Chapter 5 State EMS offices Douglas F. Kupas, Lee B. Smith, and Dean Cole Introduction In 2006, the Institute for Medicine (IOM) described organization of EMS systems across the United States: “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]. Each state and territory within the United States has a state EMS office – a functional entity that regulates various components of the EMS system. Like all other aspects of state government, there is often wide variation in where a state EMS office sits within governmental structure, personnel positions within a state EMS office, and scope of the office’s activity in regulating EMS entities and providing non-regulatory support to the EMS system. Realizing that variations exist, this chapter will describe the general functions of a state EMS office with particular attention to functions that should be understood by local EMS agency medical directors and managers. Variation in the location of state EMS offices within each state’s governmental structure can lead to confusion in terminology. For the purpose of this chapter, the term state EMS office will be used as a broad general term, understanding that a state’s EMS office may be called an office, bureau, department, program, or other terminology. The National Association of State EMS Officials (NASEMSO) is a non-profit organization that is composed of EMS officials from every state and territory within the United States. NASEMSO goals include promotion of the orderly development and coordination of EMS systems across the nation, and the organization is also a forum for exchange of information and discussion of common concerns among state EMS officials. NASEMSO also facilitates interstate cooperation in areas such as patient transfer, communications, and reciprocity of EMS personnel. It has many opportunities for specialized collaboration among states through its councils of medical directors, data managers, trauma managers, pediatric emergency care, and educational and professional standards. The organization also has committees that address specific and unique EMS topics as they occur. Each state and territory has the opportunity to appoint a state medical director to the Medical Directors Council [2]. In response to the 2006 IOM report describing fragmentation in EMS, and with support from the National Highway Traffic Safety Administration (NHTSA) of the US Department of Transportation, NASEMSO coordinated a project that developed a model for state EMS systems. Within this project, NASEMSO organized the model state EMS system into ten subsystems [3]. System Leadership, Organization, Regulation and Policy Subsystem Resource Management Subsystems – Financial Resource Management Subsystems – Human Resources Resource Management Subsystems – Transportation Resource Management Subsystems – Facility and Specialty Care Regionalization Public Access and Communications Subsystem Public Information, Education, and Prevention Clinical Care, Integration of Care, and Medical Direction Information, Evaluation, and Research Subsystem Large-Scale Event Preparedness and Response Subsystem Sections of this chapter will examine the subsystems of the model state EMS system in further detail with attention to issues that are of most importance to EMS medical directors.

**System leadership, organization, regulation, and policy**

**System leadership and organization**

There are variations as to the lead agency where EMS resides within each state, and there is significant variation regarding placement of each state EMS office within the structure of its lead agency. NASEMSO’s EMS Systems Model suggests that, ideally, each state EMS office should be located within a lead agency that has a cabinet-level department head who reports directly to and advises the governor. In the vast majority of states, the lead agency for EMS is the Department of Health or a similar department that oversees public health within the state. The second most frequent lead agency for EMS is the Department of Public Safety or similar department that typically oversees law enforcement, fire protection, or emergency management. In other states, the EMS lead agency is a separate EMS authority or commission or within some other department of state government ([Figure 5.1](https://jigsaw.vitalsource.com/books/9781118990827/epub/OPS/Vol2/c05.xhtml#c5-fig-0001)).



[**Figure 5.1**](https://jigsaw.vitalsource.com/books/9781118990827/epub/OPS/Vol2/c05.xhtml#R_c5-fig-0001) Model state EMS system agency.

Source: National Association of State EMS Officials. Reproduced with permission of the National Association of State EMS Officials.

Whether in the Department of Health or some other agency of state government, the location of EMS within these lead agencies is also important. Departments of Health are frequently broken down into bureaus, which are further divided into divisions, and may be further divided into offices or programs.

In addition to a cabinet-level department head, there are four required positions that must exist in an optimally functioning state EMS office. These positions may have official titles that differ but the specific functional roles are as follows.

* **State EMS System Director**: a full-time individual responsible for the execution of statutory responsibilities charged to the lead agency regarding regulation of state entities included in the EMS system. This individual also leads and manages technical assistance activities that the state EMS office provides for the EMS system.
* **State EMS System Medical Director**: a licensed physician responsible for medical oversight of the EMS system. The role of the state EMS medical director is described in a 2009 joint position statement from NASEMSO, the American College of Emergency Physicians (ACEP), and the National Association of EMS Physicians (NAEMSP) [4]. This document describes the qualifications and roles of a state EMS medical director, and suggests that this position should be officially recognized and full time within each of the states, District of Columbia, and each of the territories. This document describes the role as follows: “The state EMS medical director provides specialized medical oversight in the development and administration of the EMS system and is an essential liaison with local EMS agencies, hospitals, state and national professional organizations, and state and federal partners. The state EMS medical director provides essential medical leadership, system oversight, coordination of guideline development for routine and disaster care, identification and implementation of best practices, system quality improvement, and research” [5].
* **State EMS System Advisory/Authority Body**: a multidisciplinary board with an advisory role or authoritative role for the EMS lead agency.
* **State EMS Medical Committee**: a body consisting of members who provide medical expertise to the EMS system lead agency. Mmbership within the group may represent regions within the state or specialty areas of medicine or the health care system.

Under these positions that are required for an optimally functioning EMS office are personnel who accomplish regulatory and technical assistance tasks of the office. Regulatory tasks include licensing or certification, inspections, investigations, and discipline. Technical assistance operations may include planning, development, education, and disaster response. The ideal state EMS lead agency facilitates regular independent external assessment of the EMS system, and it develops and updates a comprehensive EMS system plan for the state or territory.

**Regulation and policy**

State EMS offices generally provide a combination of regulatory and technical assistance functions. EMS agencies and personnel within a state are regulated by a statute, or state law, that permits agencies and personnel to provide EMS to the general public of that state. Rules and regulations of a particular statute provide guidance in regulating and executing the specific law. Although not used liberally, states generally have the ability to waive or exempt an EMS agency or provider from requirements within its rules and regulations; however, requirements of a specific statute must be followed. Waivers of requirements within the rules and regulations are usually permitted only if a waiver will permit an agency or provider to continue to provide EMS when it is in the best interest of the public.

Each individual state EMS statute or its attendant regulations may grant a state latitude in developing policies or procedures to assist in regulating EMS entities and to provide regulated entities with information related to their licenses. A policy is a principle or rule to guide decisions and achieve rational outcomes, for which decision makers may be held accountable. A procedure includes actions that are executed in the same manner in order to obtain the same result. A standard operating procedure describes and guides multiple iterations of the same procedure over multiple occasions and locations [6].

It is important that EMS agency medical directors, EMS agency managers, and EMS providers understand the difference between standards and guidelines. Standards are generally requirements that must be met to achieve a designated purpose. These may be mandatory or voluntary but they are generally set by the government or by accrediting organizations. On the other hand, guidelines are generally rules that are set to guide behavior or offer best practice suggestions. They are often advisory and cannot be mandated by a regulatory body.

**Scope of practice**

The scope of practice – a description of what a licensed individual legally can and cannot do – is defined and limited by a state’s statute or law. Defining a scope of practice for each level of licensed EMS provider is central to further state regulation of educational programs, medication formularies, required EMS vehicle equipment lists, state-wide protocols, complaint investigations, and reciprocity with other states.

NHTSA published the National EMS Scope of Practice Model in 2007 to set consistent criteria for nomenclature and competencies for various levels of EMS providers across the United States [7]. Consistency in the scope of practice of these individuals across states will improve professional mobility of EMS providers and enhance the public’s name recognition and understanding of the providers within the EMS system.

Within each state, an individual EMS provider is only permitted to undertake the skills and roles for which the individual has been:

* trained
* certified as competent
* authorized by the EMS medical director
* licensed by the state to practice.

**Trained**

While each state sets its standard for EMS education institutes that are acceptable for educating EMS providers, ideally this education takes place in an institution that is accredited by a nationally recognized organization like the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP). Accreditation helps to ensure that EMS providers are educated using well-organized and sound educational curriculum and techniques.

**Certified as competent**

Some states provide a certifying examination for some levels of EMS providers within their system, but reliable tests must be validated, including test bank development, test security, and expertise in test psychometrics. Most states have turned to nationally recognized certification organizations like the National Registry of Emergency Medical Technicians (NREMT) to provide reliable high-stakes examinations and certification for some or all of their levels of EMS providers.

**Authorized by the medical director**

This is synonymous with credentialing. The analogy for physicians is that, in addition to successfully graduating from medical school and passing the board exam process, the physician must be credentialed to receive privileges to perform patient care and procedures within a hospital. Through the credentialing process, the EMS medical director verifies that the provider is both qualified and competent.

**Licensed by the state to practice**

Every state has a process to formally permit individuals to deliver EMS care at each level of EMS provider that is recognized within the state. For the purposes of being formally recognized by a state to practice EMS within the state, states vary on whether they use the terminology of “licensed” or “certified.” In some states, the EMS provider is licensed as an independent health care practitioner with licensing fees and requirements similar to those of other individuals who receive state licenses. Other states certify their EMS providers at the level in which the provider is educated, but this should not be confused with the certification process of an organization like NREMT. It is a common myth in the EMS community that the EMS provider functions under the medical license of the physician medical director – this is not true in the vast majority of states. Although the EMS medical director may bear some responsibility for ensuring the competence of an EMS provider within the agency, in most states EMS providers maintain their own independent licenses or certifications and are held accountable as separate health care practitioners.

**Resource management – financial**

Funding to operate a state EMS office varies among states and territories. Funding may include the following.

* **General fund**: state tax monies directly allocated by the legislature in the state budget.
* **Block grants**: monies from federal or state programs.
* **Cash funds**: monies collected by the state that are earmarked for EMS systems. For example, in some states, a portion of each motor vehicle registration or each fine for a motoring violation goes directly to the EMS system.
* **Licensure fees**: monies from licensing EMS agencies or providers.
* **Federal funds**: including funds from EMS for Children (EMSC) grants, highway safety funds, Homeland Security grants, or bioterrorism grants.

**Resource management – human resources**

To ensure adequate human resources to deliver EMS, state EMS offices must monitor the number of active BLS and ALS providers compared to provider needs of EMS agencies. Recruitment, education, and retention are critical to maintaining sufficient numbers of EMS providers within each state. Each state defines the necessary requirements for licensing or certifying providers at each recognized level. The state EMS statute or the state EMS lead agency is also responsible for setting requirements for continued certification or licensure and for reciprocity for providers from other states who wish to receive a license or certification within the state.

**Resource management – transportation**

In addition to managing financial and human resources to ensure that the EMS system is healthy and able to provide continuous EMS service, the ideal state EMS office must assess transportation and vehicle needs of the system and provide technical assistance to ensure that these meet expected standards. In addition to inspecting and licensing ground, air, and water EMS vehicles, each state EMS office develops standards for equipment carried on each licensed vehicle. Every state EMS office should provide technical assistance to develop plans for transportation capabilities for mass casualty incidents and disasters.

**Resource management – facility and specialty care regionalization**

Gone are the days when conventional thinking held that all hospitals are created equal. Today, specialty hospitals are the norm, and as health care dollars have diminished, hospitals directly advertise their services to the consumer public. The result is a non-standardized set of descriptors including “Best in region,” “Highest satisfaction,” and “Highest rated.” This can lead to confusion among the lay public when individual preference and expectations collide with the modern EMS maxim of taking the patient to the most appropriate health care facility.

There are an increasing number of specialty accreditations that hospitals can receive from various accrediting organizations. The American College of Surgeons (ACS) developed one of the first hospital specialty accreditations for trauma patients, and survival rates are improved for seriously injured trauma victims when they are treated at an ACS-accredited Level I trauma center compared to when care is provided at a non-trauma center [8]. At accredited centers, commitment of resources, mandatory training, and performance improvement processes result in a standardized approach that improves the quality of patient care and survival. This successful format has been extended to other time-sensitive illnesses: stroke, coronary artery disease, pediatrics, burns, obstetrics, sepsis, cardiac arrest, and others. Most states formally recognize certain accredited hospitals as trauma centers to which EMS agencies should transport seriously injured trauma patients. Formal recognition of stroke centers and STEMI-receiving centers is still in development in most states.

Third parties have also sought to reduce patient errors by standardization of care and integrating performance improvement. The Joint Commission and Norske das Veritas are two organizations recognized by the Centers for Medicare and Medicaid Services in their assessments of hospitals and other health care facilities. Likewise, the Centers for Disease Control and the American Heart Association, among others, have promulgated standards that may be voluntarily adhered to for stroke and heart disease.

In certain states, legislative authority is available for state EMS offices to assess hospital capabilities. Within the confines of state laws and regulations, state EMS offices must now give direction to EMS agencies and personnel regarding the appropriate triage for patients with time-sensitive illnesses and their transport to the most appropriate facility by the most appropriate means. States generally recognize a specialty receiving center by developing standards that may use the accreditation status provided by an organization or private entity, but some develop internal standards and verification processes to accredit facilities. As an example, most states recognize trauma centers that have been accredited by ACS but since 1984, Pennsylvania’s EMS Act has recognized a separate process through the Pennsylvania Trauma Systems Foundation to accredit its trauma centers [9].

State EMS offices may adopt wholesale the guidelines established by other agencies, states, or companies but often these must be modified to temper them to the realities within their own state. The geography, health care resources, weather, availability of air, ground, and water ambulances, and other local factors affect the ability to effectively use guidelines developed by national organizations. In addition, state guidance must permit alternative destinations when EMS resources or weather do not permit transport of critically ill patients to the specialty destinations that are typically available. These discussions should occur, as much as possible, before development of an individual patient’s crisis.

In our litigious society, the “Locality Rule” is no longer a primary defense and one cannot claim that there is no liability because a particular facility was not equipped to handle a particular event. This is captured in federal law with the 1996 Emergency Medical Treatment and Labor Act (EMTALA) clearly requiring hospitals to participate in the delivery of a baby whether or not they have obstetrics or pediatrics capability and to stabilize the patient to the best of the hospital's abilities [10]. Public expectations also come into play and therefore knowledge of a particular hospital’s, or other health care facility’s, capabilities is pertinent information for any state EMS office attempting to do its due diligence in developing policies and protocols for these time-sensitive illnesses.

Given the fluid nature of various categories of illness, their time sensitivities, required personnel skillsets, education, training, and modalities of transport, state EMS offices are in a unique position to formulate and give direction in the creation of criteria, policy, and procedures.

**Public information, education, and prevention**

It is important that the state EMS office develop the ability to effectively communicate with and educate the public and medical community on issues related to the EMS system. Developing relationships with the media, medical community, health care organizations, and local, regional, and state policy makers should occur before it is necessary to provide time-critical information to the public. The state EMS office should work closely with the state agency responsible for public health epidemiology to understand the top causes of death in the state. Public education and disease or injury prevention programs should focus on these causes of death and other issues important to the EMS system. The state EMS office can also use these media resources to educate the public, government officials, and health care partners regarding the capabilities and appropriate use of the EMS system and to provide just-in-time information related to EMS issues during crisis events.

**Clinical care, integration of care, and medical direction**

Every state EMS office is responsible for ensuring quality medical direction across all levels of the EMS system. In addition to a state EMS medical director, regional or county EMS medical directors may be required to assist in providing medical direction to regional EMS systems and to provide resources for local or individual agency medical directors.

Emergency medical services providers generally care for patients by providing treatment that is either defined in written protocols or that has been ordered directly by a direct medical oversight physician. Protocols generally set the standard of care and are defined by the EMS medical director or a medical committee. These often define the expected care for a specific patient presentation, but also define points at which individual EMS providers are expected to contact direct medical oversight before proceeding with additional treatments. Some systems refer to protocols as standing orders. In contrast, guidelines are not necessarily mandatory or required treatments, but provide more general information that is not necessarily considered the system standard of care.

The level of medical direction with authority to promulgate EMS protocols varies by state. While many states permit each local EMS agency medical director to develop his or her own protocols, other states require that these protocols are based at the county or regional level, and some states give statutory or regulatory authority to the state to mandate use of state-wide EMS treatment protocols. In 2010, ten states mandated state-wide BLS protocols and 11 states mandated state-wide ALS protocols. An additional ten and six states, respectively, had state-wide BLS or ALS protocols, but there was a process for a local medical director to alter or even replace these. Although not binding, at that time, 15 additional states had state-wide BLS guidelines and 17 had state-wide ALS guidelines that served as model protocols for local EMS medical directors [11].

Mandatory state-wide EMS protocols have several potential advantages.

* **Uniform standard of care.regionalization**: with increased emphasis on regionalization of care, and with the increasing transportation of patients with specialized needs and time-sensitive conditions to regionalized centers, receiving facilities can expect the same treatments and care for their patients from every EMS agency that they encounter.
* **Ease of EMS provider education/continuing education**: mandatory state-wide EMS protocols facilitate uniform education and continuing education for EMS providers.
* **Up to date**: EMS protocols can be more easily maintained and kept up to date if they are done with resources of a state EMS system rather than expecting each local EMS agency to continuously update local protocols.
* **Uniform response to disaster**: state-wide protocols provide uniform expectations and improve communication with direct medical oversight when multiple unrelated agencies respond together to disasters, both within and outside a state.
* **Changes priorities of local EMS agency medical director**: when a local EMS agency medical director does not need to place significant effort and resources into protocol development and updating, the medical director can redirect his or her time to education, quality improvement, or other priorities.
* **Evidence based**: resources available at the state level can be used to ensure that state-wide protocols are as evidence based as possible. In Canada, Nova Scotia used an evidence-based process to develop its province-wide protocols [12].

There are also some potential disadvantages to state-wide EMS protocols.

* **May not recognize local nuances in patient care needs**: some have suggested that it is difficult to provide standardized protocols that meet the needs of all patients (for example, those in both urban and rural settings), although the states with current state-wide protocols all have these variations. Some use options within the protocol to address these variations.
* **Restricts “cutting edge” or “progressive” care**: while state-wide protocols are less likely to include unproven treatments, in some cases care that is considered to be progressive by some may actually be experimental. EMS systems need to ensure that they recognize the importance of research in EMS and need to have mechanisms to support such research.
* **May not be up to date**: although it is possible that state-wide protocols can assist in keeping all systems up to date, if there is not an efficient process to update the state-wide protocols on a regular basis, then they may become “stale” and may jeopardize the opportunity for patients to receive the best care.
* **Medical directors may lose sense of control**: while state-wide protocols may assist in redirecting medical director time to priorities of quality improvement and education, it is possible that medical directors who are not responsible for protocol development for an EMS agency may feel that they no longer have an important role in the system.

The national movement in health care for evidence-based care that decreases unwarranted variation has not been ignored by EMS. In 1998, the EMSC program and NAEMSP published model pediatric protocols which were updated in 2000 and 2003. In 2006, the IOM report regarding EMS called for national protocol guidelines, and NHTSA has funded several recent projects to develop evidence-based protocols for specific emergency issues as well as to encourage the development and implementation of evidence-based EMS guidelines at a national level [13].

Among other things, NASEMSO has suggested that the model state EMS system lead agency should “establish state-wide performance measures related to patient care,” “define medical director responsibility and protection of liability through statute,” and “enforce utilizing well-defined standards, policies and procedures (including protocols) for all prehospital clinical practice” [4].

**Information, evaluation, and research**

The state EMS office should collect data from EMS agencies and other stakeholders, and these data should be used when developing state-wide EMS plans, when addressing EMS system issues, and when facilitating EMS research. In addition to collecting and analyzing information regarding EMS system performance using National EMS Information Systems-compliant data elements, the EMS lead agency should consider other data sources that may be useful in answering logistic, operational, and patient care questions posed at a system level. These additional sources may include information from death certificate data and other vital statistics, the Cardiac Arrest Registry to Enhance Survival, insurance carriers, trauma systems data, Crash Outcome Data Evaluation System, the Fatal Accident Reporting System, and hospital data.

A state-wide EMS quality improvement plan should guide the use of data for the purpose of improving patient care and EMS system efficiency. NHTSA Performance Measures and additional measures can be used as performance indicators for system quality. The state EMS office should ensure that processes are in place to ensure confidential protection of records while allowing use of state EMS system data for quality improvement and research. State EMS offices should have a plan in place to engage EMS providers in understanding the value of data and its effect on quality patient care to help ensure better reporting of patient data by EMS providers.

**Large-scale event preparedness and response**

State EMS offices play an important role in medical preparedness and response to large-scale events, including disasters, scheduled mass public gatherings, and high-profile events. State EMS offices should participate in all levels of preparation for mass casualty incidents using an all-hazards approach. The state EMS lead agency should cooperate with the state emergency management lead agency and other agencies responsible for emergency response to analyze gaps, prepare the system, and assist with responses. State EMS offices should develop means to communicate with other jurisdictions, and plans should include provisions to facilitate both intrastate and interstate use of EMS resources. The Emergency Management Assistance Compact, NIMS, and other contracted agreements are necessary to facilitate many of these instances of resource sharing.

The state EMS system plan must be rehearsed in an integrated fashion with other responsible state and local agencies using resources available to the system, including EMS vehicles, buses, and other vehicles equipped to move supine, wheelchair, and ambulatory patients, communications, equipment caches, mobile treatment facilities, and emergency personnel. The EMS preparedness planning must be integrated with hospital readiness and surge capacity. Non-traditional roles for EMS may be necessary during disasters or public health crises, and preplanning should consider how EMS resources would support objectives like mass public vaccinations and other non-traditional EMS roles.

**Conclusion**

State EMS offices are structured in many different ways, and play critical roles as both regulators of EMS and providers of technical assistance to EMS agencies and personnel. It is important that the lead agency for EMS has a director with cabinet-level access to a state’s governor. NASEMSO has identified some ideal aspects of the organization and function of state EMS offices.

In the future, health care reform will undoubtedly affect EMS agencies, providers, and systems. As the health care system uses more providers to the top of their scopes of practice to fill health care gaps, it is likely that EMS providers will be expected to provide more non-emergency care that is within their scope of practice but not traditionally within their roles in health care. More EMS providers may provide patient care in the hospital setting. EMS providers may be expected to make more decisions that do not lead to transportation to an emergency department and to integrate with systems that navigate some patients to alternative destinations. All of these potential changes from the traditional role of EMS will require state EMS officials and offices to be proactive as regulators and providers of technical assistance to the EMS system.

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