose of a needs assessment is regularly performed. An array of service needs including leadership, planning, coordination, implementation, response and technical assistance services are evaluated.
	5. The Pennsylvania DOH, Bureau of EMS provides an array of services addressing system needs such as leadership, planning, coordination, implementation, response and technical assistance. It performs an internal or external examination of the EMS system including an assessment of needs for such services at least every five years. Such an assessment may be replaced by a system of performance improvement which generates data sufficient to evaluate needs and update services on an on-going basis.

Indicator 1.1	Scoring
The Pennsylvania DOH, Bureau of EMS prepares annual reports on the status of the statewide EMS system.	0. Not known.
	1. No annual reports are available.
	2. Annual reports are prepared but are not based on input from providers and other key stakeholders
	3. Annual reports are written by the Pennsylvania DOH, Bureau of EMS with input from providers and other key stakeholders. Many subsystem reports are produced without reference to one another.
	4. Comprehensive annual reports on the status of the statewide EMS system, including the effectiveness of all subsystems are written by the Pennsylvania DOH, Bureau of EMS in conjunction with providers and other stakeholders. These have begun to incorporate state EMS Information System (EMSIS) data and performance measures derived from this self-assessment tool.
	5. Comprehensive annual reports on the status of the statewide EMS system, including the effectiveness of all subsystems, are written by the Pennsylvania DOH, Bureau of EMS in conjunction with providers and other stakeholders. These routinely report state EMSIS data and performance measures derived from this self-assessment tool and integrate comparisons with similar states through NEMSIS data.

2. Resource Management Subsystems – Financial

Indicator 2.a	Scoring
Budgets are developed for the Pennsylvania DOH, Bureau of EMS and other EMS system subsystem infrastructure.	0. Not known
	1. There is no funding to support the Pennsylvania DOH, Bureau of EMS and/or there are no processes in place upon which to base budgets.
	2. The only budgeting process is that of the Pennsylvania DOH, Bureau of EMS's executive branch department (Department of Health). There may be some ad hoc interested party input sought in that process. There may be separate legislative initiatives for specific EMS system needs by outside special interests.
	3. The Pennsylvania DOH, Bureau of EMS utilizes a participative process representative of EMS system stakeholders to develop its budget.
	4. The Pennsylvania DOH, Bureau of EMS incorporates the results of a regular state EMS system evaluation, needs assessment or a strategic planning process (State Plan) in a participative, representative process to develop its budget.
	5. The Pennsylvania DOH, Bureau of EMS routinely utilizes strategic planning processes, with broad-based stakeholder representation and participation, to develop its budget for the EMS system and its subsystems. The strategic planning processes utilize data from state EMS system evaluations and/or specific statewide needs assessment processes. Regardless of which of these sources of overall baseline information is used, the planning process utilizes on-going system performance improvement data to make budgetary decisions.

Indicator 2.b	Scoring
There is an established method of collecting EMS system financial data from all health care facilities and EMS agencies including patient charges as well as administrative and system costs.	0. Not known
	1. Financial data are not collected as part of the EMS information system (EMSIS).
	2. Financial data are collected as part of the EMSIS at individual facilities and agencies but are not reported to the Pennsylvania Bureau of EMS.
	3. Financial data are collected as part of the EMSIS and are analyzed and reported by the Pennsylvania Bureau of EMS.
	4. Financial data from the EMSIS are linked with at least one other source of cost data such as hospital discharge data.
	5. Financial data are routinely derived from the EMSIS, insurers, emergency department, hospital discharge, death certificate and rehabilitation data and, along with data on general EMS system infrastructure costs, are used to assess cost/benefit of the system. A method exists to investigate, diagnose and intervene in problems identified.

Indicator 2.c	Scoring
There is funding of the EMS system and the Pennsylvania DOH, Bureau of EMS.	0. Not known
	1. There is no specific funding to support the Pennsylvania DOH, Bureau of EMS and other EMS system infrastructure.
	2. Occasional funding has been directed at EMS system infrastructure support, and appropriations have been made to the Pennsylvania DOH, Bureau of EMS budget for this purpose.
	3. Occasional funding has been directed at EMS system infrastructure support, and appropriations have been made to the Pennsylvania DOH, Bureau of EMS budget for this purpose. More stable sources of funds have been identified, but the funds have not been appropriated for EMS system.
	4. Consistent, though limited, infrastructure funding has been appropriated to the Pennsylvania DOH, Bureau of EMS budget.
	5. The legislature has identified and appropriated infrastructure funding from general fund and non-lapsing sources for the Pennsylvania DOH, Bureau of EMS which is consistent with its legislated responsibilities.

3. Resource Management Subsystems - Human Resources

Indicator 3.a	Scoring
A performance standard has been established for prehospital licensed/certified personnel turnover rate. The NHTSA Performance Measures (PM) Indicator “2- Annual Turnover Rate” or a similar measure has been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.	0. Not known
	1. There is no such performance standard or PM indicator and none is planned at this time.
	2. Such a performance standard and PM indicator have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.
	3. There is no such performance standard or PM indicator, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but both are planned for statewide implementation within the next year.
	4. This performance standard and PM indicator have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.
	5. This performance standard and PM indicator have been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

Indicator 3.b	Scoring
Education for EMS system participants is developed based on a review and evaluation of EMS system information system (EMSIS) or other system performance data.	0. Not known
	1. There is no correlation between training programs for providers and the EMSIS or other data.
	2. There is limited use of EMSIS reports or other data to target educational opportunities.
	3. There is evidence that some providers are using EMSIS reports or other data to identify educational needs and to incorporate them into training programs.
	4. There is written documentation (e.g. meeting minutes) that many educational forums have been conducted based on EMS system data, their use in ongoing performance improvement processes and review by medical direction.

	5. Written evidence exists that EMS education opportunities are routinely impacted by regular reviews of EMS system performance.
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Indicator 3.c	Scoring
The Pennsylvania DOH, Bureau of EMS has adopted scopes of practice consistent with national standards.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS has neither guidance nor requirements for scopes of practice in the licensure/certification of EMS personnel.
	2. The Pennsylvania DOH, Bureau of EMS has some guidance or requirements for scopes of practice in the licensure/certification of EMS personnel. These reflect a minimum or maximum scope of practice with much jurisdictional or regional variation.
	3. The Pennsylvania DOH, Bureau of EMS has extensive guidance and requirements for scopes of practice in the licensure/certification of EMS personnel. These have established fairly uniform practices across the state with some local variation. These do not reflect impact from the National EMS Scope of Practice Model, nor is there a plan for bridging to that Model.
	4. The Pennsylvania DOH, Bureau of EMS has extensive guidance and requirements for scopes of practice in the licensure/certification of EMS personnel. These have established fairly uniform practices across the state with some local variation. These may or may not reflect impact from the National EMS Scope of Practice Model, but there is there a clear Pennsylvania DOH, Bureau of EMS plan for bridging to that model.
	5. The Pennsylvania DOH, Bureau of EMS has adopted scopes of practice consistent with the National EMS Scope of Practice Model and these have been implemented with accompanying guidance and requirements.

Indicator 3.d	Scoring
The Pennsylvania DOH, Bureau of EMS requires national certification for statewide certification (assuming state certification process exists) for prehospital providers.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not require national certification for the licensure/certification of EMS personnel. It grants reciprocity on a case by case basis for out of state applicants. It has no plan to change these practices in the next year.
	2. The Pennsylvania DOH, Bureau of EMS does not require national certification for the licensure/certification of EMS personnel. It grants reciprocity on a case by case basis for out of state

	applicants. It has plans to adopt national certification in at least some levels in the next year.
	3. The Pennsylvania DOH, Bureau of EMS requires national certification for the licensure/certification of some, but not all, levels of EMS personnel. It grants reciprocity on a case by case basis for out of state applicants in levels for which it does not recognize national certification. It has no plan to change these practices in the next year.
	4. The Pennsylvania DOH, Bureau of EMS requires national certification for the licensure/certification of some, but not all, levels of EMS personnel. It grants reciprocity on a case by case basis for out of state applicants in levels for which it does not recognize national certification. It has plans to adopt national certification for all levels in the next year.
	5. The Pennsylvania DOH, Bureau of EMS requires national certification for state licensure/certification of all levels of EMS personnel.

Indicator 3.e	Scoring
The Pennsylvania DOH, Bureau of EMS requires national accreditation of education programs.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not require national accreditation of education programs. It has no mechanism for approving education programs or courses. It has no plan to change these practices in the next year.
	2. The Pennsylvania DOH, Bureau of EMS does not require national accreditation of education programs. It has an internal mechanism for approving education programs or courses. It has no plan to change these practices in the next year.
	3. The Pennsylvania DOH, Bureau of EMS does not require national accreditation of education programs. It has an internal mechanism for approving education programs or courses. It has plans to require national accreditation of paramedic education programs within the next year.
	4. The Pennsylvania DOH, Bureau of EMS requires national accreditation of paramedic education programs. It has an internal mechanism for approving other levels of education programs or courses which includes standards that are consistent with the National EMS Education Standards. It has no plan to change these practices in the next year.
	5. The Pennsylvania DOH, Bureau of EMS requires national accreditation of paramedic education programs. It has an internal mechanism for approving other levels of education programs or courses until such time as national accreditation is available at one or more of these levels. This internal mechanism includes standards that are

	consistent with the National EMS Education Standards. It has committed to requiring national accreditation within two years of accreditation availability.
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Indicator 3.f	Scoring
Procedures exist for enforcing EMS personnel compliance with certification laws, regulations, and policies.	0. Not known.
	1. There are no laws, regulations, and policies pertaining to EMS personnel certification.
	2. There are laws, regulations, and policies pertaining to EMS personnel certification, but there are no clear enforcement procedures.
	3. There are laws, regulations, and policies pertaining to EMS personnel certification. There are multiple agencies including or instead of the Pennsylvania DOH, Bureau of EMS involved in enforcing these, reducing the clarity of responsibility for enforcement and producing potential inter-agency conflict.
	4. There are laws, regulations, and policies pertaining to EMS personnel certification. There are multiple agencies including the Pennsylvania DOH, Bureau of EMS involved in enforcing these, however the relationships among these seem effective and procedures should be clear to the EMS community.
	5. The Pennsylvania DOH, Bureau of EMS maintains clear procedures for enforcing personnel compliance with laws, regulations, and policies pertaining to provider certification. The Pennsylvania DOH, Bureau of EMS maintains clear procedures for enforcing personnel compliance with laws, regulations, and policies pertaining to provider certification. These include processes for adequate review and due process in enforcement.

Indicator 3.g	Scoring
The EMS system agency monitors and addresses workforce needs.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not formally monitor workforce needs or provide assistance for otherwise perceived workforce issues.
	2. The Pennsylvania DOH, Bureau of EMS does not formally monitor workforce needs but makes resources such as management guidance or recruitment/retention support materials available to ambulance services upon request.
	3. The Pennsylvania DOH, Bureau of EMS does not formally monitor workforce needs, but in response to otherwise perceived needs it routinely investigates health/safety issues, distributes management guidance or recruitment/retention

	support materials to provider agencies, publicizes this availability, and provides staff technical assistance as requested.
	4. The Pennsylvania DOH, Bureau of EMS is establishing a system to formally monitor workforce needs. In the interim, it routinely investigates health/safety issues, distributes management guidance and recruitment/retention support materials to provider agencies, publicizes this availability, has developed training programs to address these issues, and provides staff technical assistance as requested.
	5. The Pennsylvania DOH, Bureau of EMS assures an on-going needs assessment for areas of personnel shortage, trends in statewide personnel utilization, and for health/safety issues specific to the EMS working environment. Based on this on-going needs assessment, the Pennsylvania DOH, Bureau of EMS has either documented actions to address human resources needs in the state or has documented that no significant workforce needs or provider agency management issues exist.

Indicator 3.h	Scoring
A structured mechanism exists to implement medical direction mediated changes in protocol and treatment practices at state level, regional level and local level.	0. Not known
	1. There is no structured mechanism to inform or educate personnel in new protocols or treatment approaches adopted by medical direction.
	2. A structured mechanism is in place to inform or educate personnel in new protocols or treatment approaches adopted by medical direction, but it has not been tried or tested.
	3. A structured mechanism is in place to inform personnel in new protocols or treatment approaches adopted by medical direction.
	4. A structured mechanism is in place to educate personnel in new protocols and treatment approaches adopted by medical direction.
	5. A structured mechanism exists to educate personnel in new protocols and treatment approaches, as adopted by medical direction, in a timely manner. There is a method to monitor compliance with new procedures as they are instituted.

4. Resource Management Subsystems – Transportation

Indicator 4.a	Scoring
<p>A performance standard has been established for response, scene, and transport time intervals by both mean and 90th percentile measures. The NHTSA Performance Measures (PM) Indicators “10.1- Mean Emergency Patient Response Interval”, “10.2- 90th Percentile Emergency Response Interval”, “10.3- Mean Emergency Scene Interval”, “10.4- 90th Percentile Emergency Scene Interval” “10.5- Mean Emergency Transport Interval”, and “10.6- 90th Percentile Emergency Transport Interval”, or similar measures, have been adopted as statewide PM indicators and data contributing to them are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.</p>	<p>0. Not known</p>
	<p>1. There are no such performance standards or PM indicators and none are planned at this time.</p>
	<p>2. Such performance standards and PM indicators have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.</p>
	<p>3. There is no such performance standard or PM indicators, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but both are planned for statewide implementation within the next year.</p>
	<p>4. This performance standard and PM indicators have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.</p>
	<p>5. This performance standard and PM indicator (or similar measures) have been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.</p>

Indicator 4.b	Scoring
<p>The Pennsylvania DOH, Bureau of EMS has established standards for the EMS services vehicle operators.</p>	<p>0. Not known</p>
	<p>1. There are standards for EMS mobile medical and transportation services.</p>
	<p>2. There are standards for EMS mobile medical and transportation services, but they are incomplete and there is no documented schedule for update.</p>
	<p>3. There are standards for EMS mobile medical and transportation services, but they are incomplete.</p>

	They will be updated and completed within the next year.
	4. There are standards for EMS mobile medical and transportation services, but there is no effort to utilize or create evidence-based standards where possible.
	5. The Pennsylvania DOH, Bureau of EMS has established standards, drawing upon national or otherwise evidence-based standards where possible, for the equipping of vehicles (ground, air) and the operation of ambulance services. Performance standards have been established as policy for the indicators in section 4.a. There is a policy to inspect vehicles and/or review performance measures on a regular basis.

Indicator 4.c	Scoring
The Pennsylvania DOH, Bureau of EMS inspects vehicles and/or conducts an on-going system of performance improvement and takes action to correct inadequacies.	0. Not known
	1. There are no performance improvement or inspection standards for EMS mobile medical and transportation services.
	2. There are performance improvement or inspection standards for EMS mobile medical and transportation services, but they are incomplete or there is inadequate staff to enforce them. No changes are planned.
	3. There are performance improvement or inspection standards for EMS mobile medical and transportation services, but they are incomplete or there is inadequate staff to enforce them. Changes to rectify these inadequacies are documented to be completed within the next year.
	4. The Pennsylvania DOH, Bureau of EMS regularly inspects vehicles and/or conducts on-going performance improvement, utilizing the standards and performance indicators it has established. The agency's authority and latitude to take timely and effective action when inadequacies are discovered that may pose a hazard to patients or the public is limited.
	5. The Pennsylvania DOH, Bureau of EMS conducts on-going performance improvement and/or regularly inspects vehicles utilizing the standards and performance indicators it has established. The agency is has enforcement authority, including well-defined due process procedures, to take timely and effective action when inadequacies are discovered that may pose a hazard to patients or the public.

5. Resource Management Subsystems – Receiving Facility and Specialty Care Regionalization

Indicator 5.a	Scoring
A performance standard has been established for “Major Trauma Triage to Trauma Center Rate”. The NHTSA Performance Measures (PM) Indicator “5- Major Trauma Triage to Trauma Center Rate” or a similar measure has been adopted as a PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.	0. Not known
	1. There is no such performance standard or PM indicator and none is planned at this time.
	2. Performance standard and PM indicator have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.
	3. Performance standard or PM indicator have been adopted on a jurisdiction by jurisdiction basis with statewide coordination.
	4. This performance standard and PM indicator have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.
	5. This performance standard and PM indicator have been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

Indicator 5.b	Scoring
A performance standard has been established for “STEMI Triage to Specialty Center Rate”. The NHTSA Performance Measures (PM) Indicator “9- STEMI Triage to Specialty Center Rate” or a similar measure has been adopted as a PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.	0. Not known
	1. There is no such performance standard or PM indicator and none is planned at this time.
	2. There is no such performance standard or PM indicator, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but both are planned for statewide implementation within the next year.
	3.. Such a performance standard and PM indicator have been adopted on a jurisdiction by jurisdiction basis with statewide coordination.

	4. This performance standard and PM indicator have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.
	5. This performance standard and PM indicator have been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

Indicator 5.c	Scoring
The Pennsylvania DOH, Bureau of EMS brings stakeholder organizations together to implement and improve EMS system specialty care subsystems (e.g. trauma, cardiac, stroke, pediatric, burns).	0. Not known.
	1. There is no evidence of partnerships, alliances, or organizations working together to implement and maintain specialty care subsystems.
	2. There have been limited attempts to organize groups, but to date no ongoing subsystem committees are meeting regularly to design or implement specialty care subsystems of the EMS system.
	3. The Pennsylvania DOH, Bureau of EMS has at least one on-going committee with broad stakeholder representation meeting regularly to develop and implement a specialty care subsystem.
	4. The Pennsylvania DOH, Bureau of EMS has two or more on-going committees with broad stakeholder representation meeting regularly to develop and implement specialty care subsystems.
	5. The Pennsylvania DOH, Bureau of EMS has two or more on-going committees with broad stakeholder representation meeting regularly to develop and implement specialty care subsystems (e.g. trauma, cardiac, stroke, pediatric, burn). These are formally organized as multidisciplinary, multi-agency subcommittees of the state EMS system body. Their plans are integrated effectively into the statewide EMS system plan and its on-going review and improvement, and subsystem components coordinate well through the Pennsylvania DOH, Bureau of EMS and body (e.g. medical direction subsystem development of prehospital protocols draws upon representatives of specialty care subsystems for protocols in those areas).

Indicator 5.d	Scoring
There is a legislatively authorized process for the designation of specialty care receiving facilities.	0. Not known
	1. There is no process for the designation of specialty care facilities.
	2. There is no process for the designation of specialty care facilities but such a process is being planned for implementation within the next two years.
	3. There is a process for the designation of at least one type of specialty care subsystem facilities.
	4. There is a process for the designation of one or more types of specialty care subsystem facilities. This process is linked to the Pennsylvania DOH, Bureau of EMS and can be used as a template for designation of other specialty care subsystem facilities.
	5. There is a legislatively authorized process for the designation of specialty care facilities that is governed by the Pennsylvania DOH, Bureau of EMS and its specialty care subsystem committees. The Pennsylvania DOH, Bureau of EMS is actively designating and monitoring specialty care facilities.

Indicator 5.e	Scoring
For each specialty care subsystem statewide, the definition of patients who qualify for transfer to another level of specialty care facility is standard and those transfers are routinely made in a timely fashion (interfacility transports).	0. Not known
	1. There is no standard definition of transfer “qualifying patient” in any specialty care subsystem or region. Such decisions are ad hoc and rely on relationships and experience between referring and receiving providers and facilities.
	2. There are fragmented processes within specialty care subsystems, based around specialty centers on a regional basis, which may or may not have “qualifying patient” definitions and procedures for transfer.
	3. A standard definition of transfer “qualifying patient” and statewide processes to implement transfers based on it should be in place in at least one specialty care subsystem within a year.
	4. A standard definition of transfer “qualifying patient” and statewide processes to implement transfers based on it are in place in at least one specialty care subsystem. These are linked to performance improvement and medical direction review subsystems, and updated as needed on a statewide basis.
	5. A standard definition of transfer “qualifying patient” and statewide processes to implement transfers based on it are in place in two or more

	specialty care subsystems. These are linked to performance improvement and medical direction review subsystems, and updated as needed on a statewide basis.
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Indicator 5.f	Scoring
State EMS system -wide prehospital triage criteria exist to ensure appropriate emergency transport to specialty care centers.	0. Not known
	1. There are no formal triage criteria to ensure qualifying patients are transported to the most appropriate specialty facility.
	2. There are differing triage criteria guidelines used by different providers or jurisdictions.
	3. State EMS system-wide prehospital triage criteria are being developed and should be in place within the next year for at least one subspecialty system.
	4. State EMS system-wide prehospital triage criteria are in place for at least one subspecialty system. These are linked to performance improvement and medical direction review for appropriateness in identifying qualifying patients and in ensuring that they are transported to the appropriate specialty care facility.
	5. State EMS system-wide prehospital triage criteria are in place for two or more specialty care subsystems (e.g. the ACS/COT Trauma Field Triage Criteria for any trauma system). These are linked to performance improvement and medical direction review for appropriateness in identifying qualifying patients and in ensuring that they are transported to the appropriate specialty care facility. Sensitivity and specificity (over- and under-triage rates) of the criteria used are regularly reported through the Pennsylvania DOH, Bureau of EMS. Updates to the triage criteria are made as necessary to improve system performance.

Indicator 5.g	Scoring
An EMS for children specialty care subsystem exists.	0. Not known
	1. The emergency medical services for children (EMSC) specialty care subsystem has none of the following: an EMSC specialty care subsystem committee of the Pennsylvania DOH, Bureau of EMS, a legislatively authorized facility recognition system for pediatrics, a formal definition of “qualifying pediatric patient” for the purpose of transfer to a facility more highly recognized for pediatric care, and prehospital triage criteria for pediatrics.
	2. The emergency medical services for children (EMSC) specialty care subsystem has begun to develop as reflected by the existence of one of the following: an EMSC specialty care subsystem

	committee of the Pennsylvania DOH, Bureau of EMS, a legislatively authorized facility recognition system for pediatrics, a formal definition of “qualifying pediatric patient” for the purpose of transfer to a facility more highly recognized for pediatric care, and prehospital triage criteria for pediatrics.
	3. The emergency medical services for children (EMSC) specialty care subsystem is developing well as reflected by the existence of two of the following: an EMSC specialty care subsystem committee of the Pennsylvania DOH, Bureau of EMS, a legislatively authorized facility recognition system for pediatrics, a formal definition of “qualifying pediatric patient” for the purpose of transfer to a facility more highly recognized for pediatric care, and prehospital triage criteria for pediatrics.
	4. The emergency medical services for children (EMSC) specialty care subsystem has begun to mature as reflected by the existence of three of the following: an EMSC specialty care subsystem committee of the Pennsylvania DOH, Bureau of EMS, a legislatively authorized facility recognition system for pediatrics, a formal definition of “qualifying pediatric patient” for the purpose of transfer to a facility more highly recognized for pediatric care, and prehospital triage criteria for pediatrics.
	5. The emergency medical services for children (EMSC) specialty care subsystem is mature as reflected by the existence of an EMSC specialty care subsystem committee of the Pennsylvania DOH, Bureau of EMS, a legislatively authorized facility recognition system for pediatrics, a formal definition of “qualifying pediatric patient” for the purpose of transfer to a facility more highly recognized for pediatric care, and prehospital triage criteria for pediatrics.

6. Public Access and Communications Subsystems

Indicator 6.a	Scoring
There is a statewide coordinated system for the development, implementation, and ongoing evaluation of emergency medical dispatch (EMD) protocols	0. Not known
	1. There are no EMD protocols.
	2. EMD protocols have been adopted on a limited jurisdiction by jurisdiction basis without statewide coordination or regard to the design of the EMS system.
	3. EMD protocols have been adopted on a widespread jurisdiction by jurisdiction basis without statewide coordination, EMS system medical direction oversight for the most part, or regard to the design of the EMS system, but are not in conflict with EMS system design.
	4. EMD protocols have been developed without statewide coordination but in close coordination with EMS system medical direction oversight in most jurisdictions and are congruent with EMS system design.
	5. EMD protocols have been developed with statewide coordination and with EMS system medical direction oversight. It is recognized that EMD protocols for resource dispatch must be specific to the resources present in any given locale and decisions on these protocols must reflect input of those locales. There are established procedures to involve representatives of EMD staff in EMD and EMS system performance improvement and a “feedback loop” to change protocols or to update dispatcher education when appropriate. These protocols include, but are not limited to, which resources to dispatch (for example, Advanced Life Support (ALS) versus Basic Life Support (BLS), use of lights and sirens mode, early notification of the air medical and specialty facility resources, pre-arrival instructions, and other procedures necessary to ensure resources dispatched are consistent with the needs of emergency patients.

Indicator 6.b	Scoring
Public Safety Answering Points (PSAPs) implement emergency medical dispatch (9-1-1 Centers).	0. Not known
	1. PSAPs do not utilize EMD.
	2. PSAPs have begun to train staff in EMD.
	3. All PSAPs have some level of EMD trained staff.
	4. All emergency callers to PSAPs are assured of interaction with EMD trained staff.

	5. All emergency callers to PSAPs are assured of interaction with EMD certified staff in a facility whose EMD program has a medical director and has been reviewed and approved/certified by the EMSS lead agency.
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Indicator 6.c	Scoring
There is a universal access number (9-1-1) for citizens to access the EMS system, with dispatch of appropriate medical resources.	0. Not known
	1. There are still locales without a universal access number (9-1-1) for easy citizen access to the EMS system.
	2. There is a universal access number (9-1-1) for quick citizen access to care, though wireless 9-1-1 is not universally reliable.
	3. A universal access number (9-1-1) is reliably available for all landline and wireless callers statewide.
	4. A universal access number (9-1-1) is reliably available for all landline and wireless callers statewide and is integrated with all EMS jurisdictions' central communication systems under the statewide EMS system communications plan.
	5. State-of-the-art electronic, seamlessly linked citizen access (specifically E-9-1-1 and wireless E-9-1-1) and dispatch communication systems are available within all jurisdictions and utilize state-of-art EMD and other dispatch procedures routinely evaluated in an on-going performance improvement program.

Indicator 6.d	Scoring
There is a statewide, coordinated communication system for the EMS system to ensure field-to-field, field-to-facility, and interfacility bi- or multi-directional communications among all system participants.	0. Not known
	1. There is no statewide coordinated communication system for triage, treatment, and transport of patients for either single or multiple patient encounters and most jurisdictions still rely on 1970's era VHF/UHF systems. Interoperability is at "minimal" on the Interoperability Continuum (Table 1, page 23).
	2. There is no statewide, coordinated EMSS communication system, however many jurisdictions have updated EMS communications systems in a planned fashion. Many jurisdictions have moved beyond "minimal" on the Interoperability Continuum.
	3. Most jurisdictions have updated their EMS communications systems and they are coordinated on a statewide basis according to an EMSS and/or SIEC communications plan. Most jurisdictions are beyond "minimal" on the Interoperability

	Continuum.
	4. Many systems have begun to adopt wideband or broadband capabilities to transmit data and to access time-critical data bases (e.g. response resource status) in real-time. Most jurisdictions are at least at mid-point on the Interoperability Continuum. Evaluation of the effectiveness of the communication system is done routinely by the EMSS lead agency or as part of the SIEC.
	5. State-of-the-art electronic communication systems are available within all jurisdictions and are coordinated by an SIEC or similar body. The systems constitute a linkable statewide system, ideally coordinated in a single EMS state communications center or through linked, statewide regional communications centers, that is utilized for day to operations and is effective in all-hazards responses. The system is linked to public health and other nontraditional partners. The system is routinely evaluated on a statewide basis and affords narrowband, wideband and broadband solutions to EMS agencies and facilities in all jurisdictions. All jurisdictions are at least at mid-point, and most are at the far right on the Interoperability Continuum (below). The maturity of statewide EMSS communications interoperability is as a whole at the far right as defined by the USDHS SafeCom Interoperability Continuum.

7. Public Information, Education and Prevention Subsystem

Indicator 7.a	Scoring
There is a comparison of emergent illness/injury mortality using local, regional, statewide, and national data.	0. Not known
	1. There is no written comparison of emergent illness/injury mortality using local, regional, statewide, and national data.
	2. There is a written descriptive comparison of at least the leading cause of emergent illness/injury death using local, regional, and statewide data.
	3. There is a written descriptive, graphic, and tabular comparison of the leading cause of emergent illness/injury death using local, regional, statewide, and national data. An attempt is made to compare data to EMS system improvement efforts.
	4. There is a written descriptive, graphic, and tabular comparison of the <i>top three</i> leading causes of emergent illness/injury death using local, regional, statewide, and national data. An attempt is made to compare data to EMS system improvement efforts.
	5. There is a written descriptive, graphic, and tabular comparison of the <i>top ten</i> leading causes of emergent illness/injury death using local, regional, statewide, and national data. An attempt is made to compare data to EMS improvement efforts.

Indicator 7.b	Scoring
Collaboration exists between EMS system and public health leaders to complete emergent illness/injury risk assessments.	0. Not known
	1. No emergent illness/injury risk assessments are conducted.
	2. EMS system officials conduct emergent illness/injury assessments; however, there is no involvement of public health officials in those assessments.
	3. Public health officials, along with EMS system participants, assist with the design of emergent illness/injury risk assessments.
	4. Public health officials, along with EMS system leaders, assist with the design and analysis of emergent illness/injury risk assessments.
	5. The public health epidemiologist, along with EMS system leaders, is involved in the development of emergent illness/injury reports. There is clear evidence of data sharing, data linkage, and well-defined reporting roles and responsibilities.

Indicator 7.c	Scoring
The EMS system conducts a statistically valid consumer poll on a periodic basis to gauge expectations about the EMS system .	0. Not known
	1. No such poll is conducted or planned.
	2. Such a poll is being investigated.
	3. Such a poll is planned in the next year.
	4. Such a poll has been conducted and the results reported. The results are being utilized to focus public information and education efforts and system service development.
	5. The EMS system conducts a scientific consumer poll on a periodic basis to gauge expectations about the EMS system such as access, speed of response, level and type of care expected, and cost expectations of the public for care. Results are utilized to focus certain public information and education activities and system service development.

Indicator 7.d	Scoring
EMS system leaders (Pennsylvania DOH, Bureau of EMS, advisory committees, and others) inform and educate about emergent illness/injury prevention and EMS system development.	0. Not known.
	1. No targeted messaging or media campaigns have begun to educate and inform community and State leaders or policy makers about either emergent illness/injury prevention needs or EMS system development activities.
	2. Limited interfaces with policy makers and the media, aimed at both emergent illness/injury prevention and EMS system development, have occurred. Community development activities have been limited to incident-specific response opportunities.
	3. Statewide coordinated community activities have begun with the development of targeted emergent illness/injury prevention campaigns, and there have been initial discussions with policy makers regarding EMS system development.
	4. EMS system leaders are engaging policy makers in discussions about emergent illness/injury prevention and the EMS system. Examples are evident of media awareness and media messaging targeted at emergent illness/injury prevention activities.
	5. A well-orchestrated and continuing EMS System media campaign is evident. There is clear evidence that key policy makers at the State, regional, and local levels are keenly aware of the benefits of the EMS system and of the importance of emergent illness/injury prevention programs.

Indicator 7.e	Scoring
The Pennsylvania DOH, Bureau of EMS has developed or adopted a community outreach informed self-determination program to help communities determine the type of local EMS system and level of public cost they prefer.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not provide community EMS system assessment or informed self-determination services (generically, a process through which communities are encouraged to evaluate their local EMS system, learn about alternative levels and type of EMS response and their comparative costs and then determine the type of system and level of public cost they prefer).
	2. The Pennsylvania DOH, Bureau of EMS refers communities seeking such services to known suppliers of such services.
	3. The Pennsylvania DOH, Bureau of EMS provides some guidance materials, advice, and information on known agencies and organizations of such services.
	4. The Pennsylvania DOH, Bureau of EMS has developed a formal technical assistance package for communities which include a detailed explanation of community EMS assessment methods, informed self-determination processes, and limited staff consultation.
	5. The Pennsylvania DOH, Bureau of EMS has developed a formal technical assistance package for communities which include a detailed explanation of community EMS system evaluation methods and informed self-determination processes. It has developed or adapted its own informed self-determination program (generically, a process through which communities are encouraged to evaluate their local EMS system, learn about alternative levels and type of EMS response and their comparative costs and then determine the type of system and level of public cost they prefer), and provides a range of staff support, guidance materials and subsidies to encourage adoption of the program.

Indicator 7.f	Scoring
The Pennsylvania DOH, Bureau of EMS has developed or adopted a program to better enable provider agency leaders to effect public information, education, and relations (PIER) programs utilizing NHTSA and other materials.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not provide PIER support services for provider agencies.
	2. The Pennsylvania DOH, Bureau of EMS makes PIER support materials available to provider agencies upon request.
	3. The Pennsylvania DOH, Bureau of EMS routinely distributes PIER support materials to

	<p>provider agencies, and publicizes this availability.</p>
	<p>4. The Pennsylvania DOH, Bureau of EMS routinely distributes PIER support materials to provider agencies, publicizes this availability, and provides staff technical assistance as requested. This effort encourages consideration of EMS based community health services (“community paramedicine”) as a means of meeting community health needs and strengthening local EMS response or other programs appropriate to the health needs of the state’s various community types.</p>
	<p>5. The Pennsylvania DOH, Bureau of EMS routinely distributes PIER support materials to provider agencies, publicizes this availability, and provides staff technical assistance as requested. This program includes not only robust resources on raising the profile of the local EMS system and emergency illness/injury prevention efforts in the community, but enables agency leaders to explore opportunities to become involved in directly meeting preventive health, primary care and other needs in the community in order to strengthen the clinical base and response capabilities of the agency. This effort encourages consideration of EMS based community health services (“community paramedicine”), or other programs appropriate to the health needs of the state’s various community types, and offers technical assistance in approaching issues such as medical direction and training for such services.</p>

8. Clinical Care, Integration of Care, and Medical Direction Subsystem

Indicator 8.a	Scoring
The NHTSA Performance Measures (PM) Attributes “17.1- Call Complaint Distribution” and “17.2 – Call Complaint Rate” have been adopted as statewide PM attributes and data contributing to them are routinely collected, results analyzed at all levels and system planning interventions sought where necessary on a local, regional, and state level (e.g. better matching resources to call types experienced).	0. Not known
	1. There are no such PM attributes for which data is collected and none are planned at this time.
	2. There are no such PM indicators, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but are planned for statewide implementation within the next year.
	3. Such PM attributes have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.
	4. These PM attributes have been established on a statewide basis and data are now being collected, but analysis of results has not been integrated into planning processes.
	5. These PM attributes have been adopted on a statewide basis and data contributing to them are routinely collected, results analyzed at all levels and system planning interventions sought where necessary on a local, regional, and state level (e.g. better matching resources to call types experienced).

Indicator 8.b	Scoring
A performance standard has been established for prehospital relief of pain. The NHTSA Performance Measures (PM) Indicators “6.1- Pain Relief Rate”, “6.2- Pain Worsened Rate”, and “6.3- Pain Unchanged Rate” have been adopted as statewide PM indicators and data contributing to them are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.	0. Not known
	1. There is no such performance standard or PM indicators and none is planned at this time.
	2. There is no such performance standard or PM indicators, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but both are planned for statewide implementation within the next year.
	3. Such a performance standard and PM indicators have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.

	4. This performance standard and these PM indicators have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.
	5. This performance standard and these PM indicators have been adopted statewide and data contributing to them are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

Indicator 8.c	Scoring
A performance standard has been established for “EMS Cardiac Arrest Survival Rate to Hospital Discharge”. The NHTSA Performance Measures (PM) Indicator “18.2- EMS Cardiac Arrest Survival Rate to Hospital Discharge” has been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.	0. Not known
	1. There is no such performance standard or PM indicator and none is planned at this time.
	2. There is no such performance standard or PM indicator, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but both are planned for statewide implementation within the next year.
	3. Such a performance standard and PM indicator have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.
	4. This performance standard and PM indicator have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.
	5. This performance standard and PM indicator have been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

Indicator 8.d	Scoring
A performance standard has been established for at least one additional indicator of system interest in expanding its role to meet the changing needs of the patient population. This measure might involve the rate of red light and siren use (indicating changing response practice and/or call urgency), the rate of non-transports by patient complaint (indicating greater frequency of non-emergency care) or some other indicator of the EMS system adapting to meet other patient needs. Data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level.	0. Not known
	1. There is no such performance standard or PM indicator and none is planned at this time.
	2. There is no such performance standard or PM indicator, or they have been adopted on a jurisdiction by jurisdiction basis without statewide coordination, but both are planned for statewide implementation within the next year.
	3. Such a performance standard and PM indicator have been adopted on a jurisdiction by jurisdiction basis without statewide coordination.
	4. This performance standard and PM indicator have been established on a statewide basis and data are now being collected, results analyzed and interventions sought as identified. Statewide performance does not meet the performance standard as a whole.
	5. This performance standard and PM indicator have been adopted as a statewide PM indicator and data contributing to it are routinely collected, results analyzed and interventions sought where necessary on a local, regional, and state level. Statewide performance meets or exceeds the performance standard as a whole.

Indicator 8.e	Scoring
There is a clear-cut organization of information flow, authority and responsibility for medical direction from the state level through the local level.	0. Not known
	1. There is no statewide EMS system medical direction committee system.
	2. There have been informal efforts to organize multi-jurisdictional or regional committees of local medical directors and others to standardize protocols, performance improvement mechanisms and other processes.
	3. There is a distinct and uniform history of organizing medical committees on the regional and/or state levels to pursue standardization of practices and processes. There is no legislated authorization of this structure and therefore no

	formal authority, responsibility or protections from liability.
	4. There is a distinct and uniform history of organizing medical committees on the regional and/or state levels to pursue standardization of practices and processes. There is no legislated authorization of this structure and therefore no formal authority or responsibility for these committees. Responsibility for protocol adoption and other related activities may be vested in individuals at the local level promoting fragmentation of practice across regions and the state, or at the regional or state levels where input into decision-making may be uneven.
	5. There is a clear-cut organization and division of legal authority and responsibility for medical direction and for information flow involved in the processes of protocol adoption, performance improvement, and restricting the practice of prehospital care providers. As dictated by the size and complexity of the statewide, regional and local systems there are medical committees at appropriate levels to encourage and facilitate the flow of information and input to fuel these processes and to serve as deliberative bodies in these processes. Ultimate authority and responsibility for medical direction is specified in statute and extends from the state medical director through the statewide medical committee to regional medical directors to regional medical committees to local medical directors and providers as appropriate.

Indicator 8.f	Scoring
There is clearly defined legal authority and responsibility for the EMS system medical direction subsystem.	0. Not known
Medical Director(s): Ambulance Service Medical Directors and/or Medical Command Physicians	1. There is no statewide EMS system medical direction system or formal medical directors at any but the local level, and these are not consistent from jurisdiction to jurisdiction in function or responsibility/authority.
	2. There is EMS system medical direction on the local, regional and/or state levels. Some medical directors have a written job description; however, these individual generally have no specific EMS system derived legal authority or time allocated for those tasks.
	3. There is a loose EMS system medical direction subsystem with a statewide EMS system medical director, with medical directors often having written job descriptions, but with no specific legal authority above the local level. Local medical directors have adopted protocols, have in some cases implemented performance improvement programs, and are generally taking steps to improve the medical appropriateness of the EMS system. There is some

	activity on a regional or statewide basis to bring uniformity to these processes.
	4. There is a distinct EMS system medical direction subsystem with uniform job descriptions for medical directors on the state, and regional and/or local levels as applicable. There is legislated authority to adopt protocols and performance improvement programs at the local or regional level. If such authority is at the local level, there is formal activity at the regional and/or state level to standardize these.
	5. There is clearly defined legal authority and responsibility for the EMS system medical direction subsystem including the authority and responsibility to adopt protocols, to implement a performance improvement system, to credential the practice of prehospital care providers, and to generally ensure medical appropriateness of the EMS system. There is a paid statewide EMS system medical director from whom this statutory authority and responsibility extends, and with it limitations on liability, to regional and, where applicable, local medical directors. The system for creating protocols lies at the state level but is the responsibility of the state and regional medical directors as a group with input from local medical directors, other physicians and EMS providers and with opportunities for local variation approved by the Pennsylvania DOH, Bureau of EMS.

Indicator 8.g	Scoring
The Pennsylvania DOH, Bureau of EMS enforces, utilizing well-defined standards, policies, procedures, and authority, enforcement of all prehospital clinical practice.	0. Not known
* Clinical Standards are Standard Operating Procedures (SOP), Protocols, and Medication Lists.	1. There are no clinical standards to enforce.
	2. Clinical standards will be completed within the next year.
	3. Clinical standards are in effect or will be completed within the next year. There are some standards, policies, procedures, and authority for the enforcement of clinical practice standards, but they are incomplete.
	4. Clinical standards are in effect. There are standards, policies, procedures, and authority for the enforcement of clinical standards, however they are implemented without consideration of and therefore completely separate from, state and regional or local performance improvement systems.
	5. The Pennsylvania DOH, Bureau of EMS enforces, utilizing well-defined standards, policies, procedures, and authority, all prehospital clinical practice. It employs a documented, effective system of performance improvement which has specific

	points of integration with and separation from disciplinary and other licensure/certification actions and is coordinated well with the statewide medical direction system. In all enforcement practices, the Pennsylvania DOH, Bureau of EMS has well-defined procedures for adequate review and due process.
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Indicator 8.h	Scoring
The EMS system credentials Medical Directors.	0. Not known
Medical Director(s): Ambulance Service Medical Directors and/or Medical Command Physicians	1. There is no education for EMS system medical directors in the state.
	2. There is a plan to develop education for EMS medical directors in the state. Many EMS system medical directors have taken NAEMSP and other national medical director educational programs out of state.
	3. There is limited education for EMS system medical directors in the state. The Pennsylvania DOH, Bureau of EMS also provides incentives to EMS system medical directors to take NAEMSP and other national medical director educational programs out of state.
	4. There is a uniform education program for EMS system medical directors that is made available on a regular basis. Most EMS system medical directors have taken this education.
	5. The Pennsylvania DOH, Bureau of EMS requires EMS system medical directors to be credentialed. The Pennsylvania DOH, Bureau of EMS credential requires a specific initial education program and on-going continuing education.

9. Information, Evaluation, and Research Subsystem

Indicator 9.a	Scoring
EMS system data are electronically linked, from a variety of sources (e.g. trauma registry, ED discharge, vehicle crash, hospital discharge, death certificate).	0. Not known
	1. EMS system data exist centrally or are linked to other databases.
	2. EMS system data exist and can be linked through hand-sorting processes to one or more other sources.
	3. EMS system data exist and can be linked through computer-matching processes to one or more other sources.
	4. EMS system data exist and can be linked through computer-matching processes and this occurs on an ad hoc basis.
	5. All EMS system data stakeholders (including insurance carriers, FARS, and rehabilitation, in addition to typical EMS system resources) have been identified, data access agreements executed, hardware and software resources secured, and the staff allocated to deterministically and probabilistically link, analyze, and report a variety of data sources in a timely manner and this occurs routinely.

Indicator 9.b	Scoring
There is a statewide process to evaluate the quality, timeliness, completeness, and confidentiality of data.	0. Not known
	1. There is no process or written policy to evaluate the quality, timeliness, completeness, and confidentiality of the data collected in the system.
	2. There is a process of evaluation and written policy but no compliance with governance. Confidentiality of information is not ensured.
	3. The process of reviewing the quality, timeliness, completeness, and confidentiality of data is just beginning. There is some compliance with a draft written policy.
	4. There are draft written policies in place for evaluating the quality (including both reliability and validity), timeliness, and completeness of data and for ensuring confidentiality.
	5. There is a comprehensive written policy and demonstrated compliance concerning data management and governance including an evaluation of the quality, timeliness, and completeness of data, with confidential protection of records ensured while allowing appropriate access for research purposes.

Indicator 9.c	Scoring
The Pennsylvania DOH, Bureau of EMS routinely utilizes NHTSA Performance Measures (PM) and other indicators.	0. Not known.
	1. The Pennsylvania DOH, Bureau of EMS does not collect the data necessary to utilize these PM indicators and attributes.
	2. The Pennsylvania DOH, Bureau of EMS collects the data necessary to utilize many if not most of these measures, but has no plan to do so.
	3. The Pennsylvania DOH, Bureau of EMS plans to begin utilizing and reporting on these measures in the next year.
	4. The Pennsylvania DOH, Bureau of EMS has begun to utilize and report on some of the available measures.
	5. The Pennsylvania DOH, Bureau of EMS routinely utilizes NHTSA Performance Measures (PM) and their own created indicators (including outcome measures) and attributes to gauge the effectiveness of the EMS system at all levels and against state and national results and provides these to the public with appropriate explanation and system improvement suggestions.

Indicator 9.d	Scoring
Emergent illness/injury prevention programs use EMS System Information System (EMSIS) data to develop intervention strategies.	0. Not known
	1. There is no evidence to suggest that EMSIS data are used to determine emergent illness/injury prevention strategies.
	2. There is some evidence that EMSIS data are available for emergent illness/injury prevention program strategies, but the use of these data is limited and sporadic.
	3. EMSIS data reports are routinely provided to the emergent illness/injury prevention programs. The usefulness of the reports has not been measured, and emergent illness/injury prevention providers are just beginning to use EMSIS data reports for program strategies and decision making.
	4. EMSIS reports on the status of injury, and injury mechanisms, are routinely available to emergent illness/injury prevention providers and are used routinely to realign injury programs to target the greatest need.
	5. A well-integrated emergent illness/injury reporting system exists. Evidence is available to demonstrate how system providers routinely use EMSIS data to identify program needs, to develop strategies on program priorities, and to set annual goals for emergent illness/injury prevention. There is specific monitoring of work-related illnesses and injuries for the EMS workforce.

Indicator 9.e	Scoring
The statewide multidisciplinary, multi-agency EMS system (advisory or authority) body (PEHSC) formally assures expert review of system performance data.	0. Not known
	1. There is no statewide multidisciplinary, multi-agency EMS system committee (PEHSC), and there are no regular reports of system performance.
	2. There is a statewide multidisciplinary, multi-agency EMS system committee (PEHSC), but it does not delegate routine reviews of EMSIS data reports to a qualified body or conduct them itself.
	3. The statewide EMS committee (PEHSC) delegated to do data review meets regularly and reviews process-type reports; no critical assessment of system performance has been completed.
	4. The statewide EMS system committee (PEHSC) delegated to do data review meets regularly and routinely assesses reports from EMSIS data to determine system compliance and operational issues needing attention.
	5. The statewide multidisciplinary, multi-agency EMS system (advisory or authority) body (PEHSC) formally delegates by rule to a statewide medical direction committee, or other similar body, the responsibility to complete regular reviews of annotated EMSIS data reports to determine and recommend the need for system modifications. This committee meets regularly with stakeholders and reviews EMSIS data reports to assess system performance over time, looking for ways to improve system effectiveness and patient outcomes.

Indicator 9.f	Scoring
General statewide, regional, and jurisdictional/local agency EMSIS data reports are generated by the EMS system .	0. Not known
	1. No EMSIS data reports are generated to evaluate and improve system performance effectiveness.
	2. Some general EMSIS information is available for the stakeholders, but it is not consistent or regular.
	3. EMSIS data reports are done on an annual basis, but are not used for decision making and evaluating system effectiveness.
	4. Routine reports are generated using EMSIS data and other databases so that the system can be analyzed, standards evaluated, and performance measured.
	5. General statewide, regional, and jurisdictional/local agency EMSIS data reports are generated by the EMS system (or by regional/ jurisdictional bodies as appropriate) no less than once per year and are made available to EMS system leaders on all levels and to other stakeholders and the public as appropriate to evaluate and improve system performance.

Indicator 9.g	Scoring
There is a legislative mandate that an EMSIS is implemented and maintained by the Pennsylvania DOH, Bureau of EMS.	0. Not known
	1. There is no EMSIS and none is planned.
	2. There is no EMSIS but one is planned for implementation in the next year.
	3. An electronic EMSIS is being implemented as a new system or in transition from a paper-based system.
	4. An electronic, NEMSIS-compliant EMSIS exists and most of the legislative mandate to maintain the system, to have mandatory agency participation and hospital linkage components are in place. There are plans to send at least “national level” data to NEMSIS within the next year.
	5. There is a legislative mandate that an EMSIS is implemented and maintained by the Pennsylvania Bureau of EMS, and that all EMS system provider agencies provide data electronically on a regular, timely basis. EMS system hospitals and other facilities facilitate real-time data linkage and transmission for operational and clinical purposes (e.g. field access to patient history; on-line medical direction access to field data on patients and resources) and outcome evaluation. The EMSIS is NEMSIS-compliant and sends data to NEMSIS.

Indicator 9.h	Scoring
There is a prehospital statewide, mandatory performance improvement (PI) system.	0. Not known
Performance Improvement (PI) = Quality Assurance (QA) and Quality Improvement (QI) in this indicator	1. There is no statewide PI system, regional PI system, or local PI.
	2. There are no statewide or regional PI systems, but many jurisdictions and/or local agencies utilize PI systems.
	3. There is no statewide PI system, but many regions and most jurisdictions and/or local agencies PI systems are documented.
	4. There is a statewide PI system in development which is or will be utilized at all levels and considers/builds upon existing regional and jurisdictional/local agency PI systems which are already in place.
	5. There is a statewide performance improvement (PI) plan implemented and mandatory at the state, regional, jurisdictional, and local agency level with dedicated, specified medical oversight. There is legislated protection from discoverability of all EMS data. This plan includes a mechanism for reporting patient care/treatment errors.

Indicator 9.i	Scoring
The Pennsylvania DOH, Bureau of EMS has policies for educational programs so that they require familiarity of scientific literature and the role of initiating and participating in research are included in EMS education content.	0. Not known
	1. No such requirements exist or are planned.
	2. No such requirements exist but planning is underway to incorporate them at some levels.
	3. No such requirements exist, planning is underway to incorporate them, and some courses cover this content now.
	4. Such requirements are in development for inclusion in all curricula within the next year.
	5. Pennsylvania DOH, Bureau of EMS policies for educational programs require that familiarity with the scientific literature, appropriate research principles, and the value of initiating and participating in research to produce evidence-based advancement of the field are included in EMS education content.

Indicator 9.j	Scoring
The Pennsylvania DOH, Bureau of EMS enforces provider agency participation in the EMSIS and statewide performance improvement (PI) system, as well as facility(receiving hospitals) participation in EMSIS for operational, clinical, and outcome evaluation purposes.	0. Not known
Performance Improvement (PI) = Quality Assurance (QA) and Quality Improvement (QI) in this indicator	1. No such requirements exist
	2. Requirements exist and are not enforced.
	3. Such requirements exist, and some are enforced.
	4. Such requirements exist, and complete enforcement is planned within the next year.
	5. The EMS Pennsylvania DOH, Bureau of EMS enforces provider agency participation in the EMSIS and statewide performance improvement (PI) system, as well as facility participation in EMSIS for operational, clinical, and outcome evaluation purposes.

10. Large Scale Event Preparedness and Response Subsystem

Indicator 10.a	Scoring
There is a statewide MCI resource assessment.	0. Not known.
	1. There is no resource assessment of the EMS systems' ability to expand its capacity to respond to mass casualty incidents for in an all-hazards approach.
	2. An assessment of the ability of some components of the EMS system to respond to a mass casualty incident has been included in all-hazards planning. This includes personnel, supplies and equipment.
	3. An assessment of the ability of the EMS system to respond to a mass casualty incident has been conducted on a state-wide basis.
	4. A written inventory of system-wide MCI capacity has been completed and includes: additional personnel, facility surge capacity, additional equipment resources and caches, communications interoperability, overall management structure such as NIMS (National Incident Management System) to respond and manage a catastrophic incident until Federal resources become available.
	5. There is a resource assessment of the EMS systems' ability to expand its capacity to respond to mass casualty incidents (MCIs) in an all-hazards approach. The written inventory of system-wide MCI capacity has been shared with, and incorporated into, broader statewide planning efforts for all-hazards responses.

Indicator 10.b	Scoring
The EMS system has completed a gap analysis.	0. Not known.
Gap Analysis = Unmet needs	1. There are no resource standards on which to base a gap analysis.
	2. The Statewide EMS System Board, in conjunction with appropriate incident management personnel and stakeholders, has begun to develop statewide MCI response resource standards.
	3. State resource standards for EMS system response during a mass casualty incident have been developed and approved.
	4. Some components of the EMS system have completed a gap analysis based on the adopted standards.
	5. A system-wide MCI resource gap analysis has been completed based on the system resource standards adopted and an ongoing process identified.

Indicator 10.c	Scoring
A statewide EMS system MCI plan exists and has established clearly defined methods of integrating with other emergency preparedness plans (all-hazards).	0. Not known
	1. There is no EMS system plan and no integration between the EMS system and other emergency preparedness agencies.
	2. There is an established EMS system plan; but it does not address emergency integration, and no evidence is present to demonstrate integrated incident management and EMS systems.
	3. The EMS system plan addresses the interaction of the Pennsylvania DOH, Bureau of EMS, public health, and the lead emergency management system agency. Close coordination and clearly defined goals and objectives are in process and documented.
	4. The EMS system plan addresses coordination between the Pennsylvania DOH, Bureau of EMS, public health, and the lead emergency management system agencies. Plans are integrated, and working collaboration exists and is demonstrated. Routine working drills and training exercises are incorporated into operational plans.
	5. The EMS system plan addresses the Pennsylvania DOH, Bureau of EMS' coordination among EMS, public health, public safety, and emergency management. Plans are well integrated and include annual multidisciplinary exercises to test this capability using scenarios based on risk vulnerability assessment and Homeland Security Exercise and Evaluation Program (HSEEP) guidelines. Results from drills and live responses are used to further improve the plans and processes. The plan describes means to allow EMS resources to be used across jurisdictions, both intrastate and interstate, using the Emergency Management Assistance Compact and NIMS.

Indicator 10.d	Scoring
A statewide EMS system MCI plan exists and has included identification of additional resources (both manpower and equipment) necessary to respond to a mass casualty event and utilizes NIMS compliant resource typing definitions to describe these.	0. Not known
	1. The EMS system plan does not include the identification of additional resources necessary to respond to mass casualty incidents.
	2. The EMS system plan addresses mass casualty incidents but has not identified additional resources.
	3. The EMS system plan identifies resources, but it is unclear how the needs are going to be met.
	4. The EMS system plan identifies both equipment and manpower resources available currently and additional resources needed, but does not utilize NIMS compliant resource typing definitions to describe these. It also defines a process for securing and ensuring that equipment and human resources are available.

	5. There is a well-drafted and rehearsed EMS system plan, along with sufficient caches of equipment and personnel, to ensure the rapid deployment of additional resources during mass casualty incidents and utilizes NIMS compliant resource typing definitions to describe these. The plan has specific provisions for a pandemic influenza event.
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Indicator 10.e	Scoring
The state EMS system, coordinated through the Pennsylvania DOH, Bureau of EMS, has access to additional equipment, materials, and personnel for large-scale traumatic events.	0. Not known
	1. There is no surge capacity (prehospital, hospital, clinic, or coroner) built into the system for either smaller multi-patient events or mass casualty incidents.
	2. The EMS system has begun to identify additional equipment, materials, and personnel needed to respond to all-hazards events in light of new threats and emergencies. The Pennsylvania DOH, Bureau of EMS has assessed medical resources at the state, regional and local levels for specialty care centers to include trauma and burn centers, pediatric and acute care facilities
	3. The Pennsylvania DOH, Bureau of EMS, working with stakeholders, has in place additional equipment and materials for mass casualty incidents. A process to utilize additional personnel resources are in development. Testing of newly acquired equipment, material, and personnel resources has not yet been completed.
	4. The Pennsylvania DOH, Bureau of EMS, in conjunction with stakeholders, has begun to test a method of deploying additional equipment, materials, and personnel during all-hazards events.
	5. The Pennsylvania DOH, Bureau of EMS has acquired additional equipment and materials for both the prehospital and hospital response to all-hazards events. A deployment mechanism to share personnel resources has been developed and tested in both the prehospital and hospital settings (e.g., mutual aid, precredentialing of practitioners, and rapid assignment of privileges). The system routinely tests its capabilities in this area.

Indicator 10.f	Scoring
The state EMS system, through the Pennsylvania DOH, Bureau of EMS, ensures protective resources are available for prehospital providers and their families.	0. Not known
	1. There has been no assessment of need for protective resources (including vaccinations, prophylaxis, and personal protective equipment) for prehospital providers and their families. There is no system for ensuring availability of such protective resources.
	2. A system for ensuring protective resources is planned to be in place within the next year.

	3. There has been an assessment of need for protective resources (including vaccinations, prophylaxis, and personal protective equipment) for prehospital providers and their families. Some, but not all, of the resources identified as being needed have been made available.
	4. There has been an assessment of need for protective resources (including vaccinations, prophylaxis, and personal protective equipment) for prehospital providers and their families. All of the resources identified as being needed have been made available.
	5. There has been an assessment of need for protective resources (including vaccinations, prophylaxis, and personal protective equipment) for prehospital providers and their families. All of the resources identified as being needed have been made available. There is a system for routinely reassessing need for protective resources and for identifying new providers as they enter the EMS system .

III. Appendices

A. References

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5. McGinnis, KK; *Rural and Frontier EMS Agenda for the Future*; National Rural Health Association Press; 10/04; p. 62
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D. Additional Resources

1. *Cardiovascular Health: Pennsylvania's Blueprint for Action*; Pennsylvania Department of Health; 2008.
2. *Education Standards*; The National Association of EMS Educators; 2007.
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4. *EMS Agenda for the Future*; National Highway Traffic Safety Administration (NHTSA); 1996.
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9. *Pennsylvania Emergency Preparedness Guide*; Commonwealth of Pennsylvania; 2007
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IV. Strategic Planning Key Terms

State Plan Abbreviations

Abbreviation	Meaning
ACS-COT	American College of Surgeons – Committee on Trauma
EMD	Emergency Medical Dispatch
EMSC	Emergency Medical Services for Children
EMSIS	EMS Information Systems
EMSS	Emergency Medical Services System
FARS	Fatality Analysis Reporting System
NAEMSP	National Association of Emergency Medical Services Physicians
NEMESIS	National EMS Information Systems
NIMS	National Incident Management System
PIER	Public Information, Education and Relations
PM	Performance Measure
PSAP	Public Safety Answering Point
SCIP	Statewide Communications Interoperability plan
SIEC	Statewide Interoperability Executive Committee

State Plan Definitions

Term	Definition
Benchmarking	Gathering information about model efforts or best practices by other organizations or systems engaged in similar endeavors to help establish project targets and goals. Benchmarking is often incorporated into a balanced scorecard.
Clinical Standards	Pre-established performance criteria that provides the basis for assessing the quality of patient delivered by an EMS system at all levels.
Committee	Partnerships/alliances groups/organizations
Facility	Receiving facilities with an Emergency Department certified by the Pennsylvania Department of Health.
Fatality Analysis Reporting System	Provides statistics on injuries and deaths from vehicle accidents that occur within the 50 States.
Gap Analysis	Determining, documenting and approving the variance between requirements and current capabilities.
Goal	Broad statement describing a desired result. Goals may be results or process oriented.
Hospital	Specialty Care Facility
Large Scale Traumatic Event	An event resulting in a mass casualty incident where the demand for emergency medical care may exceed local resources.
Lead Agency	Department of Health
Legislation	A proposed or enacted law or group of laws.
Measure	A specific indicator that tracks your progression or status of point in reaching an end result or specific target. Answers the questions: 1) "What's our current performance?"; "How do we compare against others?"; "Are we improving or declining?" Indicators to measure/monitor success against strategic goals and objectives. The frequency in which measures are reviewed assists teams to identify potential process problems in order to meet desired outcome (i.e. complete objective to fulfill goal).
Objectives	Specific and measurable targets for accomplishing goals to be accomplished by specific teams or individuals within time limits; Addresses the questions, "What do we have to do to get there?"
Other Special Populations	A group identified by their distinct or unique features requiring targeted healthcare strategies.
Outcomes	The long-term end goals that are influenced by the project, but that usually have other influences affecting them as well. Outcomes reflect the actual results achieved, as well as the impact or benefit, of a program.
Performance Improvement/Quality Assurance/Quality	Performance Improvement, Quality Assurance and Quality Improvement are defined as the continuous evaluation of system processes to determine their efficacy and relationship to internal

Improvement	and external customer satisfaction.
Protocol	A set of indicators and associated actions that provide for a consistent response to a given clinical or operational situation.
Qualifying patient	An individual who receives specific treatment or services based on pre-defined criteria.
Region	Denotes a geographical subdivision within a State for planning purposes
Resource	Subject matter experts to complete action plan activities associated with a specific objective. Note: Some groups may be identified as resources after the publication of this plan.
Specialty Care Facilities	A healthcare institution capable of reducing morbidity and mortality in a specific patient population through its clinical expertise, e.g. trauma centers, burn centers, rehabilitation facilities, etc.
Pennsylvania Stakeholder Groups	Regional EMS Councils, Pennsylvania Emergency Health Services Council (PEHSC), Ambulance Association of Pennsylvania (AAP), Hospital & Healthsystem of Pennsylvania (HAP), Pennsylvania Fire and Emergency Services Institute (PFESI), Pennsylvania Trauma Systems Foundation (PTSF), American College of Emergency Physicians (ACEP) and American Trauma Society (ATS)
Stakeholder	Any person or group with a vested interest in the outcome of a project or plan.
Strategic Planning Process	A process by which the Pennsylvania Department of Health, Bureau of Emergency Medical Services, the EMS Advisory Council, EMS constituency and regional EMS councils and stakeholders envision the future and develop goals, objectives strategies and action plans to achieve that future.
Subspecialty Care System	The portion of the healthcare continuum focused on specific patient populations and/or anatomically linked disease processes, e.g. pediatrics, cardiology, trauma, etc.
Subsystem	A separate or subordinate system, usually capable of operating independent and whose unique contribution is integral to the composition of the total system, e.g. EMS is part of the total healthcare system, whereas trauma centers are part of the EMS system.

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