We're Here for Life

The Orange Ribbon Report

Leading and Managing EMS in Volunteer and Combination Fire Departments

Volunteer & Combination Officers Section

EMS SECTION IAFC

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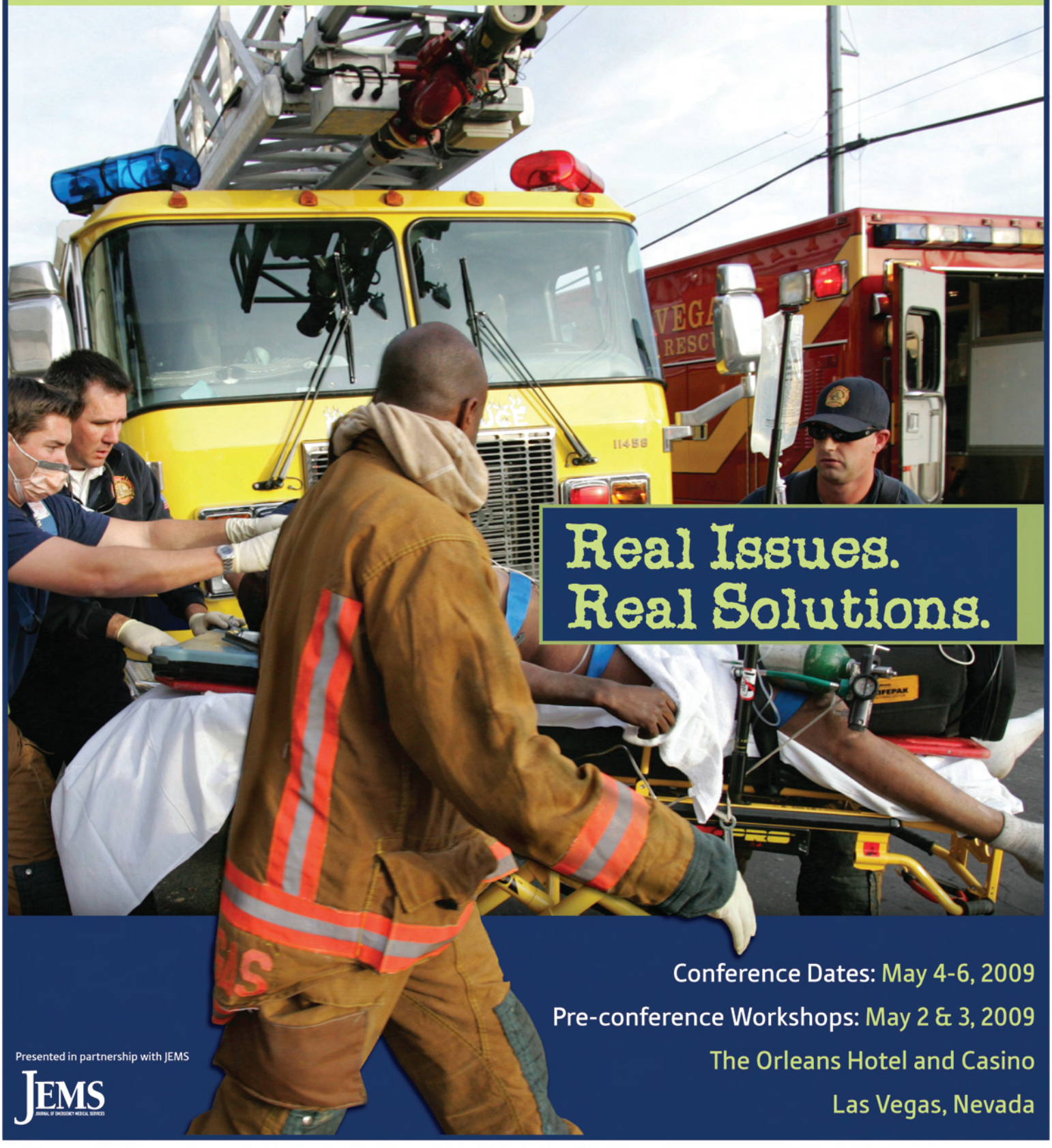

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Leading and Managing EMS in Volunteer and Combination Fire Departments

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Introduction

Across this United States, the men and women of America's volunteer fire service are deeply woven into the basic fabric of our nation. According to the National Fire Protection Association (NFPA), approximately 800,000 volunteer firefighters serve across the country. Of all the fire departments in America, 73 percent are all-volunteer departments, protecting the majority of this nation's geographical area. Volunteer, career and combination fire departments also have a strong history of pre-hospital 9-1-1 emergency medical service response. The NFPA notes that fire and rescue departments provide approximately 68 percent of EMS response across the country.

Providing EMS through a fire department makes sense because fire stations are strategically located throughout the community to provide a rapid response and fire departments are already engaged in the "customer response business." Fire-based EMS requires a great commitment, however. According to the Firehouse.com – 2004 National Run Survey, once a fire department commits to providing EMS, that service will constitute 70 percent or more of all emergency activities.

In August 2007, the Volunteer and Combination Officers Section (VCOS) and the Emergency Medical Services (EMS) Section of the International Association of Fire Chiefs came together to address the issue of EMS systems in volunteer and combination departments. That December, a group of fire and EMS chief and company officers met in Memphis, Tenn., to weigh the challenges, solutions and resources that a volunteer or combination department chief would need when considering how best to provide EMS response to the community.

The result of that effort is this tool-kit, which identifies the questions chiefs and local policy makers must answer when considering adding or increasing EMS response in their communities.

In many instances, this question must be answered quickly, as when a fire department must take over the responsibility of providing EMS when the current provider discontinues service. This may happen with little or no notice, especially if a private, for-profit company provides the service. Other times, departments, policy makers and communities have the time to fully review all the issues. This tool-kit seeks to facilitate the transition when deciding to add EMS delivery to a fire department's capabilities – or

in developing a contingency plan if the need arises in the future.

The tool-kit is divided into chapters that illuminate the various considerations departments and local policy makers must review and offer guidance on how to proceed. A number of resources and references are also included for further assistance.

Chapter 1 focuses on deployment, explaining the role and benefits to patient care in the pre-hospital 9-1-1 EMS response of fire and rescue departments. It explains personnel deployment methods, transportation considerations and EMS certification levels – First Responder, EMT Basic, EMT Intermediate and EMT Paramedic.

Chapter 2 explores the costs involved in EMS response. These costs include personnel training, personal protective equipment, apparatus, fuel and maintenance, medical supplies, administration, facilities, agency credentialing and billing.

Chapter 3 considers the challenges of communications and standardized languages. Radio types, spectrum allowances and interoperability are reviewed. The chapter also explains the role and needs of emergency medical dispatch, focusing on triage, pre-arrival and quality assurance in patient care. The role of public education is also highlighted.

Chapter 4 illuminates the considerations departments must weigh in funding EMS response and explains different types of cost-recovery systems.

Chapter 5 notes the legal requirements necessary for an EMS system. Here, the role of state EMS licensure is explained, in particular how it can differ among states and what the role of the state EMS director is.

Chapter 6 looks at human resources considerations and provides guidance on what impacts can be expected in introducing EMS to volunteer and combination departments. This chapter notes the importance of using inclusive approaches with department personnel and the community to ensure success.

Chapter 7 discusses quality management systems as a way to establish performance objectives, methods of evaluating how well those objectives are being met, and tools to facilitate making changes based on the evaluations.

The VCOS and EMS Sections of the International Association of Fire Chiefs hope that this tool-kit provides the necessary guidance, explanations and resources to assist any volunteer or combination department considering adopting EMS response.

The Volunteer Firefighters' Bill of Rights

As a Volunteer Firefighter, you have the right to:

1. An environment in which the volunteer is treated as a professional and as a valued asset – not just free labor

2. Receive respect, recognition and reward for attitude and performance

3. Know as much as possible about the organization, policies, people and programs

4. Sound guidance, supervision and direction with a job description clearly defined

5. Suitable assignments according to your abilities, knowledge, location, experience and desires

6. Opportunities for participation, development, advancement and varied experiences

7. Quality training commensurate with agency, local, county, state and national standards and appropriate to your assignment

8. Be heard and participate in planning

9. Receive periodic evaluations and feedback

10. Frequent expressions of appreciation from other volunteers and the community

—Chief John R. Leahy Jr., 2003

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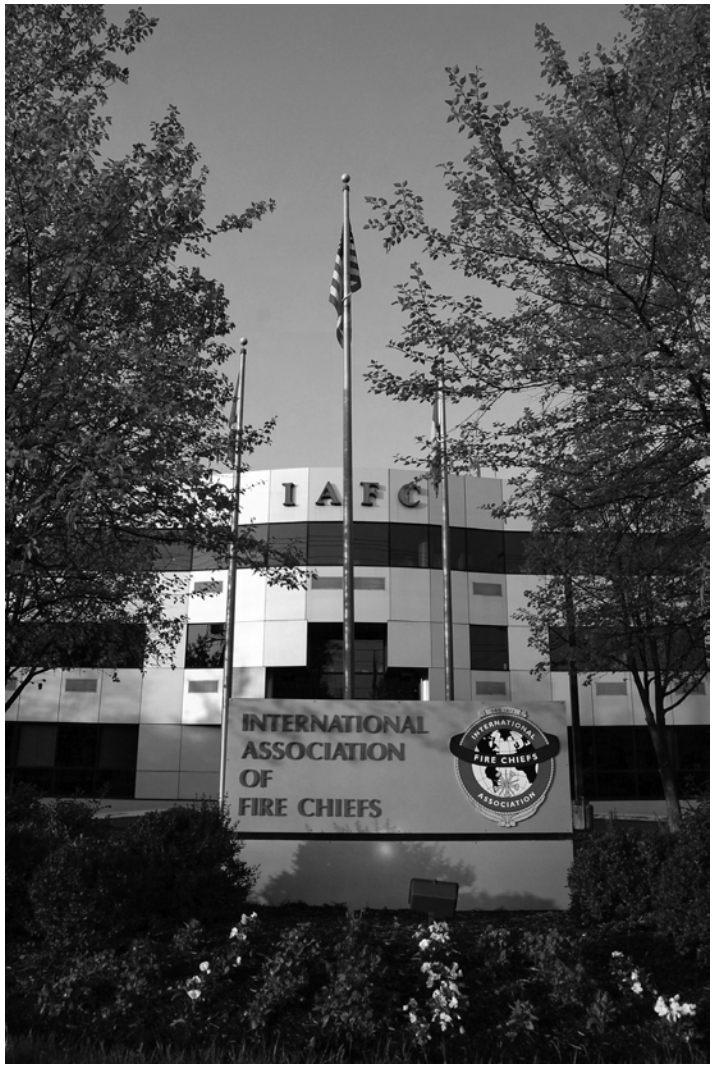
The EMT Oath

Be it pledged as an Emergency Medical Technician, I will honor the physical and judicial laws of God and man. I will follow that regimen which, according to my ability and judgment, I consider for the benefit of patients and abstain from whatever is deleterious and mischievous, nor shall I suggest any such counsel. Into whatever homes I enter, I will go into them for the benefit of only the sick and injured, never revealing what I see or hear in the lives of men unless required by law.

I shall also share my medical knowledge with those who may benefit from what I have learned. I will serve unselfishly and continuously in order to help make a better world for all mankind.

While I continue to keep this oath unviolated, may it be granted to me to enjoy life, and the practice of the art, respected by all men, in all times. Should I trespass or violate this oath, may the reverse be my lot. So help me God.

Written by: Charles B. Gillespie, MD
Adopted 1978 by the National Association of Emergency Medical Technicians



Chapter 1: Deployment

The primary objective of the pre-hospital emergency medical service (EMS) system is to deliver rapid emergency medical treatment to patients that call for help. Fire departments that provide EMS must be prepared to deploy the appropriate resources to meet that objective.

Providing EMS delivery through a fire department makes sense. Fire stations are strategically located throughout the community to provide a rapid response. Fire departments are already engaged in the "customer response business." In areas of the country that still have limited or no emergency medical services, adding EMS delivery to fire department capabilities seems to be a logical step. The difficulty and level of complexity will depend on:
1. the community's current level of service, and whether the fire department will be enhancing or replacing a current service provider; and
2. whether the department will provide for the transportation of patients to hospitals or simply provide a first response service.

In areas where the current EMS system has limited capabilities (i.e. basic first-aid), enhancing those services may be the fire department's first objective. One way to achieve that goal is to provide a faster response than the current provider with the same or a higher level of care.

In many instances, the fire department must take over the responsibility of providing EMS when the current provider discontinues service. This may happen with little or no notice, especially if a private, for-profit company provides the service. Fire departments relying on private or other EMS providers should develop a contingency plan in the event those providers discontinue their services.

When making the decision to provide EMS, keep in mind that once a fire department commits to providing EMS, that service will constitute 70 percent or more of all emergency activities.[1]

Determining the Department's Level of Service
When deciding to add EMS delivery to a fire department's capabilities – or in developing a contingency plan – the first step is to determine the level of service to provide. The department's current financial and personnel resources, as well as the level of other services provided, will help guide that decision. The two key factors are:

- The level of certification for personnel: First Responder through EMT-Paramedic
- The type of deployment: Initial first response, ambulance transportation, or both

The level of service provided is independent of the decision to provide ambulance transportation. Many fire departments provide EMS response at any of the levels identified in this report – First Responder through EMT-Paramedic – without providing ambulance transportation. In many states, ambulance transportation requires at least the EMT-Basic certification.

The following section provides information on the various levels of EMS certification. *The National Highway Traffic Safety Administration* (NHTSA) has determined the scope of practice for each level.[2] These levels will be in effect until the NHTSA implements a new scope of practice model, which will occur in 2010 (or perhaps later). (These changes are explained detail in Appendix A.) States will continue to have the option of adopting or modifying the NHTSA's scope of practice.

First Responder (FR)
The easiest level to implement is First Responder.[3] This level of training involves a 40-hour course of study outlined by the NHTSA. Implementation of this curriculum is inexpensive and is a simple way to train existing dedicated personnel. In fact, personnel may already have some EMS background through American Red Cross or National Safety Council first-aid training programs.

One of the benefits to this level of service is that First Responders are not usually involved with ambulance transportation. Fire department First Responders are often located closer to an emergency medical incident scene than local ambulance providers. If a fire department is involved in EMS, this closer proximity often results in decreased response times and earlier delivery of patient care.

The Pomona, Kan., "First Responder" emergency medical response unit was founded in 1989 with one state-certified EMT. The unit is now composed of four Kansas-certified EMTs and four first responders. Responses are made in a 2006 Ford 350 four-wheel drive, shown above, which carries equipment to provide basic life support, including an AED unit, until an ambulance arrives on scene.[4]

Emergency Medical Technician – Basic (EMT-B)

The next nationally recognized level of EMS is the Emergency Medical Technician - Basic (EMT-B) level.[5] In many communities, this is the minimum level of service required to provide ambulance transport. The National Scope of Practice for EMT-B allows providers to administer oxygen, splint, bandage, and conduct basic patient assessments. This level of certification is adequate for the majority of EMS calls. As much as 80 percent of all EMS calls do not require higher levels of care.[6]

The EMT-B level of training involves at least 110 hours of training and includes a clinical observation component in a hospital emergency department. Continuing education is required to maintain this level of certification.

The investment in equipment and staffing to provide this level of service is certainly more involved than the First Responder level. EMT-B certification involves more training time and requires additional equipment and supplies. Also, most EMT-B training programs must be approved by an agency responsible for EMS regulation and oversight. This agency may be a state, regional, county, or local governmental EMS department or agency. Most EMS regulatory agencies require independent certification testing—and in some states licensure—in order to provide EMS to the public.

Emergency Medical Technician – Intermediate (EMT-I)

The next level of service is EMT Intermediate (EMT-I).[7] The NHTSA's EMT-I scope of practice allows the provider to offer intravenous therapy, defibrillate patients, administer medication, and use advanced airway management techniques. However, the scope of practice for the EMT-I often varies based on state laws, regional or local regulations, and protocols and polices approved by the system or agency medical director.

Many fire service organizations offer an initial EMT-B service and add EMT-I capabilities as needed on scene. Some services provide a 100 percent EMT-I level of service. Either way, the EMT-I level offers advanced-level care for patients as well as support for additional training, equipment, and resources.

The number of training hours the NHTSA recommends for EMT-I is between 300 and 400 and includes a clinical component as well as a field internship on a responding EMS unit. Continuing education is required to maintain this level of certification.

Emergency Medical Technician – Paramedic (EMT-P)

The highest level of EMS pre-hospital care is provided at the Emergency Medical Technician – Paramedic (EMT-P) certification level. [8] This level of care is commonly referred to as Advanced Life Support (ALS) care. The ALS provider is the most highly trained and equipped EMS provider, offering defibrillation and cardiac monitoring, intravenous therapy, advanced airway management, and medication administration. As such, the financial and support resources needed to provide ALS response are much more significant.

Many urban, suburban, and close-in rural fire departments are able to provide ALS services as a transport provider, initial first responder, or both. Initial ALS response to EMS emergencies requires the same equipment, training and supplies as required for an ALS transport agency, with the exception of an ambulance for patient transportation.

The requirements to obtain Paramedic certification include at least 1,000 hours of training[9] and, in some states, a two-year associate degree in Para-medicine. Continuing education is required to maintain this level of certification.

The North Andover Fire Department in Massachusetts is the designated emergency ambulance service provider for the town of North Andover. This department responds to more than 2,500 EMS calls per year. They respond to these calls with two state-certified Class 1 ambulances. Of the department's 55 uniformed personnel, 49 are EMTs.

Transport and Non-Transport EMS Service Delivery

After determining the level of certification to provide, the next decision is how the EMS providers will be deployed. Fire departments may provide initial first response, patient transportation, or both.

While the decision to provide EMS may be an easy one, the decision to provide ambulance transportation is much more complex. Most fire departments initiate EMS transport for the following reasons:

- The department is located in a new geographic area, where ambulance service does not exist.
- The current ambulance provider offers poor or no service to this area.
- The fire department needs to generate revenue.

Ambulance transportation is highly regulated by local, state and federal EMS agencies, especially with regard to billing for this service. Fire departments that are contemplating ambulance transport services should consult their state or local EMS agency. The American Ambulance Association (AAA) also provides guidelines for implementing ambulance services and their associated operations.[10]

The Princeton (Ill.) Fire Department utilizes two intermediate life support (ILS) ambulances and one basic life support (BLS) ambulance to provide EMT-I level care. The fire department is staffed by nine full-time firefighter/EMTs on three 24/48 shifts and 15 part-time and volunteer firefighters and EMTs. The chief, deputy chief and EMT/EMT-I each work a 40-hour shift and all off-duty personnel respond on emergency calls when needed.

Fire departments choosing to move forward with ambulance service must determine how to provide it. The following section discusses the two types of ambulance transport services: tiered response and "hand-off" systems.

Tiered Response System

One way a smaller volunteer or combination fire department can offer EMS is to participate in a tiered response system. Based on the dispatching information, a BLS, Intermediate, or ALS provider may be assigned to respond. If the patient condition changes, the first responder can request a higher level of EMS provider for a specific incident. Since most EMS calls are basic in nature, the tiered system reserves the providers with the highest level of training for cases in which they are most needed. This type of system sends the right level of resource to the right call, BLS for BLS and ALS for ALS.

An example of a tiered response system is for a fire department to offer BLS initial EMS response and partner with another EMS provider (private, hospital-based, or third service) for higher levels of service. This system can work well for all sizes and types of departments, depending on local needs.

EMS "Hand-Off" Systems

Some fire department-based EMS systems transfer – or "hand off" – the patient to a partner provider for transport. This system allows the fire department EMS units to remain in their response area. This frequently occurs when the patient's destination hospital is some distance from the fire department jurisdiction.

Even when using the hand-off system, fire-based EMS systems should be capable of transporting a patient, or have arrangements in place for an alternate transport provider, in case the partner transport service is delayed and the patient's condition warrants an immediate transport.

Emergency vs. Non-Emergency Ambulance Transportation

In today's health care environment, emergency medical services can be expensive to provide with little means of recouping the costs. To help fill the gaps, some fire departments offer emergency or non-emergency transport services for a fee. Such fees can generate significant income for a jurisdiction. Providing ambulance transportation services is a good way for smaller volunteer or combination fire-based EMS systems to improve capabilities yet remain cost-effective, and in many cases generate significant revenue back to the department.

Departments providing non-emergency transportation must make sure adequate ambulance response capabilities are available to respond to emergency incidents.

Fire Station Locations and EMS Response Times

Providing effective EMS systems relies heavily on the strategic location of fire department facilities. Fire stations typically are placed across geographic regions according to population densities and workload needs. This creates an all-hazard response infrastructure meeting the routine and catastrophic emergency needs of all communities regardless of the nature of the emergency.[11]

The Eureka Fire Protection District outside of St. Louis, Mo., is a "combination" department, utilizing both volunteer (reserve) and career staff. The department has nearly 100 members including paramedics, EMTs, firefighters, a support team, and an explorer post. Three ALS ambulances provide Paramedic-level transport. In the event that all the ambulances are out on calls, four other pieces of fire apparatus are completely equipped to ALS-level initial response, ensuring coverage until a mutual-aid ambulance can arrive at the scene.

Using fire department personnel for EMS is a logical choice since fire station locations are based on population, the need for rapid response, and statistically calculated risks. As with fire response, EMS response better serves citizens when done quickly. Faster response times translate into better patient outcomes. For example, patients experiencing chest pain have the best outcomes when they enter the EMS system within five minutes and have advanced life support EMS care on scene within eight minutes.[12] Trauma patients also benefit from faster response times. The idea of the "Golden Hour"[13] means that severely injured trauma patients have one hour from the onset of injury until they must receive definitive surgical care to survive. When response times are faster, more of the "Golden Hour" remains for transport to an appropriate facility and treatment.

In addition, fire departments have resolved the critical issue of coverage. The fire service has a rich tradition of mutual aid and move-up coverage when a particular fire department is experiencing an overwhelming call volume. Many fire departments that provide ambulance transportation have mutual aid agreements with neighboring ambulance providers to fill in or move up when needed. This helps maintain adequate service during times of system stress.

Fire-based EMS systems that are in urban areas or have high call volumes may choose to institute a program of system status management. This model allows flexible staffing and equipment placement in response to statistically calculated volume periods and robust geographic call loads. These fire departments support their increased requests for service by having alternative scheduled staff and spare equipment in reserve and assigning or "posting" the extra resources in a location that may be outside of the fire department facility. This system is efficient only for high-volume EMS providers. The typical medium- and small-size volunteer or combination departments would generally not find a need for system status management.

Chapter 2: The Logistics of Providing EMS

Based on the level of emergency medical services a fire department plans to provide, consideration is required for the associated infrastructure, equipment and other EMS-related costs. These costs include:

- Training and continuing education
- Personal protective clothing and equipment
- Transport and non-transport apparatus, including vehicle maintenance and fuel
- Emergency medical equipment and supplies
- Administration and support services
- Facilities
- Agency credentialing, including licensure and/or ambulance service permits

Training and Continuing Education
Fire departments that do not currently provide EMS delivery services will have to plan for and arrange EMS training for department members who have not yet received it. The cost for EMS training increases based on the level of care the department plans to provide. First Responder training is the least expensive and requires the least amount of time. Training at the EMT-P level is the most expensive and the most time-intensive.

In addition to the initial EMS training, the department will have to plan for continuing education and recertification training programs. All EMS certifications have an expiration date and specific requirements for recertification. Requirements for both the initial training and continuing education are governed by the jurisdiction's EMS regulatory agency.

Personal Protective Clothing and Equipment
Infectious diseases, blood-borne pathogens, and weapons of mass destruction pose a real and dangerous threat to EMS care providers. The fire department will need to choose clothing and equipment that protects its members from these threats and provides a level of assurance to the public. The jurisdiction's EMS regulatory agency will dictate the specific personal protective equipment (PPE) required to provide EMS.

The baseline document for PPE and clothing is NFPA 1999: *Standard on Protective Clothing for Emergency Medical Operations*, which is the consensus standard developed by the National Fire Protection Association (NFPA). While designed as a consensus standard – which really means " guideline" – your state or locality may have adopted it as law. Department personnel should check with their legal counsel for guidance.

Transport and Non-Transport Apparatus
The type of EMS service delivery model selected will dictate the type and quantity of dedicated or shared apparatus a fire department will need. This section discusses the transport and non-transport apparatus needs of all levels of service, from First Responder through EMT-Paramedic.

Federal, state, and local laws and regulations govern the manufacturing, licensure and operation of EMS vehicles and make the distinction between transport and non-transport apparatus. The jurisdiction's EMS regulatory agency also may have regulations regarding EMS response apparatus, especially ambulances. If the department's administrative personnel are not familiar with these regulations, they must complete "due diligence" before designing, acquiring or purchasing any new EMS apparatus. Design standards for ambulances may vary from state to state and may depend on guidelines established by the state fire agency or the EMS regulatory agency. Fire department administrators should consult with legal counsel on specific requirements.

Resources on Ambulance Design

- The U.S. General Services Administration's Federal Supply Service has developed vehicle specifications for ambulances purchased through that program. Go to www.gsa.gov, and search for a document titled "Federal Specifications for the Star-of-Life Ambulance KKK-A-1822, which was published on June 1, 2002.

- The Ambulance Manufacturers Division (AMD) of the National Truck Equipment Association provides guidance at www.ntea.com.

- The Fire Apparatus Manufacturer's Association provides guidance at www.fama.org.

Most fire departments that provide EMS – most commonly engine companies - respond on existing apparatus. Some departments use smaller vehicles to respond to EMS incidents. Many departments will respond with more than one apparatus to specific types of EMS incidents, such as motor vehicle crashes or industrial accidents.

Personally Owned Vehicles

In some cases, EMS responders may use personally owned vehicles (POVs) as emergency vehicles. The success of utilizing POVs as first-line response vehicles will depend on the fire department's level of service. POV use is prevalent in rural areas where staffing models or geography delay emergency response. In these instances, POVs serve as first responders to assess and stabilize the patient(s) prior to the arrival of an ambulance or aero-medical service. The level of certification and the equipment required will depend on the delivery model adopted by the department.

State and local laws vary widely on the use of POVs as first-line emergency response vehicles. For example, the state of Ohio authorizes POVs as emergency response vehicles through the state fire marshal's office. Once authorized, POVs may use emergency warning equipment (i.e., red lights and sirens) and have the same rights and privileges as other public safety vehicles. On the other hand, the state of Illinois does not recognize POVs as emergency response vehicles and only allows them to use a blue "courtesy" light. The fire department should consult with the state police, motor vehicle department, and/or department of public safety to determine which laws apply.

Another consideration in using POVs for emergency response is the additional liability to the individual member and the organization. Some insurance carriers will not cover – or may require a rider policy for – POVs used in such a capacity. Depending on applicable laws, the department may need to assume the burden of liability. Also consider that one of the leading causes of line-of-duty deaths for volunteer firefighters and EMS providers is being involved in a motor vehicle accident while responding to and returning from emergency incidents in POVs. The department should conduct a thorough risk-benefit analysis before allowing POVs to be used for emergency responses.

Fire Apparatus and Staff Vehicles

The use of fire engines, aerial apparatus, wildland interface, and staff vehicles as first-line EMS response vehicles is not uncommon. They are most often utilized as part of a tiered response system or when a third party provides the EMS transport service. As previously discussed, this system enables a quick response to medical emergencies and facilitates the quick assessment and stabilization of the patient(s). However, these types of vehicles are not routinely utilized or authorized for use as transport vehicles. The level of certification and the equipment required will depend on the EMS service delivery model and level of care the fire department adopts.

Transport Vehicles (Ambulances)
If ambulance transportation services would best meet the department's requirements, first consider what type and size of ambulance will be needed. Ambulances come in a wide variety of models from a number of different manufacturers. They range from heavy- to light-duty, as they are manufactured on van, truck, and custom chassis. To help determine the required apparatus specifications, use the above-referenced GSA standard as a guideline.

After the ambulance has been purchased and received, state or local regulations enacted by the EMS regulatory or fire agency may require that it be inspected and licensed before use. Check with the state bureau of motor vehicles or state EMS agency to ensure the department meets all applicable regulations and requirements.

Finally, develop a preventative maintenance program as well as a vehicle and equipment replacement schedule.

Emergency Medical Equipment and Supplies
Though the NHTSA has determined the scope of practice for each level of EMS service, not every state, region or local jurisdiction has adopted the NHTSA's full recommendations. In fact, many states limit the use of certain skills within the scope of practice. An approved equipment and supply list for each level of service can be obtained from the jurisdiction's EMS regulatory agency. Fire department administrators must evaluate what laws and regulations apply to the department before purchasing equipment.

Below are recommendations for the types of equipment necessary for each level of response.

■ **First Responder:** Certified first responders have a very limited scope of practice; therefore the equipment needs are limited and less expensive than the higher levels of certification. Most first responders are equipped with a "first-in" bag that contains simple first-aid supplies (such as Band-Aids, gauze and blood pressure equipment) to stabilize a patient until transport units arrive. First-in bags may also contain automatic external defibrillators (AEDs) as well as equipment to maintain oral airways and administer oxygen.

■ **Emergency Medical Technician – Basic:** The medical equipment required for the EMT-B level of care includes backboards, splints, oxygen delivery devices, an AED, and airway equipment. If the EMT-B is responding in an ambulance, the ambulance would need to have portable and fixed suction devices, a fixed oxygen delivery system, communications equipment, and expendable medical supplies such as Band-Aids, dressings, gauze and oxygen tubing.

■ **Emergency Medical Technician - Intermediate:** The basic equipment for the EMT-I is the same as that of the EMT-B, with the addition of advanced airway devices, intravenous (IV) administration equipment, and, depending on the jurisdiction's allowed scope of practice, limited types of medications and disposable supplies to administer the medication.

■ **Emergency Medical Technician – Paramedic:** EMT-P personnel are required to have the same equipment as EMT-Bs and EMT-Is as well as medications approved by the jurisdiction's EMS regulatory agency and intubation equipment. They also are required to have cardiac monitoring equipment and manual defibrillators, probably the most expensive piece of equipment.

Administration and Support Services
Once a fire department decides to provide EMS delivery services, responsibility for overseeing the program must be assigned to a staff member. This oversight includes monitoring training and certifications, ordering and restocking medical equipment and supplies, ensuring compliance with laws and regulations, and providing required reports for the jurisdiction's EMS regulatory agency. Additional support for required EMS issues, such as equipment repair, patient care reports, and liaison with hospitals, the medical director, and others in the medical community are required as well.

Facilities
Adding EMS systems to a fire department will require working through some logistical issues. The extent of those issues will depend on the level of service and the service delivery model the department chooses.

The first issue is space. Consider whether the department's facilities can house EMS response vehicles as well as the related personnel, supplies and equipment. Once a fire department decides to provide EMS systems, it is likely to see a quick increase in call volume. To meet the increased demand for services, the department will have to evaluate the need for in-house staffing and in-house amenities for EMS responders (i.e., sleeping, eating, and shower facilities).

Also required is heightened security, especially for controlled substances on apparatus and/or in the station. Items such as oxygen, IV fluids, and narcotics are subject to the regulations of the jurisdiction's EMS agency; the local pharmacy board, hospital and medical director; and the U.S. Drug Enforcement Administration (DEA). As such, the department will need to track and secure these controlled items, which for many organizations means dedicating a portion of existing or new facilities for this purpose.

EMS systems also raise the need for environmental controls (heating and cooling) for expendable supplies and controlled substances. Seek advice from the EMS regulatory agency or medical oversight entity to determine what requirements need to be in place.

Agency Credentialing
Most states will require a permit or license to provide EMS to the community. If the department has decided to provide ambulance services, the ambulance may need to be inspected on a periodic basis and a permit may be required. Obtaining these licenses and permits may have associated fees. Consult with the EMS regulatory agency for these requirements.

Some departments that provide ambulance services have decided to seek accreditation for their EMS service. Accreditation requires a complete review of all aspects of the EMS delivery components and provides a third-party opinion of the quality of a department's EMS delivery system. The accrediting agencies provide the requirements and guidelines for departments seeking accreditation. The two agencies that provide EMS accreditation are listed below.

The following organizations offer accreditation to fire-based emergency medical services:

- The Commission on Accreditation of Ambulance Services (www.caas.org) specifically accredits the ambulance service industry.

- The Center for Public Safety Excellence (publicsafetyexcellence.org) accredits fire and emergency service organizations. They also have accreditation processes for chief fire officers and chief medical officers.

Chapter 3: Communications

Communication begins with people who speak the same language. Within the fire department and in the EMS community at large, the language used (or the "lingo") should be standardized to ensure compatibility and full understanding by all members. In most cases, the EMS community has used standard verbiage based on EMS certifications and medical terminology. This chapter discusses various ways to ensure and enhance clear and effective communications.

The Dispatcher/Call-Taker Link

The need for clear and effective communication starts at dispatch. A call-taker must ask questions based on a standardized protocol designed to get to the root of the problem. Then, the dispatcher must relay accurate information to field personnel. Several software packages are designed to help dispatchers obtain specific patient information and move that information to the EMS responders. For smaller dispatch systems, hard-copy operational querying guides are readily available. The references at the end of this report provide examples.

Emergency Medical Dispatch (EMD) has three parts:

1. Triage: First is triaging the incoming request for medical service to determine the level of response (i.e., no response; emergency vs. non-emergency response; or non-emergency vs. emergency transport). This feature depends heavily on the area's emergency medical dispatch facilities as well as the availability of alternative, non-emergency transport methods and medical treatment facilities.[15]

2. Pre-Arrival Instructions: The second part of EMD is to provide pre-arrival instructions to the caller on how to help the victim immediately. The level of telephone assistance varies from simple advice (for example, "Call your doctor") to complete instructions for cardiopulmonary resuscitation (CPR). Pre-arrival instructions are most commonly provided through computer software programs or on flip cards that are arranged so the dispatcher can question the caller and, based on the answers, quickly go to the card that contains the correct instructions. As this component is about saving lives, it is the most visible component of EMD and, if you are the victim, perhaps the most valuable.

3. Quality Assurance: The third – and most critical – feature of EMD is quality assurance. Each EMD program must originate with the complete involvement and cooperation of local emergency medical officials. Each aspect of the EMD protocol must be reviewed, revised as needed and approved by the local or regional EMS regulatory agency. This ensures the dispatchers are providing correct information and that the information is appropriate for local conditions. In addition, an ongoing review of the dispatchers' activity is imperative to ensure they are following protocols correctly and that the protocols have a positive impact on the victims. One way to conduct a review is to look at a random selection of several incidents each month for analysis and grading, and then to provide feedback to the dispatcher and to revise the protocols as necessary.

The public usually is not aware of the importance of this process in that a dispatcher's questions help get the patient the appropriate care. A public education program would be an effective way to relay that message.

For more information on EMD, please visit:

- *Dispatch Monthly Magazine*
www.911dispatch.com/info/emd/index.html
- National Academies of Emergency Dispatch
www.emergencydispatch.org/
- Medical Priority Dispatch
www.prioritydispatch.net/
- Power Phone
www.powerphone.com

Types of Radio and Communications Systems

The Minnesota state EMS radio plan explains how important radio communications are to the EMS community:

Two-way radio communication is one of the primary means by which the emergency medical services (EMS) system becomes a cohesive, efficiently functioning entity, providing prompt response and an optimum level of care to patients. It allows EMS providers in the field to consult with physicians regarding patient care and to communicate with hospital emergency departments allowing hospital personnel to prepare for the needs of incoming patients. It also provides for communication between EMS units, with dispatch centers, with other public safety providers and from hospital to hospital. While cell phones have become an alternative to two-way radio systems, they can be unreliable, particularly in a large-scale disaster, and should be considered as an adjunct to, rather than replacement of, the radio communications system.[16]

The most common method of dispatching is the use of wireless radio transmissions. This method ranges from single-channel simplex systems (which use the same frequency to transmit and receive) to full communications "trunking" systems, including data.

A number of public safety radio bands are distributed along the radio spectrum,[17] including:

- Low Band – 30-50 Mega Hertz (MHz)[18]
- High Band – 150-170 MHz
- Ultra High Frequency (UHF) – 450-470 MHz
- 700 & 800 MHz[19]
- Internet-based
- Public safety broadband

This chapter provides a brief overview of the various types of communications systems, to help a fire department choose what will be best.

True to its name, a simplex channel is the simplest form of radio communications and therefore the least expensive. An assigned frequency is used to transmit and receive voice communications. The radio equipment in use today can be programmed to utilize many single channels. A limitation of this type of system is the range, which is the distance the radio frequency will travel. One of the variables is the radio's transmit power. Another is whether the user is talking to a base antenna mounted on a tower or simply to another mobile or handheld radio.

Radio transmission requires a clear path between antennas known as "radio line of sight." Depending on the amount of transmit power, the line of sight could be up to five miles. Mobiles with high power output would provide greater distance and a mobile transmitting to a base antenna would have an even greater range.

Simplex systems can be used by multiple agencies that agree to share the same frequency licenses.

A single channel repeater system (or half duplex) enhances the range of mobile and handheld radios by using two different frequencies: one for transmitting and one for receiving. These frequencies are 5 MHz apart. When transmitting on a handheld radio, a repeater station (with a tower-mounted antenna) receives the portable radio transmission and rebroadcasts it at a much higher power over the reception channel of the handheld or mobile radio. This type of system greatly enhances geographic coverage. As with simplex systems, multiple agencies can use this system if they agree to share frequency licenses.

Both of the above systems can be enhanced for better radio coverage by using a "voting system" that utilizes multiple towers with multiple repeaters. The voting device compares the incoming signals and rebroadcasts the strongest one.

One way to increase the capacity of a single channel repeater system – to allow more users at a time – is to "trunk" it. Trunking utilizes up to 20 single channel repeaters. A single channel controller on each repeater ties them together (or, in the case of Motorola systems, a single control channel), sending a calling mobile phone or handheld unit to an available repeater. This method is the most effective use of multiple licensed frequencies. However, it can be costly to construct.

Internet communications – including Voice-Over-Internet Protocol (VOIP) or Radio-Over-Internet Protocol (ROIP) – can link facilities and vehicles to the dispatch center and to each other. Access to wireless Internet depends on the area infrastructure, but cellular broadband is available in most cases.

Interoperability

The previous discussions of simplex, duplex, and trunking systems have been about operability, or making sure departmental communications systems are up and running. Another consideration is interoperability, which ensures that all emergency response agencies are able to communicate with one another. Interoperability is vital to providing effective mutual aid and should be part of any mutual aid plan. Simple agreements can and should be used to ensure that neighboring agencies have permission to utilize each other's communications channels. Many states have adopted interoperable radio communications plans that address statewide mutual aid frequencies across all bands for various disciplines, including EMS, fire, law enforcement and air operations.[20]

All stakeholders must discuss and adopt radio use protocols. Those protocols should use clear – or plain – text rather than agency-specific terminology such as "10 codes." Communication among local, state and federal agencies is so important that the federal government requires it through the National Response Framework and National Incident Management System, which all fire departments should read and understand.

An aspect of interoperability that is critical to the EMS community is communications with hospitals while en route with a patient. Depending on the particular area of the country, this can range from no communication to high-tech satellite and video transmissions. However, cellular phone communications are growing at a rapid rate, and many agencies are using mobile satellite and/or Internet broadband systems that send live video and interactive voice communications between the EMS unit and the receiving facility. At a minimum, fire departments should have direct radio communications that can be used to describe the patient's condition and receive medical intervention instructions.

No matter what the available technology is, stakeholders must develop local radio use protocols to assure "same page" communications that are efficient and effective.

Information Technology Solutions

Web-based systems exist that utilize real-time communications and resource management solutions to enhance preparedness and response to medical emergencies, mass casualty events, and public health incidents. These packages provide emergency department status tracking, patient tracking, mass casualty incident support, diagnostic surveillance, hospital bed tracking, and public health alerting solutions.

They may provide a framework as follows:

EMERGENCY DEPARTMENT

- Communicate real-time status of all regional emergency resources to support informed patient transport decisions
- Prepare for incoming patients

MASS CASUALTY INCIDENT SUPPORT
- Rapidly query hospitals for capacity by triage category and other available services
- Monitor and track casualties

HOSPITAL RESOURCES
- Communicate bed availability, analyze trends, and manage hospital resources

EMERGENCY MANAGEMENT
- Coordinate emergency response resources

PUBLIC HEALTH
- Disseminate public health alerts and collect real-time surveillance information

The overall importance of communications in the provision of EMS delivery services cannot be overestimated. Departments may need to enhance their existing communications infrastructure, which may include purchasing and implementing new systems, to provide effective EMS delivery.

Chapter 4: Funding

Operational Funding

The cost to a fire department providing a new or enhanced EMS delivery service will depend on the level of service provided. Budgeting by a timeframe for adding or enhancing EMS service delivery will allow the department to forecast costs more accurately.

Any department employing career staff must budget for salaries and benefits, both of which should be sufficient to attract trained and qualified personnel. In an all-volunteer system, personnel expenses tend to be minimal. However, volunteer departments nationwide have been offering stipends to their volunteers in exchange for services provided.[21] All departments – volunteer, combination, and career – should factor EMS training, continuing education, and recertification costs into their budgets.

The cost of tools, equipment and supplies necessary for providing EMS increases as the level of service increases. For example, ALS costs will be greater than basic life support service because ALS personnel use more expensive equipment.

A response vehicle can be a major investment. Fire departments that plan to provide EMS response and on-scene treatment, but not patient transportation, would not need to purchase and maintain an ambulance. Instead, that department may opt to purchase a smaller, less expensive vehicle to get EMS first responders to the scene to initiate and provide definitive patient care. Vehicle maintenance and fuel expenses will depend on the vehicle selected to provide EMS delivery.

The EMS response vehicle will need adequate medical supplies. EMS departments typically purchase the initial inventory of medical supplies. Many receiving medical facilities will replenish most EMS supplies used on EMS patients and charge the cost of the supplies to the patient's hospital account. To receive these supplies, the EMS team must comply with the receiving facility's reporting requirements and procedures or work with the receiving medical facilities to develop a procedure for restocking the fire department EMS units.

Cost Recovery

Once the costs to provide EMS or enhance the current EMS delivery service have been determined, sources of funding must be identified. The fire department will need to determine if the cost of providing EMS delivery services can be financially self-sufficient, will need to be supplemented through current revenues the department receives, or will require additional funding.[22] Options for additional funding include user fees, tax revenues (from property taxes or special service tax districts), donations, grants, or a combination of all of these.

Billing for EMS first response or ambulance services is not likely to cover all of the operational costs, but it may offset them substantially. Departments can implement "user fees" in a few different ways.

Some volunteer or small combination departments bill patients directly for services provided. Most departments that do this assign the invoicing to a department member who understands standardized billing practices as well as the various medical insurance laws and Medicare requirements.

However, keeping abreast of these many legal issues and requirements is often confusing and overwhelming, particularly for an all-volunteer service. As such, some departments hire professional billing personnel. The department provides detailed information about each patient on every call for service; the billing company handles the collection (from sending the initial bill to engaging a collection agency, if necessary) and provides a monthly payment to the EMS agency. Billing companies also can recommend a service fee schedule based on what most insurance companies and Medicare will pay for various types of EMS calls.

When choosing a billing company, select a reputable company that can provide references. Make sure their rate of return (or collection rate – the amount collected versus the amount billed) is acceptable. The amount a department can expect to collect depends on the payer mix for the specific community. Billing companies can help determine the amount of revenue that a department can expect to collect.

Many smaller volunteer EMS departments use an annual subscription service, which generates pre-service funds and ensures that patients will be transported at a substantially reduced rate. The funds generated are rarely enough to cover actual operating expenses; however, subscription services are a good public relations tool because residents feel they are helping to sustain the organization financially as well as making a good investment if they ever need EMS systems.

The authority having jurisdiction (AHJ) for increasing taxes, either at the state or local level, can fund the EMS operation through residential tax revenues (property taxes) or by establishing special tax districts. Raising or adding any tax usually requires public approval through a ballot initiative; however, voters may be reluctant to add or increase taxes, particularly during an economic downturn. Even if a jurisdiction is successful in raising taxes for EMS, the additional revenue is often insufficient to cover all of the operational expenses for the EMS organization. Fire department administrators contemplating tax revenues to fund their EMS delivery program should consult their state and local tax departments to determine if this is a feasible approach and, if so, what the process for doing so should be.

Revenue-generating options to fund EMS delivery also may include donations, grants, or a combination of both. Most volunteer and combination fire departments already receive revenue through these methods for fire-related services.[23]

Much of the volunteer fire service is funded by donations from both citizens and businesses. Donations come from traditional yearly door-to-door fund drives, bake sales, social events, raffle tickets, and more. Donations to volunteers are usually tax-deductible.[24] When soliciting donations, departments should clearly define the activities or equipment the funds will cover, such as training or a new ambulance. Citizens and businesses are more likely to donate when they know their donation will have a direct effect on their department's safety or services.

Many sources of grants exist to help fire departments fund EMS delivery services, including corporations, foundations and the federal government. Private grants tend to be larger than federal grants. The U.S Fire Administration provides grants to EMS delivery services through the "Assistance to Firefighters Grants" programs. Other federal grants are available specifically for rural areas. For more information on federal grant programs for emergency services, go to www.fema.gov/emergency/grant. Some state and local government agencies have grants departments that can assist with identifying grants for EMS. For additional information on other grant programs, the Internet can be very informative.

Fire department administrators should explore all the options for funding EMS delivery programs. Having only one source of funding or revenue may not be enough to fund a department's EMS program in its entirety, but the combination of tax revenue, donations, and grants may provide enough funds to wholly or substantially pay for EMS delivery programs.

Chapter 5: Legal Requirements

While the federal government provides basic guidance through the NHTSA's Office of EMS, each state provides its own legal framework for EMS systems through a state EMS regulatory agency. States may regulate EMS systems at the local level by creating EMS regions and systems.

The NHTSA provides a national standard curriculum that defines the minimum objectives and requirements for the initial training of EMS responders. Other federal requirements for pre-hospital care are contained in the Health Insurance Portability and Accountability Act of 1996 (HIPAA). HIPAA requires all medical care providers, including EMS personnel, to treat patient information as confidential and has penalties for non-compliance. Fire department administrators must be familiar with this law and provide HIPAA training programs to ensure the department's personnel understand it as well.

The U.S. Occupational Safety and Health Administration (OSHA) also regulates EMS care. For example, OSHA governs infection control procedures and medical treatment of exposed EMS personnel. OSHA has many other requirements that apply to EMS employers, which are available at www.osha.gov/SLTC/emergency-preparedness/responder.html.

The new National EMS Scope of Practice Model, developed by the NHTSA in 2007, will change the current EMS levels and practices for EMS personnel. The NHTSA is planning to implement the new scope of practice model sometime in 2010.[25] Most states will then adopt these changes.

While the NHTSA provides guidelines, each state decides how EMS will be structured within its borders. As such, laws and regulations will vary from state to state. For example:

■ States determine the scope of practice of state-licensed EMS personnel, meaning they approve the training curriculum and provide for certification, licensure, re-certification and re-licensure.

■ States may choose to establish a department of public health and state EMS director. In Illinois, a physician – the EMS medical director – oversees the EMS system. All EMS personnel practice medicine under the medical license of the EMS medical director, who is ultimately responsible for the care delivered under his/her license at all levels. The system provides for credentialing, competency verification, medical direction, quality assurance, continuing education, policies and procedures, and medical protocols.

■ States may divide into regions and subdivide into individual systems. EMS delivery may vary from one region to another based on geographic needs or population needs.

■ An EMS system may be hospital-based (at the "resource hospital") or established by the local EMS authority or other EMS regulatory agency. The system may include a diverse group of pre-hospital providers such as First Responder, BLS, ALS, aero-medical, specialty transport care providers and associated hospitals.

At the local level, a medical director (or, in the case of fire-based EMS, the fire chief) oversees the pre-hospital provider agency. The local agency determines the level of care, handles personnel issues, and addresses funding, logistics and deployment of equipment and personnel. The personnel in charge of EMS at the local level must have excellent relationships throughout the system and with local hospitals. The director/chief must understand EMS system requirements, state and federal rules and regulations, and customer needs. Understanding the ever-changing, dynamic environment of EMS is essential. Fire departments that are implementing a new EMS delivery system or enhancing an existing EMS system must understand all the legal requirements that pertain to their service.

Chapter 6: Human Resources in EMS Systems

One of the most critical considerations in employing EMS systems is the impact on department personnel. Adding or increasing EMS systems directly impacts everyone; the increased activity may impact even those without EMS training. Leaders should avoid statements implying that non-EMS trained members will be unaffected. Instead, leaders must plan to manage these changes in a proactive manner and give due consideration to the service's impact on the organization's most important asset: its people.

As a department discusses adding or increasing EMS systems, plenty of questions are likely to arise. Be sure to allot adequate time for discussion and multiple opportunities for department members to provide input. Failure to appropriately manage such a significant change can jeopardize the success of the EMS program and, possibly, the future of the organization.

Consider how the department will structure EMS within the organization. Adding EMS as a separate component without cross-training personnel may seem easier – and may address opposition from some members – but it opens the door to larger problems. Consider career advancement opportunities for all members, volunteer or career. If EMS is a separate component, EMS providers have limited opportunity for advancement within the department. Providing at least a minimum level of medical training to all personnel lays the groundwork for future opportunities without limiting anyone.

The Nature of EMS

The public has high expectations for emergency medical services. In some cases, those expectations are higher than for other fire department services. If a fire department falls short of expectations (for example, by failing to save a building), insurance policies can provide financial relief. On the other hand, a loved one may live or die based on the performance of the EMS system. Leaders should understand the emotional toll these situations can take on their citizens and their personnel.

EMS is a 24/7 business, and one that can be unforgiving. Departments often find that EMS calls for service dominate their call volume, and that call volume may increase exponentially in correlation to community growth. Leaders must carefully monitor their personnel for signs of fatigue, frustration and burnout and provide them with adequate support.

All personnel within the organization must understand that the call volume will increase, and that there may be staffing changes to meet the demand. In more densely populated localities, the call volume may increase at a faster rate. The traditional volunteer model of responding from home when the pager goes off will likely fall short of the system's needs. The department may need to increase the number of volunteer personnel to meet the demand for EMS and in some cases have volunteers assigned to fire stations ready to respond to EMS incidents.

Some volunteer departments have had to add career or part-time staff to meet this increased demand. The potential revenue opportunities from providing EMS may allow the volunteer department to add paid staff members when volunteers are not available. As an example, the Freeport Fire and Rescue Department in Maine started providing non-emergency ambulance transportation for a fee and has been able to hire some full-time EMS personnel and provide a per diem to other volunteer members responding to EMS incidents.[26]

Recruitment and Retention

Because of the specialized nature of advanced emergency medical procedures, qualified EMS providers are in high demand. They also are likely to advance quickly through the ranks. This is because firefighters who respond to EMS incidents are in a position to make several decisions – in some cases, life or death decisions – daily. Because of the educational requirements and continuous testing to maintain EMS certifications, they tend to do well on standard fire department promotional examinations. While their promotion success within a department is positive, it may exacerbate an already difficult recruitment and retention challenge. Some may view this as a "good" problem to have; however, departments still must address it.

Since qualified EMS providers are in high demand, leaders should analyze the local "market," meaning the community's unique training and retention issues. Does the community have enough candidates to support the department's additional staffing needs? If not, where will the department find candidates? Some departments try to coax providers from other departments by offering increased compensation, additional benefits and other incentives.[27]

Organizations should recruit personnel well before initiating an EMS program. Leaders should create a targeted marketing plan that identifies potential volunteers. Recruitment "hot spots" might include high school EMT training programs, community college health-based programs, public service-oriented community organizations (such as the Red Cross), and health-oriented businesses.[28]

Do not rule out groups that have already been approached to recruit firefighters. Some candidates who will volunteer for EMS systems may have little interest in firefighting.

Once candidates have been identified, decide on an application process. EMS requires specific knowledge, skills and abilities. The "perfect" EMS provider will have – or have the ability to learn – certain competencies, as described in Table 1 below. As with recruiting and retaining firefighters, the department will want to make wise investments in training and resources.

Table 1

Sample EMS Provider Knowledge, Skills and Abilities		
Knowledge	Skills	Abilities
Anatomy and Physiology	Patient Stabilization	Critical Thinking
Patient Care Protocols	Patient Assessment	Problem Solving
Laws and Regulations	Treatment Procedures	Incident Documentation

Once EMS personnel are in place, leaders must develop strategies to retain them. The VCOS *White Ribbon Report* offers some guidance on retention strategies for volunteers.[29] Possibilities range from a heartfelt "thank you" to complex incentive programs.

EMS requires rigorous training and continuing education and call volumes may be high. Again, take care to monitor personnel for fatigue and provide them with appropriate support. Cross-training your personnel is an effective way to relieve EMS crews who respond to an extreme number of calls during a tour. If firefighters are trained in EMS (and vice versa), a firefighter can get off an engine and relieve an ambulance provider. The two simply swap positions.

For additional recruitment and retention resources, please visit:

- The VCOS website: www.vcos.org
- The U.S. Fire Administration website: www.usfa.dhs.gov

Training for EMS
The three primary training areas for implementing EMS are:

- Certification training
- Continuing education
- Professional development

Each component plays a critical role in ensuring a successful EMS system. Failure to address any of them may derail the system.

Certification Training
Certification training is designed to meet national standards of care and is typically approved by the jurisdiction's EMS regulatory agency.[30] The training can be provided through variety of approved EMS training institutions, though some fire departments provide EMS training in-house. Certification training typically falls into the categories of advanced life support (ALS) or basic life support (BLS).

Table 2

Certification	BLS	ALS	Approx. Hours
First Responder	X		40 hours
EMT-Basic	X		110-120 hours
EMT-Intermediate		X	200-400 hours
EMT-Paramedic		X	1000 or more

Each program typically has classroom, lab and clinical components. Most start in a classroom and move to a lab for hands-on exercises. The resources available to the department will dictate how elaborate the training facilities may be. Some may have access to formal training labs, while others may simply train on the apparatus floor.

Training in the clinical environment is often the most challenging aspect for department training officers. Most certification levels require students to spend time on an ambulance or working in a hospital emergency department to observe and master certain skills and competencies. The department must document these skills and present this documentation to the certifying agency prior to the certification test. BLS clinical requirements are easily managed, but ALS clinical requirements can be very complex and time-consuming. Third-party services are available to help manage the record keeping for ALS clinical requirements and EMS training records in general.

To help fire department members meet the clinical requirements, the department will need to build relationships with hospitals and other EMS agencies. A memorandum of understanding (MOU) is common between hospitals and fire-based EMS departments outlining what is required of students and how hospital staff will document performance. The agreement may also outline which skills students will be allowed to perform in the clinical setting. For example, finding an opportunity for students to intubate patients can be challenging because of the demand for that skill among other health care providers. Nursing students, respiratory specialists, and medical students all need to practice intubation skills. EMS students may find themselves a low priority for the chance to perform these types of high-priority skills. The organization must take the time to develop relationships to make these arrangements and avoid conflicts.

Because of the complex nature of EMS training, fire departments may be required – or may want – to affiliate with an accredited college or university. Such affiliations are fairly common for ALS training programs, particularly for departments with limited resources.

Resources for student records management:

- FISDAP: www.fisdap.com
- EMFOTEC: www.emfotec.com
- Nortel: www.nortelgov.com
- ACS Firehouse: firehousesoftware.com

Departments offering only BLS services may be able to manage the training program in-house with a qualified instructor. The lab equipment generally can be found on a standard ambulance. Required clinical time in the hospital will be minimal but can be very beneficial for the BLS student.

Continuing Education

Once certification programs are in place, departments must address the need for continuing education (CE). Each certification level has specific requirements, and fire department administrators must determine how providers will meet them. The two general approaches to meeting these goals are to expect providers to complete training on their own, or to offer opportunities to meet all of the requirements in-house. The obvious benefit to in-house training is that the department is managing continuing education proactively, helping make sure everyone meets his or her goals. Either way, the department should appoint a training officer to oversee the department's CE requirements.

Most CE requirements consist of prescribed hours in designated topic areas. The training officer should consult with the certifying agency to determine the required categories and their respective hours.

Advances in technology have given instructors new tools to make CE easier to accomplish. Many certifying agencies offer opportunities to get the required training though distance education platforms. Not all topics will fit into the distance education category, but a good portion of the content can be delivered without having to physically be in the classroom.[31]

Professional Development

As in other areas of emergency service, EMS is experiencing a growing trend toward higher education. Many community colleges offer associate degrees for paramedics. For the benefit of the department and the EMS system as a whole, encourage department personnel to take advantage of higher education opportunities. Some departments provide incentives or reimbursement to members who are pursuing college degrees. Some also allow paid time off to attend college classes.

Advanced degrees impact how firefighters and medics are classified, and therefore how salaries are determined. Job positions typically fall into one of three categories: laborer, paraprofessional and professional.

Laborers typically have a high school diploma and perform manual labor as their primary job function. The better-paid workers in the laborer category have mastered a trade and make a reasonable living. Many administrators classify firefighter/medics as laborers because no industry standard or best practice exists that requires a college degree.[32]

Table 3

Typical Job Classification Categories		
Laborer	**Paraprofessional**	**Professional**
High school diploma	Associate degree	Bachelor's degree
Lower salary grade	Mid salary grade	Higher salary grade
Hourly wages	Hourly wages or salary	Salary
Limited benefits	Improved benefits	Better benefits
Skill/trade	Skill/technician	Management/ leadership

EMS workers are just starting to break into the paraprofessional category with the introduction of associate degrees for paramedics. One reason is that many EMS organizations have acknowledged the need for higher education. The National Association of EMS Educators (NAEMSE) has made this issue one of its primary objectives through a series of position papers on EMS education.[33] To improve the educational and professional status of EMS providers, fire departments should partner with local colleges and universities to build the relationships necessary to enhance the professionalism of EMS.

Finally, departments should support the need for higher education by requiring advanced degrees for promotional opportunities. This process is likely to be long term as it requires multiple steps. To start the process, a department may consider giving extra points in promotional processes to candidates with advanced degrees and then, in a number of years, mandate a degree to be eligible for promotion. Each department must find the best strategy for its needs and implement a realistic timeline.

Chapter 7: Quality Management

Quality management (QM) is a system of establishing performance objectives, evaluating how well those objectives are being met and making changes based on the evaluations. The ultimate goal of QM in the realm of emergency medical services is to improve pre-hospital care for the citizens in the community. It is a continual process of change.

For volunteer fire departments offering EMS, quality management is important for several reasons. First and most important, most states and/or localities require it by law and it is monitored by the jurisdiction's EMS regulatory agency. This is because a comprehensive QM program will improve patient outcomes.

QM is a gap analysis that will help a fire department:
■ Identify compliance or non-compliance with federal, state and local regulations; industry standards and guidelines; and local protocols and standing orders
■ Learn how the department is currently performing and whether the system and/or the providers need improvement
■ Develop standard operating procedures (SOPs)
■ Show citizens the department is attempting to meet their needs and expectations, potentially reducing complaints and costly litigation
■ Gather data to justify the department's involvement in EMS, which can be used as evidence for more resources at budget time or during donation drives

QM is a means of improving performance for the department and for the EMS system as a whole. For the provider, it is closely tied to education and training, but not normally used for disciplinary action.

QM is designed to evaluate the department's systems of:[34]
■ Communication
■ Addressing complaints
■ Documentation
■ Reduction and prevention of illness and injury
■ Patient confidentiality
■ Performance objectives
■ Physician participation
■ Public health outcome parameters
■ Participation in studies and research
■ Total quality management

The intent is to use the lessons of past performance to improve future performance. To achieve that goal may require additional training or practice. In QM, disciplinary action should only be used as a last resort to improve performance.

A QM program uses quality assessment, quality assurance and quality improvement.

Quality Assessment
Quality assessment compares the performance of an EMS system's structures, processes and outcomes against an existing standard.[35] Structures are people, places or things. Processes are activities occurring in a system. Outcomes are the results of the structure and activities within a system.

All three are "quality indicators" that are dependent upon one another. Changes in structure may affect the process and the outcome. Likewise, changes in the process may affect the structure and outcome.

A simple equation to measure quality assessment is "structure + process = outcome." For example, more defibrillators per patient (structure) + shorter time to defibrillate (process) = increased cardiac arrest resuscitation rate (outcome).[36]

What is Quality Management?

Quality management (QM) evaluates system and individual performance, identifies areas for improvement, prioritizes development, establishes system controls, monitors performance indicators, and re-evaluates system impact. (National Fire Protection Association Standard 450, 2004 edition, Chap. 8, 8.1).

The National Fire Protection Association (NFPA) has established the following standards and guidelines for QM of EMS in the volunteer fire service:

- NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments

- NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments

- NFPA 450: Guide for Emergency Medical Services and Systems. Additional informational references can be found in Annex C of NFPA 450, Annex D of NFPA 1720 and Annex B of NFPA 1710.

Other valuable references include:

- A 1997 NHTSA report titled "A Leadership Guide to EMS," available at www.ems.gov

- A 1997 USFA report titled "Implementation of EMS in the Fire Service," available at www.usfa.dhs.gov.

Quality Assurance

Quality assurance is about establishing confidence that the products or services a department offers maintain the standards of excellence set for those products or services.[37]

Quality assurance can be divided into retrospective, concurrent and prospective. Retrospective quality assurance is used to analyze a call after it has taken place. It helps departments identify proper versus improper patient care as well as compliance with protocols and SOPs. An example would be to review patient care reports (PCRs) to see if the care providers took the required two sets of vital signs. Such analysis is also helpful in identifying patterns in individual members and groups of providers.

Concurrent quality assurance involves observing behavior as it occurs. It involves responding to calls to assess providers' skills and behavior. It also allows the observer to see if equipment and processes work as they should in the field.

Prospective quality assurance attempts to analyze performance expectations and see if the EMS system meets those expectations consistently.[38] Areas to be addressed include but are not limited to: standards for initial training, testing, credentialing, or developing standards for credentialing; continuing education; protocol development; operational policy; and procedure development. The key elements of the system that need to be examined include education, operational policy, medical protocols, standards development, categorization, and disaster management.

Part of quality assurance is determining whether an EMS system meets federal, state, and local government regulations. Adhering to regulations is imperative from a legal standpoint but is also necessary to meet many grant requirements.

Resources
Many resources are available to help with QM. The NFPA provides guidance in this area through its many industry standards. NFPA 1720 deals directly with volunteer fire department EMS operations.[39] NFPA 450 provides guidelines and recommendations for fire-based EMS programs.

Another resource in quality management is to adopt the best practices of other volunteer fire departments, with necessary refinements to adapt to a specific department's unique situation. If you are facing a problem, you are not alone; other departments have addressed it, too. The International Association of Fire Chiefs (IAFC), specifically the Volunteer and Combinations Officers Section (VCOS) and the EMS Section, can be a great resource for best practices. Both of these groups have annual conferences with best practice presentations related to EMS delivery.

Benchmarking
Benchmarking is a process of searching out and studying the best practices that produce superior performance. Benchmarks may be established within the same organization (internal benchmarking), outside of the organization with another organization that produces the same service or product (external benchmarking), or with reference to a similar function or process in another industry (functional benchmarking).[40] Benchmarking with other departments and industry standards can enhance a department's QM program. The NFPA and federal, state and local regulations set the minimum standards, but by benchmarking the department sets higher standards. For example, if the minimum standard for response to an ALS call is two ALS and two BLS providers arriving within eight minutes 90 percent of the time, a benchmark would be to have the providers arrive within four minutes 90 percent of the time.

Community Standards
Also evaluate whether the department is meeting the community's standards and expectations; if it's not, determine what needs to be done to meet them. Surveys, focus groups, and patient evaluations may help the department identify what the community's standards and expectations are.[41] Also, survey the department's personnel to gauge their expectations as well as their satisfaction with the department's ability to meet them. With all of this information, make the appropriate improvements to the department.

Individual Performance
After evaluating the system, the next step is to evaluate individual performance within the system. An example of system performance would be how many times an ambulance has a critical failure responding to emergency calls. An example of individual performance is how many times a provider missed an attempt to insert an IV line or intubation tube.

Department leaders should try to determine the cause of personnel performance deficiencies so they can be corrected through more training or practice. The performance review process should be detailed in an SOP with the medical director.

Sometimes individual deficiencies are the result of problems with the system, which department leaders should also work to correct.

The QA Team
While the ultimate responsibility lies with the fire chief and medical director, QA should be a team effort. The responsibility for the formal QA process can be rotated among department members on a periodic basis. A team approach also provides more input into the QM process and "buy-in" from all department members.

The QA team should include the medical director, an individual appointed to manage a service's QA function, EMS shift supervisors, patient care advocates, hospital emergency department personnel, and other interested parties (as community needs dictate).

Again, however, QA is the responsibility of all who provide emergency medical treatment. In other words, while the formal structures for analysis of patient care is vested in a team (or an individual, if absolutely necessary), all patient care providers must bring to the attention of the QA team any actions of providers or failing of the EMS system that warrant improvement.[42] The department should foster an environment where all team members feel comfortable bringing forward issues where improvement is necessary. This is accomplished by focusing on correcting system problems, providing additional education or training or providing appropriate tools.

To encourage department members to participate in this process, QA should not be used for disciplinary purposes. Similarly, retaliation against providers who express concerns for services by other providers is an unacceptable practice.

Quality Improvement

After assessing your department, focus on improvements. Quality improvement (QI) is about continuously examining and improving your department's products and services.[43] In QI, management measures quality (according to customer standards), improves systems of care and uses data (facts) to make decisions. The role of management is to create an environment and develop the infrastructure to help frontline personnel do their jobs effectively.

QI philosophy identifies anyone who uses specific goods or services as a customer. The emphasis on facts as the basis for decision-making requires semi-scientific study and hard data on specific items that need to be improved.[44] The previously mentioned NHTSA document, "A Leadership Guide to Quality Improvement for Emergency Medical Services Systems," thoroughly covers QI for EMS.

Footnotes

[1] Firehouse.com – 2004 National Run Survey

[2] The federal agency responsible for EMS guidance is the National Highway Traffic Safety Administration (NHTSA), an arm of the U.S. Department of Transportation. EMS is housed at NHTSA because the initial federal legislation regulating EMS systems – the Highway Safety Act of 1966 – required each state to have a highway safety program in accordance with federal standards. EMS was to be a part of that highway safety program. More information is available on the NHTSA website at www.nhtsa.dot.gov.

[3] NHTSA First Responder, 1995

[4] Pomona, 2007

[5] NHTSA EMT-B, 1994

[6] Eureka Fire Protection District 1996 – 2007 Response Report; Eureka FPD, Eureka, Mo.

[7] NHTSA EMT-I, 1998

[8] NHTSA EMT-P, 1998

[9] www.iafc.org/emsSection

[10] Information from the AAA is available at www.the-aaa.org.

[11] Katz, Pepe, and Pratt, 2007

[12] American College of Cardiology et al, 2004

[13] Dr. R. Adams Cowley, M. D., founder of the University of Maryland Shock Trauma Center, coined the term "Golden Hour."

[14] The DEA requires each facility storing narcotics to be licensed. For additional information, please visit www.usdoj.gov/dea.

[15] Many jurisdictions do not implement this feature of EMD because of the time needed to determine the level of response or because of liability concerns. In reality, EMD triaging has been proven to be successful and there may be more liability associated with not providing it since it has become an accepted standard in the EMS arena. EMD triaging is critical to preventing abuse and overcrowding of local emergency medical systems; reducing the number of emergency response incidents, which helps conserve available resources for the fire department, ambulance provider, and emergency rooms; and helping to reduce the number of EMS provider accidents by not responding "lights-and-siren" to every EMS call.

[16] State of Minnesota Emergency Medical Services Regulatory Board – EMS Radio Communications Plan: A Radio Planning Guide for Minnesota EMS & Hospitals – 2007

[17] New spectrum will be available for public safety agencies in 2009. See Appendix C for more information.

[18] The low band frequency is increasingly becoming obsolete for the fire service because it is long-range and therefore has a higher chance of interference and "skip."

[19] This is generally used as trunking but can be either simplex or duplex.

[20] One example is the Texas Interoperable Channel Plan Memorandum of Understanding available at tsiec.region49.org/TSIEC+MOU.pdf.

[21] The Fair Labor Standards Act governs the remuneration of volunteer personnel. Before offering any monetary benefit to volunteer members, please consult with legal counsel to make sure you are within the legal limits.

[22] Volunteer fire departments providing EMS will have to decide how to bill – or even whether to bill – uninsured patients for emergency medical care and transportation. This is a complex legal and moral issue that deserves careful consideration, after consulting with legal counsel.

[23] Additional information on funding EMS delivery programs is available in the United States Fire Administration's publication "A Guide to Funding Alternatives for Fire and Emergency Medical Service Departments (FA 141/1993)

[24] Before seeking tax-deductible donations, consult with legal counsel to make sure the department is legally qualified to receive them.

[25] The document is available at: www.nasemsd.org/documents/FINALEMSSept2006_PMS314.pdf. Please review Appendix A of this report for more information.

[26] Chief Paul Conley, Freeport (Maine) Fire and Rescue Department. Remember to consult the Fair Labor Standards Act for guidelines regarding remuneration of volunteer personnel.

[27] Departments offering only basic life support services may not find the same competitive recruiting environment, but must still manage the candidate pool appropriately.

[28] When you approach candidates at these locations, be sure to follow any rules the school, organization, or business has regarding solicitation.

[29] The White Ribbon Report is available on the VCOS website at www.vcos.org.

[30] For information specific to your region, consult your state and local EMS agencies.

[31] For an example of distance education, please visit www.targetsafety.com.

[32] Some fire service leaders believe the emergency services should be considered a profession because of the inherent complexity and risk. However, the decision-makers who classify the positions have little experience or understanding of the work. Fire service leaders must be prepared to translate what we do into "administration language" to win the debates on classification in the boardroom. If we truly want to be considered a profession, we must meet the same benchmarks as other recognized professions.

[33] For more information, visit the NAEMSE website at www.naemse.org as well as the NHTSA document "EMS Education Agenda for the Future" located at www.ems.gov.

[34] NFPA 450, Index, 2004 Edition, p. 31

[35] NFPA 450, 2004 Edition, 3.3.50

[36] Fairfax County, Va., Quality Management Program

[37] NFPA 450, 2004 Edition, 3.3.51

[38] USFA, Implementation of EMS in the Fire Service, 1/1997, p. 82.

[39] NFPA 1710 applies to paid career departments and includes specific response criteria for fire-based EMS delivery.

[40] U.S. Agency for International Development - Quality Assurance Project (QAP) (www.qaproject.org)

[41] Consider linking a public education program with your survey to educate your community about the services your department provides.

[42] USFA, Implementation of EMS in The Fire Service, 1/1997, p. 80-81

[43] NFPA 450, 2004 Edition, 3.3.52

[44] Principles of EMS Systems, 3rd Edition, 2006, American College of Emergency Physicians

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Appendix A
New EMS Education Standards in 2010

Work is underway by the National Highway Traffic Safety Administration (NHTSA) EMS Division to develop a new set of education standards for emergency medical services (EMS) called the National EMS Education Standards. These new standards will be the basis for First Responder, Emergency Medical Technician (EMT), and Paramedic textbooks by various publishers, as well as for educational course development. The new standards are in their third draft and the expected implementation date is sometime in 2010.

The basis for formulating the standards comes from three different documents available through NHTSA's EMS Division. The first, called the "EMS Education Agenda for the Future: A Systems Approach," had its roots in the 1996 document "EMS Agenda for the Future." The EMS Agenda called for a proposed new and improved national EMS educational system that would increase efficiency and produce greater entry-level graduate competencies.

The second document used to draft the new National EMS Education Standards is the National EMS Core Content, also produced by NHTSA's EMS Division. The document lists all that must be learned in EMS education, including conditions, chief complaints, operational issues, and psychomotor skills.

The third NHTSA EMS Division document is the National EMS Scope of Practice Model, written in 2005. This document identifies the four EMS personnel licensure levels and what each level is capable of doing, or their "scope of practice."

Many individuals and organizations have helped develop the new National EMS Education Standards. The individuals are mostly EMS educators who come from a broad background of EMS including urban, rural, and volunteer EMS systems. A large group of EMS stakeholders also provided input. During the open comment period, representatives of the IAFC's Emergency Medical Services and Volunteer and Combination Officers Sections met to review the draft standards, discuss their impact on the fire service, and formulate a written response. (Please see Appendix B for a copy of the comment letter.)

When the new standards are released, the EMS community is likely to see the following changes:

1. Standardized licensure levels: One of the major changes will be a change to four different titles and licensure levels. This comes from the National EMS Scope of Practice Model. Most states use EMT-B designations, but some use other designations that are not discussed in this report. Some states only use the designations of EMT-B and Paramedic. The four new licensure levels will be: Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), and Paramedic. The recommended hours of education for the EMR would increase to 48; to 198 hours for EMT; to 166 hours for AEMT; and to approximately 1,300 hours for Paramedic.

2. Competency-based standards: The new standards will require competency-based rather than hours-based education. Under the current standards, a trainee may attend 1,300 hours for a paramedic license yet still not be competent at intubation. Instead of emphasizing the number of hours a student sits in a classroom, the new standard will require the student to prove competency in certain skills.

3. Ambulance driving: The new recommended draft standard no longer involves ambulance driving, staging, and scene positioning. The project team that drew up the draft standards felt these operational issues were best left to the employer, who would teach these skills during orientation or on-the-job training.

Shortly after NHTSA's EMS Division implements the new EMS education standards, publishers will begin printing textbooks to reflect these changes.

Appendix B
Letter to the National Association of EMS Educators
Regarding Proposed Changes to the Scope of Practice

Dear Project Director Cason:
On behalf of the nearly 13,000 chief fire and emergency officers of the International Association of Fire Chiefs (IAFC) and its IAFC Emergency Medical Services (EMS) Section, I would like to commend your project team's efforts on draft 1.0 of the National EMS Education Standards. In response to your request, this letter contains the comments of the IAFC EMS Section to the draft standards.

In July 2007, the IAFC EMS Section convened a workgroup in Memphis, Tennessee to examine Draft 1.0 of the proposed National EMS Education Standards. The workgroup was comprised of nine fire and training officers from a variety of fire department types, including metropolitan, suburban, career and combination departments. The workgroup reviewed the draft education standards as they may impact the fire service with a focus on the financial impact of the proposed increase in hours as well as the impact on the future labor pool pertaining to recruiting and training. Generally, the IAFC EMS Section supports the concept of a national standard that will improve the portability of licensure (reciprocity) among the states and increases professionalism in EMS through higher education.

The workgroup also express several areas of caution. In response to the increased hours in the EMT curriculum, it agrees that strong EMT level providers are the backbone of the EMS system and strengthen the higher level (AEMT and Paramedic) providers, but raised two concerns. First, it stressed that increased time in the education/training process should correlate to an improved student "product," creating a better provider in the field. Second, it questioned whether the increase in knowledge gained through the draft education standards will have a real effect on the actual field practice of the EMT. In other words, does the current education curriculum leave the EMT unprepared to function in the field and if so, what evidence suggests this? Given that further clarification from the National EMS Education Standards project team authors could answer these concerns, the IAFC EMS Section is cautiously supportive of the draft education standards, realizing that EMS improvements at this level will be realized over a period of time as students are exposed to the new curriculum.

The IAFC EMS Section is encouraged by the draft education standards' view toward the future in crafting an education curriculum that will be flexible in presentation methods, as well as adaptable to improvements gained from evidence-based findings or technology improvements.

Specific areas of IAFC EMS Section support and concern are listed below in bullet form along with specific curriculum recommendations.

The IAFC EMS Section expresses support for the following points in the draft education standards:

• Competency-based education and alternatives to traditional classroom education to achieve the mastery of knowledge and skills. The concept of flexibility in instructional media and methods to meet the course objectives/competencies instead of a strict hour-based requirement is highly desirable.
• A national education standard which would be foundational for national reciprocity.
• The concept of increased professionalism through higher education.
• Student evaluations at all levels testing their knowledge, skills and professional behavior
• A modular curriculum design that would allow for the completion of (and demonstrated competence in) various course elements either as course pre-requisites or as course components given that these elements have been completed to a national standard, e.g. – an AHA or ARC CPR course, FEMA NIMS course, etc. These elements include, but are not limited to CPR, Hazardous Materials Awareness, NIMS, and a Basic Emergency Vehicle Operations Course.

The IAFC EMS Section expresses concern regarding the following points in the draft education standards:
• The IAFC EMS Section would like to see substantiation on why there is an increase in training hours and how the new hour level was determined.
• While the IAFC EMS Section supports higher education and the aim of increased professionalism in EMS, it is concerned that the general move toward college-based courses, the increase in hours and resulting financial impact will adversely affect departments' ability (especially volunteer departments) to meet the goals of the standards.
• Will the increase in education standards further impact the pool of people who can complete the requirements? Will potential student populations with impaired socioeconomic status be adversely affected such that

they will be essentially prevented from entering the EMS field?
The IAFC EMS Section feels the following general and specific category recommendations will enhance the draft education standards:
General Recommendations
• A nationally recognized emergency vehicle operations course (including traffic management and roadway safety) would be included in the EMT course hours.
• Substantiation: The risks to personnel while responding (driving) or operating in the roadway are well documented. This recommendation is based on the need to formally address this safety risk at the earliest possible stage in a person's career. While this represents an increase in the course time this training is generally delivered to personnel after they are deployed to field assignments, so it does not represent an increase in the overall hours required to properly prepare an individual. Additionally, this approach provides a method to address a known national risk in a standardized manner.
• EMS personnel must achieve EMT state licaensure certification before advancing to paramedic training.
• Substantiation: This recommendation is based on the view that strong EMT level skills and knowledge are foundational to all subsequent levels of training.
• With respect to CoAEMSP certification for paramedics under "Educational Infrastructure," the education standards should also include certification via fire service academies accredited at the state level.
o Substantiation: Many states have "Technical/Vocational" schools that are not colleges/universities but provide a great deal of the EMS education. Many fire academies have excellent education and highly qualified training staff but would not qualify if the requirement was held to a college or university setting.
Specific Category Recommendations
• "Documentation" – the education standards need to provide for increased competency on incident documentation writing skills at all levels due to the risk (liability) in this area.
• "Medical/Legal" – the standards need to provide for increased competency on the area of patient refusals specifically due to the increased risk (liability) in this area.
• "Scene Size-Up" – EMT's and AEMT's should equally possess a "complex knowledge" of scene size-up (risk assessment) and scene management since all levels face the same level of risk upon initial arrival on the scene.
• "Infectious disease" – the EMR should have simple knowledge of infectious disease since they may have contaminated vehicles and equipment as well.
• "Toxicology" – the Paramedic should have a fundamental knowledge of cyanide exposures. The group recognizes the increasing body of knowledge related to exposure to the by-products of combustion and the need for paramedics to understand their role in cyanide exposure treatment as well as their long understood role in the treatment of carbon monoxide exposures from this same source.

Thank you for taking the time to attend this meeting and present the history and inter-relationship of the proposed Standards with the parent documents – EMS Agenda for the Future, EMS Education Agenda for the Future and the National Scope of Practice – and your outline of the Standards themselves and the associated Instructional Guidelines. Additionally, Chief David Becker, EMS Section Vice-Chair, who represented the IAFC at the initial stakeholders meeting and participated as a content writer, outlined his general view of the Standards as well as his rationale behind the EMS Operations Section of the document which he authored. These two presentations agreed that the major focuses of the draft education standards are: to outline a national education standard that will improve national EMS practice; to be the foundation of national reciprocity; and to provide the framework to continue to professionalize EMS nationwide through higher education.

We thank you for taking the time to review our suggestions and recommendation on draft 1.0 of the National EMS Education Standards. If you have any questions regarding them, please feel free to contact me at (901) 320-5464.

Sincerely,

Chief Gary Ludwig
Chairman, IAFC EMS Section

Appendix C
Increased Communication Capacity for Public Safety Nationwide

Operability and interoperability would not be possible without the necessary bandwidth. In 1997, Congress responded to calls to increase the amount of bandwidth available to public safety agencies by directing the Federal Communications Commission (FCC) to allocate 24 mHz in the upper 700 mHz band for use by public safety. After much delay, this spectrum will finally become available for public safety use in February 2009. It will provide 12 mHz of voice channels and 12 mHz of wideband data channels for individual licensees. Fire and police departments are now in the planning process of building communications systems utilizing this new spectrum.

In addition to allocating 24 mHz of the available spectrum for public safety use, Congress set aside $5 billion from the auction to create a nationwide roaming and interoperability network for public safety agencies at the federal (e.g., U.S. Coast Guard), state (e.g., highway patrol), and local (e.g., police, fire/EMS) levels. This development will give public safety agencies access to satellite services and provide broadband coverage to rural areas for the first time. The network, governed by the public safety community, will allow for next-generation technology; permit public safety ruggedness specifications to ensure reliability under severely adverse conditions; and ensure priority access for public safety agencies.

On Nov. 19, 2007, the FCC selected the Public Safety Spectrum Trust Corporation (PSST) to be the public safety broadband licensee. PSST will hold a license for 10 mHz of public safety spectrum in the upper 700 mHz band designated for nationwide wireless broadband use. This 10 mHz was to be combined with an adjacent 10 mHz of spectrum to be licensed to the commercial winner of a public auction.

On Jan. 24, 2008, the FCC opened that auction but no bidders came forward. The PSST Corporation will be working with the bidder community, Congress and the FCC to get the right rules in place to encourage a commercial entity to partner with public safety.

For additional information, visit the PSST Corporation's website at www.psst.org.

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The IAFC Emergency Medical Services Section:

- Is a forum that addresses fire service EMS issues
- Provides guidance and direction to the IAFC Board and membership on fire service EMS issues
- Represents fire-based EMS issues to the federal government and other interest groups

The VCOS Section Vision
The vision of the Volunteer and Combination Officers Section is to represent the interests of all volunteer and combination fire/rescue/EMS agencies. We will be a dynamic organization, characterized by our integrity, customer focus and membership development, with value placed on people and the superior utilization of technology. We will excel by creating educational programs, through unrivaled networking and by helping VCOS members further their success and reach their potential.

The VCOS Section Mission Statement
The mission of the IAFC Volunteer and Combination Officers Section is to provide chief officers who manage volunteers within the fire/rescue/EMS delivery system with information, education, services, and representation to enhance their professionalism and capabilities.

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National Fallen Fire Fighter Foundation

www.firehero.org

Firefighter Life Safety Initiatives

The Firefighter Life Safety Summit held in Tampa, Florida, in March 2004, produced 16 major initiatives that will give the fire service a blueprint for making changes.

1. Define and advocate the need for a cultural change within the fire service relating to safety, incorporating leadership, management, supervision, accountability and personal responsibility.

2. Enhance the personal and organizational accountability for health and safety throughout the fire service.

3. Focus greater attention on the integration of risk management with incident management at all levels, including strategic, tactical, and planning responsibilities.

4. Empower all firefighters to stop unsafe practices.

5. Develop and implement national standards for training, qualifications, and certification (including regular recertification) that are equally applicable to all firefighters, based on the duties they are expected to perform.

6. Develop and implement national medical and physical fitness standards that are equally applicable to all firefighters, based on the duties they are expected to perform.

7. Create a national research agenda and data collection system that relate to the initiatives.

8. Utilize available technology wherever it can produce higher levels of health and safety.

9. Thoroughly investigate all firefighter fatalities, injuries, and near misses.

10. Ensure grant programs support the implementation of safe practices and/or mandate safe practices as an eligibility requirement.

11. Develop and champion national standards for emergency response policies and procedures.

12. Develop and champion national protocols for response to violent incidents.

13. Provide firefighters and their families access to counseling and psychological support.

14. Provide public education more resources and champion it as a critical fire and life safety program.

15. Strengthen advocacy for the enforcement of codes and the installation of home fire sprinklers.

16. Make safety a primary consideration in the design of apparatus and equipment.

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