

EMS Systems



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National EMS Education Standard Competencies

Preparatory

Applies fundamental knowledge of the emergency medical services (EMS) system, safety/well-being of the emergency medical technician (EMT), medical/legal, and ethical issues to the provision of emergency care.

Emergency Medical Services (EMS) Systems

- › EMS systems (pp 15–26)
- › History of EMS (pp 9–10)
- › Roles/responsibilities/professionalism of EMS personnel (pp 26–27)
- › Quality improvement (pp 20–21)
- › Patient safety (pp 7, 26)

Research

- › Impact of research on emergency medical responder (EMR) care (pp 24–26)
- › Data collection (p 25)
- › Evidence-based decision making (pp 25–26)

Public Health

Uses simple knowledge of the principles of illness and injury prevention in emergency care.

Knowledge Objectives

1. Define emergency medical services (EMS) systems. (p 5)
2. Name the four levels of EMT training and licensure. (pp 6–8)
3. Describe EMT licensure criteria; include how the Americans with Disabilities Act (ADA) applies to employment as an EMT. (p 8)
4. Discuss the historical background of the development of the EMS system. (pp 9–10)
5. Describe the levels of EMT training in terms of skill sets needed for each of the following: EMR, EMT, AEMT, and paramedic. (pp 10–14)

6. Recognize the possible presence of other first responders at a scene with EMR training, some knowledge of first aid, or merely good intentions, and their need for direction. (pp 13–14)
7. Name the 14 components of the EMS system. (pp 15–26)
8. Describe how medical direction in an EMS system works, and the EMT's role in the process. (p 18)
9. Define mobile integrated healthcare and community paramedicine. (p 19)
10. Discuss the purpose of the EMS continuous quality improvement (CQI) process. (pp 20–21)
11. Characterize the EMS system's role in disease and injury prevention and public education in the community. (pp 23–24)
12. Describe the roles and responsibilities of the EMT. (p 26)
13. Describe the attributes an EMT is expected to possess. (p 27)
14. Explain the impact of the Health Insurance Portability and Accountability Act (HIPAA) on patient privacy. (p 27)

Skills Objectives

There are no skills objectives for this chapter.

Introduction

This textbook serves as the primary resource for the emergency medical technician (EMT) course. It discusses what will be expected of you during the course and what requirements you must meet to be licensed or certified as an EMT in most states. You will learn about the differences between first aid training, a Department of Transportation (DOT) emergency medical responder (EMR) training course, and the training courses for an EMT, advanced emergency medical technician (AEMT), and paramedic.

Emergency medical services (EMS) is a *system*. This system's key components and how they influence and affect the EMT and his or her delivery of emergency care are carefully discussed in this chapter. The administration, medical direction, quality control, and regulation of EMS are also presented. The chapter concludes with a detailed discussion of the roles and responsibilities of the EMT as a health care professional.

Course Description

You are about to enter an exciting field. The **emergency medical services (EMS)** system consists of a team of health care professionals who, in each area or jurisdiction, are responsible for and provide emergency care and transportation to the sick and injured **Figure 1-1**. Each emergency medical service is part of a local or regional EMS system that provides the many prehospital and hospital components required for the delivery of proper emergency medical care. The standards for prehospital emergency care and the people who provide it are governed by the laws of each state they serve and are typically regulated by a state office of EMS.



Figure 1-1

As an EMT, you are part of a larger team that responds to a variety of calls and provides a wide range of prehospital emergency care.

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After you successfully complete this course, you should be eligible to take either the National Registry of EMTs exam or your state's certification exam. A **certification** exam is used to ensure all health care providers have at least the same basic level of knowledge and skill. After you pass this exam, you will be eligible to apply for state licensure. **Licensure** is the process by which states ensure applicant competency in an examination setting. This allows states to manage who can function as a health care provider. It is the same principle as taking a driving test to obtain a driver's license to certify you know how to operate a motor vehicle. Different states will refer to the authority granted to you to function as an EMT as licensure, certification, or credentialing. For the purposes of this textbook, the term *licensure* will be used.

YOU are the Provider

PART 1

You are working your first shift as an EMT. You are on duty with an experienced EMT and her paramedic partner. The crew is familiarizing you with the ambulance when the tone alert sounds, "EMS 4, respond to 325 Blossom Avenue for a woman with back pain." You and your crew proceed to the scene, which is located 4 miles from your station.

1. Do your roles and responsibilities as an EMT differ from those of a paramedic? If so, how?
2. What is the difference between what you learned in your EMT class and the care you provide in the field?

In most states, people who work on an ambulance are categorized into four training and licensure levels: **emergency medical responder (EMR)**, **emergency medical technician (EMT)**, **advanced EMT (AEMT)**, and **paramedic**. An EMR has very basic training and provides care before the ambulance arrives. EMRs may also perform in an assistant role within the ambulance. An EMT has training in basic life support (BLS), including automated external defibrillation, use of airway adjuncts, and assisting patients with certain medications. An AEMT has training in specific aspects of **advanced life support (ALS)**, such as **intravenous (IV) therapy** and the administration of certain emergency medications. A paramedic has extensive training in ALS, including endotracheal intubation, emergency pharmacology, cardiac monitoring, and other

advanced assessment and treatment skills.

Although the specific training and licensure requirements vary from state to state, almost every state's requirements follow or exceed the guidelines recommended in the current National Highway Traffic Safety Administration (NHTSA) EMS Education Standards.

This textbook covers the practice and skills identified in the 2009 *National EMS Education Standards*. It also covers the information needed for EMTs to perform the skills outlined in the 2005 National EMS Scope of Practice Model. In the United States, NHTSA is the federal administrative source for education standards and related documents.

Like any introductory course, the EMT course covers a great deal of information and introduces many skills **Figure 1-2**. EMT courses include didactic instruction (knowledge), psychomotor instruction (skills laboratories), and clinical behavior/judgment (professionalism). Everything you learn in the course will be important to your ability to provide high-quality emergency care once you are licensed and ready to practice. In addition, the knowledge, understanding, and skills that you acquire in the EMT course will serve as a foundation for the additional knowledge and training you will receive in future years.

In addition to the required core content, this text includes additional information to help you understand and apply the knowledge and skills included in the EMT course. Your instructor will furnish you with reading assignments. It is essential that you complete the assigned reading before each class. Each class builds upon the previous; ensuring you complete the readings and assignments will help you understand subsequent lessons. This approach is pivotal to your success in this course.



Figure 1-2

In the classroom, you will learn both didactic and practical skills to prepare you for various types of calls.

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In class, your instructor will review the key parts of the reading assignment and clarify and expand on them. He or she will answer any questions you have and clarify any points you or others find confusing. Unless you carefully read the assignment and made notes before coming to class, you will not fully understand or benefit from the classroom presentations and discussions. Creating your own tools such as flashcards, study questions, and outlines will help you retain important information. It will also help you take better notes during class **Table 1-1**.

The EMT course includes four types of learning activities:

1. Reading assignments from the textbook, lecture presentations, and classroom discussions provide you with the necessary knowledge base.
2. Step-by-step demonstrations teach you the hands-on skills you then need to practice repeatedly in supervised small group workshops.
3. Summary skills sheets help you memorize the sequence of steps in complex skills that contain a large number of steps or variations so you can perform the skill with no errors or omissions.
4. Case presentations and scenarios used in class help you learn how to apply the knowledge and skills acquired to situations you will find in the field.

Table 1-1

Study Tips for Using This Textbook

- Complete each assignment diligently and carefully.
- Reading a textbook is different from reading a newspaper, website, blog, or novel. Make sure you understand what you have read, and study difficult concepts.
- Read each chapter several times and underline key points. Take notes!
- Note the chapter's objectives so you can measure your knowledge effectively.
- Ask your instructor to clarify any questions you note in your reading or in class.
- Take additional notes when the assigned material is expanded upon in class.

Use supporting materials suggested by your instructor, such as digital assessments, animations, videos, and student workbooks.

- Remember: The only absurd question is the one that you fail to ask.

EMT Training: Focus and Requirements

What is an EMT? EMTs are the backbone of the EMS system in the United States. You provide emergency care to the sick and injured. Some of the patients you will treat are in life-threatening situations, whereas others require only supportive care.

The skills you need to safely deliver this care are found within this textbook. Some of the subjects discussed include:

- **Scene size-up:** Scene size-up involves both awareness of scene safety *and* a big-picture awareness of the overall situation at hand. EMS operates in a wide variety of environments that can create situations where EMS personnel can be injured—outside on a highway, inside a cluttered house, or anywhere in between. Your primary job is to ensure it is as safe as possible. During scene size-up you must gain a big-picture perspective of the call, determine whether it is safe to proceed, determine whether additional resources are needed, and identify the initial approach to mitigate the emergency.
- **Patient assessment:** Patient assessment is the foundation of any EMS call. You must determine what is wrong with the patient. Patients can have many complaints and you will learn to determine which complaints are life threatening.

Words of Wisdom

The Star of Life

The National Highway Transportation Safety Administration (NHTSA) recognized the need for a symbol that would represent EMS as a critical public service and created the *Star of Life*. NHTSA holds priority rights to the use of this registered certification mark.



Adapted from the personal Medical Identification Symbol of the American Medical Association, each bar on the Star of Life represents an EMS function. The functions include:

1. Detection
2. Reporting
3. Response
4. On-scene care
5. Care in transit
6. Transfer to definitive care

The serpent and staff in the symbol portray the staff of Asclepius, an ancient Greek physician deified as the god of medicine. Overall, the staff represents medicine and healing, with the skin-shedding serpent being indicative of renewal.

The Star of Life has become synonymous with emergency medical care around the globe. This symbol can be seen as a means of identification on ambulances, emergency medical equipment, patches or apparel worn by EMS providers, and materials such as books, pamphlets, manuals, reports, and publications that either have a direct application to EMS or were generated by an EMS organization. It also appears on road maps and highway signs indicating the location of or access to qualified emergency medical care.

Source: Adapted from US National Highway Traffic Safety Administration. www.ems.gov.

- **Treatment:** As an EMT, you will provide oxygenation and medication therapies. You will control bleeding and assist patients during childbirth. In addition to hands-on skills, you will learn how to manage patients who are in emotional crisis, and to calm patients and to relieve some of their anxiety.
- **Packaging:** Most patients need to be transported to a facility. This could mean a hospital, clinic, or other medical care facility. You will learn how to transport patients with a wide variety of illnesses and injuries.
- **EMS as a career:** Many of you are taking this course because you want to help people. To ensure all EMS providers have a long, healthy career, it is important for you to learn how to take care of yourself. We will discuss job stressors and successful ways to cope with them.

Licensure Requirements

To be recognized and function as an EMT, you must meet certain requirements. The specific requirements differ from state to state. Ask your instructor, learning institute, or your state EMS official about the requirements in your state. Generally, the criteria to be licensed and employed as an EMT will include the following:

- High school diploma or equivalent
- Proof of immunization against certain communicable diseases
- Successful completion of a background check and drug screening
- Valid driver's license
- Successful completion of a recognized health care provider basic life support (BLS)/ cardiopulmonary resuscitation (CPR) course
- Successful completion of a state-approved EMT course
- Successful completion of a state-recognized written certification examination
- Successful completion of a state-recognized practical certification examination
- Demonstrate the mental and physical ability necessary to safely and properly perform all the tasks and functions described in the defined role of an EMT
- Compliance with other state, local, and employer provisions

The **Americans With Disabilities Act (ADA)** of 1990 protects people who have a disability from being denied access to programs and services that are provided by state or local governments and prohibits employers from failing to provide full and equal employment to the disabled. In addition, Title I of the ADA protects EMTs with disabilities seeking gainful employment under many circumstances. Employers with a certain number of employees are required to adjust processes so that a candidate with a disability can be considered for the position, and when possible, modify the work environment or how the job is normally performed. This allows EMTs who can perform the functional job skills the opportunity to pursue a career in EMS.

YOU are the Provider

PART 2

You arrive at the scene, ensure it is safe to enter, and make contact with the patient, a 59-year-old woman. She is sitting on her couch, is in obvious pain, and states it has been ongoing for the past month. You assess the patient as your partner prepares to take her vital signs.

Recording Time: 0 Minutes

Appearance	Grimacing; obvious pain
Level of consciousness	Conscious and alert
Airway	Open; clear of secretions or foreign bodies
Breathing	Adequate rate and depth
Circulation	Radial pulse, normal rate and rhythm; skin is pink, warm, and dry

3. How do you know if this patient is experiencing a “true emergency?”

One of the primary responsibilities of each state is to ensure the safety of its residents. As such, states have requirements prohibiting people with certain legal infractions from becoming EMS providers. The specific legal exclusions, either misdemeanors and/or felonies, are created on a state-by-state basis. Contact your state EMS office for more information.

Special Populations

EMS systems must be capable of handling many different situations, including obstetric, pediatric, and geriatric emergencies. Proper procedures, drug dosages, and even assessment techniques are often different in children, adults, and older people.

Overview of the EMS System

▶ History of EMS

As an EMT, you will join a long tradition of people who provide emergency medical care to their fellow human beings. With the early use of motor vehicles in warfare, volunteer ambulances were organized and personnel went overseas to provide care for the wounded in World War I. During World War II, the military trained special corpsmen to provide care in the field and bring the casualties to aid stations staffed by nurses and physicians. In the Korean conflict, this evolved into the field medic and rapid helicopter evacuation to nearby Mobile Army Surgical Hospital units, where immediate surgical interventions could be performed. Many advances in the immediate care of trauma patients resulted from the casualty experiences in the Korean and Vietnam conflicts.

Unfortunately, emergency care of the injured and ill at home had not progressed to a similar level. As recently as the 1960s and early 1970s, emergency ambulance service and care varied widely across the United States. In some places, it was provided by well-trained advanced first aid personnel who had well-equipped, modern ambulances. In a few urban areas, it was provided by hospital-based ambulance services that were staffed with interns and early forms of prehospital care providers. In many areas, the only emergency care and ambulance service was provided by the local funeral home using a hearse that could be converted to carry a cot and serve as an ambulance. In other places, the police or fire department used a station wagon that carried a cot and a first aid kit. In most cases, these vehicles were staffed with a driver and an attendant who had some basic first aid training. In the few areas where a commercial ambulance was available to transport the ill, it was usually similarly staffed and served primarily as a means to transport the patient to the hospital.

Many communities did not have formal provisions for prehospital emergency care or transportation. Injured people were given basic first aid by police or fire personnel at the scene and were transported to the hospital in a police or fire officer's car. Customarily, patients with an acute illness were transported to the hospital by a relative or neighbor and were met by their family physician or an on-call hospital physician, who assessed them and then summoned any specialists and operating room staff that were needed. Except in large urban centers, most hospitals did not have the emergency department (ED) staff available today.

EMS as we know it today had its origins in 1966 with the publication of *Accidental Death and Disability: The Neglected Disease of Modern Society*, known more commonly as The White Paper. This report, prepared jointly by the Committees on Trauma and Shock of the National Academy of Sciences/National Research Council, revealed to the public and Congress the serious inadequacy of prehospital emergency care and transportation in many areas. As a result, Congress mandated that two federal agencies address these issues. The NHTSA of the DOT, through the Highway Safety Act of 1966, and the Department of Health, Education, and Welfare (now known as the Department of Health and Human Services), through the Emergency Medical Services Development Act of 1973, created funding sources and programs to develop improved systems of prehospital emergency care. This explains why EMS is administrated at the federal level through the DOT and not the Department of Health.

In the early 1970s, the DOT developed and published the first curriculum to serve as the guideline for EMT training. To support the EMT course, the American Academy of Orthopaedic Surgeons prepared and published the first EMT textbook—*Emergency Care and Transportation of the Sick and Injured*—in 1971, often called the Orange Book for its original trademark orange cover. Through the 1970s, following the recommended guidelines, each state developed the necessary legislation, and the EMS system expanded throughout the United States. During the same period, emergency medicine became a recognized medical specialty, and the fully staffed EDs that we know today became the accepted standard of care.

In the late 1970s, the DOT developed a recommended National Standard Curriculum for the training of paramedics and identified a part of the course to serve as training for EMTs.

During the 1980s, many areas enhanced the EMT National Standard Curriculum by adding EMTs with advanced levels of training who could provide key components of ALS care and advanced lifesaving procedures. The availability of paramedics and ALS-level care on calls that require or benefit from advanced care has grown steadily in recent years. In addition, with the evolution in training and technology, the EMT and AEMT can now perform a number of important advanced skills in the field that were formerly reserved for only the paramedic.

This growth and sophistication of the EMS system did not come without its drawbacks. As each state sought to create a system that would meet the needs of its citizens, the definitions of EMS providers began to vary from state to state. For example, in some states EMTs were allowed to administer medications, while in other states they were not.

In the 1990s NHTSA began an examination of EMS from a national perspective. With the counsel of EMS providers, physicians, fire chiefs, nurses, state administrators, educators, and other interested professionals, NHTSA created the *EMS Agenda for the Future*. This important document created a plan to standardize the levels of EMS education and EMS providers in an effort to ensure a more seamless delivery of EMS care across the country.

The skills you learn and the scope of practice EMTs now enjoy are part of this national movement toward an EMS system that meets the needs of an ever-changing health care industry and meets those needs through a safe and efficient method.

Levels of Training

As discussed earlier, licensure of EMTs is a state function subject to the laws and regulations of the state in which the EMT practices. Each state is granted the ability to control the functions of its licensed providers. For this reason there remains some variation from state to state on the scope of EMT practice, as well as training and recertification requirements. Here is how the system is supposed to work from the federal level down to the local level.

At the federal level, NHTSA brings in experts from around the country to create the **National EMS Scope of Practice Model**. This document provides overarching guidelines for the minimum skills each level of EMS provider should be able to accomplish. **Table 1-2** shows the guidelines from that model. Some items in the table are flagged and corresponding notes are provided to show areas where current practice has evolved. For example, certain skills listed in the table are no longer practiced or have been aligned with a different skill level. Because licensure is a state function, at the state level laws are enacted to regulate how EMS providers will operate and are then executed by the state level EMS administrative offices that control licensure. Finally, the local medical director provides daily oversight and support to EMS personnel **Figure 1-3**. For example, the medications that will be carried on an ambulance or where patients are transported are the day-to-day operational concerns on which the medical director will have direct input.

The national guidelines are intended to ensure consistent delivery of EMS across the country. The only way a medical director can allow an EMT to perform a skill is if the state has already approved that skill. The medical director can limit scope of practice but cannot expand it beyond state law. Expanding the scope of practice requires state approval.

You can download the EMT, AEMT, and paramedic education standards and instructional guidelines at www.ems.gov. In addition, the National Registry of Emergency Medical Technicians (NREMT) is a nongovernmental agency that provides national standardized EMS testing and certification in much of the United States. Many states use the National Registry standards to certify their EMTs and grant licensing reciprocity to NREMT-certified EMTs. It is important to remember EMS is regulated entirely by the state in which you are licensed.

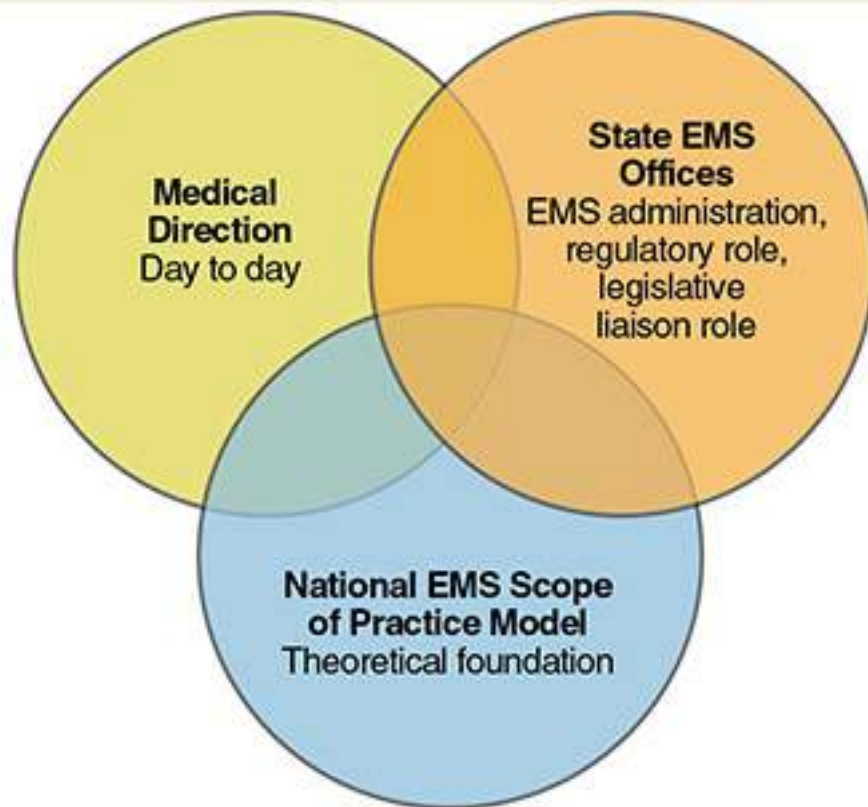


Figure 1-3

Hierarchies of the National EMS Scope of Practice Model.

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Table 1-2**The Interpretive Guidelines: National EMS Scope of Practice Model**

Note:

An EMT also provides the skills listed in the EMR level.

An AEMT also provides the skills listed in the EMR and EMT levels.

A paramedic also provides the skills listed in the EMR, EMT, and AEMT levels.

Airway and Breathing Minimum Psychomotor Skill Set

EMR	EMT	AEMT	Paramedic
Oral airway	Humidifiers	Supraglottic airway	BiPAP/CPAP
Bag mask device	Partial rebreathing mask		Needle chest decompression
Sellick maneuver ^a	Venturi mask		Chest tube monitoring
Head tilt–chin lift	Manually triggered ventilators		Percutaneous cricothyrotomy
Jaw-thrust	Automatic transport ventilators		ETCO ₂ /capnography
Modified chin lift	Oral and nasal airways		NG/OG tube
Obstruction, manual			Nasal and oral endotracheal intubation
Oxygen therapy			Airway obstruction removal by direct laryngoscopy
Nasal cannula			Positive end-expiratory pressure
Nonbreathing mask			
Upper airway suctioning			

Assessment Minimum Psychomotor Skill Set

Manual BP	Pulse oximetry	Blood glucose monitoring ^b	ECG interpretation
	Manual and auto BP		Interpretive 12-lead
			Blood chemistry analysis

Pharmacologic Intervention Minimum Psychomotor Skill Set

Medication Administration Routes <ul style="list-style-type: none"> Unit dose auto-injector for self or peer care (MARK 1)^c 	Assisted Medications <ul style="list-style-type: none"> Assisting a patient in administering his/her own prescribed medications, including auto-injector 	<ul style="list-style-type: none"> Peripheral IV insertion IV fluid infusion Pediatric IO insertion 	<ul style="list-style-type: none"> Central line monitoring IO insertion Venous blood sampling
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Pharmacologic Intervention Minimum Psychomotor Skill Set

Medication Administration Routes

- Buccal
- Oral

Medication Administration Routes

- Aerosolized
- SC
- IM
- Nebulized
- SL
- Intranasal (IN)
- IV push for D₅₀ and narcotic antagonist only

Medication Administration Routes

- Endotracheal
- IV (push and infusion)
- Nasogastric (NG)
- Rectal
- IO
- Topical
- Accessing implanted central IV port

Medications To Be Administered

- Physician-approved over-the-counter medications (oral glucose, aspirin for chest pain or suspected ischemic origin)

Medications To Be Administered

- SL nitroglycerin for chest pain of suspected ischemic origin
- SC^d and IM epinephrine for anaphylaxis

Medications To Be Administered

- Physician-approved medications
- Maintenance of blood administration

Pharmacologic Intervention Minimum Psychomotor Skill Set

EMR

EMT

AEMT

Paramedic

- Glucagon and IV D₅₀ for hypoglycemia
- Inhaled beta-agonist for dyspnea and wheezing
- Narcotic antagonist
- Nitrous oxide for pain relief

- Initiation of thrombolytics

Emergency Trauma Care Minimum Psychomotor Skill Set

Manual cervical stabilization

Spinal immobilization

Morgan lens

Manual extremity stabilization

Seated spinal immobilization

Eye irrigation

Long board

Direct pressure

Extremity splinting

Hemorrhage control

Traction splinting

Emergency moves for endangered patients

Mechanical patient restraint

Tourniquet^e

Emergency Trauma Care Minimum Psychomotor Skill Set

MAST/PASG*

Cervical collar

Rapid extrication

Medical/Cardiac Care Minimum Psychomotor Skill Set

CPR	Mechanical CPR	Cardioversion
AED	Assisted complicated delivery of an infant	Carotid massage
Assisted normal delivery of an infant		Manual defibrillation
		TC pacing

Abbreviations: AED, automated external defibrillator; BiPAP/CPAP, bilevel positive airway pressure/continuous positive airway pressure; BP, blood pressure; CPR, cardiopulmonary resuscitation; D₅₀, 50% dextrose in water; ECG, electrocardiogram; IM, intramuscular; IO, intraosseous; IV, intravenous; MAST/PASG, military antishock trousers/pneumatic antishock garments; NG, nasogastric; OG, orogastric; SL, sublingual; SC, subcutaneous; TC, transcutaneous.

Note: The 2005 National EMS Scope of Practice Model serves as a foundation for states to build their own model. It is intended to illustrate the operation of each level of EMS provider and the progression from one level to another. It is not inclusive of every skill a state may allow.

*The Sellick maneuver is no longer routinely recommended.

^bBlood glucose monitoring is now considered an EMT-level skill.

^cMark I has been replaced by the DuoDote and the Antidote Treatment Nerve Agent Auto-Injector (ATNAA).

^dSubcutaneous epinephrine administration is typically considered a paramedic-level skill now.

*Tourniquet use has evolved to be practiced by all providers including the EMR level.

► Public Basic Life Support and Immediate Aid

With the development of EMS and increased awareness of the need for immediate emergency care, millions of laypeople have been trained in BLS/CPR. In addition to CPR, many people take first aid courses that include bleeding control and other simple skills that may be required to provide immediate essential care. These courses are designed to train people so those in the workplace—teachers, coaches, child care providers, and others—can provide the necessary critical care in the minutes before EMTs or other responders arrive at the scene.

In addition, many people, such as those who regularly accompany groups on camping trips or are in other situations where the arrival of EMS may be delayed because of remote location, are trained in advanced first aid. This course includes BLS and the essential additional care and packaging that may be necessary until the help of rescuers and EMTs can be obtained at a remote location.

One of the most dramatic recent developments in prehospital emergency care is the use of an **automated external defibrillator (AED)**. These remarkable devices, some no larger than a cell phone, detect treatable life-threatening cardiac dysrhythmias (ventricular fibrillation and ventricular tachycardia) and deliver the appropriate electrical shock to the patient. Designed to be used by the untrained layperson, these devices are now included at every level of prehospital emergency training.

► Emergency Medical Responders

Because the presence of a person who is trained to initiate BLS and other urgent care cannot be ensured, the EMS system includes immediate care by EMRs, such as law enforcement officers, firefighters, park rangers, ski patrollers, or other organized rescuers who often arrive at the scene before the ambulance and EMTs **Figure 1-4**. EMR training provides these people with the skills necessary to initiate immediate care and assist the EMTs on their arrival. The course focuses on providing immediate BLS and urgent care with limited equipment. It also familiarizes students with the additional procedures, equipment, and packaging techniques that EMTs may use and the EMR may be called on to assist.

In addition to professional EMRs, EMTs often encounter a variety of people on the scene eager to help. You will encounter Good Samaritans trained in first aid and CPR, physicians and nurses, and other well-meaning people with or without prior training and experience. Identified and used properly, these people can provide valuable assistance when you

are shorthanded. At other times, they can interfere with operations and even create problems or danger for themselves or others. It will be your task in your initial scene size-up to identify the various people on the scene and orchestrate well-meaning attempts to assist.

► **Emergency Medical Technician**

The EMT course requires approximately 150 hours (more in some states) and provides the essential knowledge and skills required to provide basic emergency care in the field. The course serves as the foundation on which additional knowledge and skills are built in AEMT training. On arrival at the scene, you and any other EMTs who have responded should assume responsibility for the assessment and care of the patient and follow the proper packaging and transport of the patient to the ED if appropriate.



Figure 1-4

Emergency medical responders, such as law enforcement officers, are trained to provide immediate basic life support until EMTs arrive on the scene.

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► **Advanced Emergency Medical Technician**

The AEMT course and training are designed to add knowledge and skills in specific aspects of ALS to providers who have been trained and have experience in providing emergency care as EMTs. These additional skills include IV therapy, use of advanced airway adjuncts, and the knowledge and skills necessary to administer a limited number of medications. The AEMT course ranges between 200 and 400 hours. The purpose of this level of EMS provider is to deliver an expanded range of skills beyond the EMT. In some parts of the United States, the availability of paramedics is limited. AEMTs help to fill the gap by providing limited ALS care to regions where paramedics are not available.

► **Paramedic**

The paramedic completes an extensive course of training that significantly increases knowledge and mastery of basic skills and covers a wide range of ALS skills **Figure 1-5**. This course ranges from 1,000 to more than 1,300 hours, divided between classroom and internship training. Increasingly, this training is offered within the context of an associate's degree or bachelor's degree college program.



Figure 1-5

Paramedic training covers a wide range of ALS skills.

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Words of Wisdom

There are many directions you can take your EMS career. Specialty certifications include technical rescue, tactical EMS, critical care transport, disaster management, and much more. Other career paths include serving as an instructor or administrator. Advancement into positions such as EMS directors, administrators, and educators frequently requires formal education or degrees related to EMS.

Components of the EMS System

The *EMS Agenda for the Future* is a multidisciplinary, national review of all aspects of EMS delivery. The goal is to develop a more cohesive and consistent system across the country. In the document, there are 14 components of an EMS system as outlined in **Table 1-3**. NHTSA has taken these components and organized them in such a way to understand some of the interrelationships between the components.

Figure 1-6 demonstrates how the components interact. The tabs on the right side show the primary 9-1-1 components of EMS. Someone recognizes an emergency, 9-1-1 is activated, an ambulance is dispatched, and emergency care and transportation are administered. In the center are the essential aspects needed to allow the primary 9-1-1 components to

function—finances, radios, computers, and people. The left side demonstrates the continuum of care from the prehospital environment to the ED and beyond. Finally, as patients leave the health care system, there are strategies of prevention and education to help ensure people live long and healthy lives. Understanding the 14 components will help you better understand how the EMS system works.

Table 1-3

EMS Agenda for the Future Components of an EMS System

EMS System	
1. Public Access	8. Communication Systems
2. Clinical Care	9. Human Resources
3. Medical Direction	10. Legislation and Regulation
4. Integration of Health Services	11. Evaluation
5. Information Systems	12. System Finance
6. Prevention	13. Public Education
7. EMS Research	14. Education Systems

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YOU are the Provider

PART 3

Your partner records the patient’s vital signs on the patient care report as you ask the patient additional questions regarding her back pain. She tells you her lower back began hurting about a month ago; however, she has never been evaluated by a physician. She denies injuring her back. She further denies any other symptoms or past medical history.

Recording Time: 4 Minutes

Respirations	16 breaths/min; regular and unlabored
Pulse	88 beats/min; strong and regular
Skin	Pink, warm, and dry
Blood pressure	126/66 mm Hg
Oxygen saturation (SpO₂)	99% (on room air)

Your assessment of the patient's back does not reveal any obvious deformities, swelling, or bruising, and her vital signs are stable. The patient requests you take her to the hospital.

4. The patient has requested you transport her to the hospital, but does not appear to be experiencing any life-threatening conditions. Should you transport her to the hospital?

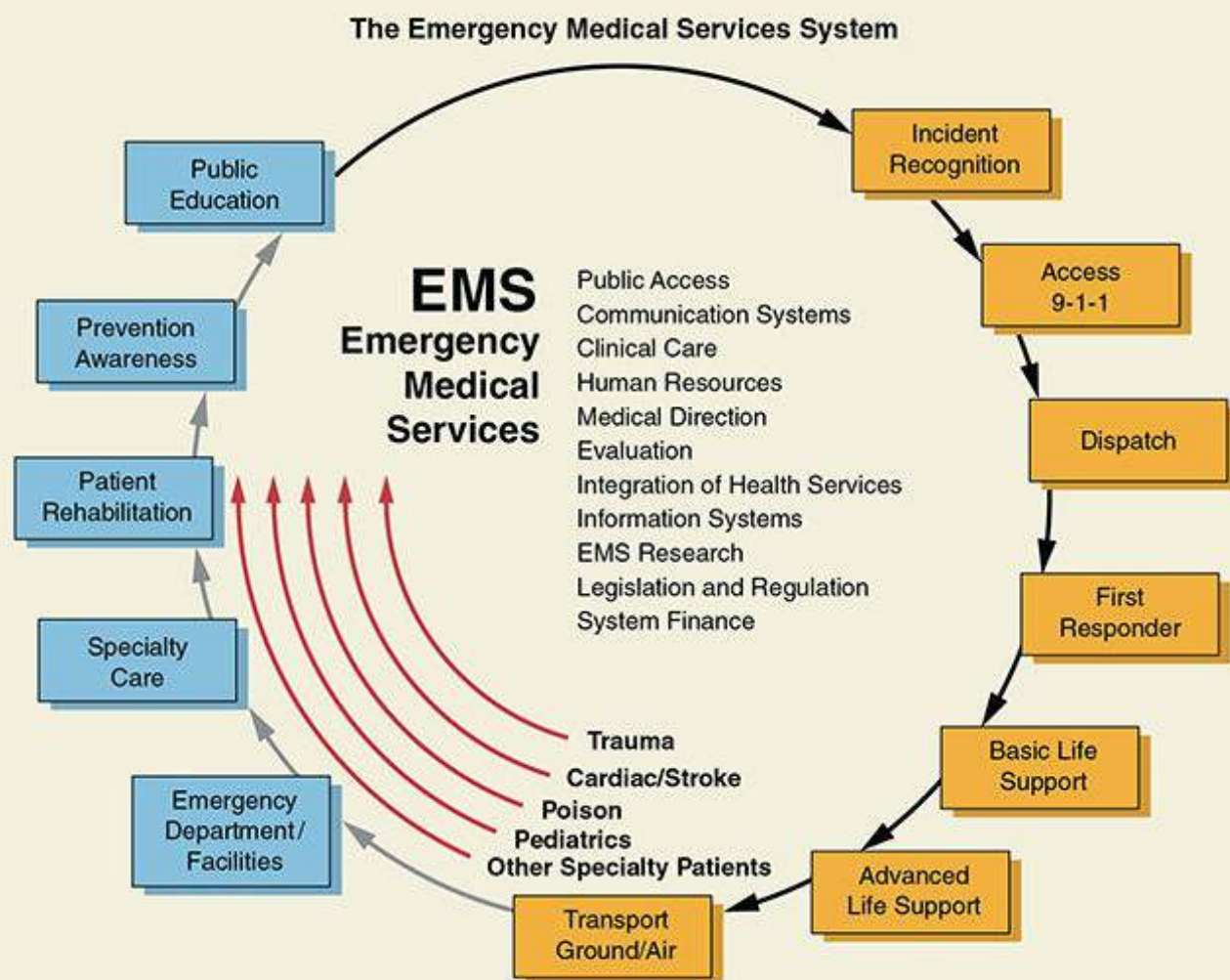


Figure 1-6

Interaction of the components of the National Highway Traffic Safety Administration's emergency medical services system.

Source: www.ems.gov.

► Public Access

Easy access to help in an emergency is essential. In most of the country, an emergency communication center that dispatches fire, police, rescue, and EMS units can be reached by dialing 9-1-1. At the communication center, trained dispatchers obtain the necessary information from the caller and, following dispatch protocols, dispatch the ambulance crew and other equipment and responders that may be needed **Figure 1-7**. This communication center is called a **public safety access point**.

In an enhanced 9-1-1 system, the address of the caller is displayed on a screen. The address remains on the screen until the dispatcher removes it. Therefore, if the caller is unable to speak or hangs up, the location remains displayed. However, not all cell phones have this capability. Most emergency communication centers are equipped with special equipment allowing people with speech or hearing disabilities to communicate with the dispatcher via a keyboard and printed messages. In some areas, rather than 9-1-1, a different special published emergency number may be used to call for EMS. Social media may play an evolving role in allowing lay people trained in CPR to be alerted of a cardiac arrest in their area. Training the public how to summon an EMS unit is an important part of the public education responsibility of each EMS service. Enhanced 9-1-1 systems are now available that can identify not only the cell phone number from which an emergency call is being placed, but also the exact geographic coordinates of the cell phone at the time the call is made. Such systems use global positioning system (GPS) technology. Because cell phones capable of transmitting a GPS signal and a system capable

of receiving that signal are both required, the technology requires additional time and resources to implement.



Figure 1-7

Trained dispatchers obtain information about the call and then send responders to the scene as needed.

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A system called **emergency medical dispatch (EMD)** was developed to assist dispatchers in providing callers with vital instructions to help them deal with a medical emergency until EMS crews arrive. Dispatchers are trained and provided scripts to help them relay relevant instructions to the callers. The system helps dispatchers select appropriately resourced units to respond to a request for assistance. It is the dispatcher's duty to relay all relevant and available information to the responding crews in a timely manner. Keep in mind current technology does not allow the dispatcher to "see" what is actually going on at the scene; however, it is not uncommon for you to find the reality of the call quite different from the dispatch information.

► Communication Systems

Using the information provided by the caller, the dispatcher will select the appropriate parts of the emergency system that need to be activated. Over half of EMS support is provided by a governmental entity such as a fire agency (about 45%) or other non-fire governmental agency (20%). Private services deliver about one-fourth of EMS support. Other models seen less frequently include hospital-based programs and Native American tribal services.

New technologies are constantly being developed to assist responders in locating their patients. As previously described, cell phones can be linked to GPS units to display their location. Responding units can transmit their position to a dispatcher who can transmit the location of a call to a moving digital map in the unit, complete with turn-by-turn directions. Medical databases can be queried and patient information can be directly downloaded to the EMT's computer or uploaded from the EMT's laptop to the database. Familiarize yourself with mobile phone dispatch systems in your jurisdiction so you are aware of who will potentially be on-scene when you arrive to a cardiac arrest. Constant training and education are required to keep the EMT's knowledge of technological developments up-to date.

Safety Tips

As an EMT, you are responsible for checking the ambulance and making sure equipment is completely functional. If equipment is not functioning properly, you should notify a supervisor immediately and either take the ambulance out of service or replace the nonfunctioning piece of equipment. Remember, safety first.

► Clinical Care

Clinical care describes the various pieces of equipment and scope of practice for using that equipment. As an EMT, you will use a wide range of different emergency equipment. During the EMT course, you will be introduced to, and learn how to use, a variety of appliances and devices that you may need on a call. You will learn when the use of each is indicated and when it is of no benefit or may cause harm. Although the use of different models and brands of a given device will follow the same basic principles and methods, some variation and peculiarities may exist from one model to another. When you join a service, check each key piece of equipment before going on duty to ensure that it is in its assigned place, that it is working properly, and that you are familiar with the specific model carried on your ambulance.

Each EMT may be called on to drive the ambulance. Therefore, you must familiarize yourself with the roads in your **primary service area (PSA)** or sector. The PSA is the main area in which an EMS agency operates. Before going on duty, check all the equipment and supplies and communication equipment that the ambulance carries. It is your responsibility to ensure the ambulance is fully fueled, has sufficient oil and other key fluids, and that the tires are in good condition and properly inflated **Figure 1-8**. You should also test each of the driver's controls and each built-in unit and control in the patient compartment. If you have not driven the specific ambulance before, it is a good idea to take it out and become familiar with it before you respond to a call. Maintenance and safe driving of the ambulance are discussed in detail in [Chapter 37, Transport Operations](#).



Figure 1-8

Making sure the ambulance is fueled is part of an EMT's responsibility.

► Human Resources

The human resources component deals with people. Who delivers the care? How are these people compensated for their time and energy? How do other members of the medical community interact and participate within the EMS world? These are some of the questions discussed within the component of human resources.

EMS in this component is examined as a profession. The overarching concept is to encourage the creation of EMS systems that provide an environment where talented people want to work and can turn their passion into a rewarding career.

Several objectives need to be accomplished to help make a career in EMS a lasting one. Efforts are being made to ensure that EMS providers can move from one state to another more seamlessly. From a global point of view, one of the core functions of a state is to provide and protect its citizens. This obligation has led to the creation of EMS levels that are unique to a particular state. Though effective for any one state, these idiosyncratic EMS levels make movement from one state to another complicated. One of the functions of the National Scope of Practice Model is to create stable foundations on which each level of EMS provider is grounded. The net effect is to encourage a more consistent definition of “what is an EMT” so providers can move more freely about the country.

The *EMS Agenda for the Future* encourages the creation of systems that help to protect the well-being of EMS providers. It also encourages systems to develop career ladders, allowing talented EMS providers ways to use their talent for many years.

► Medical Direction

Each EMS system has a physician **medical director** who authorizes the EMTs in the service to provide medical care in the field. The appropriate care for each injury, condition, or illness that you will encounter in the field is determined by the medical director and is described in a set of written standing orders and protocols. Protocols are described in a comprehensive guide delineating the EMT’s scope of practice. Standing orders are part of protocols and designate what the EMT is required to do for a specific complaint or condition. Providers are not required to consult medical direction before implementing standing orders.

The medical director is the ongoing working liaison between the medical community, hospitals, and the EMTs in the service. If treatment problems arise or different procedures should be considered, they are referred to the medical director for his or her decision and action. To ensure the proper training standards are met, the medical director determines and approves the continuing education and training that are required of each EMT in the service.

Medical control is provided either off-line (indirect) or online (direct), as authorized by the medical director. Online medical control consists of direction given over the phone or radio directly from the medical director or designated physician. The medical direction can be transferred by the physician’s designee; it does not have to be transferred by the physician himself or herself. Off-line medical control consists of standing orders, training, and supervision authorized by the medical director. Each EMT must know and follow the protocols developed by his or her medical director.

The service’s protocols will identify an EMS physician, usually at a local hospital, who can be reached by radio or telephone for medical control during a call. This is a type of direct online medical control. On some calls, once the ambulance crew has initiated any immediate urgent care and gives their radio report, the online medical control physician may either confirm or modify the proposed treatment plan or may prescribe any additional special orders that the EMTs are to follow for that patient. The point at which the EMTs should give their radio report or obtain online medical direction will vary.

► Legislation and Regulation

Although each EMS system, medical director, and training program has latitude, their training, protocols, and practices must conform to the EMS legislation, rules, regulations, and guidelines adopted by each state. The state EMS office is responsible for authorizing, auditing, and regulating all emergency medical services, training institutions, courses, instructors, and providers within the state. In most states, the state EMS office obtains input from an advisory committee made up of representatives of the services, service medical directors, medical associations, hospitals, training programs, instructors’ associations, EMT associations, and the public in that state.

At the local level, each EMS system operates in a designated PSA in which it is responsible for the provision of prehospital emergency care and the transportation of the sick and injured to the hospital.

EMS is usually administered by a senior EMS official. Daily operations and overall direction of the service are provided by an appointed chief executive officer and several other officers who serve under him or her. When EMS is a part of a fire or police department, the department chief will usually delegate the responsibility for directing EMS to an assistant chief or other officer whose sole responsibility is to manage the EMS activities of the department. To provide clear guidelines, most

services have written operating procedures and policies. When you join a service, you are expected to learn and follow them.

The chief executive of the service is in charge of both the necessary administrative tasks (eg, scheduling, personnel, budgets, purchasing, vehicle maintenance) and the daily operations of the ambulances and crews. Except for medical matters, he or she operates as the chief (similar to a fire chief or police chief) of EMS for the service and the PSA that it covers.

► Integration of Health Services

EMS does not work in a vacuum. EMS personnel travel to people's homes and to vehicle crashes. Once on scene, they deliver care and transport the patient to a care facility. Integration of health services means that the prehospital care you administer is coordinated with the care administered at the hospital. When you deliver a patient to the ED you are simply transferring that patient to another care provider. The excellent care that you began should be continued in the ED. This component helps to decrease errors, to increase efficiencies, and, most of all, to ensure the patient receives comprehensive continuity of care.

Words of Wisdom

A patient may experience only once what you may experience hundreds of times. Understand and be empathetic to the patient's anxiety.

Although it may not appear like an emergency to you, it is considered an emergency by your patient and his or her family members. Treat them with respect. Your patients and their family members will always remember how you acted when you were with them.

Some EMS systems have collaborated with local hospitals to improve patient outcomes associated with time sensitive treatment like heart attacks, trauma, and stroke. This is accomplished through special training in the EMS system and certain hospital departments. For example, when paramedics determine a patient is having a heart attack, they alert the ED. In turn, the personnel in the ED notify the cardiac catheterization team, or you may be directed to transport the patient to a cardiac specialty center. As a result, the key personnel are ready to begin critical treatments as soon as the patient arrives at the hospital. Similar activities take place for stroke and trauma patients.

► Mobile Integrated Healthcare

Mobile integrated healthcare (MIH) is a new method of delivering health care that utilizes the prehospital spectrum. It has evolved as a result of the Patient Protection and Affordable Care Act, with the goal to facilitate improved access to health care at an affordable price. In the MIH model, health care is provided within the community, rather than at a physician's office or hospital. An integrated team of health care professionals, including EMS providers, delivers health care services in the community, and connects patients with other valuable resources such as social services. An advantage of this model is that it offers access for care to patients within communities with limited medical resources, and leads to better service for those who are home-bound or disabled.

This new branch of health care is causing the evolution of additional training levels for EMS providers. One new aspect is **community paramedicine**, in which experienced paramedics receive advanced training to equip them to provide services within a community. In addition to the patient care services a paramedic would typically provide, services provided by community paramedics may include performing health evaluations, monitoring chronic illnesses or conditions, obtaining laboratory samples, administering immunizations, and serving as a patient advocate.

► Evaluation

The medical director is responsible for maintaining **quality control**, ensuring that all staff members who are involved in caring for patients meet appropriate medical care standards on each call. To provide the necessary quality control, the medical director and other involved staff review patient care reports (PCR), audit administrative records, and survey patients.

Continuous quality improvement (CQI) is a circular system of continuous internal and external reviews and audits of all aspects of an EMS system. To provide CQI, periodic run review meetings are held with those involved in patient care to review the run reports and then discuss any areas of care that appear to need change or improvement. Positive feedback is also discussed. If a problem appears to be repeated by a single EMT or crew, the medical director will discuss the details with those involved. The CQI process is designed to identify areas of improvement and, if necessary, assign remedial training or develop some other educational activity. The medical director is also responsible for ensuring that appropriate continuing education and training are available.

Information and skills in emergency medical care change constantly. You need refresher training or continuing education as new modalities of care, equipment, and understanding of critical illnesses and trauma develop. Equally, when you have

not used a particular procedure for some time, skill decay may occur. Therefore, your medical director may establish a training program to correct the deficit. For example, an ED physician noted that despite their assessments, many EMTs were missing a high number of closed long bone fractures, resulting in poor prehospital care. A subsequent audit of calls led to a review and retraining session for assessment and care of fractures. This same process can apply to CPR or any other type of skill you do not use often. Ensuring your skills and knowledge are current is one of the ongoing commitments of being an EMT.

YOU are the Provider

PART 4

The patient is placed onto the stretcher, placed in a position of comfort, and loaded into the ambulance. You and the paramedic are in the back with the patient as your EMT partner drives to the hospital. En route, the paramedic starts an intravenous (IV) line and administers pain medication to the patient. Shortly after the medication has been administered, you reassess the patient.

Recording Time: 12 Minutes

Level of consciousness	Conscious and alert
Respirations	16 breaths/min; regular and unlabored
Pulse	90 beats/min; strong and regular
Skin	Pink, warm, and dry
Blood pressure	120/62 mm Hg
SpO₂	97% (on room air)

Within a few minutes, the patient tells you her back pain has subsided. She asks you if you think her back pain could be a sign of a serious problem.

5. Is the paramedic required to contact medical control prior to administering any medications?
6. How should you answer the patient's question regarding her concern that she may have a serious condition?

Another function of the evaluation process is to determine ways to limit or eliminate human error. During the delivery of EMS, as with any occupation, there are times when errors can happen. Driving to the scene can be hazardous. As you are lifting and moving a patient, the patient can be dropped. Communicating with other EMTs or transferring the patient to the ED presents circumstances where errors can happen. Remember, errors can occur at any point during the call that can result in harm to the patient, public, and you.

Errors are not inevitable, though. If the circumstances of the errors are understood, it may be possible to eliminate or at least minimize them. There are many ways to examine medical errors. This textbook focuses on errors from three possible sources. They can occur as a result of a rules-based failure, a knowledge-based failure, or a skills-based failure (or any combination of these). For example, does the EMT have the legal right to administer the particular medication the patient needs? Has the medical director given permission to administer the drug? If not, a rules-based failure has occurred if the EMT assists with the administration. Does the EMT know all of the pertinent information about the medication being delivered? If not, a breakdown at this point, such as the administration of the wrong medication, would be referred to as a knowledge-based failure. Finally, is the equipment operating and being used properly? If not, a skills-based error has occurred. Any error can come from multiple sources.

Limiting errors requires the efforts of both the EMS agency and EMS personnel. Agencies need to have clear protocols, which are detailed plans that describe how certain patient issues, such as chest pain or shortness of breath, are to be managed. These protocols need to be understood by all EMTs within the service.

The environment can also contribute to errors. Are there ways to limit distractions? How do we improve lighting so EMTs can see well? How organized is the equipment? Can the EMT find what he or she needs in a timely manner? Environmental considerations can be managed using many approaches. Sometimes the solution is as easy as ensuring flashlights are available on all ambulances. Consider having police assistance on certain types of EMS calls or getting the assistance of an EMS supervisor. Perhaps a new type of equipment bag will provide better organization. Typically, when trying to reduce environmental factors regarding errors, this means having the right people with the right equipment in place.

EMTs can also help to reduce errors. Your job is to protect the patient from harm and to deliver high-quality medical care. This is one of your most important responsibilities. You are a patient care advocate—you speak for patients on their behalf. Keeping this responsibility in mind will help you to limit errors.

There are other ways errors can be reduced. When you are about to perform a skill, ask yourself, “Why am I doing this?” Knowing the reason for your actions gives you time to reflect and make a more informed decision. Even within EMS, rarely

do you have to act so quickly that you do not have a moment to consider what it is you are doing and why. If you have considered what to do and cannot come up with a solution, ask for help. Talk with your partner, contact medical control, or call your EMS supervisor.

Another way to help limit medical errors is to use “cheat sheets.” Keep a copy of your protocol book with you. Emergency physicians have many reference materials available to them. Physicians recognize they cannot memorize everything, so referencing a book or an Internet resource helps ensure the accuracy of their memory.

Finally, after a troublesome call, sit down and talk. Talk with your partner and/or your supervisor. Discussing the events that just happened provides an excellent avenue for learning. Your discussions can help lead to changes in protocol, how equipment is stocked, or even the purchase of new equipment.

► Information Systems

EMS is not unlike any other profession in today’s world. Without computers, the job would be much more difficult. An information system allows EMS providers to efficiently document the care that has been delivered. Once that information is stored electronically, it can be used to improve care. For example, how many times has a department seen patients with chest pain? What is the average on-scene time for major trauma patients? How many AED runs has the department had? These questions and many more can be answered using the information gathered from computerized medical records.

This information is used for a variety of purposes. It is used to construct educational sessions for the department. Data from ambulance activity logs is used to justify hiring more personnel. Examining the types of patients and their frequency can provide the foundation for the purchase of new equipment and guide continuing education sessions. This information can also be combined with other database resources, such as from a hospital, to determine patient outcome. Departments from around the country are sending information to Washington, DC, so a national snapshot of EMS activities can be obtained. Information gathered by the National EMS Information System (NEMSIS) can be found at <http://www.nemsis.org>. This information will be used to better plan for the needs of EMS systems today and in the future.

► System Finance

All EMS departments need a funding system that allows them to continue to provide care; however, the type of system needed depends on many variables. There are several types of EMS departments around the country. The *Journal of Emergency Medical Services* annually reports on how EMS is delivered in the 200 largest cities within the United States. See **Table 1-4** for the breakdown of types of EMS services within the United States for the year 2012.

These departments may have paid or volunteer personnel, or a mix of both. Financial resources are available for EMS departments through taxation, fee for service, paid subscription, donations, federal/ state/local grants, fund-raisers, or combinations of same. Which financial system is used depends on the needs and makeup of each EMS department.

How are EMTs involved with the financial side of EMS? You may think the financial activities belong to those who work in the office. However, you may be asked to gather insurance information from patients, secure signatures on certain documents such as HIPAA notifications, or obtain written permission from patients to bill their health insurance company. All of these steps are important to the health care process. When you do not provide needed information, the patient may be billed, rather than the insurance company.

EMTs are also involved in helping with fund-raisers, stuffing envelopes, or just making calls to potential subscribers to the service. Regardless of what type of system you work, you will help the department secure its financial resources.

Table 1-4**Types of EMS Services that Transport Patients in the 200 Largest Cities Within the United States****Type of Organization Providing EMS Transport Services**

Private organization	39.6%
Fire department	37.4%
Third service and hospital	23.0%

Data from: Ragone, MG. JEMS Surveys 200 Most Populous Cities. February 1, 2012. Accessed 11/4/14 at <http://www.jems.com/article/administration-and-leadership/jems-surveys-200-most-populous-cities>.

► Education Systems

Your training will be conducted by many knowledgeable EMS educators. In most states, the instructors who are responsible for coordinating and teaching the EMT course and continuing education courses are approved and licensed by the state EMS office or agency. Most EMS training programs must adhere to national standards established by the accrediting organizations CoAEMSP (Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions) and CAAHEP (Commission on Accreditation of Allied Health Education Programs). To be licensed in some states, an instructor must have extensive medical and educational training and teach for a designated period while being observed and supervised by an experienced instructor. ALS-level instructors and directors must hold a four-year degree.

Generally, ALS training is provided either in a college, adult career center, or hospital setting. In most states, educational programs that provide ALS training must be approved by the state and have their own medical director. In these courses, many of the lectures and small group sessions are presented by the medical director or other physicians, nurses, and EMS instructors. In clinical sessions in which supervised practice is obtained in the ED or other in-hospital settings, students are also supervised directly by physicians and nurses.

The quality of care you provide depends on your ability and the quality of your training. Therefore, your instructor and the many others who develop and participate in your training program are key members of the emergency care team.

When you no longer have the structured learning environment that is provided in your initial training course, you must assume responsibility for directing your own study and learning. As an EMT, you are required to attend a certain number of hours of continuing education approved for EMTs each year to maintain, update, and expand your knowledge and skills. In many services, the required hours are provided by the training officer and medical director. In addition, most EMS education programs and hospitals offer a number of regular continuing education opportunities in each region. You may also attend state and national EMS conferences to help keep you current about local, state, and national issues affecting EMS. Because there are many levels of licensing, you should ensure that the continuing education you receive is approved for the EMT. Whether you take advantage of these opportunities depends on you. You may decide to remain an EMT or you may want to achieve a higher level of training and certification, but whatever you choose, the key to being a good EMT and providing high-quality care is your commitment to continual learning and increasing your knowledge and skills.

EMTs possess special knowledge and skills that are directed to the care of patients in emergency situations. The authority that is delegated to you to care for patients is a very special one. Maintaining your knowledge and skills is a substantial responsibility. Knowledge and skills that are learned in any profession weaken when they are not used on a continual basis. Consider the steps involved in CPR, for example. If you have not used these skills since your original training, it is unlikely you will perform CPR proficiently. Frequent continuing education, refresher courses, and computer-based or manikin-based self-education exercises are measures you can take to maintain your skills and knowledge.

► Prevention and Public Education

The next two components of the EMS system are often closely associated with each other. Prevention and public education are aspects of EMS where the focus is on public health. **Public health** examines the health needs of entire populations with the goal of preventing health problems. Although there are many definitions possible for public health, the prevention of health problems seems to provide a good overarching framework.

Health care in the United States is currently in a state of flux. The high-tech, on-demand style of care that is prevalent has two major drawbacks. One, it is very expensive. In the United States, more than 17.9% of the gross domestic product is accounted for by health care. Two, it may not deliver a better product. The US government reports people born in the United States have an average life expectancy of 79 years. There are 35 other countries where people are living longer. If we are spending such large sums on health care, shouldn't we be living longer?

What needs to be addressed is the concept of prevention. Is it more expensive to treat a patient with a heart attack or to work with communities to help prevent the heart attack from ever happening? Or consider the scenario of an EMS provider working with a community to help get new traffic lights installed, thereby decreasing the incidence of vehicle collisions and subsequent injuries. The concept of prevention applies to both the patient and the EMS provider. Eating right, exercising, and using other stress management techniques can help prevent medical emergencies. It may seem strange, but the goal of education should be to create an environment where the need for EMS is decreased.

The focus of the public health arm of health care is prevention. Public health works to prevent illness and injury, meaning being proactive. A good example of public health at work is the common product, salt. The next time you buy salt, look at the contents. In the United States, salt is sold with the additive iodine. It was discovered years ago that a condition known as goiter (abnormally large thyroid gland) is caused by a decrease in iodine levels within people's diets. The solution was to add this important element into a commonly used food source. Today, goiters are rare within the United States. **Table 1-5** demonstrates other significant accomplishments of the public health system.

EMS is able to work with public health agencies on both primary and secondary prevention strategies. **Primary prevention** focuses on strategies that will prevent the event from ever happening. Polio was a devastating disease that caused death and disability for thousands of Americans in the early 1900s. A vaccine was developed to prevent the disease. In the span of one generation, the disease was virtually eliminated. Vaccinations are a good example of primary prevention within public health.

Table 1-5**Examples of Public Health Accomplishments**

Vaccination programs	Clean drinking water
Fluoridation of water supplies	Seat belt laws
Helmet laws	Tobacco use laws
Sewage systems	Restaurant inspections
Formation of the Food and Drug Administration	Prenatal screenings

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In 2009, the World Health Organization declared the swine flu (H1N1) virus to be at pandemic levels, which meant that the virus had spread throughout the world. The Centers for Disease Control and Prevention estimated that between 2009 and 2010 there were approximately 60.8 million cases and 12,469 deaths in the United States. If a major outbreak were to occur in the United States, EMTs may be called on to assist in the administration of vaccinations. Other examples of primary prevention include ensuring people know the dangers of drinking and driving and the harmful effects of using tobacco and other drugs. There are several ways EMTs can contribute to primary prevention efforts. You can become involved in programs that educate the community about pool safety and car seat installation or in home safety and fall prevention programs for senior adults. Other opportunities include teaching first aid and CPR to various groups within your area. Remember, small actions can lead to big differences!

In a **secondary prevention** strategy, the event has already happened. The question is how can we decrease the effects of the event? Helmets and seat belts do not prevent the accident from happening, yet they do prevent serious injuries from occurring due to the accident. The next time you drive down a major roadway, take note of the construction of the guardrails. There have been significant changes in guardrail construction over the years as more information has become available on what happens during a vehicle collision.

As an EMT, you may also be involved in the surveillance of illnesses and injuries. The PCR's that are generated by EMS personnel can be used to determine if a serious, widespread condition exists. For example, EMS is in a perfect position to provide statistical information to the local government about collisions. Injury surveillance data can be used to determine ways to improve a dangerous intersection, to prevent accidents from ever happening, or to limit the severity of injuries to drivers.

As discussed earlier, you can help educate the public. People may not understand why an accident has happened. A parent allows her 15-month-old child to play outside with other children unsupervised. The child falls and cuts her hand. EMS arrives and the cause of the injury is obvious. You can work with the parents professionally, respectfully, and kindly to help educate them on how to prevent this injury from occurring in the future.

The public may not understand the education that EMS providers have, and what services you can provide. You can go to

local schools and teach children to call 9-1-1 when there is a medical emergency. You can work with local health care institutions to inform local residents when to call for an ambulance and when other transportation methods are more appropriate. Also, efforts to use social media to alert the public of a cardiac arrest are developing. You should consider advocating for social-media-directed or mobile phone dispatch systems that encourage lay people trained in CPR to respond to episodes of cardiac arrest that occur in close proximity to them.

Teaching people how to perform CPR, how to help a choking victim, or even how to assist in the delivery of a baby are all aspects of public education. Educating the public on the benefits of compression-only CPR is another example. One of the important effects of public education is an increase in public respect for EMS. When people understand what it means to work on an ambulance and provide care to the sick and injured, they are more likely to consider EMS a vital part of the public health care system. This change in attitude can be powerful and lead to increased EMS funding and greater respect for EMS as a profession.

► EMS Research

Why do EMTs perform the skills they do? How many ambulances does a city need? Should we remain on the scene and stabilize the patient or should we rapidly transport the patient? These questions and thousands more like them help determine the shape and impact of EMS on the community. The answers to these questions are derived from research. Unfortunately, many of the tools and techniques that EMS providers use are borrowed from other health care settings without any research proving their effectiveness in EMS.

In the early days of EMS, it was believed major trauma patients needed to be stabilized on the scene before they were transported. Paramedics would start IV lines and use advanced airways. There was no foundation to support this behavior; it was assumed that this care needed to be done. After compiling significant amounts of prehospital EMS research, it was determined that major trauma patients needed to be transported to an operating room more than they needed IV fluids. Now EMS providers provide rapid transport of major trauma patients to trauma centers where they can get the surgical care they need. This is the power of EMS research.

Applying evidence-based practice is becoming an integral part of functioning as an EMS provider. Patient care should be focused on procedures that have proven useful in improving patient outcomes. There is a limited amount of prehospital EMS research relative to other areas of medical research; however, as EMS research continues, evidence-based practice will have a correspondingly greater role in EMS. All aspects of the EMT role are currently being researched, not only within the academic community, but in growing numbers of the practitioner community, as every EMT has something to contribute to improving the role.

As an EMT, you will be involved in research typically through gathering data. You may be part of a study to determine how much oxygen should be given to patients with shortness of breath. You may be involved in a study to track the time it takes to get serious trauma patients to the ED. Your job is to ensure you carefully record all of the information about these patients. The information gathered is analyzed by others to answer these questions and the results are shared with the rest of the EMS community to change patient care practices. Traditional medical practice is based on such research.

Research can also be done at each EMS facility. EMS personnel can examine patient care records to determine where the department can improve. This information can be used to generate educational sessions for the EMTs or it can be used to plan public education/public prevention strategies. High-quality patient care should focus on procedures useful in improving patient outcomes through sound research.

It is important to stay current on the latest advances in health care. On a regular basis, the International Liaison Committee on Resuscitation (ILCOR), along with its member the American Heart Association, update guidelines based on current medical evidence. The ILCOR guidelines are an excellent example of evidence-based medical decision-making in progress. These changes occur because more information is known.

One word of caution: When reading new research, make sure you understand what the results mean. Research information can be powerful, but it is often powerful within a very limited setting. A manufacturer of a defibrillator boasts their new machine will terminate ventricular fibrillation on the first shock 95% of the time. On the basis of this information, you may immediately want to buy this new product. Terminating ventricular fibrillation is certainly a positive result, but does this defibrillator save more lives than other defibrillators? In this example, the manufacturer is reporting the defibrillator is able to terminate ventricular fibrillation, not that the defibrillator is able to save more lives. People who do not examine the research will often make that hasty conclusion.

patient report to the receiving facility. Your estimated time of arrival is 8 minutes.

Recording Time: 19 Minutes

Level of consciousness	Conscious and alert
Respirations	14 breaths/min; regular and unlabored
Pulse	70 beats/min; strong and regular
Skin	Pink, warm, and dry
Blood pressure	118/60 mm Hg
SpO₂	98% (on room air)

You deliver the patient to the emergency department (ED) in stable condition and give your verbal report to a staff nurse. The patient thanks you and your crew for taking such good care of her. You depart the hospital and return to service. On the way back to the station, the paramedic critiques your performance.

7. What is the purpose of an EMS call critique?

Be skeptical when reading research. Ask questions and conduct your own research. Conclusions that seem too good to be true are usually not true.

Roles and Responsibilities of the EMT

As an EMT, you will often be the first health care professional to assess and treat the patient; as such, you have certain roles and responsibilities [Table 1-6](#) and are expected to possess certain attributes [Table 1-7](#). The guiding principle for EMS personnel is “everything you do needs to be done with the patient in mind.” What is in the best interest of the patient? This is referred to as being a patient advocate.

Often, patient outcomes are determined by the care you provide in the field and your identification of patients who need prompt transport. You are responsible for all aspects of EMS, from the preparation of the equipment to the delivery of care to providing a good example for others within the community.

Table 1-6

Roles and Responsibilities of the EMT

- Keep vehicles and equipment ready for an emergency.
- Ensure the safety of yourself, your partner, the patient, and bystanders.
- Emergency vehicle operation.
- Be an on-scene leader.
- Perform an evaluation of the scene.
- Call for additional resources as needed.
- Gain patient access.
- Perform a patient assessment.
- Give emergency medical care to the patient while awaiting the arrival of additional medical resources.
- Give emotional support to the patient, the patient's family, and other responders.
- Maintain continuity of care by working with other medical professionals.
- Resolve emergency incidents.
- Uphold medical and legal standards.
- Ensure and protect patient privacy.
- Give administrative support.
- Constantly continue your professional development.
- Cultivate and sustain community relations.
- Give back to the profession.

Table 1-7**Professional Attributes of EMTs**

Attribute	Description
Integrity	Consistent actions, a firm adherence to a code of honest behavior
Empathy	Aware of and thoughtful toward the needs of others
Self-motivation	Able to discover problems and solve them without someone directing you
Appearance and hygiene	Uses persona to project a sense of trust, professionalism, knowledge, and compassion
Self-confidence	A state of being where you know what you know AND know what you not know; able to ask for help
Time management	Able to perform or delegate multiple tasks ensuring efficiency and safety
Communications	Able to understand others and have them understand you
Teamwork and diplomacy	Able to work with others; to know your place within a team; able to communicate while giving respect to the listener
Respect	Places others in high regard or importance; understands others are more important than self
Patient advocacy	Constantly keeping the needs of the patient at the center of care
Careful delivery of care	Pays attention to detail; makes sure what is being done for the patient is done as safely as possible

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► Professional Attributes

As an EMT, whether you are paid or a volunteer, you are a health care professional. Part of your responsibility is to make sure patient care is given a high priority without endangering your own safety or the safety of others. Another part of your responsibility to yourself, other EMTs, the patient, and other health care professionals is to maintain a professional appearance and manner at all times. Appearance, including uniforms, hair length, and tattoos, are usually regulated by the policies of your department **Figure 1-9**. Your attitude and behavior must reflect that you are knowledgeable and sincerely dedicated to serving anyone who is injured or in an acute medical emergency. A professional appearance and manner help to build confidence and ease the patient's anxiety. You are expected to perform under pressure with composure and self-confidence. Patients and families who are under stress need to be treated with understanding, respect, and compassion.

Most patients will treat you with respect and appreciation, but some will not. Some patients are uncooperative, demanding, unpleasant, ungrateful, and verbally abusive. You must be nonjudgmental and overcome your instincts to react poorly to such behavior. Remember, when people are hurt, ill, under stress, frightened, despondent, under the influence of alcohol or drugs, or feel threatened, they will often react with inappropriate behavior, even toward those who are trying to help and care for them. Every patient, regardless of his or her attitude, is entitled to compassion, respect, and the best care that you can provide.



Figure 1-9

A. A professional appearance and demeanor help build confidence and ease patient anxiety. **B.** An unprofessional appearance may promote distrust and incompetence.

A, B: © Jones & Bartlett Learning.

Words of Wisdom

Professionalism extends beyond appearance and the activities you perform on a daily basis. As a professional, you have a responsibility to your partner, colleagues, patients, and profession to maintain a current level of knowledge.

Most people in this country can obtain proper routine medical care when they are ill and are surrounded by relatives and friends who will help to take care of them. However, when you are called to a home for a medical problem that is clearly not an emergency, remember that for some patients, calling an ambulance and being transported to the ED is the only way to obtain medical care.

As a new EMT, you will be given a lot of advice and training from the more experienced EMTs with whom you serve. Some may voice a callous disregard for some types of patients. Do not be influenced by the unprofessional attitude of these providers, regardless of how experienced or skilled they appear.

As a health care professional and an extension of physician care, you are bound by patient confidentiality. You should not discuss your findings or any disclosures made by the patient with anyone but those who are treating the patient or in limited situations, as required by law, the police or other social agencies. When discussing a call with others, you should be careful to avoid revealing any information that might disclose the name or identity of patients you have treated. Be careful not to

gossip about calls and patients with others, even in your own home. The protection of patient privacy has drawn national attention with the passage of the **Health Insurance Portability and Accountability Act (HIPAA)**. You should be familiar with the requirements of this legislation, especially as it applies to your particular practice.

1. Do your roles and responsibilities as an EMT differ from those of a paramedic? If so, how?

The fundamental roles and responsibilities—providing *safe and effective* emergency medical care to the sick and injured, and transporting patients to an appropriate medical facility—are the same for the EMT, AEMT and paramedic provider.

The only difference between the EMT and the paramedic is the level of care that is provided to the patient. EMTs have a fundamental knowledge of emergency care and provide basic life support (BLS), such as cardiopulmonary resuscitation, bleeding control, bandaging and splinting, and basic airway management. Paramedics have a comprehensive knowledge of emergency medical care, which is built on a solid knowledge of BLS, and provide advanced life support interventions, such as advanced airway management, cardiac monitoring, and medication administration.

2. What is the difference between what you learned in your EMT class and the care you provide in the field?

Your education and training is intended to prepare you to function as an entry-level competent EMT; therefore, your education should reflect the current practice of prehospital emergency medical care. The cognitive knowledge and psychomotor skills learned in the classroom are concepts that you will apply when caring for patients in the field. With experience and contact with many patients experiencing a variety of injuries and illnesses, your ability to apply the concepts learned in the classroom will be enhanced. You will develop your own “routine” regarding your general approach to patient care; however, you must be able to alter your routine based on the situation and the needs of the patient. Experience also enhances your critical thinking abilities. Critical thinking is a complex combination of skills; it includes the following characteristics:

- **Rationality:** Relying on reason rather than emotion; requiring evidence; not ignoring evidence; following evidence where it leads; and being more concerned about finding the best explanation than about being right; analyzing apparent confusion; and asking questions
- **Self-awareness:** Weighing the influences of your motives and biases and recognizing your own assumptions, prejudices, biases, or point of view
- **Open-mindedness:** Evaluating all reasonable inferences; considering a variety of possible viewpoints or perspectives; remaining open to alternative interpretations; accepting new explanations because they explain the evidence better; accepting new priorities in response to reevaluation of the evidence; and not rejecting unpopular views as out of hand
- **Judgment:** Recognizing the relevance and/ or merit of alternative assumptions and perspectives and recognizing the extent and weight of evidence
- **Discipline:** Being precise, meticulous, comprehensive, and exhaustive; resisting manipulation and irrational appeals; and avoiding snap judgments

3. How do you know if this patient is experiencing a “true emergency?”

An emergency can be defined as any event or situation that requires immediate intervention to minimize or prevent serious injury or death. An emergency to one person may not be an emergency to another. You must recognize that people call EMS when they perceive their situation as an emergency. In the interest of the patient, you should assume an emergency exists unless a thorough and accurate assessment yields otherwise.

Your job is to take care of patients whether a “true emergency” exists or not.

4. The patient has requested you transport her to the hospital, but does not appear to be experiencing any life-threatening conditions. Should you transport her to the hospital?

Delivering excellent and compassionate care and providing transportation to a higher level of care should be the norm. The absence of any obvious life-threatening conditions does not mean this patient does not require further medical

evaluation and treatment. She has been experiencing back pain for a month; this could indicate a serious underlying problem that can only be diagnosed in a hospital. You will often encounter patients who are not experiencing any life-threatening conditions but still require EMS treatment—even if it is just supportive—and transport to the hospital.

Consulting with online medical control is recommended when a patient refuses treatment or transportation and you feel these interventions are in the patient's best interest. Similarly, if you feel transportation is not necessary, consulting with online medical control can help ensure this is the correct decision. This consultation should always be documented. If you allow patients with recognized or potentially serious medical problems to refuse care or do not offer these patients transportation to obtain higher level evaluation you expose yourself to greater levels of legal liability.

5. Is the paramedic required to contact medical control prior to administering any medications?

It depends on the EMS system's protocols. Some EMS protocols require prior contact before administering certain medications; others do not. Medical control is either off-line (indirect) or online (direct), as authorized by the EMS medical director. Online medical control consists of direction given over the phone or radio directly from the medical director or designated physician. Off-line medical control consists of standing orders, interventions that do not require prior contact with medical control, as authorized by the medical director. In this case, the paramedic started an IV line and administered medication without contacting medical control first. This indicates he or she had standing orders to do so. The paramedic recognized the need for pain medication, has been appropriately educated and trained on the medication and how to administer it, and has been authorized by the medical director to administer it at his or her discretion. It is important to note that just because your EMS system has standing orders for certain interventions, you should always contact medical control if you have any questions or concerns or need advice. Be familiar with your EMS system's protocols.

6. How should you answer the patient's question regarding her concern that she may have a serious condition?

Honesty is a critical attribute of any EMS provider. Lying to a patient and providing false hope and reassurance are unethical and inhumane. In many cases, the most honest answer to a question is "I don't know." Do not speculate—based solely on your assessment—and tell her she does or does not have a serious condition; you do not have the diagnostic equipment and resources needed to come to any conclusions. If you do not know the answer to a patient's question, do not be afraid to say "I don't know." Follow this up by reassuring her you will give her the best medical care possible and that the physician at the hospital will do the same. Patients deserve to hear the truth; never tell them otherwise.

7. What is the purpose of an EMS call critique?

The purpose of an EMS call critique is to provide feedback regarding how you cared for the patient and met his or her physical and emotional needs. It should not be punitive or demeaning; it is an educational tool that will enable you to enhance your patient care skills. EMTs must be open to constructive criticism; this is how they learn and become more proficient emergency care providers. Informal, one-on-one critiques, such as what the paramedic is conducting with you after the call, are ideal learning opportunities because information about the call is still fresh in your mind. Formal critiques, such as those that are conducted as part of the EMS continuous quality improvement (CQI) process, are designed to ensure that safe and effective patient care is consistently provided by all EMS providers in the system. To provide CQI, periodic run review meetings are held with those involved in patient care to review patient care reports and discuss any areas of care that appear to need change or improvement. Positive feedback should also be provided. If a problem appears to be repeated by a single EMT or crew, the medical director will discuss the details with those involved. If deemed necessary by the medical director, he or she may assign remedial training or develop some other educational activity. Many EMS systems have a designated person, who is assigned by the medical director, to carry out these tasks.

EMS Patient Care Report (PCR)

Date: 3-23-16	Incident No.: 010109	Nature of Call: Back pain	Location: 325 Blossom Ave.		
Dispatched: 0720	En Route: 0720	At Scene: 0723	Transport: 0735	At Hospital: 0750	In Service: 0801

Patient Information

Age: 59 Sex: F Weight (in kg [lb]): 64 kg (141 lb)	Allergies: None Medications: Ibuprofen Past Medical History: None Chief Complaint: Back pain
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Vital Signs

Time: 0727	BP: 126/66	Pulse: 88	Respirations: 16	Spo ₂ : 99%
Time: 0735	BP: 120/62	Pulse: 90	Respirations: 16	Spo ₂ : 97%
Time: 0742	BP: 118/60	Pulse: 70	Respirations: 14	Spo ₂ : 98%

EMS Treatment (circle all that apply)

Oxygen @ __ L/min via (circle one): NC NRM BVM	Assisted Ventilation	Airway Adjunct	CPR
Defibrillation	Bleeding Control	Bandaging	Splinting
Other: IV line, pain medication (by paramedic)			

Narrative

Dispatched for a 59-year-old woman with back pain. On arrival at the scene, found the patient sitting on the couch in her living room. She was conscious and alert; her airway was patent; and her breathing was adequate. Patient reports lower back pain, which has been present for the past month. She denied injuring her back; she further denied any other symptoms or past medical history. Medications include ibuprofen for pain. Assessment of patient's back revealed no gross evidence of deformity, swelling, or bruising. Pulse, sensory, and motor functions were grossly intact in all extremities. The patient stated she has not been evaluated by a physician for her back pain; however, because it has progressively worsened, she called 9-1-1. Obtained vital signs, placed patient onto stretcher and placed her in position of comfort, loaded her into the ambulance, and began transport to the hospital. En route, paramedic started IV line and administered analgesia. Shortly after analgesia was administered, patient expressed relief of her pain. Reassessment revealed that she remained conscious and alert with stable vital signs. Provided reassurance and reassessment throughout remainder of transport. Delivered patient to emergency department without incident and gave verbal report to staff nurse. **End of report**

Prep Kit

▶ Ready for Review

▪ The standards for prehospital emergency care and the providers who deliver it are governed by the laws in each state and

are typically regulated by a state office of EMS.

- The EMS ambulance is staffed by EMTs who have been trained to the emergency medical technician, advanced EMT (AEMT), or paramedic level according to recommended national standards and have been licensed by the state they serve.
 - An EMT has training in basic emergency care skills, including automated external defibrillation, use of airway adjuncts, and assisting patients with certain medications.
 - An AEMT has training in specific aspects of advanced life support (ALS), such as intravenous therapy and the administration of certain emergency medications.
 - A paramedic has extensive training in ALS, including endotracheal intubation, emergency pharmacology, cardiac monitoring, and other advanced assessment and treatment skills.
 - Emergency medical responders, such as law enforcement officers, firefighters, park rangers, ski patrollers, or other organized rescuers often arrive at the scene before the ambulance and EMTs.
 - After the EMTs size up the scene and assess the patient, they provide the emergency care and transport that is indicated based on their findings and ordered by their medical director in the service's standing orders and protocols or by the physician who is providing online medical direction.
 - The National EMS Scope of Practice Model, developed by NHTSA, provides overarching guidelines as to what skills each level of EMS provider should be able to accomplish.
 - The *EMS Agenda for the Future* is a multidisciplinary, national review of all aspects of EMS delivery that encourages the creation of systems that help to protect the well-being of EMS providers. It includes 14 components that make up an EMS system.
 - You will often be the first health care professional to assess and treat the patient; as such, you have certain roles and are expected to possess certain attributes.
 - EMT attributes include compassion and motivation to reduce suffering, pain, and mortality in those who are injured or acutely ill; a desire to provide each patient with the best possible care; commitment to obtain the knowledge and skills that this position requires; and the drive to continually increase your knowledge, skills, and ability.
 - The EMT course that you are now taking will present the information and skills that you will need to pass the required certification examination needed to become a licensed EMT.
 - Once you have completed the course, you must assume responsibility for directing your own study through continuing education provided by your service's training officer and medical director or through other opportunities available to you. Your commitment to continued learning is the key to being a good EMT.
 - Throughout your career, seek new certifications and roles that will broaden your abilities and experience. Mobile integrated healthcare, including the role of community paramedic, is an example of how EMS roles are evolving.
 - As a health care professional and an extension of physician care, you are bound by patient confidentiality.
-

► Vital Vocabulary

advanced EMT (AEMT) An individual who has training in specific aspects of advanced life support, such as intravenous therapy, and the administration of certain emergency medications.

advanced life support (ALS) Advanced lifesaving procedures, some of which are now being provided by the EMT.

Americans With Disabilities Act (ADA) Comprehensive legislation that is designed to protect people with disabilities against discrimination.

automated external defibrillator (AED) A device that detects treatable life-threatening cardiac dysrhythmias (ventricular fibrillation and ventricular tachycardia) and delivers the appropriate electrical shock to the patient.

certification A process in which a person, an institution, or a program is evaluated and recognized as meeting certain predetermined standards to provide safe and ethical care.

community paramedicine A health care model in which experienced paramedics receive advanced training to equip them to provide additional services in the prehospital environment, such as health evaluations, monitoring of chronic illnesses or conditions, and patient advocacy.

continuous quality improvement (COI) A system of internal and external reviews and audits of all aspects of an EMS system.

emergency medical dispatch (EMD) A system that assists dispatchers in selecting appropriate units to respond to a particular call for assistance and provides callers with vital instructions until the arrival of EMS crews.

emergency medical responder (EMR) The first trained professional, such as a police officer, firefighters, lifeguard, or other rescuer, to arrive at the scene of an emergency to provide initial medical assistance.

emergency medical services (EMS) A multidisciplinary system that represents the combined efforts of several professionals and agencies to provide prehospital emergency care to the sick and injured.

emergency medical technician (EMT) An individual who has training in basic life support, including automated external defibrillation, use of a definitive airway adjunct, and assisting patients with certain medications.

Health Insurance Portability and Accountability Act (HIPAA) Federal legislation passed in 1996. Its main effect in EMS is in limiting availability of patients' health care information and penalizing violations of patient privacy.

intravenous (IV) therapy The delivery of medication directly into a vein.

licensure The process whereby a competent authority, usually the state, allows people to perform a regulated act.

medical control Physician instructions given directly by radio or cell phone (online/direct) or indirectly by protocol/guidelines (off-line/indirect), as authorized by the medical director of the service program.

medical director The physician who authorizes or delegates to the EMT the authority to provide medical care in the field.

mobile integrated healthcare (MIH) A method of delivering health care which involves providing health care within the community rather than at a physician's office or hospital.

National EMS Scope of Practice Model A document created by the National Highway Traffic Safety Administration (NHTSA) that outlines the skills performed by various EMS providers.

paramedic An individual who has extensive training in advanced life support, including endotracheal intubation, emergency pharmacology, cardiac monitoring, and other advanced assessment and treatment skills.

primary prevention Efforts to prevent an injury or illness from ever occurring.

primary service area (PSA) The designated area in which the EMS agency is responsible for the provision of prehospital emergency care and transportation to the hospital.

public health Focused on examining the health needs of entire populations with the goal of preventing health problems.

public safety access point A call center, staffed by trained personnel who are responsible for managing requests for police, fire, and ambulance services.

quality control The responsibility of the medical director to ensure the appropriate medical care standards are met by EMTs on each call.

secondary prevention Efforts to limit the effects of an injury or illness that you cannot completely prevent.

Assessment
in Action



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You are tasked with teaching a review course for the National Registry written exam. Several students are worried about passing the cardiology and trauma sections. You reassure them that while these are very important topics, the fundamentals form the building blocks for our profession and should not be forgotten. After sharing those words of wisdom, you begin class.

1. Which of the following agencies is the federal source for the EMT education standards?
 - A. Department of Health and Human Services
 - B. National Highway Traffic Safety Administration
 - C. Federal Emergency Management Agency
 - D. Department of Transportation
2. What is the primary job of the EMT?
 - A. Provide appropriate medical care
 - B. Diagnose the patient's condition
 - C. Ensure personal safety
 - D. Provide transport to the closest hospital
3. This act of legislation protects people with disabilities from being denied access to programs and services that are provided by state or local governments.
 - A. Ryan White Act
 - B. Marchman Act
 - C. Equal Rights Amendment
 - D. Americans with Disabilities Act
4. Which of the following is NOT a component of an EMS system under the EMS Agenda for the Future?
 - A. Medical direction
 - B. Certification reciprocity

- C. Public education
 - D. EMS research
5. Which of the following is an example of secondary prevention?
- A. Providing cervical spine immobilization
 - B. Administering vaccines
 - C. Conducting injury surveillance
 - D. Teaching safety in schools
6. The roles and responsibilities of an EMT include all of the following EXCEPT:
- A. performing a patient assessment.
 - B. upholding medical and legal standards.
 - C. providing legal advice to patients.
 - D. ensuring and protecting patient privacy.
7. An example of teamwork and diplomacy is:
- A. using your persona to project a sense of trust.
 - B. being able to communicate while giving respect to the listener.
 - C. placing others in high regard or importance.
 - D. delegating multiple tasks ensuring efficiency and safety.
8. The Health Insurance Portability and Accountability Act (HIPAA):
- A. enables patients to travel without losing health insurance.
 - B. requires insurance companies to justify denying health care.
 - C. prevents an emergency department from refusing to care for a critically ill patient.
 - D. limits the availability of a patient's health care information.
9. What is continuous quality improvement (CQI) and how is it used to help ensure the safety of patients?
10. Why is EMS research a vital part in the evolution of patient management?