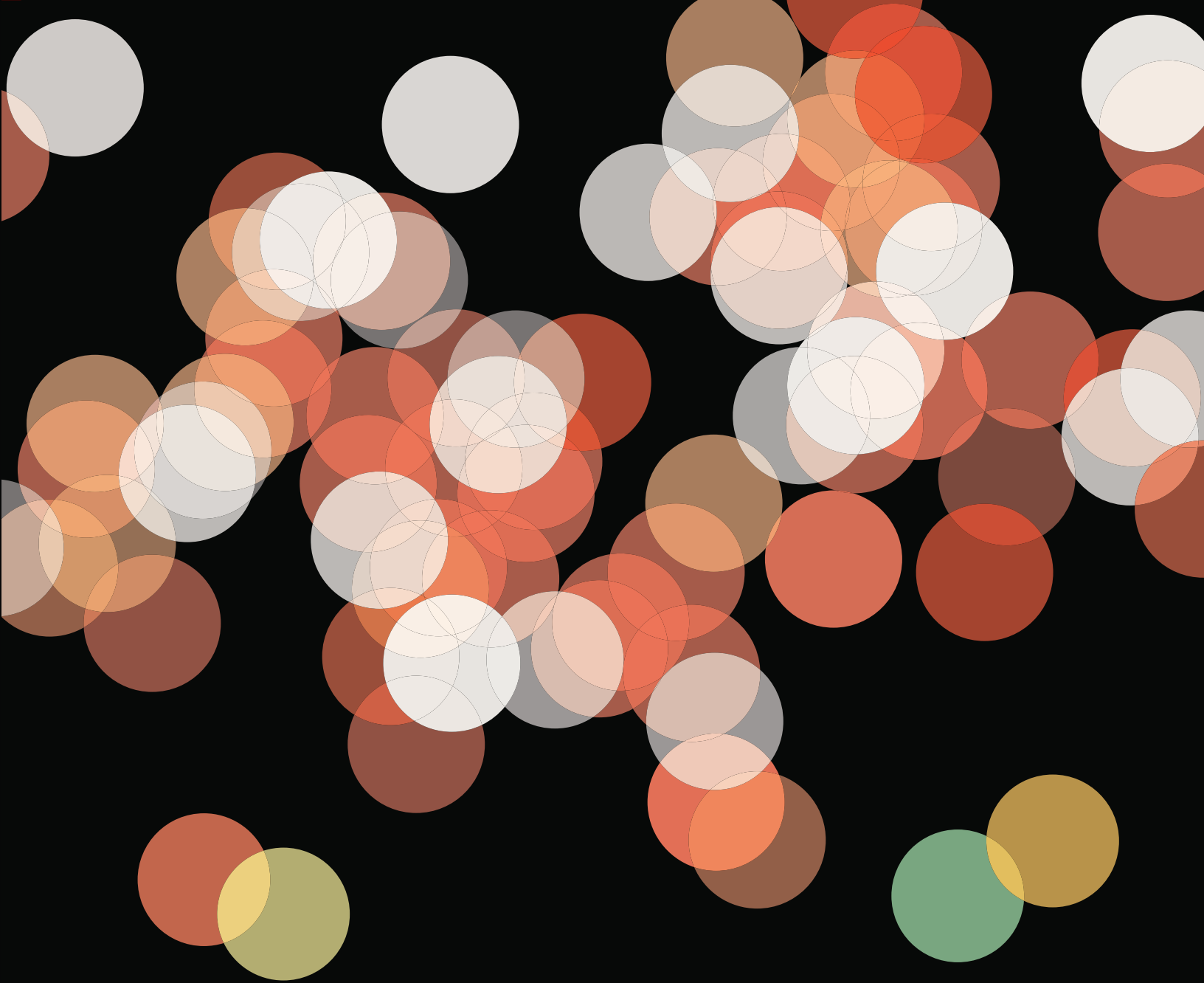
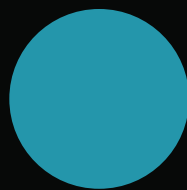




PEARSON NEW INTERNATIONAL EDITION



Prehospital Emergency Care
Joseph J. Mistovich Keith J. Karren
Brent Hafen
Tenth Edition

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Emergency Medical Care Systems, Research, and Public Health

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARDS • **Preparatory** (Content Areas: EMS Systems; Research); **Public Health**

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

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

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Describe the key historical events that have shaped the development of the emergency medical services (EMS) system, including:
 - a. Lessons learned in trauma care from experiences in the Korean and Vietnam conflicts
 - b. Publication of *Accidental Death and Disability: The Neglected Disease of Modern Society*
 - c. Highway Safety Act of 1966
 - d. Emergency Medical Services System Act of 1973
 - e. Public CPR courses
 - f. Publication of the *National Emergency Medical Services Education and Practice Blueprint*
 - g. Publication of *EMS Agenda for the Future* and *The EMS Education Agenda for the Future: A Systems Approach*
 - h. Development of *National EMS Core Content*, *National EMS Scope of Practice Model*, and *National EMS Education Standards*
 - i. The Institute of Medicine report *The Future of EMS Care: EMS at the Crossroads*
3. Briefly explain each of the components of the Technical Assistance Program Assessment Standards:
 - a. Regulation and policy
 - b. Resource management
 - c. Human resources and training
 - d. Transportation
 - e. Facilities
 - f. Communications
 - g. Public information and education
 - h. Medical direction
 - i. Trauma systems
 - j. Evaluation
4. Discuss the differences between 911 and non-911 EMS access systems, including the features and benefits of 911 systems.
5. Compare and contrast the scopes of practice of the following levels of EMS providers:
 - a. Emergency Medical Responder (EMR)
 - b. Emergency Medical Technician (EMT)
 - c. Advanced Emergency Medical Technician (AEMT)
 - d. Paramedic
6. Explain the importance of the EMT's understanding of the health care resources available in the community.
7. Give examples of how EMTs can carry out each of the following roles and responsibilities:
 - a. Personal safety and the safety of others
 - b. Patient assessment and emergency care
 - c. Safe lifting and moving
 - d. Transport and transfer of care
 - e. Record keeping and data collection
 - f. Patient advocacy
8. Describe the expectations of EMTs in terms of each of the following professional attributes:
 - a. Appearance
 - b. Knowledge and skills
 - c. Physical demands
 - d. Personal traits
 - e. Maintaining certification and licensure

continued

9. Discuss the purposes of medical direction/oversight in the EMS system.
10. Describe the purpose of quality improvement/continuous quality improvement programs in EMS.
11. Explain the EMT's roles and responsibilities in quality improvement.
12. Identify activities in EMS that pose a high risk of mistakes and injuries.
13. Discuss steps that you can take to minimize mistakes and injuries in EMS.
14. Discuss the steps of evidence-based decision making.
15. Explain the limitations of evidence-based decision making in EMS.
16. Describe the relationship between EMS and public health.
17. List the ten greatest public health achievements in the United States in the 20th century.

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary.

Advanced Emergency Medical Technician (AEMT)

Americans with Disabilities Act (ADA)

Emergency Medical Responder (EMR)

Emergency Medical Technician (EMT)

EMS system

evidence-based medicine

medical direction

medical director

medical oversight

off-line medical direction

on-line medical direction

Paramedic

prehospital care

protocols

quality improvement (QI)

standing orders

Case Study

The Dispatch

EMS Unit 121—respond to 10915 Pine Lake Road in Perry Township—you have an elderly male at that location—victim of a fall—Perry Township Fire Department has been notified and is en route—time out 1032 hours.

En Route

While you confirm the address with dispatch, your partner pulls out the county map. “I know that location,” he says. “Yes, here. We need to head north on Lincoln.” You pull your unit out of the garage. Your partner operates the emergency lights and sirens. Within 8 minutes, you turn onto Pine Lake Road and spot a police car and a fire truck.

Upon Arrival

You position your ambulance in the driveway of the residence to afford an easy exit. As you leave the unit, the police officer—a First Responder who radioed for EMS help—tells you that a 65-year-old male fell about 30 feet down a very steep embankment behind his house. He’s been at the bottom for about 30 minutes. The patient, Edgar Robinson, is conscious and is able to tell you that his right arm and leg are injured. The rescue squad from the fire department is preparing to rappel down the embankment to extricate the patient.

How would you proceed?

During this chapter, you will read about the roles and responsibilities of an EMT. Later, we will return to the case study and put in context some of the information you learned.

INTRODUCTION

One of the most critical health problems in the United States today is the sudden loss of life and disability caused by catastrophic accidents and illnesses. Every year thousands of people in this country die or suffer permanent harm because of the lack of adequate and available emergency medical services. As an Emergency Medical Technician (EMT), you can make a positive difference.

This course is designed to help you gain the knowledge, skills, and attitudes necessary to be a competent, productive, and valuable member of the Emergency Medical Services (EMS) team. As you begin, your instructor will provide the necessary paperwork, describe the

expectations for the course and the job, inform you of required or available immunizations, and outline your state and local provisions for certification as an EMT.

THE EMERGENCY MEDICAL SERVICES SYSTEM

A Brief History

Emergency medical care has developed from the days when the local funeral home was the ambulance provider and patient care did not begin until arrival at the hospital. By contrast, the modern, sophisticated

EMS system (Emergency Medical Services system) permits patient care to begin at the scene of the injury or illness, and EMS is part of a continuum of patient care that extends from the time of injury or illness until rehabilitation or discharge. Today, when a person becomes ill or suffers an injury, he has easy access to EMS by telephone, gets a prompt response, and can depend on getting high-quality prehospital emergency care from trained professionals.

What happens to an injured person before he reaches a hospital is of critical importance. Wars helped to teach us this lesson. During the Korean and Vietnam conflicts, for example, it became obvious that injured soldiers benefited from emergency care in the field prior to transport. This realization helped the civilian EMS system evolve from a mere provider of fast transport by poorly trained or untrained individuals who provided little or no care to a system in which highly trained EMS personnel provide professional care at the scene and en route to the hospital. We continue to learn about trauma care from the wars in Iraq and Afghanistan and to implement changes in EMS practice based on the outcomes of those patients.

The modern EMS system has evolved from its beginnings in the 1960s when the President's Committee for Traffic Safety identified a need to reduce the injuries and deaths related to highway crashes. In 1966, the National Academy of Sciences National Research Council published a report entitled *Accidental Death and Disability: The Neglected Disease of Modern Society*. This report became known as the "white paper," detailing the number of deaths and injuries related to traffic crashes in the United States. The "white paper" also identified severe deficiencies in the delivery of prehospital care in the United States and made recommendations intended to change ambulance systems, training requirements, and the provision of prehospital care. The following are some of the significant developments that have had a profound effect on emergency medical services:

- The Highway Safety Act of 1966 required each state to establish a highway safety program that met prescribed federal standards and included emergency services. The Department of Transportation, through its National Highway Traffic Safety Administration (NHTSA), took a leadership role in the development of emergency medical services. An early focus was improving the education of prehospital personnel. One initiative was the development of national standard curricula. The EMT programs of today have gradually evolved from this charge and continue to use a national standard curriculum.
- The Emergency Medical Services System Act of 1973 provided access to millions of dollars of funding geared to EMS system planning and implementation, personnel availability, and training.
- The American Heart Association began to teach cardiopulmonary resuscitation (CPR) and basic life

support to the public. Completion of a CPR course is now a prerequisite to the EMT course.

- The National Registry of EMTs in 1993 released the *National Emergency Medical Services Education and Practice Blueprint*, which defined issues related to EMS training and education and was intended to guide the development of national training curricula.
- The National Highway Traffic Safety Administration in 1996 published the *EMS Agenda for the Future* document with the intent to make EMS a greater component in the health care system in the United States. In 2000, a follow-up document, *The EMS Education Agenda for the Future: A Systems Approach*, was released to address the issue of consistency in the education, training, and certification and licensure of entry-level EMS personnel nationally.
- The National Highway Traffic Safety Administration and Health Resources and Services Administration in 2005 published the *National EMS Core Content*, which defined the domain of knowledge found in the National EMS Scope of Practice Model. It promotes universal knowledge and skills for EMS personnel.
- The National Highway Traffic Safety Administration in 2006 published *The National EMS Scope of Practice Model*, which defines four levels of EMS licensure and the corresponding knowledge and skills necessary at each level. The Scope of Practice will be discussed later in the chapter.
- The Institute of Medicine report *The Future of EMS Care: EMS at the Crossroads* in 2006 recommended that all state governments adopt a common scope of practice that allows for reciprocity between states, national accreditation for all paramedic programs, and national certification as a prerequisite for state licensure and local credentialing.
- The National Highway Traffic Safety Administration's National EMS Education Standards outline the minimum terminal objectives for entry-level EMS personnel based on the National EMS Scope of Practice Model. The contents of this text are based on the National EMS Education Standards.

Advances continue to be made in emergency medical services design and response, equipment, research, and the education of EMTs. Many lives have been saved and unnecessary disabilities avoided because of these advances in emergency medical services.

Technical Assistance Program Assessment Standards

Each state has control of its own EMS system, independent of the federal government. However, the National Highway Traffic Safety Administration (NHTSA) provides a set of recommended standards called the "Technical Assistance Program Assessment Standards." A brief description of these standards follows. They will

be discussed in much more detail throughout this text and in your EMT course.

- **Regulation and policy.** Each state must have laws, regulations, policies, and procedures that govern its EMS system. A state-level EMS agency is also required to provide leadership to local jurisdictions.
- **Resource management.** Each state must have central control of EMS resources so that each locality and all patients have equal access to acceptable emergency care.
- **Human resources and training.** All personnel who staff ambulances and transport patients must be trained to at least the EMT level.
- **Transportation.** Patients must be provided with safe, reliable transportation by ground or air ambulance.
- **Facilities.** Each seriously ill or injured patient must be delivered in a timely manner to an appropriate medical facility.
- **Communications.** A system of communications must be in place to provide public access to the system and communication among dispatcher, EMS personnel, and hospital.
- **Public information and education.** EMS personnel should participate in programs designed to educate the public in the prevention of injuries and how to properly and appropriately access the EMS system.
- **Medical direction.** Each EMS system must have a physician as a medical director to provide medical oversight that includes overseeing patient care and delegating appropriate medical practices to EMTs and other EMS personnel.
- **Trauma systems.** Each state must develop a system of specialized care for trauma patients, including one or more trauma centers and rehabilitation programs, plus systems for assigning and transporting patients to those facilities.
- **Evaluation.** Each state must have a quality improvement system for the continuing evaluation and upgrading of the system.

Access to the EMS System

There are two general systems by which the public can access emergency medical services: 911 and non-911.

Often referred to as the universal number, 911 is the phone number used nationwide to access emergency services, including police, fire, and EMS. The most common 911 system is enhanced. An enhanced 911 system, called E-911, provides automatic number identification (ANI) and automatic location identification (ALI), which indicate the exact address and phone number from which the call is being made. This information is automatically displayed on the computer screen of the call taker, even if the individual making the call hangs up. The main advantage of E-911 is that the address and phone number are automatically displayed, and an immediate response can be dispatched, even if the caller

is unable to communicate effectively—for example, because of an injury or illness such as a stroke, or if he cannot recite his address in the confusion of the emergency, or if it is a child who cannot tell the call taker the address.

While exact procedures may vary, the basic process is the same. Calls are received by a public service answering point (PSAP) where a call taker collects, verifies, and records the information about the emergency, decides which service must respond, and facilitates alerting the necessary service (Figure 1 ■).

There are two main benefits to the 911 universal number:

- The public service answering point is generally staffed by trained communications personnel. Many are specially trained as Emergency Medical Dispatchers (EMDs), who not only take the call and facilitate the dispatch of emergency services but also provide instructions for lifesaving emergency care, such as bleeding control or CPR, that can be administered immediately by the caller or another person at the scene.
- The use of 911 reduces the time it takes the caller to access the emergency services system. The caller does not have to look up a ten-digit number to contact in the case of an emergency. The number is easy for young children to remember and dial. All three services—police, fire, and EMS—are accessible by dialing one number. Thus, all emergency resources can be dispatched simultaneously to a scene, for example, to a car crash that requires traffic control and investigation by the police, fire suppression and extrication by the fire service, and emergency medical care and transportation by EMS.

The Federal Communication Commission (FCC) currently estimates that wireless (cell) phones are responsible for placing approximately 70 percent of 911 calls, with the percentage increasing each year. Although wireless phones are an extremely important tool in gaining access to public safety services in the event of an emergency, they also provide unique challenges to the public service answering point and the information shared with



■ **FIGURE 1** Communications play a vital role in the Emergency Medical Services (EMS) system.

the call taker. Because wireless service is mobile and not associated with one fixed address or geographic location, the cell site (tower) closest to the 911 caller is often the only location identifier. Also, the call can be erroneously sent to a PSAP that doesn't service that particular area if the cell site is close to a geographic boundary.

The FCC has adopted rules to improve the accuracy of location information provided to PSAPs by wireless technology companies. These rules include:

- **Basic 911:** The wireless service provider to transmit all calls to a PSAP regardless of whether or not the caller subscribes to the provider's service.
- **Phase I Enhanced 911:** The wireless service provider must provide the PSAP with the telephone number of the device placing the call and the location of the cell site or base station transmitting the call.
- **Phase II Enhanced 911:** The wireless service provider must provide the latitude and longitude of the caller. The information must be accurate within 50 to 300 meters, depending on the type of technology used.

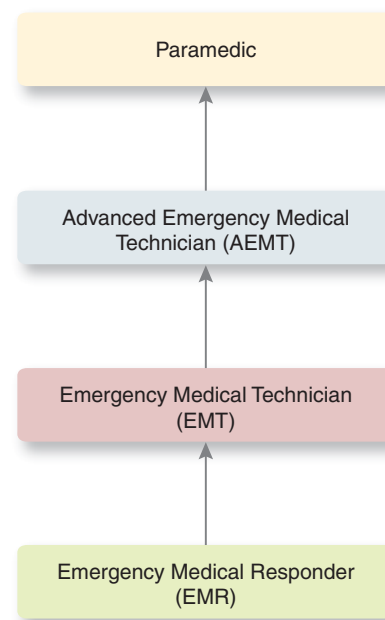
Technology to track the exact location of cell phone calls through global-positioning-satellite (GPS) has been developed and is now being used by many, but not yet all, EMS systems.

Voice over Internet Protocol (VoIP) services have also presented challenges to accessing 911 in an emergency. The FCC imposed requirements that VoIP providers must provide 911 service to all customers as a standard feature, obtain a physical location from the subscriber of where the service will be used, and transmit all 911 calls, including callback number and registered location, to the appropriate public service answering point.

Levels of Training

The *National EMS Scope of Practice Model* released by the National Highway Traffic Safety Administration in 2005 was developed to bring a higher degree of consistency to EMS throughout the United States, improve patient care and safety, allow for easier reciprocity between states, and decrease public confusion by identifying specific national levels of EMS practitioners. The National Scope of Practice Model identifies the following four levels of EMS practitioners (Figure 2 ■):

1. **Emergency Medical Responder (EMR)**, which is similar to the First Responder level, provides immediate lifesaving care to patients who have accessed the EMS system and while awaiting response from a higher-level EMS practitioner. The EMR uses basic airway, ventilation, and oxygen therapy devices; takes patient vital signs; and provides stabilization of the spine and suspected extremity injuries, eye irrigation, bleeding control, emergency moves, CPR, automated external defibrillation, and emergency childbirth care.



■ **FIGURE 2** The four levels of EMS practitioners.

2. **Emergency Medical Technician (EMT)** provides basic emergency medical care and transportation to patients who access the EMS system. The interventions provided by the EMT include those performed by the EMR but with basic equipment found on an ambulance. The EMT level is similar in scope to the EMT-Basic level with the addition of advanced oxygen therapy and ventilation equipment, pulse oximetry, use of automatic blood pressure monitoring equipment, and limited medication administration.
3. **Advanced Emergency Medical Technician (AEMT)** provides both basic and limited advanced emergency medical care and transportation to patients in the prehospital environment. The AEMT provides all of the skills of the EMT with the addition of the use of advanced airway devices, monitoring of blood glucose levels, initiation of intravenous and intraosseous (in-the-bone) infusions, and administration of a select number of medications.
4. **Paramedic** scope of practice includes the skills performed by the EMT and AEMT with the addition of more advanced assessment and patient management skills and provision of the highest level of prehospital care. Paramedics perform advanced assessments, form a field impression, and provide invasive and drug interventions as well as transport. Their care is designed to reduce disability and death of patients who access the EMS system.

The Health Care System

First Responders and EMTs are an integral part of a community's health care system—a network of medical care that begins in the field and extends to hospitals

and other treatment centers. In essence, EMTs provide **prehospital care**—emergency medical treatment given to patients before they are transported to a hospital or other facility. (In some areas the term *out-of-hospital care* is preferred, reflecting a trend toward providing care on the scene with or without subsequent transport to a hospital. Out-of-hospital care also includes care provided during interfacility transport. Your instructor can provide information on how or if this term may apply to your EMS system.)

The EMT may be required to decide on the facility to which the patient must be transported. The most familiar destination is the hospital emergency department, which is staffed by physicians, nurses, and others trained in emergency medical treatment. Here patients are stabilized and prepared for further care. Some patients may need to be transported to special facilities such as the following:

- **Trauma center** for rapid surgical intervention and specialized treatment of injuries that generally exceeds hospital emergency department capabilities (Figure 3 ■)
- **Burn center** for specialized treatment of serious burns, often including long-term care and rehabilitation
- **Obstetrical center** for high-risk obstetric patients
- **Pediatric center** for specialized treatment of infants and children
- **Poison center** for specialized treatment of poisoning victims
- **Stroke center** to provide specialized care for specific acute stroke patients
- **Cardiac center** for the rapid and advanced management of patients suffering cardiac emergencies
- **Hyperbaric center** for the treatment of certain toxic exposures, diving emergencies, and other conditions
- **Spine injury center** for the management of patients with severe spine injuries
- **Psychiatric center** to care for patients with behavioral emergencies



■ **FIGURE 3** A trauma center can provide rapid surgical intervention and treatment of injuries that generally exceeds hospital emergency department capabilities. (© Edward T. Dickinson, MD)



■ **FIGURE 4** The EMT works closely with other public safety personnel.



■ **FIGURE 5** You will often work as a team with paramedics and others.

You will often be called to emergencies where you and your partner are the only trained emergency personnel involved. At other times, two or more emergency services will be needed at the scene (Figure 4 ■). Specialized rescue teams and fire personnel, as well as law enforcement, all may be involved. As a member of the team that stabilizes and transports a patient (Figure 5 ■), you will be in a position to serve as the liaison between the community's medical services and those public safety workers.

THE EMT

Roles and Responsibilities

While specific responsibilities may vary from one area to another, your general responsibilities as an EMT include personal safety and the safety of others, patient assessment and emergency medical care, safe lifting and moving, patient transport and transfer, record keeping and data collection, and patient advocacy. These and other responsibilities are found in Table 1.

In light of these roles and responsibilities, the **Americans with Disabilities Act (ADA)** of 1990 protects

TABLE 1**Roles and Responsibilities of the Emergency Medical Technician**

- Maintain vehicle and equipment readiness.
- Ensure safety of the EMS crew, the patient, and bystanders at the scene.
- Operate the emergency vehicle.
- Assess the patient.
- Provide emergency care.
- Safely lift and move the patient.
- Prepare oral and written reports.
- Safely transport the patient.
- Transfer patient care.
- Perform record keeping and data collection.
- Serve as the patient's advocate.
- Provide emotional support to the patient, relatives, and others at the scene.
- Integrate the EMS service with other emergency and nonemergency services.
- Resolve the emergency incident.
- Maintain medical and legal standards.
- Provide administrative support.
- Enhance professional development.
- Develop and maintain community relations.

individuals who have a documented disability from being denied initial or continued employment based on their disability. The employer must make necessary and reasonable adjustments so that individuals with disabilities are not precluded from employment. Check with your state EMS office and ADA representative to seek further information.

Personal Safety and the Safety of Others

Your first and most important priority is to protect your own safety (Figure 6 ■). Remember this rule: You cannot help the patient, other rescuers, or yourself if you



■ **FIGURE 6** The EMT must ensure personal safety at all times. (© Pat Songer)

are injured. You also do not want to endanger other rescuers by forcing them to rescue you—instead of the patient. Once scene safety is ensured, the patient's needs become your priority.

Drive safely at all times, using proper precautions to avoid traffic accidents. Use a seat belt whenever you drive or ride, unless you need to remove it to care for the patient. Remove yourself from potentially hazardous sites such as high-traffic areas, downed power lines, gasoline leaks, fires, chemical spills, radiation leaks, and so on. Never enter a volatile crowd situation, such as a riot, crime scene, or hostage situation, until it has been controlled by law enforcement. Take extra precautions when you suspect that a patient, relative, or bystander at the scene is under the influence of drugs or alcohol, has a behavioral disorder, or is emotionally charged, because these individuals have a tendency to suddenly change their behavior and may become a danger to you and your crew.

At the scene, follow directions from police, fire, utility, and other expert personnel. Create a safe area in which the patient can be treated (away from the threat of fire or explosion, for example). Redirect traffic for the safety of patients and bystanders.

Wear reflective emblems or clothing at night, and provide adequate lighting at an accident scene. Minimize personal injury from jagged metal or broken glass at an accident scene by wearing a helmet or hard hat, protective outerwear, eye protection, and leather gloves. In addition, wear protective gear, such as gloves, eye protection, mask, and gown, as necessary to avoid infectious diseases.

Patient Assessment and Emergency Care

Once you have ensured scene safety, you must gain access to patients, recognize and evaluate problems, and provide emergency care (Figure 7 ■)—often in situations that involve more than one patient. First, always perform a primary assessment to help you identify and



■ **FIGURE 7** The EMT is responsible for providing competent patient care.

care for immediately life-threatening problems, such as airway compromise, respiratory insufficiency, cardiac arrest, or severe bleeding. Then complete a secondary assessment, after which you can stabilize and treat other emergency injuries or conditions you discover or suspect. Work as quickly as possible while avoiding undue haste, carelessness, and mishandling of the patient. Always be aware of changing conditions and ensure that the scene remains safe.

Safe Lifting and Moving

Prevent further injury of patients by always using the easiest and safest recommended emergency urgent or nonurgent moves and equipment. Prevent injuring yourself by always using proper body mechanics and by making sure you have sufficient help to lift and move patients and equipment.

Transport and Transfer of Care

Before leaving the scene, determine which facility (local emergency department, pediatric hospital, burn center, or other) will be most appropriate. Consider the patient's condition, the extent of injuries, prior health care contact, the relative locations, hospital staffing, and destination protocols when making transport decisions. Consult medical direction if necessary, and follow your local transport protocols.

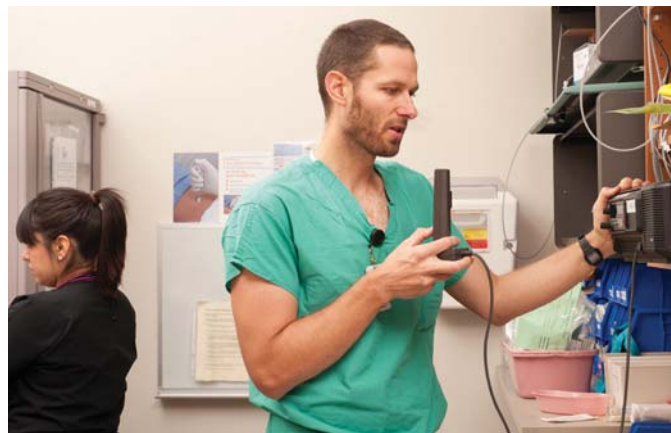
Use the communications equipment available to you to notify the receiving facility of the number of patients, the destination(s), and the nature and extent of injuries. Alert the emergency department or receiving facility about high-priority patients and what will be needed immediately upon arrival, such as a trauma team or a stroke team. Report changes in the patient's condition, and consult medical direction during transport as appropriate and as required (Figures 8 ■ and 9 ■).

Drive in a way that will minimize further injury and maximize patient comfort. Obey appropriate laws and regulations, and use lights and sirens properly. Realize that not all patients require the use of lights and sirens. Once you reach the destination, help remove the wheeled stretcher and maneuver it into the emergency department.

Report both verbally and in writing to the appropriate receiving facility personnel what injuries or conditions were identified, what care has been given to the patient, and the patient's response to treatment. Provide other assistance as needed and do not leave before the patient has been properly transferred to the care of the receiving facility personnel (Figure 10 ■).

Record Keeping and Data Collection

Throughout your shift, maintain an up-to-date log of calls, if required. Before leaving the hospital, or as soon as possible, complete the written or electronic



■ **FIGURE 8** The EMT can get on-line medical direction by telephone, cell phone, or radio.



■ **FIGURE 9** Assessment and emergency care are continued en route to the medical facility.

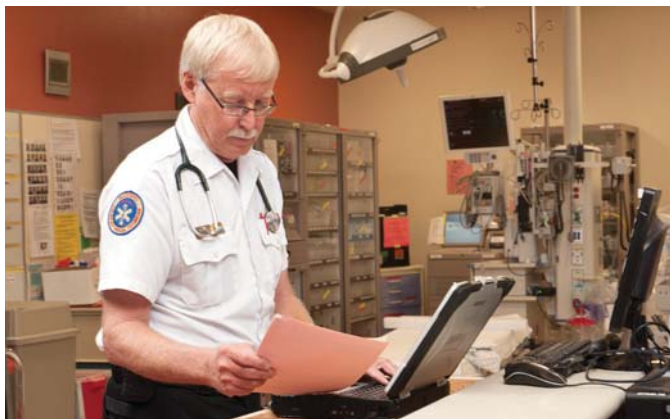


■ **FIGURE 10** The EMT is responsible for properly transferring the care of the patient to the appropriate medical personnel.

prehospital care report (Figure 11 ■). A copy of this report will become part of the patient's medical record and part of your EMS system's permanent records.

Patient Advocacy

As an emergency care provider, you are also responsible for protecting the patient's rights. At the scene, collect and safeguard a patient's valuables on his person,



■ **FIGURE 11** As soon as possible, complete the written or electronic prehospital care report.

transport them with the patient, and document what was given to emergency department personnel. In the field, protect the patient's privacy, shield the patient as much as possible from curious bystanders, and answer questions truthfully. Conceal from curious onlookers the body of a patient who has died.

Make sure that the patient's friends or loved ones at the scene know how to get to the hospital or medical facility that you are transporting the patient to. In some systems a relative may be transported in the operator's section of the ambulance. At the receiving facility, act as the patient's advocate by making certain you have provided necessary information, especially about circumstances hospital personnel have not witnessed. Honor any patient requests that you reasonably can, such as notifying a relative or ensuring that the patient's home is secure. Be sure to adhere to all confidentiality rules when doing such activities.

Professional Attributes

A number of professional attributes are important to maximize your effectiveness as an EMT. They include appearance, knowledge, skills, the ability to meet physical demands, general interests and temperament, and maintenance of certification and licensure. See Table 2 for characteristics of professional behavior for EMTs.

Appearance

Excellent personal grooming and a neat, clean appearance help instill confidence in patients treated by EMTs—and help protect them from contamination that could be caused by dirty hands, dirty fingernails, or soiled clothing. Respond to the scene in complete uniform, or appropriate dress, to portray the positive image you want to communicate. Remember, you are on a medical team. Your appearance can send the message that you are competent and can be trusted to make the right decisions.

TABLE 2

Characteristics of Professional Behavior for EMTs

- Integrity
- Empathy
- Self-motivation
- Professional appearance and hygiene
- Self-confidence
- Effective time management
- Good verbal and written communication skills
- Teamwork and diplomacy
- Respect for patients, coworkers, and other health care professionals
- Patient advocate
- Careful delivery of service

Knowledge and Skills

To practice as an EMT, you need to successfully complete the basic training program for EMTs as outlined by the U.S. Department of Transportation. In addition to the required course work, you also need to know the following:

- **Use and maintenance of common emergency equipment**, such as suction machines, oxygen-delivery systems, airway adjuncts, automated external defibrillators, spinal immobilization equipment, splints, obstetrical kits, various types of patient-moving devices, and tools to gain access to the patient.
- **Assistance with the administration of medications** approved by medical direction.
- **Cleaning, disinfection, and sterilization of nondisposable equipment.**
- **Safety and security measures** for yourself, your partner, and other rescuers, as well as for the patient and bystanders.
- **Territory and terrain** within the service area to allow expedient response to the scene and to the appropriate receiving facility.
- **State and local traffic laws and ordinances** concerning emergency transportation of the sick and injured. Ambulances are given certain privileges, but they are not immune from all traffic laws.

Use opportunities for continuing education to expand your knowledge and learn about advances in patient care, new equipment, or better ways of using existing equipment. Take refresher courses to renew your knowledge and skills. Finally, maintain up-to-date knowledge of local, state, and federal legislation, regulations, standards, guidelines, and issues that affect the emergency medical systems in your area.

Physical Demands

To be an EMT, you must be in good physical health. You must be able to lift and carry up to 125 pounds.

Your eyesight must be good (correction by lenses is permitted), and you must have good color vision in order to properly assess a patient as well as for driving safely. Color vision is necessary to determine various changes in the color of the skin, nail beds, lips, and inside the mouth, which provide critical information about the severity and the possible condition the patient is experiencing. You must also be able to communicate effectively both orally and in writing. This will be necessary when communicating with patients, crew members, other emergency response personnel, and the medical staff. Your hearing must be good enough to accurately hear radio communications, patient and bystander responses, auscultated blood pressure, auscultated and other abnormal patient noises, communication from other crew members at the scene, and oral instructions.

Personal Traits

In times of crisis, patients will look toward someone to reestablish order in a suddenly chaotic world. Chances are that someone will be you. It can bring out the best in you as well as cause you a great deal of stress. To be effective as an EMT, you should have the following characteristics:

- **A calm and reassuring personality.** As an EMT you will often be required to perform skills and procedures while speaking in a reassuring and calming voice to a patient who may be agitated, in shock, or in a great deal of pain.
- **Leadership ability.** You must be able to assess a situation quickly, step forward to take control when appropriate, set action priorities, give clear and concise directions, be confident and persuasive enough to be obeyed, and carry through with what needs to be done.
- **Good judgment.** You must be able to make appropriate decisions quickly, often in unsafe or stressful situations involving human beings in crisis.
- **Good moral character.** While there are many legal constraints on the profession, you also have ethical obligations. You are in a position of public trust that can never be wholly defined by statute or case law alone.
- **Stability and adaptability.** Being an EMT can be quite stressful. Exhaustion, frustration, anger, and grief are part of the package. You must learn how to delay expressing your feelings until the emergency is over. Just as important, you must also understand that intense emotional reactions are normal and that seeking support from coworkers, counselors, friends, and family is an important aspect of keeping yourself mentally and physically fit.
- **Ability to listen.** You must be an effective listener when gathering information from patients and

bystanders and when receiving orders from medical direction or others at the scene. You should exhibit empathy and compassion in your responses; however, you must always maintain a high degree of professionalism, confidence, and competence.

- **Resourcefulness and ability to improvise.** You will find yourself in some situations where a particular piece of equipment, tool, or technique doesn't quite work. You will need to be resourceful, quickly thinking and adapting to make things work for the best care for your patient. You will find yourself improvising to care for and move some patients. As an example, if a patient entrapped in an overturned vehicle needs immediate ventilation, you must determine the most effective method to gain entry to the vehicle, to provide ventilation with both you and the patient in an awkward and unusual position, and to continue to deliver ventilation while removing the patient from the wrecked vehicle. Each call, situation, and patient is different and requires quick thinking and resourcefulness to provide efficient and effective emergency care.
- **Cooperativeness.** Often your call may involve other emergency services, such as First Responders and the police. You must be able to act as a leader while fully cooperating with others at the scene to provide the best possible care to the patient.

Maintenance of Certification and Licensure

It is the personal responsibility of each EMT to maintain certification and licensure to practice. This involves meeting the necessary continuing education requirements, verifying skill competency, avoiding any criminal or unethical behavior, and submitting all fees necessary to maintain current certification and licensure.

State EMS Agency Role

According to the National Association of State EMS Officials (NASEMSO), every state and territory in the United States has a lead EMS agency. The primary responsibilities of the state EMS agency are:

- Overall planning of the statewide EMS system
- Coordination of the statewide EMS system
- Regulation of the statewide EMS system
- Licensing local EMS agencies and personnel

As EMS continues to evolve, there is often overlap between the emergency medical services, public safety, and public health. The state EMS agency is actively involved in ensuring that a high quality of emergency medical services is provided in order to protect the health and safety of the public.

Medical Direction/Medical Oversight

As an EMT, you are the designated agent of the physician medical director of your EMS system. The care you render to patients is considered an extension of the medical director's authority. (Learn your own state laws, statutes, and regulations in regard to medical direction.)

The **medical director** is a physician who is legally responsible for the clinical and patient care aspects of the EMS system. An EMS medical director is also involved in EMS education programs and refresher courses, overseeing and providing continuing education, and facilitating the quality improvement system. Every emergency medical service must have a medical director in order to provide any level of prehospital care.

The medical director is responsible for providing **medical direction**. A primary charge of medical direction is developing and establishing the guidelines under which the emergency medical service personnel function. These guidelines are referred to as **protocols**. Protocols comprise a full set of guidelines that define the entire scope of medical care (triage, treatment, transport, destination). Often referred to as orders, protocols may consist of both off-line and on-line medical direction.

Off-line medical direction is provided through a set of predetermined, written guidelines that allow EMTs to use their judgment to administer emergency medical care according to the written guidelines without having to contact a physician. **On-line medical direction** requires that the EMT acquire permission from a physician via cell phone, telephone, or radio communication prior to administering specific emergency care. As an example, the protocol for chest pain may read: (1) Administer oxygen via nonrebreather mask at 15 lpm; (2) place patient in position of comfort; (3) administer one patient-prescribed nitroglycerin tablet if systolic blood pressure is greater than 90 mmHg; (4) administer one 160–325 mg aspirin; (5) contact advanced life support; (6) if the patient does not experience relief of chest pain from one nitroglycerin tablet, contact medical direction to consider administering additional doses.

Items 1 through 5 are all off-line medical direction or standing orders. The EMT is expected to perform these treatments and activities for a patient having chest pain without having to contact the physician prior to treatment. However, in reference to item 6, if the patient is continuing to experience chest pain, the EMT must contact medical direction and receive permission to administer any additional doses of nitroglycerin. Because item 6 requires direct communication with the physician, it is considered on-line medical direction.

Standing orders are a subset of protocols that do not require real-time physician input. In some systems, the term is synonymous with off-line medical direction. In some systems, the term *standing orders* refers specifically to treatments that can be performed

if communication cannot be established or is lost with medical direction.

Medical oversight is the emerging term that more comprehensively describes the EMS system medical director's responsibilities. These include all of the clinical and administrative functions and activities performed by the medical director as necessary to exercise ultimate responsibility for the emergency care provided by individual personnel and the entire EMS system.

Quality Improvement

Quality improvement (QI), also known as *continuous quality improvement (CQI)*, is a system of internal and external reviews and audits of all aspects of an emergency medical system. To ensure that the public receives the highest quality of prehospital care, the goals of quality improvement are to identify those aspects of the system that can be improved and to implement plans and programs that will remedy any shortcomings. It is important to recognize that quality improvement is not designed to evaluate individual performance, but instead is intended to determine how effective the *system* is and to identify what improvements can be made to deliver a better service. Although quality improvement can identify an individual with a poor performance that requires some type of corrective action or remedial work, as a general rule quality improvement should be used not as a penalty tool but as an evaluation system geared toward overall system improvement.

As an EMT, your role in quality improvement (Figure 12 ■) is to:

- **Document carefully.** Carefully and thoroughly document each call. Prehospital care reports that you prepare are studied by quality improvement committees to spot such things as excessive response times, which might be remedied by redeploying ambulances, or to identify seldom-used skills for refresher training.
- **Perform reviews and audits.** Become involved in the quality improvement process by volunteering for QI committee work or by critiquing the performance of other EMTs at the scene of a call.
- **Obtain feedback.** Gather feedback from patients, other EMS personnel, and hospital staff. This may be done formally through surveys distributed to patients and hospital staff members, or informally by seeking advice about your performance after a call from physicians, nurses, or other medical personnel.
- **Maintain equipment.** Conduct preventative maintenance on equipment and ensure it is in the proper working order.
- **Participate in continuing education.** Participate in refresher courses and continuing education to reinforce, update, and expand your knowledge and skills.
- **Maintain skills.** It is important to continuously practice your skills to a level of mastery.



■ **FIGURE 12** The EMT takes an active role in quality improvement.

Issues in Patient Safety

One of the most important issues that must be addressed when dealing with patients in the prehospital environment is safe delivery of care. There are some activities that are considered “high risk” and put the patient at greater risk for medical mistakes, injury, or exacerbating an existing injury. Some of these high-risk activities include:

- Transfer of care or “hand-off” at the scene between emergency responders or at the medical facility
- Poor communication that leads to misunderstanding and medical errors
- Carrying and moving patients in a manner that puts them at risk for being dropped
- Involvement in an ambulance crash while transporting the patient to a medical facility
- Lack of spinal immobilization or improper spinal immobilization procedures that increase the risk of converting a stable spinal column injury into an unstable spinal column injury, or improper immobilization that exacerbates the existing injury

Errors during patient care may also put the patient at risk. These errors usually result from failure of the EMT to properly perform a skill, failure of the rules the EMT must follow, or failure of the EMT to have obtained or retained the appropriate knowledge to perform patient care effectively.

You can take the following steps to prevent errors that may jeopardize the patient’s safety:

- Develop clear protocols.
- Light the scene effectively.
- Try to minimize interruptions during assessment and emergency care.
- Clearly mark all drugs and packages so each is very distinct.
- Reflect on all actions.
- Question all assumptions.
- Use decision aids if necessary.
- Ask for assistance if you need it.

RESEARCH AND EMS CARE

The traditional approach to the practice of medicine involved a combination of a strong foundation of scientific knowledge, intuition, and good judgment. As medical practice has evolved, the science component has become more emphasized through the concept of **evidence-based medicine**. Evidence-based medicine focuses on research to provide clear evidence that certain procedures, medications, and equipment improve the patient’s outcome. The following four steps are common in evidence-based decision making:

- Formulate a question about emergency care that needs to be answered.

- Search medical literature for research data that are related and applicable to the question.
- Appraise the evidence for validity and reliability.
- If the evidence supports a change in practice, change protocols and implement the change in prehospital emergency care.

Although an evidence-based approach appears to be extremely desirable in making decisions about prehospital patient management, very little research has so far been done regarding prehospital care. EMS has typically had to rely on research conducted for the hospital emergency department. Although hospital and prehospital emergency care are somewhat related, there are variables in the prehospital environment that are not encountered in the hospital setting; thus, it is often difficult to extrapolate and apply the results and conclusions of hospital emergency care research to prehospital practice.

Initiatives are under way to increase the amount of research conducted specifically to support or to change the delivery of prehospital emergency care. It is the responsibility of every EMT to participate in such research so that EMS can develop its own evidence-based practices to support and improve its profession.

PUBLIC HEALTH

The majority of the EMT's responsibilities are concerned with treating patients who have a medical illness or traumatic injury. However, as an EMT you are also part of the public health team. Public health deals with protecting the health of an entire population. Specific populations will be defined differently depending on the issue at hand. The population under consideration may be a select group, such as children, elderly adults, individuals with mental or physical disabilities, a neighborhood, a city, a state, or an entire nation.

Public health is first responsible for identifying problems that affect the health of the population in question. As an example, the lack of the use of infant and child car seats in a particular region as identified through injury surveillance data would prompt the public health professional to take action. EMTs may be the frontline individuals in identifying the problem, reporting on the issue to the proper agency, and potentially providing education to those who are involved in the problem.

Public health attempts to reduce the incidence of injury and illness through preventative strategies geared at protecting, promoting, and improving the health of a population. This is typically achieved through research, education, and health promotion. In published statements, the American Public Health Association has defined the vision of public health as "healthy people in healthy communities" and the mission of public health

as "to promote physical and mental health and prevent disease, injury, and disability."

According to the Centers for Disease Control (CDC) *Morbidity and Mortality Weekly Report*, the ten greatest public health achievements in the United States in the 20th century were:

- **Vaccinations** to eliminate smallpox and polio, and to control measles, rubella, tetanus, diphtheria, *Haemophilus influenzae* type B, and other infectious diseases
- **Motor-vehicle safety** measures to reduce the number of motor-vehicle deaths
- **Workplace safety** measures to decrease the number of work-related deaths
- **Control of infectious disease** through clean water and sanitation and antimicrobial therapy
- **Reduction in deaths from coronary heart disease and stroke** related to the reduction in risk factors such as smoking and high blood pressure
- **Safer and more healthful foods** through controlling food contamination and ensuring the nutritional value of foods
- **Decline in maternal and infant mortality** through better hygiene, nutrition, antibiotics, access to health care, and technologic advances in maternal and infant care
- **Use of barrier devices during sexual contacts** to protect against pregnancy, HIV, and other sexually transmitted diseases
- **Fluoridation of drinking water** to prevent tooth decay and tooth loss
- **Reduction in the use of tobacco products** through promotion of cessation programs and reduction of secondhand smoke, resulting in improvement across a wide spectrum of health issues

Public health professionals may be involved in enforcing laws and regulations that protect the health and ensure the safety of the public. This may be achieved through legislation such as seat belt and helmet laws.

EMS is part of the public health system and plays an integral role in carrying out its mission. Roles of EMS in public health include:

- Health prevention and promotion through primary prevention (vaccinations, education), secondary prevention of complications of disease, and health screening (Figures 13a, b and c ■)
- Disease surveillance through identifying and reporting certain diseases or conditions that are identified as public health issues
- Injury prevention through education, promotion of the use of safety equipment (seat belt use, helmet use, falls prevention, fire prevention), and injury surveillance



(a)



(b)



(c)

■ **FIGURE 13** The roles of the EMS in public health include participation in (a) public education programs (CPR), (b) health screenings, and (c) education programs for kids.

Chapter Review

SUMMARY

Emergency medical services systems have evolved dramatically from the days when the funeral home provided transportation of the sick and injured to the hospital as a courtesy. Many of the practices today have come from treating military casualties on the battlefield during various wars and conflicts. Because of the number of highway deaths associated with auto crashes, the Department of Transportation in the 1960s took a lead role in developing the education program for EMTs. Even though EMS systems are independent of federal government control, the National Highway Traffic Safety Administration (NHTSA) developed the Technical Assistance Program Assessment Standards as recommended guidelines for EMS systems.

Most EMS systems are accessed using the universal number 911. Quick access via this standardized number reduces response times. Enhanced 911 systems provide the name, geographic location, and phone number for the landline the call is being made from.

The levels of EMS training according to the National Scope of Practice Model are Emergency Medical Responder (EMR), Emergency Medical Technician (EMT), Advanced EMT (AEMT), and Paramedic.

The EMT has many roles and responsibilities: safety, patient assessment and emergency care, transportation and transfer of care, patient advocacy, professional appearance, knowledge and skills, ability to handle physical demands, and positive personal traits. Many of these roles and responsibilities are essential to the function of the EMT.

Medical direction or medical oversight is a key component of any EMS system. An EMT is unable to function without medical direction. One responsibility of medical direction is to provide orders or protocols. Medical direction may be off-line, in the form of written patient care orders, or on-line, where you communicate directly with the physician or a designee for oral patient care orders.

To improve the EMS system, quality improvement (QI) must be performed to identify any weaknesses or inadequacies. QI is a continuous process that involves all aspects of the system, including the personnel who provide care.

Emergency care provided in the prehospital environment is continuously evolving based on current research.

Treatments and techniques that were used in the past have been supported, changed, or eliminated based on evidence found in studies. New techniques and treatments are no longer implemented without adequate evidence to support their effectiveness. More research needs to be conducted that is specific to EMS.

Emergency medical services is part of the public health system, vision, and mission. EMS is on the frontline to reduce the incidence of injury and illness through preventative strategies that are geared toward protecting, promoting, and improving the health of a population. This is typically achieved through education, health and safety promotion, and research.

Case Study Follow-up

Scene Size-up

You have been dispatched to a 65-year-old male, Edgar Robinson, who fell down a steep embankment behind his house. Although the rescue squad officer informs you that you will be in no personal danger, you and your partner are cautious as you carry your equipment closer to the embankment. As your partner takes the patient's wife, Mrs. Robinson, aside, the rescue squad officer tells you that his crew all have Emergency Medical Responder training and will immobilize Mr. Robinson on a backboard before bringing him up.

Primary Assessment

One Emergency Medical Responder reports her observations of the patient to you as the others place the patient where you indicate. She tells you that the patient's chief complaint is of pain to his right wrist and right thigh and that the patient's airway is patent with respirations of 24 per minute with an adequate volume, radial pulse is 90 beats per minute and strong, and the skin is warm and dry.

As you begin your own primary assessment, you note that your general impression of Mr. Robinson is of an alert, robust older man. Mr. Robinson explains to you that while disposing of yard wastes, he got too close to the edge of the embankment and slipped.

Secondary Assessment

You perform a physical exam while your partner takes vital signs, which indicate no change from those reported by the Emergency Medical Responder. Your physical

exam reveals abrasions to the arms, with pain and a slight deformity to the right wrist. There are also superficial abrasions to the right leg, with deformity, swelling, and pain to the right thigh. You discover that the patient cannot feel or move the toes of his right foot. However, pulses are present in the foot.

You initiate oxygen therapy via a nonrebreather mask.

The history you take, by asking questions of the patient, confirms sharp pain to the right wrist and thigh, which started immediately after he landed at the bottom of the embankment. Mr. Robinson also reports that he did not lose consciousness. He denies any other complaints but informs you that he is allergic to sulfa drugs and takes medication for high blood pressure.

After checking the immobilization of the patient, you enlist the Emergency Medical Responders to help you apply a traction splint to the right leg. Then you splint the injured wrist. During these procedures, you speak quietly and reassuringly to the patient.

Reassessment

You move Mr. Robinson on the backboard to a wheeled stretcher, then transfer him to the ambulance. You notify the hospital that you are en route and give details of the patient's condition, then conduct a reassessment every 5 minutes to monitor his condition until you arrive at the hospital.

Upon arrival, you transfer care of the patient without incident to the emergency department staff and give your verbal report. You carefully complete your written prehospital care report and prepare the unit for the next call.

IN REVIEW

1. Describe the purpose of the modern EMS system.
2. Name two ways the public accesses the EMS system. Explain advantages or disadvantages of each.
3. List the four levels of prehospital emergency care training.
4. List six types of special facilities, other than a hospital emergency department, to which some patients may need to be transported.
5. List the general responsibilities of an EMT.
6. Describe at least five steps you can take to protect your own safety as an EMT.
7. Describe at least three ways you might act as the patient's advocate.
8. Describe the EMS physician medical director's primary responsibility.
9. List the goals of quality improvement.
10. Describe the EMT's role in quality improvement.
11. Describe evidence-based EMS care.
12. Explain the role of the EMT in public health.

CRITICAL THINKING

You are called to the residence of a 78-year-old male patient who appears to have suffered a stroke. The patient is unable to speak and appears agitated. The niece of the patient wants him transported to the small local hospital a few blocks from

his house. A stroke center is approximately 20 minutes from your location.

1. What are your responsibilities while on this call?
2. How can you serve as the patient's advocate?
3. How can you use medical direction in this situation?

ANSWER KEY

IN REVIEW

1. The purpose of the modern EMS system is to allow those who need it easy access, a prompt response, and high-quality prehospital emergency care from trained professionals.
2. The public can access the EMS system by way of the universal telephone number 911 or by using a non-911 number such as a seven-digit number. The advantages of a universal number are that central dispatch is generally staffed by trained technicians—often certified Emergency Medical Dispatchers (EMDs)—and the number is easy to remember. In addition, all three services—police, fire, and EMS—are accessible by calling one number. Non-911 or seven-digit numbers are used much less often in communities to access the EMS system because of the inherent delay in reaching the appropriate services.
3. The four levels of emergency medical technician training are Emergency Medical Responder (EMR) (similar to First Responder), Emergency Medical Technician (EMT) (formerly EMT-Basic), Advanced Emergency Medical Technician (AEMT) (formerly EMT-Intermediate), and Paramedic (formerly EMT-Paramedic).
4. Six types of special facilities to which patients may be transported include trauma centers, burn centers, obstetric centers, pediatric centers, poison centers, and stroke centers.
5. The general responsibilities of the EMT include personal safety and the safety of others, patient assessment and emergency medical care, safe lifting and moving, transport and transfer, record keeping and data collection, and patient advocacy.
6. Among the ways you can protect your own safety as an EMT are to wear personal protective equipment such as gloves, eye protection, and mask and gown when indicated for scene hazards; drive safely; use seat belts; do not enter potentially hazardous sites; never enter a volatile crowd situation until it has been deemed safe by law enforcement; take extra precautions with patients, relatives, and bystanders who are under the influence of drugs or alcohol, have a behavioral disorder, or are emotionally charged; follow directions from police, fire, utility, and other expert personnel; create a safe area in which patients can be treated; redirect traffic for the safety of all; wear reflective emblems

or clothing at night; and provide adequate lighting at an accident scene.

7. Among the ways you can act as a patient's advocate are to protect the patient's privacy and confidentiality, shield the patient as much as possible from curious bystanders, conceal from curious onlookers the body of a patient who has died, answer the patient's questions truthfully, make sure the patient's relatives or friends at the scene know how to get to the hospital, make certain you provide necessary information to hospital personnel, honor any patient requests that you reasonably can, and collect and safeguard a patient's valuables and transport them with the patient as well as document what items were left with emergency department personnel.
8. The EMS system physician medical director's primary responsibility is to oversee the clinical and patient care aspects of the system. The medical director is responsible for providing medical direction by developing and establishing the guidelines under which the emergency medical service personnel function.
9. To ensure that the public receives the highest quality of prehospital care, the goals of quality improvement are to identify those aspects of the system that can be improved and to implement plans and programs that will remedy any shortcomings of the system.
10. The EMT's role in quality improvement includes careful documentation on every call; becoming involved in the QI process by performing reviews and audits as requested; gathering feedback from patients, other EMS personnel, and hospital staff; conducting preventive maintenance on vehicles and equipment; participating in refresher courses and continuing education; and maintaining skills in all aspects of patient care and equipment operation.
11. Evidence-based medicine focuses on research to provide substantiation that certain procedures, medications, and equipment improve the patient's outcome. EMS has often had to rely on research conducted for the emergency department for changes in practice because there is currently very little research in prehospital care.
12. EMS professionals play an integral role in the mission of public health through activities such as health education, disease and health screening, disease surveillance, and injury prevention through the promotion of safety equipment such as seat belts and helmets.

GLOSSARY

Advanced Emergency Medical Technician (AEMT) the level of EMS practitioner who performs the responsibilities of an EMT with the addition of the use of advanced airway devices, monitoring of blood glucose levels, initiation of intravenous and intraosseous infusions, and administration of a select number of medications.

Americans with Disabilities Act (ADA) a federal law passed in 1990 that protects individuals with a documented disability from being denied initial or continued employment based on their disability.

Emergency Medical Responder (EMR) the level of EMS practitioner who is likely to be the first person on the scene with emergency care training.

Emergency Medical Technician (EMT) the level of EMS practitioner who provides basic emergency medical care and transportation to patients who access the EMS system including oxygen therapy and ventilation equipment, pulse oximetry, use of automatic blood pressure monitoring equipment, and limited medication administration.

EMS system Emergency Medical Services system.

evidence-based medicine medical practice based on scientific evidence that certain procedures, medications, and equipment improve patient outcome.

medical direction medical policies, procedures, and practices that are available to EMS providers either off-line or on-line.

medical director physician who is legally responsible for the clinical and patient care aspects of an EMS system.

medical oversight the medical director's broad responsibilities, including all clinical and administrative functions and activities necessary to exercise ultimate responsibility for the emergency care provided by individual personnel and the entire emergency medical services (EMS) system.

off-line medical direction medical policies, procedures, and practices that medical direction has established in written guidelines.

on-line medical direction direct orders from a physician to a prehospital care provider given by radio or telephone.

Paramedic the level of EMS practitioner who provides the highest level of prehospital care, including advanced assessments and care, formation of a field impression, and invasive and drug interventions.

prehospital care emergency medical treatment given to patients before they are transported to a hospital or other facility. Also called *out-of-hospital care*.

protocols the policies and procedures for all components of an EMS system. Also called *orders* or *standing orders*.

quality improvement (QI) a system of internal and external reviews and audits of an EMS system to ensure a high quality of care. Also known as *continuous quality improvement (CQI)*.

standing orders preauthorized treatment procedures; a type of treatment protocol. *See also* off-line medical direction, protocols.

Workforce Safety and Wellness of the EMT

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARDS • **Preparatory** (Content Areas: Workforce Safety and Wellness); **Medicine** (Infectious Diseases)

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

Applies fundamental knowledge to provide basic emergency care and transportation based on assessment findings for an acutely ill patient.

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Given a description of a patient or family member's behavior, identify the stage of grief it most likely represents.
3. Explain the principles for interacting with patients and family members in situations involving death and dying.
4. Give examples of situations that EMS providers may find stressful.
5. Compare and contrast the characteristics of acute, delayed, and cumulative stress reactions.
6. Recognize signs and symptoms of stress reactions.
7. Describe lifestyle changes you can make to help you deal with stress.
8. Describe responses your friends and family may have to your work in EMS.
9. Describe changes in the work environment that can help you manage job-related stress.
10. Discuss the components of a comprehensive system of critical incident stress management.
11. Describe measures you can take to protect yourself from exposure to diseases caused by pathogens and accidental and work-related injury.
12. Give examples of diseases caused by each of the different types of pathogens (bacteria, viruses, fungi, protozoa, and helminths).
13. Describe the Standard Precautions that must be taken to protect health care workers from exposure to infectious diseases.
14. Describe the personal protective equipment that may be used by EMS personnel.
15. Explain the role of immunizations and tuberculosis testing in maintaining good health.
16. Discuss the risks and preventive measures for specific infectious diseases of concern to EMTs, including:
 - a. Hepatitis B
 - b. Hepatitis C
 - c. Tuberculosis
 - d. Acquired immune deficiency syndrome
 - e. Severe acute respiratory syndrome
 - f. West Nile virus
 - g. Infections due to multidrug-resistant organisms
17. Explain the risks and measures that can be taken to protect yourself against the following hazards:
 - a. Hazardous materials
 - b. Hazardous rescue situations
 - c. Traffic-related injuries
 - d. Violence and crime
18. Describe the components of physical and mental wellness.

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary.

burnout
cleaning
critical incident

critical incident stress debriefing (CISD)

defusing
disinfecting
pathogens

personal protective equipment (PPE)

purified protein derivative (PPD) tuberculin
test

Standard Precautions

sterilization

Case Study

The Dispatch

EMS Units 111 and 112—both units respond to 327 Manchester Avenue—possible domestic dispute with reported gunfire—called in by the police department—time out 1441 hours.

Upon Arrival

You immediately identify three city police cruisers outside the house. Patrol officers are kneeling behind their units with guns drawn and pointed at the house. One of the police officers is gesturing emphatically for you and your partner to keep back. Your partner stops the

ambulance a good distance away. As you survey the scene with binoculars, you identify a downed police officer at the front door of the residence. He is not moving and seems to be bleeding profusely. You both hear gunfire.

How would you proceed?

During this chapter, you will learn about methods of safeguarding yourself from stress, body substances, and other hazards. Later, we will return to the case and apply the principles learned.

INTRODUCTION

As you proceed through your course and this text, you will study specific ways to safeguard your well-being—in the face of danger and under other high-stress circumstances. This chapter presents an overview. In it you will learn to recognize and deal with the stress that normally accompanies emergency work, to practice all appropriate Standard Precautions, to wear the appropriate personal protective equipment at the scene of accidents and illness, to recognize common infectious diseases, and to practice strategies to prevent work-related injuries.

EMOTIONAL ASPECTS OF EMERGENCY CARE

In the course of providing emergency care, you will encounter family members, as well as patients, who are in distress—acute physical or mental suffering caused by pain, anxiety, strain, or sorrow. When such emotional pressures become too great for them to handle, emotional crisis occurs. The emergency care you provide can move those patients and family members toward reestablishing emotional equilibrium.

Death and Dying

Death and dying are inherent parts of emergency medical care. You must care for the dying patient's emotional needs, as well as his injuries or illnesses. If the patient has suffered a sudden death, you may also need to help the family or bystanders deal with the situation.

A study by Elizabeth Kübler-Ross on how people cope with death has identified five general stages that dying patients—and those close to them—will experience. However, each person is unique. Individuals will progress through the stages at their own rates and in their own ways. Although these stages usually apply to the dying patient, they also can apply to patients experiencing nonfatal emergencies. For example, a patient who loses both legs in an industrial accident will grieve the loss of the limbs.

Five Emotional Stages

Characteristically, you will not witness all five stages during emergency treatment. For example, the critically injured patient who is aware that death is imminent typically displays denial, bargaining, or depression. The terminally ill patient may be more prepared and display acceptance. The key for you is to accept all these emotions as real and necessary, and respond accordingly.

- **Denial (“Not me.”).** At first, the patient may refuse to accept the possibility that death is near. This refusal, or denial, is a defense mechanism that creates a buffer between the shock of approaching death and the need to deal with the illness or injury.
- **Anger (“Why me?”).** As the patient moves through denial, anger generally follows—and you may be the target. Do not become defensive. That kind of anger is an aspect of the grieving process both dying patients and their families go through. Be empathetic, and use your best listening and communication skills.
- **Bargaining (“Okay, but first let me . . .”).** Following anger, the patient will likely try to “bargain,” or make agreements that at least in the patient’s mind will postpone death for a short time.
- **Depression (“Okay, but I haven’t . . .”).** As reality settles in, the patient may become silent, distant, sad, and despairing—usually about those he will leave behind and things left undone.
- **Acceptance (“Okay, I am not afraid.”).** Finally, patients may appear to accept death, though not happy about it. At this stage, the family usually requires more support than the patient does.

Dealing with the Dying Patient, Family, and Bystanders

Although emergency care of the patient’s illness or injury is your priority, you have an obligation to help patients and others through the grieving process. Keep in mind that patients, families, and bystanders may be progressing through the stages at different rates. Whatever stage they are in, their needs include dignity, respect, sharing, communication, privacy, and control. To help reduce their emotional burden:

- **Do everything possible to maintain the patient’s dignity.** Avoid negative statements about the patient’s condition. An unresponsive patient may hear what you say and feel the fear in your words. Even if the patient is unresponsive, talk to him as if he is fully alert and explain the care you are providing.
- **Show the greatest possible respect for the patient,** especially when death is imminent. Families will be extra sensitive to how the dying relative is treated. Even attitudes and unspoken messages are perceived. Allow family members to stay with the patient during resuscitation efforts, explain what you are doing, and assure them that you are making every possible effort to help the patient. It is important for the family to know with certainty that you never simply “gave up.”
- **Communicate.** Help the patient become oriented to surroundings. Explain several times, if necessary, what has happened and where it has happened. Explain who you are and what you and others are planning to do. Assure the patient that you are doing everything possible and that you will see that the patient gets to a hospital as quickly as possible for further care. Without interrupting care for the patient, communicate the same message to the family. Explain any procedures you need to carry out. Give straightforward answers to questions. Report what you know to be true, but do not guess or make assumptions.
- **Allow family members to express themselves.** They should be able to scream, cry, or vent grief in a way that is not hazardous to you or others. This can help them progress through the stages of the grieving process. If they direct anger at you, remember not to take the attack personally. Be tolerant and avoid getting defensive.
- **Listen empathetically.** Many dying people want messages delivered to survivors. Take notes and assure the patient that you will do whatever you can to honor his requests. Then, follow through on your promise. If possible, you or a member of your team should stay with the family to listen to their concerns and answer their questions.
- **Do not give false assurances,** but let the patient know that everything that can be done to help will be done. Allow for some hope. Be honest but tactful. If the patient asks if he is dying, do not confirm it. Patients who do the most poorly are often the ones who feel hopeless. Instead, say something like “We are doing everything we can for you. We need you to help us by not giving up.”
- **Use a gentle tone of voice with the patient and family.** Explain the scope of the injury or problem, the procedures you are doing, and related information as kindly as you can in terms the family can understand.
- **Take appropriate steps if the family wants to touch or hold the body after death.** If family members want to touch or hold the body after death (and if local protocol allows), arrange for it. Do what you can to improve the appearance of the body. Clean vomitus, blood, or secretions from the face and hands. Elevate the head for a few minutes to allow fluids to drain. If the body is mutilated, warn the family first, and explain that you have covered the badly injured parts. If a possible crime is involved, do not clean the patient or remove any blood. Do not allow the family to enter the crime scene or to touch the body until permission is granted by law enforcement, coroner, or medical examiner. It is vital that all crime scene evidence is preserved.
- **Do what you can to comfort the family.** Offer help to family members who are at the scene. Even if death is imminent, arrange for them briefly to see and talk to the patient. This should not interrupt your emergency care or delay transport. Encourage the family to talk to an unresponsive patient. Explain that the patient may still hear and understand. If the patient is deceased and the family asks you to pray with them, do so if you feel comfortable about it. Stay with the family until the medical examiner or coroner arrives. Finally, if a family member asks to accompany the patient in the ambulance, make the arrangements if at all possible.

High-Stress Situations

Patients, families, and bystanders are not the only ones who experience extreme stress in an emergency situation. The EMT does too. Accepting and understanding that fact is the first step in learning how to handle it in healthy ways.

Stress is any change in the body's internal balance. It occurs when external demands become greater than personal resources. Top sources of stress for the EMT include long hours, boredom between calls, working too much and too hard, getting little recognition, having to respond instantly, making life-and-death decisions, fearing serious errors, dealing with dying people and grieving survivors, and being responsible for someone's life (Figure 1 ■).

Many emergency calls may be considered "routine" with a minimal level of stress. However, the nature of some calls may produce extreme levels of stress. Some of these situations include:

- Multiple-casualty incidents (MCIs) involving multiple patients at a single scene
- Abuse and neglect of infants, children, adults, and the elderly
- Emergencies involving infants and children
- Injury or death of a coworker
- Responding and providing emergency care to a relative or bystander
- Severe traumatic injuries such as amputations

Stress Reactions

There are three basic types of stress reactions that the EMT may experience as a result of a high-stress incident or from constant exposure to stressful situations. The types of stress reactions are:

- **Acute stress reaction.** An acute stress reaction results from exposure to a high-stress situation. You may note the reaction not only in the patient or bystanders, but also in you, your partner, or other emergency

service personnel at the scene of the high-stress incident. Signs and symptoms typically occur immediately or shortly after the incident and may involve cognitive, physical, behavioral, or psychological functions. If the patient is experiencing what appears to be a medical emergency, such as chest pain or shortness of breath, it may be necessary to provide emergency care and seek further medical treatment. If it is you, your partner, or another emergency worker with signs or symptoms of a possible medical emergency, seek immediate medical treatment.

It is normal to experience some minor signs or symptoms associated with high-stress situations, such as nausea, elevated heart rate, sweating, tremors, loss of appetite or excessive eating, trouble concentrating, and inability to sleep. Some EMTs have none of these responses to the high-stress situation. This is also normal and is not an indication that they are stronger or better emergency care workers. It may be that they have different coping mechanisms to the stress situation.

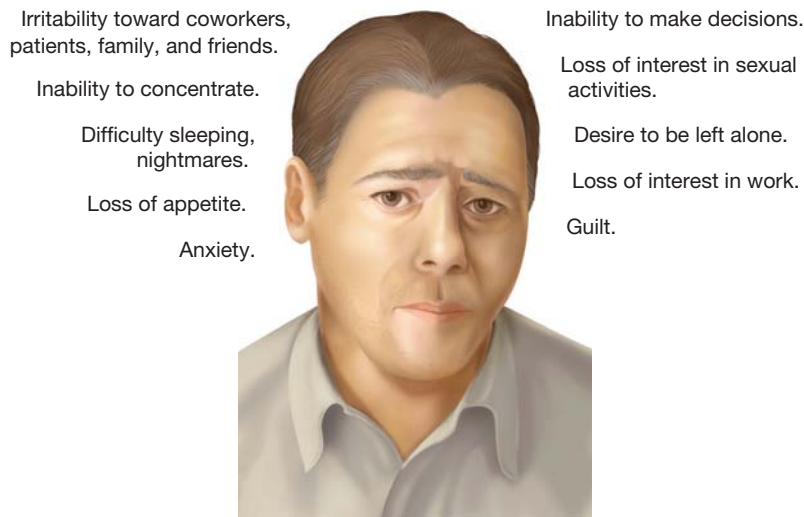
- **Delayed stress reaction.** Posttraumatic stress disorder (PTSD) is a typical delayed stress reaction that occurs from exposure to a high-stress situation; however, the signs and symptoms are not evident immediately. It may be days, months, or even years before the patient begins to experience the signs and symptoms of stress. Since a period of time typically passes before the onset of signs and symptoms, it may be difficult to relate the stress reaction to the particular past incident that caused the condition, and the patient may not understand why he is experiencing it. PTSD typically produces nightmares, irritability, insomnia, inability to think clearly or concentrate, flashbacks, increased interpersonal conflicts, and a decreased ability to relate to others. People suffering from PTSD may seek relief through drug or alcohol use. A person experiencing PTSD needs to seek help from a mental health professional.
- **Cumulative stress reaction.** As the name implies, cumulative stress reaction is a result of constant exposure to stressful situations that build over time. This is a common cause of **burnout**—a state of exhaustion and irritability. Initially, the signs and symptoms are not well recognized and may include an increase in anxiety and irritability. As the stress progresses, a state of emotional exhaustion may be reached and the condition may progress to more severe physical ailments. It can markedly decrease an EMS provider's effectiveness in delivering emergency medical care. Some of the very best providers have had to leave the profession because of it. Many of the more severe signs and symptoms, listed next, are common in the cumulative stress reaction.



■ **FIGURE 1** Responsibility for a life can be highly stressful.
(© Mark C. Ide)

Common Signs and Symptoms of Stress Reactions

One of the best ways to prevent burnout is to recognize the warning signs of stress (Figure 2 ■). The earlier they



■ **FIGURE 2** The warning signs of stress.

are recognized, the easier they are to remedy. These warning signs include:

- Irritability with coworkers, family, and friends
- Inability to concentrate
- Difficulty sleeping and nightmares
- Anxiety
- Indecisiveness
- Guilt
- Loss of appetite
- Loss of sexual desire or interest
- Isolation
- Loss of interest in work

General categories of signs and symptoms also have been identified with stress. In addition to the warning signs just listed, these categories include:

- **Thinking.** Confusion, inability to make judgments or decisions, loss of motivation, chronic forgetfulness, loss of objectivity
- **Psychological.** Depression, excessive anger, negativism, hostility, defensiveness, mood swings, feelings of worthlessness
- **Physical.** Persistent exhaustion, headaches, gastrointestinal distress, dizziness, pounding heart
- **Behavioral.** Overeating, increased alcohol or drug use, grinding teeth, hyperactivity, lack of energy
- **Social.** Increased interpersonal conflicts, decreased ability to relate to patients as individuals

Stress Management

Many EMTs expose themselves to overwhelming stress in the desire to help meet the needs of patients. They feel completely responsible for everything that happens on a run, even things that are clearly out of their control. Some are so involved that their self-image becomes based on job performance. As an EMT, you must maintain good physical, emotional, social, behavioral, and psychological health. To this end, it is critical

that you not only recognize the signs and symptoms of stress reactions but that you also manage the stress immediately—before it progresses and interferes with your ability to function effectively, in and out of the field. The next section lists ways to help you cope.

Make Lifestyle Changes

The following lifestyle changes can help you deal with stress:

- **Take a look at your diet.** Certain foods tend to increase the body's stress response. So cut down on the amount of sugar, caffeine, and alcohol you consume. Increase the amount of lean protein you eat, limit your carbohydrates, and decrease your saturated fat intake (Figure 3a ■). While at work, eat frequently but in small amounts.
- **Exercise more often.** Exercise has all sorts of benefits (Figure 3b ■). One of the greatest is that it provides a physical release for the pent-up emotions that accompany many crises. Another is that it helps to prevent injury.
- **Learn to relax.** Practice relaxation techniques, such as taking a deep breath, holding it, and blowing out forcefully. Meditation and visual imagery techniques are also helpful ways to relax. You may also wish to try temporary diversions, such as watching a funny movie, reading a good book, or going to a concert with a friend. Cut loose a little bit.
- **Avoid self-medication.** Reaching for a bottle—whether it is filled with alcohol or with pills—does not help you cope with stress. In fact, it will increase stress. Your problems are still there when you come out of the stupor, and they will probably be worse because you did not act on them immediately.

Keep Balance in Your Life

One way to keep a balance of work, recreation, family, health, and other interests is to assess your priorities.



(a)



(b)

■ **FIGURE 3** (a) Follow a healthy diet. (b) Aerobic exercise is an effective way to relieve stress.

Take a few minutes to list all your activities on paper. Write “1” beside your first priority, “2” beside your second, and so on. Then address those activities—all of them—in order of the priority you have assigned them.

You can also share your worries with someone else. Talking to someone you trust and respect can help relieve stress. It can also help you to discover alternatives that might have otherwise escaped you. A good confidante can listen empathetically and ask questions that will help you explore your ideas honestly. Talking with loved ones helps them understand what you may be going through. It also lets them feel included.

Still another way to help keep balance in your life is to accept the fact that you will occasionally make mistakes. Honestly admit to yourself that no person is right all of the time, and understand that a mistake does not reduce your value. You do not have to be perfect to do a good job.

Recognize the Response of Your Family and Friends

The support of your family and friends is essential in helping you manage stress. However, you may find that they, too, suffer from a certain amount of stress as a result of your job. You may find:

- **Lack of understanding.** Families typically have little if any knowledge about prehospital emergency care.
- **Fear of separation or of being ignored.** Long hours and demanding physical labor can take their toll and increase your family’s distress over your absences. Typically you may hear: “Your job is more important to you than your family!”
- **Worry about on-call situations.** Stress at home may increase because your family may overemphasize or exaggerate the danger you face when you respond to emergency calls.
- **Inability to plan.** Family and friends may not understand why you cannot leave your call area or have to leave an event early. Typically you may hear: “You’re not the only one on call. Let someone else go this time.”

- **Frustrated desire to share.** You often find it too difficult to talk about what has happened during your shift. Your family and friends understand why, in a general way, but nevertheless feel frustrated in their desire to help and support you.

Help family and friends understand the nature of your work and what you do for patients. Talk to them. Describe how you feel about what you do. Answer their questions. Explaining the safety precautions you and coworkers take every day can ease their anxieties. Encouraging them to join you in staying fit (daily exercise and planning healthy meals, for example) also can help alleviate their concerns when you cannot be with them. Always include time with them on your list of priorities.

Make Changes in Your Work Environment

The following changes in your work environment can help you manage job-related stress:

- **Develop a “buddy” system with a coworker.** Keep an eye on each other, and suggest when relaxation or a diversion is advisable. Try a relaxation technique whenever you find your effectiveness diminishing.
- **Encourage and support your coworkers.** Make positive remarks, and resist the temptation to criticize or dwell on the negative.
- **Periodically take a break to get some exercise—**do some type of aerobic exercise, such as taking a brisk walk, riding an exercise bike, walking or running on a treadmill, using an elliptical machine, or a similar activity.
- **Request work shifts that allow you more time to relax** with your family and friends.
- **Request a rotation of duty assignment** to a less busy area or an area with a different type of call volume. As an example, move from a station that deals primarily with calls involving crime and violence to a station that responds to more illnesses.

Seek Professional Help

You can also seek advice from mental health professionals, who can help you realize that your reactions are normal, mobilize your best coping strategies, and arm you with more effective ways to deal with stress in the future.

Critical Incident Stress Management

Emergency service personnel who suffer **critical incident** stress develop many of the signs and symptoms of burnout. They also may suffer from repeated mental images of the incident, fear of continuing in EMS work, and inability to function at the scene of subsequent emergencies. Critical incident stress management (CISM) is a process to deal with stress encountered by the EMT. It consists of two different approaches to stress management: critical incident stress debriefing and critical incident defusing.

A **critical incident stress debriefing (CISD)** is ideally held within 24 to 72 hours of a critical incident. During CISD, a team of peer counselors and mental health professionals help emergency service personnel work through seven phases. These phases are intended to allow the participants to review the facts of the event, share their feelings, identify signs and symptoms they are experiencing, sort through their feelings with the assistance of a mental health professional, receive suggestions for overcoming the stress, develop a plan of action for returning to the job, and be able to obtain follow-up assistance if lingering issues are present. CISD is not meant to assign blame. All information that is shared remains confidential.

CISD typically includes anyone involved in the incident—law enforcement personnel, firefighters, EMS personnel, communications personnel, and hospital emergency department personnel. In some cases, the debriefing may involve emergency service personnel family members, who are inevitably affected by the stress of the incident. In cases of multiple casualties, such as earthquakes, tornadoes, or severe hurricanes, a number of CISD meetings involving hundreds of people may need to be conducted.

Even if professional counselors are involved in sessions, CISD is not, in itself, professional counseling. Rather, it is a means to relieve stress.

Defusing is a version of CISD held within 1 to 4 hours following a critical incident. It is attended only by those most directly involved in the critical incident and lasts only 30 to 45 minutes. Less structured than a CISD meeting, defusing gives the smaller group of emergency service personnel an opportunity to vent their emotions and get information they may need before the larger group meets for CISD.

CISD has become controversial for many providers. The controversy stems from the need for scientific evidence that CISD truly assists emergency care personnel in resolving stress issues. It is important to keep current with the literature so that you may stay informed about

the effectiveness of CISD. It is also important to recognize that a comprehensive critical stress management program involves more than CISD. Comprehensive critical incident stress management should include:

- Preincident stress education
- On-scene peer support
- One-on-one support
- Disaster support services
- Defusing
- CISD
- Follow-up services
- Spouse and family support
- Community outreach programs
- Other health and welfare programs

SCENE SAFETY

Keeping yourself safe at the scene of an illness or injury involves taking appropriate measures to protect yourself from infectious disease, following proper rescue procedures, and knowing how to handle violence, especially at a crime scene. It is also important to be an advocate for these protective measures—to help keep fellow emergency service personnel, as well as yourself, safe and well.

Protecting Yourself from Disease

How Diseases Spread

Diseases are caused by **pathogens**, which are microorganisms that are typically visible only through a microscope and may be found in the environment around you and also residing on or within the patient you are assessing and treating. The most common pathogens you will encounter are bacteria, viruses, fungi, protozoa, and helminths.

- **Bacteria** are microscopic single-celled organisms that have the capability of reproducing on their own within a host (patient's body) that can provide a favorable environment and food supply. Common diseases produced by bacteria include sinus infection, ear infection, pneumonia (bacterial), strep throat, tuberculosis, and urinary tract infections. Bacterial infections typically respond to antibiotic treatment.
- **Viruses**, which are even smaller than bacteria, cannot grow on their own but require a host cell to reproduce. The virus invades a cell, reproduces, and then releases new virus particles that infect other cells. Those cells then produce more virus, spreading the infection throughout the body. Viruses are resistant to antibiotic treatment because they are located and unreachable within the host cell. Fortunately, most viruses are mild and self-limiting, such as the common cold or the flu. Conditions caused by viruses include acquired immune deficiency syndrome (AIDS) from the human immunodeficiency virus (HIV), hepatitis (A, B, and C), pneumonia (viral),

severe acute respiratory syndrome (SARS), chicken pox, and respiratory syncytial virus (RSV).

- **Fungi** are plantlike microorganisms that typically do not cause infection in a person with a normally functioning immune system. In a patient with a compromised immune system, fungi may cause diseases that would not be typically found, such as pneumonia in the HIV-infected person.
- **Protozoa** are single-celled organisms that are typically found in the soil and are able to move. Patients infected by protozoa often have a compromised immune system; however, some protozoa can cause infection in an uncompromised patient. The protozoa frequently enter the body through a fecal-oral route. Mosquitoes are carriers of protozoa that cause malaria. Some forms of gastroenteritis and vaginal infections are caused by protozoa in uncompromised immune systems.
- **Helminths** are parasitic worms, such as roundworms, flukes, and tapeworms, that cause infection. The helminth is typically introduced into the body by ingestion of worm eggs found in infected food or water or through the worm larvae invading through the skin. Hookworm, an example of a helminth infection, is a condition in which the parasitic worm attaches to the patient's intestine, leading to blood loss and anemia.

Pathogens can spread in a number of ways, including by way of blood and other body fluids or through the air. Infectious diseases are contracted from a pathogen transmission but may not necessarily be communicable. For example, malaria is an infectious disease that is spread primarily through mosquitos (vector-borne) but cannot be transmitted through person-to-person contact. A communicable disease is one that spreads from person to person (Table 1). It can spread directly through blood-to-blood contact, contact with open wounds and exposed tissue (Figure 4 ■), and contact with the mucous membranes of the eyes and mouth. It can also spread indirectly by way of a contaminated object such as a needle. Airborne pathogens are spread by one person coughing, sneezing, or exhaling infected droplets that are then breathed into the respiratory tract of another person.

Standard Precautions

U.S. Department of Occupational Safety and Health Administration (OSHA) guidelines require emergency care personnel to take precautions against disease transmitted by blood and other potentially infectious substances or body fluids. Also, employers share the responsibility with the employee to ensure that the necessary

TABLE 1 Infectious Diseases, Transmission, and Personal Protective Measures

Disease	Transmission Mode	Incubation Period	Protective Measures
HIV/AIDS	Blood, semen, vaginal fluid, blood transfusion, needlestick, transplacental	Months	Gloves, eyewear, hand washing
Hepatitis B and C	Blood, semen, vaginal fluid, needlestick, transplacental, human bite, sexual contact (HBV)	Weeks or months	Gloves, eyewear, hand washing
Tuberculosis	Respiratory secretions, airborne or direct contact	2 to 6 weeks	Gloves, eyewear, HEPA or N-95 respirator, hand washing
Influenza	Airborne droplets, direct contact with body fluids	1 to 3 days	Gloves, surgical mask, hand washing
Chicken pox (varicella)	Airborne droplets, direct contact with open sores	11 to 21 days	Gloves, surgical mask, hand washing
Bacterial meningitis	Oral and nasal secretions	2 to 10 days	Gloves, surgical mask, hand washing
Pneumonia	Respiratory secretions and droplets	1 to 3 days	Gloves, surgical mask, hand washing
German measles (rubella)	Airborne droplets, transplacental	10 to 12 days	Gloves, surgical mask, hand washing
Whooping cough (pertussis)	Respiratory secretions, airborne droplets	6 to 20 days	Gloves, surgical mask, hand washing
Staphylococcal skin infection	Direct contact with infected lesion or contaminated object	1 to 3 days	Gloves, hand washing
Severe acute respiratory syndrome (SARS) coronavirus	Respiratory airborne, direct contact	10 days	Gloves, hand washing, surgical mask, eye protection



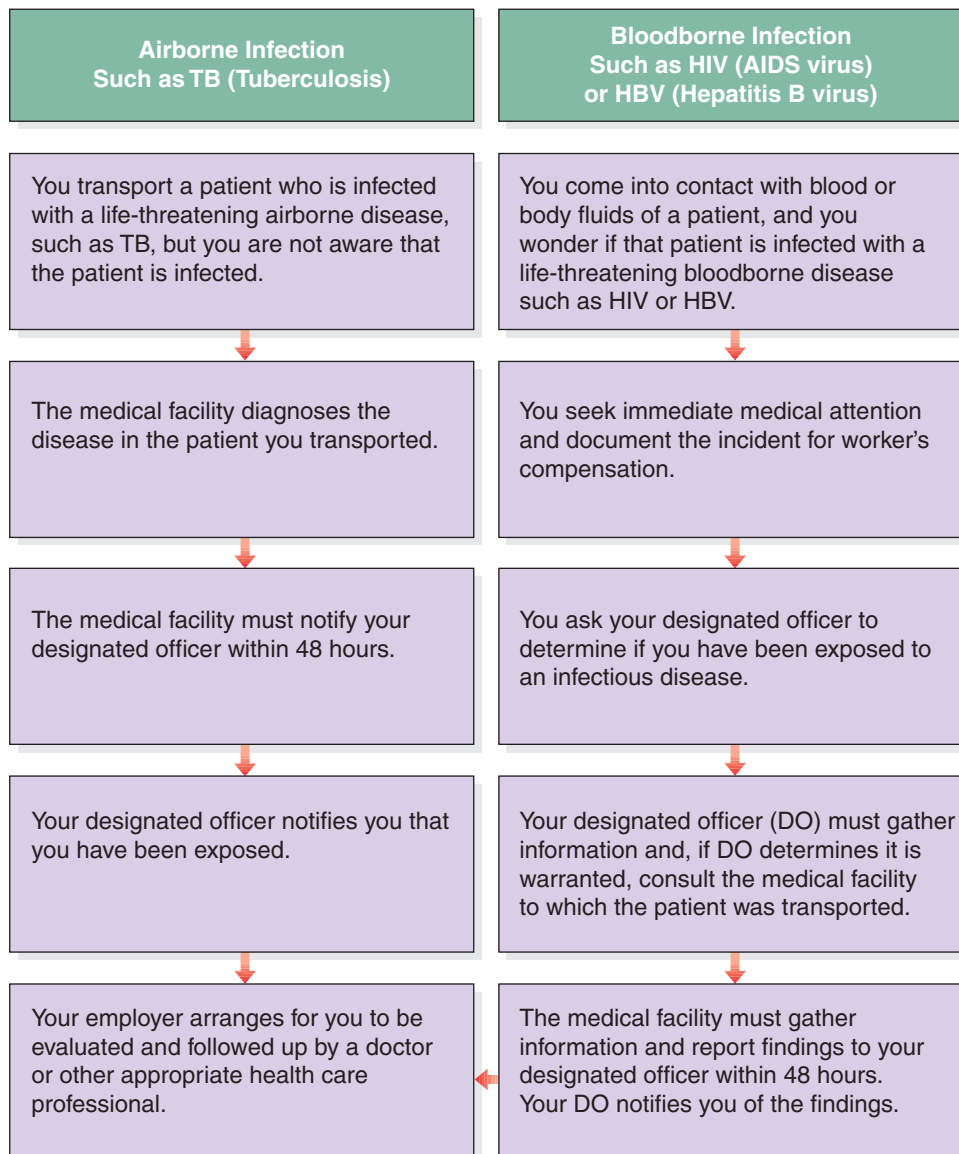
■ **FIGURE 4** An open sore on the foot of an apparent drug user is an example of an open wound that has the potential to spread infection.

equipment and procedures are in place to offer the necessary protection to emergency care personnel. Employers are responsible for developing a written exposure

control plan and providing training, certain immunizations, and the proper equipment for protection against disease transmission. The employee must complete the training and follow the procedures outlined in the exposure control plan.

The employer is also responsible for developing and enforcing a written policy to be used in the case of an exposure of an employee to an infectious substance such as blood or other body fluids. Needlesticks or direct contact with potentially infectious body fluids must be properly documented. Some policies require baseline infection testing of the exposed worker immediately with subsequent testing at designated intervals. Federal legislation has been enacted to allow for notification of EMS personnel who have come in contact with a patient who is infected with a communicable disease such as HIV, hepatitis B virus (HBV), or tuberculosis bacterium (TB) (Figure 5 ■).

INFECTIOUS DISEASE EXPOSURE PROCEDURE



■ **FIGURE 5** Infectious disease exposure procedure.

Protecting yourself from disease transmission through exposure to blood and other body fluids was formerly referred to as body substance isolation (BSI); it is more recently called **Standard Precautions**. The equipment utilized for Standard Precautions is referred to as **personal protective equipment (PPE)**. The following are guidelines for Standard Precautions.

Hand Washing. *Hand washing is the single most important way you can prevent the spread of infection* (Figure 6 ■). The spread of infection to you as the provider and from you, then passing it from patient to patient, can be reduced by hand washing. Methicillin/oxacillin-resistant *Staphylococcus aureus* (MRSA) and *C. difficile* colitis are two infections whose spread the EMT can reduce by simple hand washing. According to the U.S. Public Health Service, most contaminants can be removed from the skin with 10 to 15 seconds of vigorous lathering and scrubbing with plain soap. *Note: You should wash your hands even if you were wearing gloves.*

For maximum protection, begin by removing all jewelry from your hands and arms. If there was any chance that the jewelry was contaminated, also clean it with soap and water. Then proceed to vigorously lather and rub together all surfaces of your hands. Pay attention to creases, crevices, and the areas between your fingers. Use a brush to scrub under and around your fingernails. (It is recommended that you keep your nails short and unpolished.) If your hands are visibly soiled, spend more time washing them. Wash your wrists and forearms if they were exposed or possibly contaminated. Rinse thoroughly under a stream of running water. Dry well, using a disposable towel if you can.

Alcohol-based hand sanitizer can be used if you do not have access to soap and running water in the field. According to the Centers for Disease Control (CDC), use an alcohol-based hand sanitizer that contains at least 60 percent alcohol. Sanitizers don't eliminate all of the germs; therefore, be sure to wash your hands thoroughly as soon as possible.



■ **FIGURE 6** Thoroughly washing hands after patient contact is the first line of protection against infectious disease.



■ **FIGURE 7** Wear a protective eyeshield and other personal protective equipment when suctioning a patient.

Personal Protective Equipment. Always use PPE as a barrier against infection. It will help to prevent your skin and mucous membranes from coming in contact with a patient's blood and other body fluids. PPE includes eye protection, protective gloves, gowns, and masks (Figure 7 ■).

- **Eye protection.** Use eye shields to protect against blood and other body fluids splashing into your eyes. Several types are available (Figure 8 ■): clear plastic shields that cover the eyes or cover the whole face, protective eyewear (safety glasses) with side shields, and, if you wear prescription eyeglasses, there are removable side shields you can attach to your glasses. Form-fitting goggles also are available but are not required.
- **Protective gloves.** Wear high-quality vinyl, latex-free, or other synthetic gloves whenever you care for a patient. If a glove accidentally tears while in



■ **FIGURE 8** Protective eyewear. Removable side shields are also available for prescription glasses.

use, remove it as soon as you can do so safely. Then wash your hands and replace the glove with a new one. Never reuse gloves. Put on a new pair of gloves between contacts with different patients to avoid exposing one patient to another's infection. Also, use a proper technique for removing contaminated gloves so that you do not accidentally expose yourself to any blood or other body fluids contained on the gloves' surface (EMT Skills 1). Upon glove removal, be sure to wash your hands thoroughly. In addition, wear a good pair of utility gloves when cleaning vehicles and equipment.

- **Gowns.** Wear a gown in any situation where there may be significant contact with blood or other body fluids, such as during childbirth. If possible, use a disposable gown. If at all possible, also change your uniform after caring for a patient in a large-splash situation.
- **Masks.** Wear a disposable surgical-type face mask to prevent blood or other body fluids from being splashed into your nose or mouth. You may also put a surgical mask on the patient if an airborne disease is suspected (Figure 9 ■). If you are treating a patient suspected of having tuberculosis, you need additional protection. Wear a high-efficiency particulate air (HEPA) respirator or an N-95 respirator (Figure 10 ■).

Additional Guidelines. The following guidelines should be observed as part of routine patient care:

- Whenever possible, use disposable equipment. Disinfect or sterilize nondisposable equipment according to local guidelines and protocols.
- Never reuse disposable equipment. Discard it after use with one patient. If you suspect that a patient may have an infectious disease, place used disposable equipment in a plastic bag clearly labeled as biohazardous or infectious waste. Then seal the bag. Equipment used with HIV, hepatitis B, or other infectious patients should be double-bagged.
- If your uniform gets soiled with body fluids, remove, bag, and label it. It should be washed in hot soapy



■ **FIGURE 9** Use surgical masks to protect against blood splatters or airborne disease.



■ **FIGURE 10** Wear a special high-efficiency particulate air (HEPA) respirator or an N-95 respirator when you suspect tuberculosis.

water for at least 25 minutes. Take a hot shower yourself, and rinse thoroughly.

- After transferring care of a patient, gather all disposable equipment soiled by blood and other body fluids. Bag and seal it. Then label it as infectious waste (Figure 11 ■).
- Document in your logbook or on your flow sheet any contact with blood or other body fluids and any cleaning you have done as a result.
- Sponge, wipe, or wash noncritical items that do not ordinarily touch the patient or only touch intact skin



■ **FIGURE 11** Put items in a biohazard bag if infectious or contaminated with blood or other body fluids.

(such as blood pressure cuffs). Rinse with clear water and allow to dry thoroughly.

- Patient care equipment that enters the body or that touches mucous membranes must be cleaned before each use with high-level disinfection or sterilization. Thoroughly clean to remove all blood, tissue, and other residue. Then follow local guidelines, local protocols, and manufacturer guidelines for disinfection or sterilization.
- Dispose of all needles or sharp instruments in a rigid, puncture-proof container (“sharps container”) immediately after you use them. Do not recap needles (Figure 12 ■).
- Clean up blood and body fluids as soon as possible by routine cleaning with a hospital-grade disinfectant or a solution of household bleach and water.
- Walls, window coverings, and other nonhorizontal surfaces in the ambulance do not need routine cleaning, but should be cleaned if visibly soiled.
- Wash your hands thoroughly after cleaning the ambulance or disposing of equipment.

Cleaning, disinfecting, and sterilizing are all related terms. **Cleaning** is simply the process of washing a soiled object with soap and water. **Disinfecting** includes cleaning, but also involves using a hospital-grade disinfectant or germicide to kill many of the microorganisms that may be present on the surface of the object. **Sterilization** is the process by which an object is subject to a chemical or physical substance (such as superheated steam in an autoclave) that kills all microorganisms on the surface of an object. Generally, disinfection is used for items that will come in contact with the intact skin of a patient, such as backboards and splints. However, if the equipment will come in contact with mucous membranes or other open or internal structures, it should be sterilized (laryngoscope blades, for example).

Immunizations. Before you begin active duty, have a physician make sure you are adequately protected against common diseases. Have a **purified protein**

derivative (PPD) tuberculin test to detect tuberculosis every year. This and the other immunizations listed here are recommended for active-duty EMTs:

- PPD tuberculin test (annually)
- Tetanus prophylaxis (every 10 years)
- Hepatitis B vaccine
- Influenza vaccine (annually)
- Polio immunization (if needed)
- Rubella (German measles) vaccine
- Measles vaccine (if needed)
- Mumps vaccine (if needed)
- Varicella vaccine (if needed)

Because some immunizations have been found to offer only partial protection, have your physician verify your immune status against rubella, measles, and mumps and obtain a hepatitis B titer. Although immunizations offer protection against many diseases, Standard Precautions must always be practiced, even by immunized EMTs.

Reporting Exposure. State and local laws vary regarding the reporting of exposure to blood and other body fluids, especially if a patient is known to be HIV positive or have hepatitis B or is known to be in a high-risk category for infection. In general, promptly report any suspected exposure to your supervisor, including date and time of the exposure, type of body fluid involved, the amount of fluid, and details of the exposure. Follow local protocol and your service’s exposure policies.

Infectious Diseases of Concern to the EMT

Hepatitis B

Hepatitis B is one of several viruses that directly affect the liver. A serious disease that can last for months, hepatitis B can be contracted through blood and body fluids. A major source of the virus is the chronic carrier, who usually has no signs or symptoms and is often unaware of being ill. These people can transmit the disease at any time.

The following are signs and symptoms of the hepatitis B virus:

- Fatigue
- Nausea and loss of appetite
- Abdominal pain
- Headache
- Fever
- Yellowish color of skin and whites of eyes (jaundice)
- Dark urine

Remember: Hepatitis B infection may not cause symptoms. You can be unaware of infection and still pass it on to others. Protective procedure recommendations include the following:

- Wear disposable protective gloves whenever you care for patients to prevent contact with blood and other



■ **FIGURE 12** Place all sharp instruments in a rigid, well-mounted, puncture-resistant container.

body fluids. Make sure you have bandaged all cuts, lesions, scratches, hangnails, and any other open wound on your hands.

- After removing gloves, wash your hands, wrists, and forearms thoroughly with hot, soapy water and rinse well.
- Get vaccinated against hepatitis B before beginning EMS field work. These vaccines are offered by employers when employees have the potential to come in contact with blood and body fluids.
- Double-bag and seal all soiled refuse. Dispose of it according to local protocol.
- Clean and disinfect or sterilize all nondisposable equipment. Launder your soiled clothing in hot, soapy water and bleach.

If you suspect you have been exposed to hepatitis B, report the incident to your supervisor and follow your service's exposure policy. Care may include an injection of HBIG (hepatitis B immunoglobulin) immediately and again within a month if not previously vaccinated. You may also receive a vaccination, if you have not already had one.

Hepatitis C

Hepatitis C virus (HCV) infection has become the most common bloodborne infection in the United States. Fortunately, the risk of transmission through occupational exposure is relatively low since it requires introduction through the skin by needlestick. Transmission via the mucous membrane is rare. Testing of emergency personnel is recommended after exposure has occurred.

Approximately 80 percent of patients with HCV have no signs or symptoms. Those who are symptomatic typically present with the following:

- Jaundice (yellow color to skin and eyes)
- Fatigue
- Abdominal pain (may be located in right upper quadrant)
- Nausea
- Dark urine
- Loss of appetite

Unlike with hepatitis B, there is no vaccination to prevent hepatitis C infection. It is extremely important that you take Standard Precautions when dealing with exposure to body fluids, especially blood. Also be careful to avoid any sharps or needles with infected blood since this is the most significant route of HCV transmission for EMS personnel.

Tuberculosis

Tuberculosis almost vanished once, but it has made a dramatic comeback. In fact, researchers are worried because new drug-resistant strains are developing. The pathogen that causes tuberculosis is found in the lungs

and other tissues of the infected patient. You can be infected by droplets from the cough of a patient and from the patient's infected sputum.

The main signs and symptoms of tuberculosis are as follows:

- Fever
- Cough (often coughing up blood)
- Night sweats
- Weight loss

OSHA has adopted protective procedure standards for rescuers. The standards include the use of special HEPA or N-95 respirators. Recommendations include the following:

- Wear disposable protective gloves to avoid contact with infected sputum or mucus.
- Wear a HEPA or N-95 (respirator) mask to avoid breathing infected droplets.
- Perform artificial ventilation with OSHA-approved equipment.
- After you remove your gloves, wash hands thoroughly with hot soapy water and rinse well.
- Disinfect all nondisposable equipment that was contaminated by the patient's body fluids with a hospital-grade disinfectant with a tuberculocidal agent. See that all linens and clothing are laundered in hot soapy water and bleach.

Human Immunodeficiency Virus (HIV)/ Acquired Immune Deficiency Syndrome (AIDS)

Fortunately, AIDS is not spread through casual contact. It cannot be transmitted by coughing, sneezing, sharing eating utensils, linens, skin contact, or such indirect exposures. It is more difficult to contract HIV (human immunodeficiency virus, the virus that causes AIDS) through occupational exposure than it is to contract the virus that causes hepatitis B. The identified modes of transmission include the following:

- Sexual contact involving the exchange of semen, blood, or through contact with vaginal or cervical secretions
- Infected needles
- Infected blood or blood products
- Mother-child transmission, which occurs when an infected mother passes the virus to her child, sometimes as early as the 12th week of gestation
- Contact with infected blood or secretions through mucous membranes or open skin

Simply stated, AIDS is a syndrome of medical problems caused by HIV, a virus that destroys the body's ability to fight infections. Many patients infected with HIV do not exhibit signs or symptoms and do not know they are infected. AIDS patients become infected with what are called opportunistic infections (infections that take

advantage of the “opportunity” provided by the body’s lack of ability to fight them). These infections are caused by viruses, bacteria, parasites, and fungi. They are serious illnesses that either do not occur or occur only in milder forms among people with healthy immune systems.

AIDS can involve many organs and systems of the body. This results in a countless array of signs and symptoms. The most common include the following:

- Persistent, low-grade fever
- Night sweats
- Swollen lymph glands
- Loss of appetite
- Nausea
- Persistent diarrhea
- Headache
- Sore throat
- Fatigue
- Weight loss
- Shortness of breath
- Mental status changes
- Muscle and joint aches
- Rash
- Various opportunistic infections

Remember—not everyone who is infected by HIV has yet developed, or even will develop, AIDS. However, people who carry HIV are still capable of spreading the infection to others, even if they have no signs or symptoms. Follow Standard Precautions at all times. They can significantly reduce your risk of becoming infected with HIV.

Severe Acute Respiratory Syndrome (SARS)

Severe acute respiratory syndrome (SARS) is caused by a respiratory virus that was found in Asia in 2003. SARS cases have been identified worldwide, including in the United States and Canada. The virus is thought to be transmitted by close person-to-person contact by respiratory droplets produced by the infected person who coughs or sneezes. Close contact is generally defined as within 3 feet of the infected person. The respiratory droplets are then deposited on the mucous membranes of the mouth, nose, or eyes of the noninfected person. Also, the respiratory droplets may be deposited on an object that is touched by a noninfected person who then touches his eyes, inside his mouth, or his nose and subsequently becomes infected.

The following are signs and symptoms of SARS:

- A high fever of usually greater than 100°F (38°C)
- Headache and body ache
- General feeling of discomfort
- Respiratory symptoms
- Diarrhea
- Dry cough

Most patients with SARS will develop pneumonia. The patient may then present with more severe signs of respiratory distress.

The best protection for the EMT if SARS is suspected is to wear a surgical mask to avoid inhaling respiratory droplets, eye protection to avoid droplets entering the mucosa of the eyes, and gloves. Also place a surgical mask on the patient. When dealing with the patient or equipment used on the patient, do not touch your eyes, nose, or mouth with your gloved hands. Be sure to immediately remove the gloves after the patient exposure and wash your hands thoroughly. If you think you have been exposed, contact the person who manages infectious disease exposure at your EMS agency. Be alert for signs of fever and respiratory symptoms for 10 days after the exposure.

West Nile Virus

West Nile virus (WNV) is transmitted through the bite of an infected mosquito. Most mosquitoes are infected by feeding off an infected bird. Approximately 80 percent of the people infected with WNV will not show any signs or symptoms. However, some patients will present with severe to mild signs and symptoms. These include the following:

Severe Signs and Symptoms

- High fever
- Headache and stiff neck
- Confusion and disorientation to coma
- Seizures
- Muscle weakness
- Numbness
- Paralysis
- Vision loss

Mild Signs and Symptoms

- Fever
- Headache and body ache
- Nausea and vomiting
- Skin rash to chest, stomach, and back
- Soreness to neck from swollen lymph glands

The signs and symptoms of the severe cases may last for several weeks. Some of the signs and symptoms may be permanent. In mild cases, the signs and symptoms can last for only a few days to several weeks.

Standard Precautions will protect you from the virus. You are much more likely to contract the virus from a mosquito bite than through an occupational exposure from coming in contact with a patient who has the West Nile virus.

Multidrug-Resistant Organisms

Multidrug-resistant organisms are pathogens that have adapted to and developed the ability to resist standard antimicrobial drugs. As an EMT, you will likely come in contact with these pathogens while transporting patients from hospitals, especially intensive care units and burn units, long-term care facilities, nursing homes, and other

medical care facilities. They may also be found in patients who have chronic wounds or who frequently use health care facilities such as physicians' offices and hemodialysis centers. The most common types of pathogens are:

- Methicillin/oxacillin-resistant *Staphylococcus aureus* (MRSA)
- Vancomycin-resistant enterococci (VRE)
- Penicillin-resistant *Streptococcus pneumoniae* (PRSP)
- Drug-resistant *Streptococcus pneumoniae* (DRSP)

These organisms can produce many different types of infections that are resistant to standard antibiotic therapy. Patients may develop pneumonia, blood infections, ear infections, sinus infections, skin infections, and infections of the lining of the abdomen (peritonitis).

Transmission of the infection is usually through direct person-to-person contact. It is important that you follow the medical care facilities' instructions on personal protection when transporting these patients. At the minimum, follow your normal Standard Precautions and be sure to use good hand-washing procedures.

Protecting Yourself from Accidental and Work-Related Injury

As an EMT you must constantly be aware of the risk of potential injury associated with even the everyday aspects of the profession. Prevention strategies include the use of vehicle restraint systems, safe lifting and

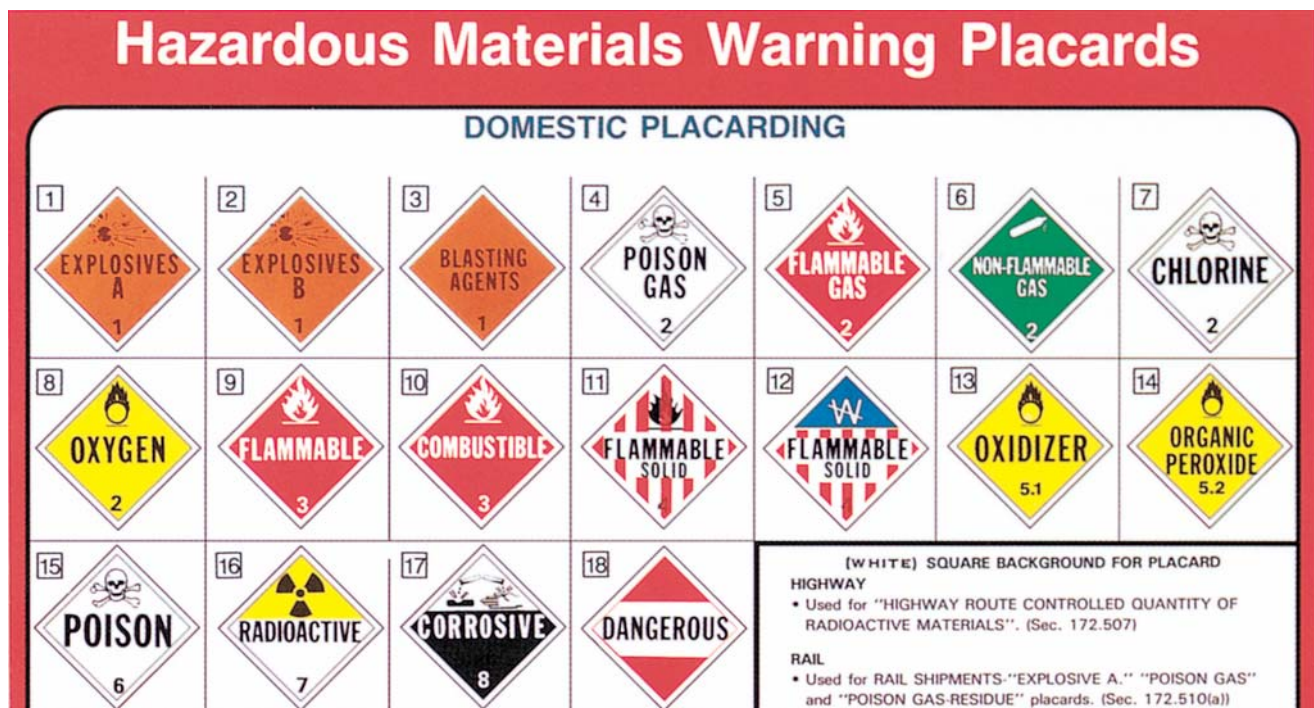
moving techniques, getting adequate sleep, physical fitness, proper nutrition, and practicing proper Standard Precautions against disease transmission.

You must also protect yourself during rescue operations involving hazardous materials, potentially life-threatening rescues, violence, and biological and chemical weapons of mass destruction. It is imperative that you not fall victim to the same hazards that affect your patients.

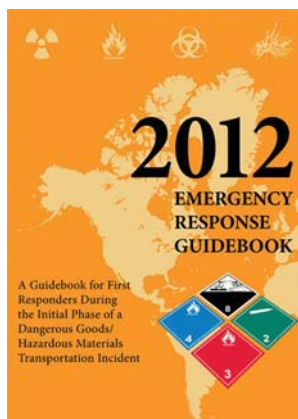
Hazardous Materials

Whenever you are called to a scene involving possible hazardous materials, use binoculars to try to identify the materials as hazardous before approaching. Look for signs or placards and compare them to those listed in the *Emergency Response Guidebook*, published by the U.S. Department of Transportation (Figures 13 ■ and 14 ■). A copy of the handbook should be in every emergency vehicle.

Rescuers trained in managing hazardous materials wear protective clothing at a hazardous materials emergency, including self-contained breathing apparatus and "hazmat" suits (Figures 15 ■ and 16 ■). Whenever possible, a specialized hazardous materials team should be called to control the scene before you enter. EMTs should provide emergency care only after the scene is safe, contamination is limited, and patient decontamination has been accomplished.



■ **FIGURE 13** Examples of hazardous materials warning placards.



■ **FIGURE 14** The *Emergency Response Guidebook* should be carried on all EMS vehicles.



■ **FIGURE 15** Self-contained breathing apparatus (SCBA).

Rescue Situations

The following rescue situations involve potential threat to the life of both patients and emergency service personnel:

- Downed power lines or other potential for electrocution (Figure 17 ■)
- Fire or threat of fire (including gasoline or chemical spills)



■ **FIGURE 16** Typical hazardous materials protective suits.



■ **FIGURE 17** Downed power lines pose a potential life threat for patients and rescuers. (© Mark C. Ide)

- Explosion or threat of explosion
- Hazardous materials
- Possible structural collapse
- Low oxygen levels in confined spaces
- Trenches that are not properly secured
- Biological, nuclear, and chemical weapons

Generally, you should call for assistance from specialized teams—from the power company or fire department, for example—before attempting rescue or patient treatment in a situation involving a life-threatening danger. If complex or extensive rescue is involved, also call for specialized rescue teams. Once a scene is controlled, follow local protocol in wearing the necessary personal protective equipment, such as turnout gear, puncture-proof gloves, helmet, and protective eyewear (Figure 18 ■).



■ **FIGURE 18** Full protective gear, including eye protection, helmet, turnout gear, and gloves.

Plenty of rescues take place outdoors in the dark and in bad weather. If the rescue is being performed on a roadway, an essential for every rescuer is an ANSI/ISEA 107-2004 Class 2 or Class 3 approved high-visibility vest or 207-2006 public safety vest (PSV), as discussed in the next section. Depending on the situation, you might consider rubber or waterproof boots and slip-resistant waterproof gloves in wet weather. In cold weather, wear gloves, a warm hat, and long underwear, as well as several layers of clothing on your torso. In accidents involving grain, cement, or similar materials, wear a dust respirator. If there is any risk of falling debris, wear an impact-resistant protective helmet with reflective tape and a strap under the chin.

It is vital to your safety that you follow your system's protocols and policies on personal protection. A good rule is to be sure that you wear at least the protective equipment that others on the scene are required to wear. For example, if you are responding to a call at a factory and all the employees are required to wear a helmet while in the plant, the minimum protection you should wear is a helmet.

High-Visibility Vest. A recently approved federal law requires all EMTs and other rescue personnel

responding to accidents or other emergencies on or near a roadway to wear approved high-visibility apparel in an attempt to reduce the incidence of injury to emergency responders.

The American National Standards Institute (ANSI) and International Safety Equipment Association (ISEA) created the standard ANSI/ISEA 107-2004, American National Standard for High-Visibility Safety Apparel and Headwear. Three classes of garments were established:

Class 1—designed for workers in parking lots and other areas with traffic flow moving at less than 25 mph

Class 2—designed for personnel whose attention is diverted from traffic or where the traffic flow is moving at 25 mph or greater

Class 3—designed for personnel whose work greatly diverts their attention away from the roadway and where they are at serious risk from hazards created by moving vehicles

The ANSI/ISEA 207-2006 American National Standard for High-Visibility Public Safety Vests (PSV) was approved to increase the visibility of emergency personnel on the roadway and to reduce the incidence of roadway hazards. The newer standard made significant changes to standard class garments to accommodate the public safety responder. The PSV has the same retro-reflective material as the Class 2 vest and nearly the same amount of fluorescent material. The PSV has breakaway features, specific vest dimensions to allow for fit over turnout gear, and color-specific markings to allow for differentiation between law enforcement, fire, and EMS personnel.

Currently, the Code of Federal Regulations requires all emergency personnel who are exposed to traffic within the right-of-way of a highway that receives federal funding to wear high-visibility safety apparel that meets the Class 2 or 3 standards of ANSI/ISEA 107-2004 or the Public Safety Vest standard ANSI/ISEA 207-2006.

Violence and Crime

You may face violence without warning—from a patient, bystander, family member, perpetrator of a crime, or behavioral emergency patient—during any patient rescue or treatment situation. Generally, if you suspect potential violence, you should call law enforcement before you enter the scene, especially if the perpetrator of a crime is or may still be present. Do not enter the scene to render patient care until it has been adequately controlled by law enforcement and until those with weapons (such as guns or knives) have been removed from the scene. Typical emergencies in which you should call law enforcement include domestic disputes, patients under the influence of drugs or alcohol who appear to be agitated or hostile, street or gang

fight, bar fight, potential suicide, scenes with angry family members or angry bystanders, behavioral emergencies with hostile action or threats, and any type of crime scene.

Regardless of where you work, you may want to consider using body armor, sometimes called a “bullet-proof vest.” Many metropolitan area EMS agencies issue body armor or provide some other means for personnel to be protected.

If you need to treat patients at a crime scene, take specific precautions to preserve the chain of evidence needed for investigation and prosecution. A general rule is to avoid disturbing the scene unless absolutely necessary for medical care.

WELLNESS PRINCIPLES

Remaining well is a fundamental aspect that allows you to perform your responsibilities as an EMT to the best of your ability. Wellness does not simply imply the lack of illness; it involves physical, intellectual, emotional, social, environmental, and spiritual dimensions. An imbalance in any of these dimensions could lead to a state of poor health. The following sections focus on the physical and mental components of wellness.

Physical Well-Being

Physical well-being focuses on the body and the ability to perform the physical demands of being an EMT. It includes physical fitness, adequate sleep, disease prevention, and injury prevention. Methods to reduce your incidence of acquiring an infectious disease and techniques to prevent injury from safety hazards have been discussed earlier in the chapter.

Physical Fitness

The core components to remaining physically fit and able to perform your job as an EMT are cardiovascular endurance, muscle strength, muscle endurance, muscle flexibility, and body composition.

Cardiovascular Endurance. Cardiovascular endurance is gained through aerobic exercise that is geared toward improving the ability of the heart, lungs, and vessels to supply the muscles and organs with oxygen and other nutrients during prolonged periods of work. Walking, jogging, swimming, and using an elliptical or step machine can all help to strengthen the cardiovascular system. To obtain the benefits of cardiovascular

exercise, it is necessary to reach and maintain your target heart rate for a period of time, often 30 to 40 minutes at least three days a week. Your target heart rate can be calculated by the following procedure:

1. Measure your resting heart rate.
2. Subtract your age from 220, which provides your estimated maximum heart rate.
3. Subtract your resting heart rate from your maximum heart rate, and then multiply that figure by 70% (0.70).
4. Add the final calculated number from step 3 to your resting heart rate.

The following is an example of calculating a target heart rate by this formula:

1. Resting heart rate is 62 beats per minute (bpm) for a 28-year-old.
2. Total estimated maximum heart rate is 192 bpm ($220 - 28 = 192$).
3. Total estimated maximum heart rate minus the resting heart rate is 130 bpm ($192 - 62 = 130$ bpm) multiplied by 70% = 91 bpm ($130 \times 0.70 = 91$ bpm).
4. Target heart rate as calculated by adding the resting heart rate to the calculated figure in step 3 equals 153 bpm ($91 + 62 = 153$ bpm).

Muscle Strength. Muscle strength is defined as the amount of force a muscle can produce through a single contraction. It is tested by the amount of weight that can be lifted. The primary way to build muscle strength is through weight lifting or other types of resistance exercises. Lifting heavy objects is a crucial and repetitive part of an EMT's job, including lifting patients and equipment.

Muscle Endurance. Muscle endurance is defined as the ability of the muscle to function repeatedly without unwarranted fatigue. Improvement in muscle endurance is achieved by forcing the muscles to lift a greater weight than the muscle is used to. This, again, is achieved through weight training. Muscle endurance is necessary to be able to carry patients and equipment for long periods of time, such as from a bedroom to the ambulance.

Muscle Flexibility. Muscle flexibility allows you to move your joints through the full range of motion. This is achieved primarily through stretching. Muscle flexibility is key to lifting and moving patients and equipment properly. Without adequate flexibility, you are prone to muscle and joint injury.

Body Composition. Body composition is evaluated primarily by the ratio of body fat to total weight.

A lower ratio of body fat is associated with a healthier individual. A higher ratio of body fat places the EMT at risk for chronic conditions such as heart disease, hypertension, and diabetes. Proper nutrition and exercise will help to reduce and/or maintain a proper ratio of body fat.

Adequate Sleep

EMS work is performed 24 hours a day, 7 days a week. When you work a shift that falls within a different span of the day than you are accustomed to being awake and alert, it interrupts your body's natural timing system, referred to as circadian rhythms. Interfering with your body's circadian rhythms makes you prone to difficulty with physical coordination, thought processes, and social functions.

One of the keys to maintaining as near normal function as possible is getting an adequate amount of sleep. Lack of sleep (sleep deprivation) puts you at risk for accidents and injury. It also puts your patients at risk of improper care resulting from your inability to function at the necessary mental and physical level. Individuals require a minimum of 8 to 10 hours of sleep each day. Studies have shown that a lack of regular sleep contributes to chronic diseases, such as heart disease, weight gain, and poor mental function. Methods to improve the quality and increase the number of hours of sleep include the following:

- Select an environment that mimics nighttime, such as one that is cool and dark.
- Select a regular time to sleep when a block of sleep can be achieved uninterrupted.
- Prepare yourself for sleep by not eating a heavy meal, drinking caffeine, or exercising immediately before your sleep time.
- Reduce interruptions by turning off the phone ringer, shutting off pagers, turning cell phones to the silent mode, and posting a sign on your door indicating that you are sleeping.

Smoking Cessation

Smoking contributes dramatically to an unhealthy lifestyle. As an EMS professional, you are part of the public health system. One of your responsibilities is

to promote a healthy lifestyle in the public to reduce the incidence of disease, illness, and injury. By smoking, you are violating this responsibility and increasing your own risk of cardiovascular and pulmonary disease, and cancer. There are a number of strategies available to quit smoking. By doing so, you will not only improve your public image but also greatly improve your health.

Alcohol- and Drug-Related Issues

Some EMS providers resort to the use of alcohol or drugs, prescription or illegal, in an attempt to reduce the mental and physical stress associated with the job. Overindulgence in alcohol to reduce or relieve stress is a practice that must be avoided. It has consequences for your health and mental function, and it does not get rid of the stress. Similarly, the use of medications or illegal drugs to cope with stress is a grave warning sign. If you or a fellow EMT is relying on drugs or alcohol, it is necessary to seek professional assistance. Many EMS agencies have employee assistance programs that are extremely beneficial in situations like these.

Mental Well-Being

Stress associated with EMS can easily affect your mental well-being. Over time, this can lead to the development of chronic physical illness as well as emotional issues. Individuals who are close to you and who are not involved in EMS may not understand the stresses of the job and what you are experiencing. This can contribute to difficulty in relationships and an imbalance in your personal life. It is important to talk to family members or those you are close to and explain how you are feeling. They may not completely understand; however, it is a step toward helping them understand. Exercise, relaxation, and engaging in something you enjoy, such as fishing or hiking, are great ways to reduce stress and improve your mental well-being.

If these methods are not enough to help you achieve a feeling of mental well-being, look into any employee assistance programs your agency may provide or seek out other sources of help, such as professional counseling.

EMT SKILLS
1**Safe Glove Removal**

■ **1A** Follow a safe technique for removal of gloves. Use only contaminated glove surfaces to touch other contaminated glove surfaces, and use clean inside glove surfaces to touch other clean inside glove surfaces. Do not touch a contaminated surface with your bare hand or fingers.



■ **1B** Use a gloved finger to pull a cuff out and down on the other glove. Do not touch the inside of the glove.



■ **1C** Without touching the inside of the glove, continue pulling it downward.



■ **1D** Pull until the glove is inside out and off all but the tips of the fingers and thumb.

Chapter Review

SUMMARY

As an EMT, you will be faced with death and dying on a regular basis. It is likely that what you will experience in a short while most people will not experience in a lifetime. Some patients who are terminally ill will go through certain stages related to death and dying. Family members may go through the same stages but at different times. Be prepared to deal with these patients, their families, and their emotions.

Stress is inherent in emergency medical services and may have significant physical, emotional, psychological, and social impacts on your life. Be prepared to recognize the warning

signs and symptoms of stress. Stress reactions may be acute, delayed, or cumulative. Once you have recognized stress, use effective methods to diminish or eliminate it.

One of the most important aspects of scene safety is protecting yourself against any hazards. This includes taking the necessary Standard Precautions against infectious disease. If responding to a scene that involves specialized rescue, such as for hazardous materials or swift water, do not attempt any type of rescue yourself unless you have received the necessary specialized training and have the proper equipment. Responding to scenes that involve violence and crime may present certain risks. Be sure to have the proper resources dispatched to secure the scene.

Case Study Follow-up

Scene Size-up

You have been dispatched to the scene of a domestic dispute. You learn from the police that the husband is an unemployed alcoholic who is going through a “de-tox” program. He is holding his wife and two daughters hostage. An officer is already down, and a special tactics team is working to bring the situation under control.

Two hours later you are still not permitted to approach. The husband has released the two children and they are transported by another EMS unit. Suddenly there is a single gunshot. The husband appears at the front door, shooting randomly. The special tactics team returns fire. The man falls to the ground.

Patient Assessment

After the police secure the scene, you and your partner approach with Standard Precautions. Primary assessment shows that the downed police officer is dead,

having received multiple gunshot wounds to the head and neck. The gunman is also dead, with multiple gunshot wounds to the head and chest. The wife inside the house is dead, shot once through the head. You and your partner return to the ambulance and notify dispatch that there will be no additional transports. The incident commander releases you and your partner from the scene.

Critical Incident Follow-up

During the drive back to the station, your partner is very quiet and tense. At the station, you try to get him to discuss the call. He responds angrily and tells you he is going to quit EMS. You both summon your supervisor, who recognizes the signs of acute stress reaction. The supervisor meets with the EMT and encourages him to contact the employee assistance program. He arranges to meet with a mental health professional to discuss the call. He returns to his next shift relaxed and confident that he can perform competently.

IN REVIEW

1. List the five stages through which a dying patient may pass.
2. Describe several things you can do—other than provide emergency medical care—to help dying patients.
3. List five of the signs and symptoms of chronic stress and burnout.
4. List four ways you can help deal with the stress in your life.
5. Identify some of the negative feelings families of EMTs may have in response to the job. Describe some of the ways you can help.
6. Describe the safety precautions an EMT can take to prevent the spread of infectious disease.
7. Discuss the responsibilities employers have, under OSHA guidelines, to protect emergency care personnel from transmission of infectious diseases.

8. Discuss the responsibilities emergency care employees have, under OSHA guidelines, for their own protection against transmission of infectious diseases.
9. List the personal protective equipment necessary for hazardous materials situations, rescue operations, and scenes of violence or crime.
10. List steps to prevent work-related injuries.
11. List common infectious diseases the EMT may encounter in the prehospital setting.
12. List strategies that contribute to physical and mental well-being.

CRITICAL THINKING

You are dispatched to the scene for a 3-year-old female child who was shot in the chest. As you arrive on the scene, you note blood covering the front porch and sidewalk.

1. What would you do to ensure scene safety?
2. What other resources should be requested?

3. Why is this a potential high-stress situation?
4. What can be done to reduce your stress associated with the call?

ANSWER KEY

IN REVIEW

1. The five stages through which a dying patient may pass are denial (“Not me”), anger (“Why me?”), bargaining (“Okay, but first let me”), depression (“Okay, but I haven’t”), and acceptance (“Okay, I am not afraid”).
2. Things you can do to help the dying patient may include the following: do everything possible to maintain the patient’s dignity, show respect for the patient, communicate who you are and what you are doing, allow family members to express themselves, listen empathetically, avoid giving false assurances, be honest but allow for some hope, use a gentle tone of voice, let the patient know that everything that can be done to help will be done, take appropriate steps if the family wants to touch or hold the body after death, and do what you can to comfort the family.
3. Signs and symptoms of chronic stress and burnout may include irritability with coworkers, family, and friends; inability to concentrate; difficulty sleeping and nightmares; anxiety; indecisiveness; guilt; loss of appetite; loss of sexual desire or interest; isolation; loss of interest in work; problems in thinking (confusion, inability to make judgments or decisions, loss of motivation, chronic forgetfulness, and loss of objectivity); psychological problems (depression, excessive anger, negativism, hostility, defensiveness, mood swings, and feelings of worthlessness); physical problems (persistent exhaustion, headaches, gastrointestinal distress, dizziness, and pounding heart); behavioral problems (overeating, increased alcohol or drug use, grinding teeth, hyperactivity, and lack of energy); social problems (increased interpersonal conflicts); and decreased ability to relate to patients as individuals.
4. Ways to help deal with stress may include making lifestyle changes, such as improving diet, taking advantage of the benefits of exercise, practicing relaxation techniques, and avoiding self-medication of any kind. Other ways to deal with stress may include making changes to the work environment, such as developing a “buddy” system with a coworker, encouraging and supporting coworkers, taking periodic breaks for exercise, requesting work shifts that allow more time with family and friends, and requesting a rotation of duty assignment.
5. Negative feelings that families of EMTs may have include a lack of understanding about your job, a fear of separation or fear of being ignored, worry about on-call situations, inability to plan, and a frustrated desire to help and support you. Ways to help include explaining the nature of your work and what you do for patients and how you feel about what you do, answering their questions and easing their anxieties, and encouraging them to join you in staying fit. Always include time with them on your list of priorities.
6. Safety precautions to prevent the spread of infectious disease include Standard Precautions taken at all times, including hand washing; use of personal protective equipment such as protective eyewear, protective gloves, gowns, and masks; cleaning, disinfecting, and sterilizing clothing and equipment; immunizations; and reporting exposures as required by state law.
7. Under OSHA guidelines, employers have the responsibility for developing a written exposure control plan and providing training, certain immunizations, and the proper equipment for protection against disease transmission. The employer is also responsible for developing and enforcing a written policy to be used in the case of an exposure of an employee to an infectious substance.
8. Employees share—along with employers—the responsibility of ensuring that the necessary equipment and procedures are in place for protection against exposure to infectious disease. In addition, employees must complete proper training and follow the procedures outlined in their exposure control plan.
9. Personal protective equipment for special situations includes the following: in a hazardous materials situation, a self-contained breathing apparatus and specialized “hazmat” suit; in a rescue operation, turnout gear, puncture-proof gloves, impact-resistant protective helmet, protective eyewear, and additional equipment dictated by local protocol, such as reflective clothing, rubber boots and slip-resistant gloves, or dust respirator. If the rescue is being performed on a roadway, federal law requires rescuers to wear ANSI/ISEA approved high-visibility apparel. For violent scenes or crime scenes, some rescuers may also elect to wear body armor.
10. Prevention strategies include the use of vehicle restraint systems, safe lifting and moving techniques, getting an adequate amount of sleep, physical fitness and proper nutrition, and practicing proper disease transmission Standard Precautions. You must also protect yourself during rescue operations involving hazardous materials, potentially life-threatening rescues, violence, and biological and chemical weapons of mass destruction. It is imperative that you not fall victim to the same hazards that affect your patients.
11. The more common infectious diseases encountered in the prehospital setting are hepatitis, tuberculosis, and influenza.

12. Remaining well is fundamental to performing your role as an EMT. That can be achieved through physical fitness, such as cardiovascular endurance, muscular strength and flexibility, and maintaining an appropriate body fat composition.

In addition, getting an adequate amount of sleep; avoiding smoking, alcohol, and drugs; and dealing with stress effectively can all improve your physical and mental well-being and contribute to your effectiveness in your profession.

GLOSSARY

burnout a condition resulting from chronic job stress, characterized by a state of irritability and fatigue that can markedly decrease effectiveness.

cleaning the process of washing a soiled object with soap and water.

critical incident any situation that causes unusually strong emotions that interfere with the ability to function.

critical incident stress debriefing (CISD) a session usually held within 24 to 72 hours of a critical incident, where a team of peer counselors and mental health professionals help emergency service personnel work through emotions that normally follow a critical incident.

defusing a session held prior to a critical incident stress debriefing (CISD) for emergency service personnel most directly involved to provide an opportunity to vent emotions and get information before the CISD.

disinfecting in addition to cleaning, this process involves using a disinfectant such as alcohol or bleach to kill many of the microorganisms that may be present on the surface of an object.

pathogens microorganisms such as bacteria and viruses that cause disease.

personal protective equipment (PPE) equipment worn to protect against injury and disease.

purified protein derivative (PPD) tuberculin test a test to determine the presence of a tuberculosis infection based on a person's positive reaction to tuberculin, a substance prepared from the tubercle bacillus.

Standard Precautions a method of preventing infection by disease organisms based on the premise that all blood and body fluids are infectious. Formerly called *body substance isolation*.

sterilization the process by which an object is subject to certain chemical or physical substances (typically, superheated steam in an autoclave) that kill all microorganisms on the surface of an object.

Medical, Legal, and Ethical Issues

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARD • Preparatory (Content Area: Medical/Legal and Ethical)

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

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Differentiate between the concepts of *scope of practice* and *standard of care*.
3. Given a scenario, determine whether you would have a duty to act.
4. Explain your duties with respect to patients, your partner, yourself, and your equipment.
5. Describe the intent of Good Samaritan laws.
6. Explain each of the following legal protections for EMTs:
 - a. Sovereign immunity
 - b. Statutes of limitations
 - c. Contributory negligence of the patient
7. Explain the EMT's legal obligations with respect to medical direction.
8. Differentiate between the concepts of ethics and morals.
9. Describe the ethical responsibilities of EMTs.
10. Given a scenario presenting an ethical dilemma, discuss the consequences of various decisions and actions.
11. Explain each of the following types of consent:
 - a. Informed consent
 - b. Expressed consent
 - c. Implied consent
 - d. Consent to treat minors
 - e. Involuntary consent
12. Compare and contrast the typical provisions and pre-hospital applications of each of the following types of advance directives:
 - a. Do not resuscitate order
 - b. Living will
 - c. Durable power of attorney
 - d. Physician orders for life-sustaining treatment
13. Given a scenario in which a patient has an advance directive, determine the appropriate action to be taken.
14. Given a scenario in which a patient refuses care, discuss the actions you should take.
15. Differentiate between criminal and civil liability.
16. Explain the concept of negligence.
17. Give examples of ways you can avoid each of the following tort claims:
 - a. Abandonment
 - b. Assault
 - c. Battery
 - d. False imprisonment/kidnapping
 - e. Defamation
18. Explain patients' rights and your legal and ethical responsibilities concerning confidentiality and privacy.
19. Describe COBRA and EMTALA provisions as they apply to EMS.
20. Give examples of ways you can protect yourself legally in transport and transfer situations.
21. Describe special considerations for patients who are potential organ donors.
22. Identify presumptive signs of death.
23. Identify situations in which law enforcement or the medical examiner's/coroner's office should be contacted.
24. Discuss special considerations in responding to potential crime scenes.
25. Describe situations in which the EMT may be mandated to make a report, such as suspected abuse, crimes, and infectious diseases.

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary.

abandonment	Emergency Medical Treatment and Active Labor Act (EMTALA)	libel
advance directive	expressed consent	living will
assault	false imprisonment	minor consent
battery	Good Samaritan law	negligence
consent	Health Insurance Portability and Accountability Act (HIPAA)	physician orders for life-sustaining treatment (POLST)
Consolidated Omnibus Budget Reconciliation Act (COBRA)	implied consent	proximate cause
defamation	informed consent	scope of practice
do not resuscitate (DNR) order	intentional tort	slander
durable power of attorney	involuntary consent	standard of care
duty to act		tort

Case Study

The Dispatch

EMS Unit 105—proceed to 733 East Third Street—you have an elderly male at that location with abdominal pain—time out 1430 hours.

Upon Arrival

An elderly woman, who tells you she is Mrs. Schuman, meets you and your partner on the front porch of the home. She is wearing only a nightgown, and the temperature is only 38°F. She says, “It’s my husband. Something is wrong. I just can’t handle him anymore.”

You quickly usher Mrs. Schuman inside while you scan the scene for hazards. As soon as you enter you notice that the house is in shambles. The rooms are so cluttered

that you and your partner can barely pass through. Mrs. Schuman leads you to the bedroom, where you find the patient lying on the bed. Mr. Schuman’s eyes are open, and he’s moaning softly. His bed sheets and undergarments are stained with dried urine. The odor is very strong, and the temperature inside the room is very cold.

How would you proceed with this case?

During this chapter, you will learn about special legal and ethical considerations that have an impact on the medical care you administer to your patients. Later, we will return to the case and put in context some of the information you learned.

INTRODUCTION

Should you stop to treat an accident victim when you are off duty? May you treat a child when the parents are not present to give consent? Should you withhold cardiopulmonary resuscitation (CPR) if the patient’s family asks you to? You will often need to act on medical, legal, and ethical issues such as these during your career as an EMT.

At times you may wonder if you can provide emergency care at all without being sued! You are unlikely to be sued successfully if you provide and carefully document care within your scope of practice and local protocols, with knowledge of such issues as patient consent and duty to act.

THE SCOPE OF PRACTICE

Prehospital emergency care has changed significantly since its early days. One improvement has been in the

quality of training that emergency medical personnel receive today. The public and the health care profession have come to expect a competent EMT who understands and accepts the legal and ethical responsibilities to the patient, to the medical director, and to the public.

Legal Duties

Typically, state laws identify the EMT’s **scope of practice**, or the actions and care that EMTs are legally allowed to perform by the state in which they are providing emergency medical care. Scope of practice also identifies which activities would be deemed illegal if performed without licensure or certification and establishes boundaries among professionals. For example, providing oxygen under the appropriate circumstances is within the EMT’s scope of practice. However, suturing a laceration is not and is therefore illegal—even if the EMT may actually know how to perform the skill.

Among the sources commonly used to define the EMT's scope of practice are the National Highway Traffic Safety Administration's *National EMS Scope of Practice Model* and the *National EMS Education Standards*, which reflect minimum training standards applied throughout the United States, as well as state laws, regulations, and policies. The scope of practice is not a practice guideline or protocol and does not define the standard of care. It is purely a definition of what actions can legally be performed by the EMT.

The **standard of care** would be defined as the care that is expected to be provided by an EMT with similar training when managing a patient in a similar situation. The concept of "the reasonable person standard" is applied. That is, what would a reasonably prudent EMT with similar training do in the same situation? Also, standard of care asks whether the EMT provided the care properly. Thus, standard of care deals with two principles: (1) Did the EMT provide the right assessment and emergency care for the patient? and (2) Did the EMT perform the assessment and emergency care properly?

The scope of practice asks: Was the EMT allowed by law to do what he did? Falling below the standard of care would constitute negligence. The following sources may be used to define the standard of care:

- Recognized and accepted EMT textbooks
- The care that would be expected by other EMTs in the community or region
- Local and state protocols
- National Highway Traffic Safety Administration's *National EMS Education Standards*
- The EMS system's operating policies and procedures

Duty to Act

The concept known as **duty to act** refers to your legal obligation to provide service, whether you think the patient needs an ambulance or not. Legally, while you are on duty you are obligated to care for a patient who requires and consents to it, rendering the necessary emergency care to the best of your ability and training. If you are off duty and not functioning in an EMS capacity, however, in most states you have no more legal obligation to act than any other citizen. While off duty in these states, you could legally do any of the following:

- Stop and help the accident victim at the scene.
- Pass the scene and call for help.
- Pass the scene and make no attempt to call for help.

Note, however, that some states *do* require EMTs to stop and render aid even when off duty.

Whether or not your state requires it, if you are off duty from your paid or volunteer service and publicly respond to a page for assistance at an emergency call, or if you come across a scene and decide to stop to provide emergency care, you will create a duty to act, even though you are off duty. The reason for this assumed duty to act is that others may not respond because they

feel that your response has covered the call adequately and no other assistance is needed. If you begin emergency care and then decide to leave the scene, the patient could be placed in a situation that may be worse than if you had not responded at all. Once you do stop to help, thus creating the duty to act, you assume certain legal responsibilities. For example, once you have begun to provide care, you cannot leave until someone with the appropriate expertise—typically defined as one with an equal or higher level of training—takes over care. You are also legally responsible for any of the patient's personal property that you pick up.

One of the most important aspects of duty to your patient involves respecting the rights of the patient. It is your responsibility to serve as the patient's advocate and to protect and honor his rights. Part of that protection includes maintaining the privacy and confidentiality of the patient's medical status, history, and records. You are there to lessen the patient's suffering. You must also provide complete and competent care for your patient. This involves not only providing care for the physical injuries and illness, but also meeting the emotional needs of the patient. You must also do no further harm.

Your duty goes beyond accepting the responsibility to respond and provide emergency care to a patient. You also have a duty to self, a duty to your partner, and a duty to take responsibility for your equipment.

Your duty to self requires that you obtain the necessary credentials to practice as an EMT, that you maintain your skills to a level of proficiency, that you maintain your mental health, and that you remain physically able to perform the duties of the job.

Your duty to your partner involves ensuring that he is physically and mentally fit to provide emergency medical care and other responsibilities of the job. If your partner reports for work under the influence of alcohol or drugs, you have a duty to report the situation to your supervisor. In the end, it protects you and protects the public.

Your duty regarding your equipment is vital. It is your legal responsibility as an EMT to ensure that all of your equipment is in proper working order. This is done at the beginning of each shift. If a piece of equipment malfunctions because of improper maintenance, or if you don't have a necessary piece of equipment to treat a patient, you are negligent in providing care to the patient.

Good Samaritan Laws

The first Good Samaritan law was enacted in 1959 in California specifically to protect from liability "persons licensed (such as a physician or surgeon) who in good faith render emergency care at the scene of the emergency . . . for civil damages as a result of any acts or omissions." Many states have immunity laws of their own, some of which specifically cover prehospital emergency care providers.

Generally, a **Good Samaritan law** protects a person who is not being paid for his services from liability for acts performed in good faith unless those acts constitute gross negligence. Therefore, the person suing must prove that the care provided was markedly below the standard of care and, in some cases, with willful or wanton intent to harm the patient.

Most states have specific laws authorizing EMTs to perform prehospital emergency medical procedures without a medical license. Most states also provide some form of immunity to nurses, physicians, supervisors, and other personnel who give directions to EMTs by cell phone, telephone, or radio. The laws governing private and public providers vary. Be sure to learn your local laws.

A Good Samaritan law does not prevent you from being sued, although it may provide you some protection against losing the lawsuit if you have performed according to the standard of care for an EMT. So while you are on duty or assisting off duty, your best defense to lawsuits is prevention. Always render care to the best of your ability, always work within your scope of practice and within the standard of care, always behave in a professional manner, and ensure that you are covered by adequate liability insurance. If you keep your patients' best interests in mind when rendering care, you will seldom, if ever, go wrong.

Other Legal Protections

Another type of immunity afforded to public or government emergency medical services is *sovereign immunity*. Sovereign immunity, also known as governmental immunity, prevents persons treated by governmentally operated EMS systems from suing the government for civil liability. Since private EMS companies are not government agencies, they are not protected under sovereign immunity.

Each state has determined an appropriate *statute of limitations* relative to negligence claims. This means that the patient has only a certain amount of time to file a negligence claim following either the event that caused the injury or illness or from the point of discovering that the problem existed. Statutes of limitations are typically measured in years.

If the patient contributed in any manner to his own injury or illness, and he chooses to file a negligence claim against an EMS provider, then the patient may be found guilty of *contributory negligence*. In other words, contributory negligence exists when there is a finding that the patient, through his own negligence, caused or contributed to the damage that was done to him.

Medical Direction

Your legal right to function as an EMT is contingent on medical direction. When providing emergency care you should:

- Follow standing orders and protocols, as approved by medical direction.

- Establish cell phone, telephone, and radio communications with medical direction when appropriate.
- Communicate clearly and completely with medical direction, and follow orders medical direction gives in response.
- Any time there is a question about the scope or direction of care, consult medical direction.

Most areas also have protocols for cooperation between EMS personnel and other public safety services.

Ethical Responsibilities

Ethics is a branch of philosophy specifically directed toward the study of morality, or morals. *Morals* are concepts of "right and wrong." A code of ethics is a list of rules of ideal conduct. A Code of Ethics for EMTs was issued by the National Association of Emergency Medical Technicians in 1978. Basically, if you place the welfare of the patient above all else when providing medical care, you will rarely commit an unethical act.

Your ethical responsibilities include these:

- Serve the needs of the patient with respect for human dignity, without regard to nationality, race, gender, creed, or status.
- Maintain skill mastery. Demonstrate respect for the competence of other medical professionals.
- Keep abreast of changes in EMS that affect patient care. Assume responsibility in defining and upholding professional standards.
- Critically review performances, seeking ways to improve response time, patient outcome, and communication. Assume responsibility for individual professional actions and judgment.
- Report with honesty. Hold in confidence all information obtained in the course of professional work unless required by law to divulge such information.
- Work harmoniously with other EMTs, nurses, physicians, and other members of the health care team.

Ethical and moral conflicts may sometimes arise during the performance of your duties. Such an ethical or moral issue may occur when, for example, you are responding to a terminally ill patient who is requesting that no treatment be rendered, and yet the do not resuscitate (DNR) orders presented to you have expired. Legally, you have an obligation to provide care, and yet you may feel an ethical obligation to honor the patient's wishes to receive no treatment, and a moral obligation to preserve life under any circumstances. In such a situation, obviously, legal and moral criteria would conflict with ethical criteria.

Other situations in which ethical and moral considerations may conflict include mass casualty events where medical care is being rationed as part of the triage process, and cardiac arrest in the wilderness where resources are limited and transportation time to definitive

care is extended. The ethical and moral conflicts that arise as a result of situations like these can be very challenging. It is always best to remember that local protocols and applicable laws should be followed, and that medical direction can be contacted at any time to assist with decisions in these types of situations.

ISSUES OF PATIENT CONSENT AND REFUSAL

Types of Consent

Under the law, the conscious, competent, and rational patient has the right to accept or refuse emergency medical care. Therefore, it is necessary to obtain **consent**, or permission, before providing such care. Before emergency care is rendered, the patient must be informed of the care to be provided and the associated risks and consequences. Consent so obtained is termed **informed consent**.

After introducing yourself, you must indicate to the patient that you would like to perform an assessment to determine what his condition is, provide emergency care, and transport him to a medical facility. You must ask the patient if he understands and has any questions. Ask the patient for his explicit permission before proceeding, even if he was the one who placed the 911 call to EMS. This is particularly important if the assessment or treatment you are recommending is part of a research program in which the interventions in question have not yet been proven effective, which would complicate the process of ensuring that the patient is adequately informed.

Don't assume that the patient will always consent to all aspects of your assessment, care, and transport. Listen carefully to the patient's response so that you don't proceed without his consent. Even on the most routine of calls, if you were to touch a patient's body or clothing without first obtaining the proper consent, you could be charged with battery, or touching unlawfully. Battery applies to anyone who provides emergency care when the patient does not consent to the specific treatment. (Battery is discussed in more detail later in this chapter.)

In addition to informed consent, there are four other types of consent: **expressed consent**, **implied consent**, **minor consent**, and **involuntary consent**.

- **Expressed consent** must be obtained from every conscious, mentally competent adult before treatment is started. The patient must be of legal age, competent (meaning that the patient has the mental capacity to make a decision), able to make a rational decision, and informed of the assessment and procedures you will be performing and all related risks. Basically, the patient must receive—in terms the patient understands—all of the information that would affect a reasonable person's decision to accept or refuse treatment. Although a verbal confirmation of the patient's consent

is preferable, nonverbal cues from the patient, such as nodding when asked if it is all right to perform an assessment, are acceptable as well. It is good practice to document the patient's approval.

- **Implied consent**, also known as the *emergency doctrine*, occurs when you assume that a patient who is unresponsive or who is not competent or who is unable to make a rational decision (e.g., a patient who is disoriented because of a head injury) would consent to emergency care if he could. Implied consent also applies to the patient who initially refuses your care but then becomes unresponsive, incapacitated, or irrational because of illness or injury. In a true emergency where the patient is at significant risk of death, disability, or deterioration of condition, the law assumes that the unresponsive patient would give consent.
- **Consent to treat a minor** must be obtained from a parent, legal guardian, or other person who has been granted limited rights of decision making by the parent or guardian, such as a teacher, a stepparent, or another authorized caregiver. Depending on state law, a minor usually is any person under age 18 or 21. Minors are considered not legally competent to accept or refuse emergency care; however, if the parent or legal guardian is not present and cannot be reached to provide consent, the concept of implied consent, or the emergency doctrine, is used. It is assumed that the parent or legal guardian would consent to the care of the minor if they were present at the scene. It is imperative that you clearly document the circumstances in making the decision to render emergency care to the minor. You do not need consent of a parent or guardian to treat an emancipated minor—usually defined as a minor who is married, pregnant, a parent, a member of the armed forces, financially independent and living away from home, or one who has been declared emancipated by court decree.
- **Involuntary consent** can be applied when you are dealing with a mentally incompetent adult or with an individual who is in custody of law enforcement or is incarcerated. Gaining consent to assess and treat such individuals often involves a third party, such as a legal guardian, a law enforcement officer, or other officer of the court. If appropriately deemed to be incompetent or in legal custody, the patient does not have the legal right to determine his own care, which makes it necessary to gain consent from the appropriate individual with the legal authority to make decisions on that person's behalf.

Advance Directives

You may sometimes be called to treat terminally ill patients. In some cases, the patient may request—and a physician may order—that no resuscitation measures take place if the heart and lungs stop functioning. Legally, due in part to the federal Patient Self-Determination Act, the patient has a right to refuse resuscitative efforts. An

advance directive (instructions written in advance) against resuscitation, signed by the patient, is a legally recognized document. This documents the wish of the chronically or terminally ill patient not to be resuscitated and legally allows the health care provider to withhold resuscitation.

Common types of advance directives are a do not resuscitate (DNR) order, a living will, a health care durable power of attorney, and physician orders for life-sustaining treatment (POLST). A **do not resuscitate (DNR) order** is a legal document or order that most often governs resuscitation issues only, whereas a **living will** is more often used to cover more general health care issues, including the use of long-term life support equipment such as ventilators and feeding tubes. A health care **durable power of attorney**, also known as a *health care proxy*, designates a person who is legally empowered to make health care decisions for the signer of the document if he is unable to do so for himself. Decisions by health care proxies usually pertain only to in-hospital or long-term care facility situations.

Physician orders for life-sustaining treatment (POLST) are used in patients with serious or terminal illness who are not expected to survive for longer than 1 year. Unlike a do not resuscitate order that is geared primarily to making a decision to resuscitate or not to resuscitate a patient, POLST is designed to allow the patient to choose and express the level of treatment he desires in the case of deterioration prior to the need for resuscitation. Thus, POLST implies the continuation of life-sustaining treatment with the potential for limitations. For example, the patient may choose the administration of medications but may refuse advanced airway procedures or defibrillation. The POLST is voluntary, not mandatory, for patients. You might find the POLST form in a health care facility, such as a nursing home or long-term care facility, or in a patient's home. One of the other types of advance directive may accompany the POLST form. The POLST form must be signed by a physician and include dates during which it is valid. The contact information for the physician must also be included. In some states, the POLST may be signed by a physician assistant (PA) or nurse practitioner (NP).

When you are presented with a DNR or POLST, you must determine to the best of your ability whether it is valid and interpret the manner in which the directive should be followed. Check to see that the physician's instructions are clear, concise, and unambiguous and typed or written in a clear hand on professional letterhead. Phrases like "no heroics" or "no extraordinary treatment" are not clear enough to meet legal requirements. In many jurisdictions and in some states, a standard legal form or varied legal forms are used for DNR orders (Figures 1 ■ and 2 ■). Be sure to learn the laws and protocols for the state you will function in, since they vary significantly. Some states require a written physician order; others have the patient wear a DNR bracelet. Most states require that the signed DNR

or POLST order be present at the scene in order to withhold or limit treatment. Do not simply accept the word of the family. If the DNR or POLST order is not present, you are obligated to perform the resuscitation or needed treatment.

Some states have different degrees of DNR (different kinds of resuscitation treatments refused) and are based on various levels of chronic illness or terminal status. Some patients may request that only selected emergency care or comfort procedures be performed. Typically, oxygen administration is considered a standard comfort measure and should be provided for both the do-not-resuscitate and the modified-support patient. Be sure to learn your local protocol.

Advance directives may be filled with problems for prehospital providers. First, by its very nature, a living will is generally more useful in an institutional setting, such as a nursing home or hospital, where health care providers are aware of it and know the doctor who signed it. In addition, many advance directives require more than one physician to verify the patient's condition—a requirement that may be difficult to fulfill in the field, even if the advance directive is located. Finally, the time taken to scrutinize an advance directive can take precious moments away from providing resuscitative care.

Issues you may encounter at the scene regarding the DNR or POLST are questions about the validity of the document, interpretation of what care should or should not be provided, and a conflict between the DNR or POLST order and the wishes of a family member. To protect yourself, the best manner to proceed is to (1) consider initiating treatment immediately so that if the issue cannot be resolved you will not be held negligent for not providing care or delaying treatment, (2) contact medical direction for instructions on how to proceed, and (3) continue treatment until the problem has been resolved.

You will be in a much better position if you err by providing treatment rather than by withholding treatment when faced with questions about whether to provide care. In the absence of a valid DNR or POLST order and a physician's written instructions, you are obligated to begin full resuscitation or needed treatment immediately.

Refusing Treatment

Competency

The courts have ruled that a patient has the right to refuse care even if it results in the patient's death. In order for the patient to refuse care, it is vital that you first determine that the patient is competent. As noted earlier, a competent adult is one who is lucid and capable of making an informed decision. Typically, a patient is deemed to be lucid if he is able to accurately prove orientation to "person, place, and time." People who display an altered mental status or who are mentally ill or under the influence of drugs or alcohol may be considered



DNR COMFORT CARE

DNR IDENTIFICATION FORM

☐ **DNRCC**
(If this box is checked the DNR Comfort Care Protocol is activated immediately.)

☐ **DNRCC—Arrest**
(If this box is checked, the DNR Comfort Care Protocol is implemented in the event of a cardiac arrest or a respiratory arrest.)

Patient Name: _____

Address: _____

City _____ State _____ Zip _____

Birthdate _____ Gender ☐ M ☐ F

Signature _____ (optional)

Certification of DNR Comfort Care Status (to be completed by the physician)*

(Check only one box)

☐ **Do-Not-Resuscitate Order**—My signature below constitutes and confirms a formal order to emergency medical services and other health care personnel that the person identified above is to be treated under the State of Ohio DNR Protocol. I affirm that this order is not contrary to reasonable medical standards or, to the best of my knowledge, contrary to the wishes of the person or of another person who is lawfully authorized to make informed medical decisions on the person's behalf. I also affirm that I have documented the grounds for this order in the person's medical record.

☐ **Living Will (Declaration) and Qualifying Condition**—The person identified above has a valid Ohio Living will (declaration) and has been certified by two physicians in accordance with Ohio law as being terminal or in a permanent unconscious state, or both.

Printed name of physician*: _____

Signature _____ Date _____

Address: _____ Phone _____

City/State _____ Zip _____

* A DNR order may be issued by a certified nurse practitioner or clinical nurse specialist when authorized by section 2133.211 of the Ohio Revised Code.

See reverse side for DNR Protocol

Page 1 of 2

■ **FIGURE 1** An Ohio EMS DNR identification form.

continued

not competent or incapacitated. Many states have laws that provide protection to members of EMS when using implied consent to assess, treat, and transport an incapacitated patient. A competent adult has the right to refuse treatment—verbally, or by pulling away, shaking his head, gesturing you away, or pushing you away—or to withdraw from treatment after it has started.

Under the law, to refuse treatment or transport, a patient must be informed of and fully understand the treatment and all potential risks and consequences of

refusal, up to and including the possibility of death if it is a potential risk. Have the patient explain to you what these potential consequences are if treatment is refused. If the patient does not understand the consequences, he would be deemed incompetent and treated under implied consent. Once this has been accomplished, you must attempt to get the patient to sign an official “release from liability” form. The signed form—or a patient’s witnessed refusal to sign the form—is only a part of the documentation of the



DO NOT RESUSCITATE COMFORT CARE PROTOCOL

After the State of Ohio DNR Protocol has been activated for a specific DNR Comfort Care patient, the Protocol specifies that emergency medical services and other health care workers are to do the following:

WILL:

- Suction the airway
- Administer oxygen
- Position for comfort
- Splint or immobilize
- Control bleeding
- Provide pain medication
- Provide emotional support
- Contact other appropriate health care providers such as hospice, home health, attending physician/CNS/CNP

WILL NOT:

- Administer chest compressions
- Insert artificial air way
- Administer resuscitative drugs
- Defibrillate or cardiovert
- Provide respiratory assistance (other than that listed above)
- Initiate resuscitative IV
- Initiate cardiac monitoring

If you have responded to an emergency situation by initiating any of the **WILL NOT** actions prior to confirming that the DNR Comfort Care Protocol should be activated, discontinue them when you activate the Protocol. You may continue respiratory assistance, IV medications, etc., that have been part of the patient's ongoing course of treatment for an underlying disease.

Page 2 of 2

■ **FIGURE 1** An Ohio EMS DNR identification form, continued.

case. You must document what you told the patient in regard to his condition and the potential consequences of refusing care as well as the patient's continued refusal. Basically, you must write down what you told the patient, and the patient's response. Be sure to get the patient and at least one witness, someone other than your partner, to sign the form.

When in doubt, always err in favor of providing care to the patient. If necessary, contact medical direction for advice.

Protecting Yourself in Refusal Situations

Complete and accurate documentation is a key factor in protecting yourself from liability for malpractice in the form of negligence or abandonment when a patient refuses treatment. Do the following before you leave the scene:

- **Try again to persuade the patient to accept treatment or transport to a hospital.** Tell the patient why treatment or transport is essential. Be especially



DNR COMFORT CARE

☐ DNR Comfort Care ☐ DNR Comfort Care Arrest

Name _____

Birthdate _____ Gender ☐ M ☐ F

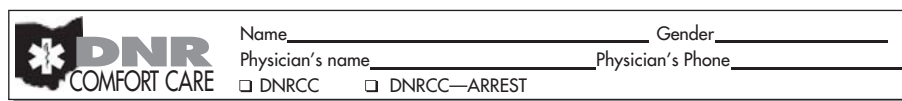
Physician name _____

Physician phone _____

Other emergency phone _____

The person named on the front of this card may revoke DNR Comfort Care status by destroying this card.

(a)



DNR COMFORT CARE

Name _____ Gender _____

Physician's name _____ Physician's Phone _____

☐ DNRCC ☐ DNRCC—ARREST

(b)

■ **FIGURE 2** DNR documents may also take alternative forms, as these examples from Ohio EMS show: (a) a DNR wallet card, and (b) a DNR hospital bracelet.

clear and diligent in explaining the possible consequences of refusal (Figure 3 ■). Document your attempts to convince the patient as well as the consequences of refusal, and have the patient read aloud from the report to verify understanding.

- **Make sure the patient is competent and able to make a rational, informed decision.** A patient who is emotionally, intellectually, or physically



■ **FIGURE 3** When a patient refuses treatment or transport, be very clear and diligent in explaining to the patient why these are essential and the possible consequences of refusal.

impaired by illness or injury may not be capable of absorbing all the information you give. Make sure that the patient is not suicidal and not under the influence of drugs, alcohol, or other mind-altering substances.

- **Consult medical direction as needed, or as required by local protocol.**
- **If the patient still refuses, clearly document what was told to the patient, his response, and have him sign a refusal form.** In some areas the form must be signed by witnesses (follow local protocol). If the patient refuses to sign the form, attempt to get signed statements of witnesses that the patient refused to sign.
- **Before you leave the scene, encourage the patient to seek help if certain symptoms develop.** If possible, be specific. Say things like “If you have a burning pain in your stomach” or “If you start seeing double.” Avoid technical terms the patient might not understand. Document the fact that you encouraged the patient to seek help later.
- **If you are unsure whether the patient is able to make a rational decision, contact medical direction** for a consultation as to whether to treat and transport.

OTHER LEGAL ASPECTS OF EMERGENCY CARE

Negligence

If you breach your legal duty, you create a liability. Two types of liability are criminal and civil. In a criminal liability case, the government, on behalf of the public, brings legal action against the EMT. This may result in a fine or even incarceration. In a civil action, an individual, known as the plaintiff, files a lawsuit against an individual EMT, the EMS agency or company, or others indirectly involved in the care of the patient, such as the supervisor or medical director. These latter individuals are known as the defendants. In a civil action, the defendant is accused of committing a **tort**, which is a wrongful act, injury, or damage. In civil or tort cases, the plaintiff usually seeks monetary compensation for an act, damages, or an injury that resulted from the EMT's actions. Most often, lawsuits against EMS involve negligence from a duty not being performed. **Negligence** is a tort in which there is no intent to do any harm to the patient but in which a breach in the duty to act occurred.

The plaintiff (person who files the lawsuit) has to prove the following four elements:

- The EMT had a duty to act.
- The EMT breached that duty to act.
- The patient suffered an injury or harm that is recognized by the law as a compensable injury.
- The injuries were the result of the breach of the duty (proximate cause).

If the plaintiff cannot prove all four of the elements, the suit will fail and no damages will be awarded.

Two common legal principles are often associated with negligence claims against EMS. The first is *res ipsa loquitur*, meaning “the thing speaks for itself.” This concept is used in cases where a caregiver's inappropriate actions are obviously the cause of patient harm. The concept of *negligence per se* means that an act is considered to be negligent simply because it is in violation of a statute or regulation such as written EMS protocols or approved scope of practice.

Duty to Act

Duty to act, as described earlier in the chapter, is an obligation of the EMT to respond to the scene and to provide emergency care to the patient. Once a patient relationship has been established, which is simply done by the EMT making contact with the patient with the intent to provide emergency care, it cannot be terminated without the consent of the patient.

Breach of Duty to Act

A breach of the duty to act is when the EMT deviates from the standard of care. *Negligence* is a deviation from

the standard of care. *Simple negligence* occurs when an EMT fails to perform care or when a mistake is made in the treatment. *Gross negligence* is willful, wanton, or extremely reckless patient care far beyond being negligent or careless. Gross negligence is care that is construed as being dangerous to the patient. An EMT who intentionally causes harm to a patient will be charged with gross negligence. Gross negligence may be so severe that it leads to criminal charges brought against the EMT.

Damages

Damages refers to injuries that are real, demonstrable, and recognizable by the law. The injuries cannot be trivial or minor.

Proximate Cause

It must be determined that the injuries suffered by the patient were the direct result of the EMT's negligence. This is referred to as **proximate cause** or causation. By contrast, the patient's injuries may be a result of the traumatic event or the underlying disease and not the negligence of the EMT.

Intentional Tort

An **intentional tort** is an action knowingly committed by an individual that is considered to be civilly wrong according to the law. Common intentional torts in EMS are abandonment, assault, battery, false imprisonment, and defamation. The primary difference between an intentional tort and negligence is that negligence is a failure to meet the standard of care that is typically permissible, whereas an intentional tort is knowingly committed.

Abandonment

If you stop treatment of the patient without transferring the care to another competent professional of an equal or higher level of training and certification or licensure, it would be considered **abandonment** (Figure 4 ■). Abandonment can occur in the emergency department if you do not officially transfer the care of the patient or if the transfer is to an inappropriate medical professional. For example, if you arrive at the emergency department, place the patient in an emergency department room, notify the ward clerk or secretary that the patient is there, and then leave the patient, you have just abandoned the patient. You must give an oral report to a physician, nurse, or other health care worker who is qualified to care for that patient and the injuries he has sustained or the condition he is suffering from. Simply moving the patient from your stretcher to the hospital bed does not constitute a patient transfer of care.

An EMT can fully assume the transfer of care of a patient at the scene from a paramedic or Advanced EMT



■ **FIGURE 4** EMTs transferring care to a flight crew for transport to a trauma center. You must always transfer care of the patient to a professional of equal or better training to avoid charges of abandonment.

only if the patient's condition or injuries can be managed by the EMT and no advanced life support skills are necessary. On the other hand, if the EMT transfers care of a multisystem trauma patient to a physician who is a dermatologist, the EMT has potentially abandoned the patient. Typically, a dermatologist is not qualified to manage a multisystem trauma patient.

Performing a thorough assessment and always providing care that is in the best interest of the patient will likely eliminate the risk of abandonment.

Assault

Assault is a willful threat to inflict harm on a patient. Assault can occur without actually touching the patient. If the patient has the apprehension of bodily harm and the EMT has the ability to do so, it would be considered assault. If the EMT threatens to stick the patient with an epinephrine auto-injector and holds it up in front of the patient, the EMT has potentially created a fear in the patient that the act will be committed.

Battery

Battery is the act of touching a patient unlawfully without his consent. If you don't seek and obtain consent, your emergency care might be construed as battery by the patient, even though your intention is good. Without consent, your touching of the patient is unlawful.

False Imprisonment or Kidnapping

If a patient is competent and refuses your assessment, treatment, and transport, you must obey his wishes. Taking the patient to the hospital or other medical care facility against his wishes may result in charges of **false imprisonment** or kidnapping. False imprisonment results from intentionally transporting a competent patient without his consent. It is not necessary that the patient is restrained, it is simply not allowing the competent

patient to withdraw from treatment and transport when he desires to do so.

Defamation

If you release information to the public in either a written or spoken form that is construed to be damaging to that person's character, reputation, or standing within the community, you can be charged with **defamation**. The spoken form of defamation is **slander**. It is extremely important that you discuss patient, partner, and other emergency issues in a private setting and never in public. **Libel** is putting a false or damaging statement in written form or via mass media. Follow the correct policies and procedures for complaints against others so that you avoid any litigation involving defamation of character.

As an EMT, it is important to understand these components of a potential or real lawsuit. The best defense against such a suit is to provide emergency care to the best of your ability and to be sure that you understand clearly your scope of practice and the expected standard of care.

Confidentiality

Information obtained while getting a patient history, performing a physical assessment, and treating the patient must be kept strictly confidential. The deliberate invasion of a patient's privacy by an EMT may lead to loss of certification or licensure and other legal actions.

Do not speak to the press, your family, friends, or other members of the public about details of the emergency care you provided to a patient. If you speak about the emergency, you must not relate specifics about what a patient said, who the patient was with, and anything unusual about the patient's behavior or personal appearance. The same restrictions hold true of information you receive from another member of the EMS system. Confidentiality applies not only to cases of physical injury, but also to cases involving possible infectious diseases, illnesses, and emotional and psychological emergencies.

Releasing confidential information requires a written release form signed by the patient or a legal guardian. You should not release confidential written or spoken information about the patient to someone claiming to be a legal guardian until you have established legal guardianship. By law, you are allowed to release confidential patient information without a patient's or guardian's permission if:

- Another health care provider needs to know the information in order to continue medical care.
- An official public health or other governmental agency requires mandatory reporting of information related to your contact with the patient. State laws, for example, commonly require the reporting of incidents of rape, child abuse, elder abuse, neglect, domestic violence, certain communicable diseases, gunshots,

stab wounds, animal bites, suspicious burns, and certain other crimes or conditions.

- You are requested by the police to provide the information as part of a potential criminal investigation.
- A third-party billing form requires the information.
- You are required by legal subpoena to provide the information in court.

Health Insurance Portability and Accountability Act (HIPAA)

The **Health Insurance Portability and Accountability Act (HIPAA)** of 1996 is a federal law that protects the privacy of patient health care information and gives the patient control over how the information is distributed and used. HIPAA requires strict adherence to policies and procedures regarding record keeping, storage, access, release, and discussion of patient medical records. EMS systems are required by federal law to have specific policies and procedures in place regarding confidentiality and privacy issues related to patient care records and information. Every person in the EMS system who comes into contact with patients or patient information must be aware of and understand these policies and procedures.

In regard to HIPAA and your practice as an EMT, you will find the following:

- You will be limited to discussing patient-specific information only with individuals with whom it is medically necessary to do so. You cannot go out into the ambulance bay area and begin to discuss your previous patient using specific patient information. There is no medical necessity in doing so and it can be construed as a violation of the HIPAA regulations.
- You will be trained on specific policies and procedures regarding privacy issues by your EMS agency.
- You and the patient will be provided with the patient privacy policies and procedures. It is your responsibility to obtain a signature from the patient acknowledging that he received the information. The form is often included with the insurance release form.
- Your EMS agency will have a designated Privacy Officer who will oversee HIPAA regulations. This is a good resource person to contact regarding issues related to patient-specific information.

If someone is requesting information from you, contact the person in your EMS system who is charged with the responsibility of managing and protecting confidential information. This is the most appropriate person to make the determination as to whether any information should be released and what information can be released and to whom without violating the privacy rights of the patient.

COBRA and EMTALA

The **Consolidated Omnibus Budget Reconciliation Act (COBRA)** and the **Emergency Medical**

Treatment and Active Labor Act (EMTALA) are federal regulations that ensure the public's access to emergency health care regardless of ability to pay. They are intended to eliminate any discrimination in who is provided emergency medical care. The regulations prevent "patient dumping," in which a patient requiring medical care is turned away at the door or transferred to a public hospital because of inability to pay for the services. EMTALA is also known as the "anti-patient-dumping statute." EMTALA specifically deals with a patient seeking medical care for an emergency medical condition, whether it is due to an injury or an illness. Even though both regulations are primarily geared toward hospital treatment and transfer, EMS personnel are affected by certain aspects of the regulations, especially if the ambulance service is owned and operated by the hospital.

EMS becomes involved when patients are being transferred from a hospital to another medical facility. The key issue is the requirement of the transferring facility to ensure that the patient is stabilized to the best of the medical facility's ability prior to transfer. This does not mean that the patient cannot be a critical patient or would have no chance of deteriorating en route. However, the transferring facility must ensure that the ambulance crew performing the transfer is qualified and capable of managing the patient and his condition. For example, an EMT crew would not be able to perform a transfer of a patient requiring continuous electrocardiogram monitoring and intravenous infusion monitoring and drug therapy, because these skills are beyond an EMT's scope of practice. In this case, it would be the responsibility of the EMT to contact his supervisor or follow the EMS policies to notify the transferring facility that the EMT crew is not capable of doing the transfer. If the transfer is done, it could be an EMTALA violation. As an EMT, you have a responsibility to make sure that the patient is stable enough for transfer. If there is a question, it may be necessary for your EMS medical director to contact the transferring physician to discuss whether the EMS crew is capable of conducting the transfer. This must be done prior to loading the patient onto your cot and initiating the patient transfer.

If you are operating a hospital-based ambulance and make a decision to bypass your hospital, which is the closest appropriate medical facility, and take the patient to another medical facility because the patient does not have insurance nor the ability to pay for services, you can be charged with "patient dumping" under the EMTALA regulation.

Protecting Yourself in Transport and Transfer Situations

In an emergency transport to a medical facility, do not make a decision to transport to a specific medical facility based on the patient's ability to pay. Never report this information over the radio. Do not bypass a medical

facility that is able to treat the patient, unless you are directed to do so by medical direction or the patient or predetermined protocol. Be sure to clearly document the reason for bypassing the medical facility.

If you are performing a transfer between hospitals or medical facilities:

- Get a full and clear report about the patient's condition.
- Ensure that you are able to provide the level of care necessary during the transport and it is within your scope of practice.
- Obtain the informed consent form signed by the patient or his legal guardian allowing for the transfer.
- Obtain the written certification of transfer that includes the transferring physician's name and address, facility receiving the patient, and the reason for the transfer.
- Know where you are going and take the quickest possible route.

Special Situations

Donors and Organ Harvesting

Organs can be donated only if there is a legal signed document giving permission to harvest the organs. A signed donor card is considered a legal document. A sticker affixed to the reverse side of a patient's driver's license, or an "organ donor" specification printed directly on the license, provides an intent to donate organs.

A potential organ donor should be treated no differently than any other patient requiring emergency care. The individual is a patient first, an organ donor last. In addition to providing appropriate care, you can assist the organ harvesting procedure as follows:

- Identify the patient as a potential donor based on the type of injuries or illness and treatment that was rendered. Patients who are about to die or who have died within hours are potential organ donors. In each case, however, hospital staff and the patient's family make the ultimate decision.
- Communicate with medical direction regarding the possibility of organ donation. You can initiate this process by alerting the receiving hospital's emergency department staff, who will in turn contact other necessary departments.
- Provide emergency care, such as CPR, that will help maintain vital organs in case harvesting is attempted. This is best accomplished by treating every patient equally well.

Medical Identification Insignia

A patient with a medical condition, such as an allergy, diabetes, or epilepsy, may be wearing or carrying a medical identification tag, such as a bracelet, necklace, or card (Figure 5a ■). Look for them during assessment.



(a)



(b)

■ **FIGURE 5** (a) Medical identification jewelry. (b) Medical alert tattoo.

Note that medical identification insignia may also list a phone number you can call for specific treatment and medication requirements.

Medical Alert Tattoo

Some people who have traditionally worn a medical alert bracelet have now obtained a permanent medical alert tattoo. Instead of a medical alert bracelet alerting the health care provider to a condition such as diabetes in the unresponsive patient, a permanent tattoo to the wrist, arm, chest, or other location is designed to alert the health care provider (Figure 5b ■). These tattoos are not standard in the insignia, lettering, or colors; thus, the EMT may overlook a tattoo as body art rather than a medical alert device.

According to the American Academy of Family Physicians, medical alert tattoos are not yet very pervasive. Also, obtaining a tattoo involves risk, especially for a diabetic with existing wound-healing and infection issues.

During physical assessment of the patient with an altered mental status, it would be prudent to inspect the wrists, arms, ankles, neckline, chest, and other areas of the body for tattoos that may alert you to a medical

condition. If a tattoo is noted on the body of an altered mental status patient, pay close attention to ensure it is not a medical alert tattoo.

Recognizing Death in the Field

It is the ultimate responsibility of a physician to determine the time and cause of death. However, in some situations you may have to make a judgment as to whether to attempt resuscitation or not. As a general rule, if the patient is still warm and does not exhibit any obvious signs of death, begin resuscitation. An exception is hypothermia (low body temperature) where the patient's body is extremely cold and rigid. Hypothermic patients have survived long periods of cardiac arrest and cannot be considered dead until rewarmed.

When dealing with patients holding a DNR order or those with terminal illness, it is necessary to determine the presumptive signs of death. These include the following:

- Absence of a pulse, breathing, and breath sounds
- Complete unresponsiveness to any stimuli
- No eye movement or pupil response
- Absence of a blood pressure
- No reflexes

There are some situations in which signs of death are obvious and resuscitative efforts are not necessary. The obvious signs of death include:

- Decapitation
- Rigor mortis (body becomes stiff within 2–12 hours)
- Decomposition of the body
- Dependent lividity (discoloration of the skin from blood pooling that is effected by gravity) (Figure 6 ■)

Cases involving violent, unusual, or suspicious causes of death usually require investigation by the

medical examiner or coroner. The medical examiner or coroner is usually called for:

- Homicides
- Suicides
- Violent deaths (including suspected child or elder abuse)
- Crash-related deaths (auto, motorcycle, all-terrain vehicle, snowmobile)
- Unusual scene characteristics (e.g., burns, electrocution)
- Sudden infant death syndrome (SIDS)
- Dead on arrival (depending on your local protocol)

It is important to understand your local protocol related to death-in-the-field situations. It is better to err to benefit the patient and begin resuscitation if you have any doubt. Also, be sure you understand the situations in which the medical examiner or coroner must be called to investigate a field death.

Crime Scenes

Whenever an EMS is called to a potential crime scene, dispatch should also notify the police. Recognizing a possible crime scene requires a high index of suspicion. As a general guideline, a potential crime scene is any scene that may require police support, including a potential or actual suicide, homicide, drug overdose, domestic dispute, rape, abuse, hit-and-run accident, riot, robbery, gunfire, or potentially dangerous weapons.

Your first concern upon approaching a crime scene should be for your own safety. If you suspect that a crime is in progress or a criminal is still active at the scene, do not attempt to provide care to any patient. Wait until the police declare that the scene is safe. Keep in mind that even when the police declare the scene safe to enter, it can still be potentially dangerous.

Once the scene is secure, your priority is emergency care of the patient. However, also try to avoid disturbing anything that may be considered evidence:

- Take one way in and out.
- Touch only what you need to touch, and remember to tell a police officer if you move or touch anything.
- Move only what you need to move to protect the patient and to provide proper emergency care.
- Do not use a crime scene telephone unless the police give you permission to do so.
- In the absence of police permission, move the patient only if the patient is in danger or must be moved in order for you to provide care.
- Observe and document anything unusual.
- If possible, do not cut through holes in clothing possibly caused by bullets or stabbing.
- Do not cut through any knot in a rope or tie (a possible clue). Cut away from the knot. Do not cover the patient with a sheet.
- If the crime is rape, do not wash the patient or allow the patient to wash. Ask the patient not to change



■ **FIGURE 6** Dependent lividity in a dead person. (© Leroy Jenkins)

clothing, use the bathroom, or take anything by mouth, because doing so may destroy evidence. While you cannot force a person to avoid these activities, explain your reasons. Most will cooperate.

As an EMT, you may have a legal duty to report situations in which injury may have resulted from commission of a crime. Learn your local protocols.

Special Reporting Situations

You may be required to report certain conditions. Familiarize yourself with the requirements in your state. The following are commonly required reporting situations:

- **Abuse.** Many states require people to report suspected child abuse. Some states have very broad requirements, whereas others require reporting only from physicians. Such statutes frequently grant immunity from liability for libel, slander, or defamation of character as long as the report is made in good faith. In some states, laws also exist regarding the reporting of other kinds of abuse, such as abuse of the elderly and spousal abuse.
- **Crime.** Many states require EMTs to report an injury that may have resulted from a crime or to report injuries such as gunshot wounds, knife wounds, suspicious burns, and poisonings. Your state may also require you to report any injury that you suspect was caused by sexual assault.
- **Drug-related injuries.** Some states require you to report drug-related injuries. However, the U.S. Supreme Court has ruled that drug addiction—not drug possession—is an illness, not a crime.

Other situations you may be required to report include suspected infectious disease exposure, use of

patient restraints to treat or transport patients against their will, cases in which a patient appears to be mentally incompetent or intoxicated, attempted suicides, and dog bites. Learn the laws in your state regarding situations you are required to report.

Baby Safe-Haven Laws

In the 1990s, an alarming number of infant abandonments occurred, resulting in many infant deaths. At that time, a parent would be criminally prosecuted for neglect or abandonment if an infant was left unattended with the intent of relinquishing custody. As a result of the surge in abandonments, in 1999 Texas enacted the first baby safe-haven law designed to allow a parent to relinquish custody of an unharmed infant to a proper authority. Currently, all states and the District of Columbia have passed baby safe-haven legislation also known as infant abandonment laws.

Baby safe-haven laws vary significantly from state to state. The legal safe-surrender location varies drastically from only designated hospitals in California to a variety of locations to include a hospital, law enforcement agency, fire station, or EMS agency in many other states. It is common for an EMS station to be considered a safe-haven location where an infant can be left with an EMS provider. The age of the infant that can be turned over legally also differs dramatically according to the various state laws. The maximum age varies from only 3 days of age in some states to 1 year of age in North Dakota.

EMS providers must become familiar with the baby safe-haven (infant abandonment) law in their state to determine if their EMS station is a designated safe-haven location and, if it is, what actions are required in case of an abandonment.

Chapter Review

SUMMARY

Medical, legal, and ethical issues must always be considered when performing emergency care. EMTs must function within their scope of practice and to an acceptable standard of care. The scope of practice identifies what emergency care the EMT is legally able to perform, whereas the standard of care addresses whether the care was performed according to an accepted level of practice.

EMTs have a duty to act, that is, a legal obligation to respond and provide emergency care for the patient. However, your duty goes beyond providing emergency care. For

example, you have a duty to remain up to date in all of your certifications and licensure, to check all equipment to ensure it is in working order, and to remain physically and emotionally fit to perform your job.

Medical direction provides the EMT with the legal right to function in the prehospital setting. Medical direction should be involved in providing medical oversight in all aspects of the emergency medical services system.

Before you assess the patient or provide emergency care, you must obtain consent from the patient. You must inform the patient of the assessment and emergency care to be provided and any consequences or risks associated with that

care. Expressed consent involves the patient providing some type of acknowledgment or affirmation of the consent. Implied consent is used for patients who are unable to provide consent, such as a patient with an altered mental status but who, it is assumed, would provide consent if he were able to do so. Minor consent is a type of implied consent used when providing emergency care for minors whose parents or guardians are not present or able to give consent. Involuntary consent involves a third party and is used for those patients who are either mentally incapable or legally prevented from making their own health care decisions.

A competent patient has the right to refuse emergency care or to withdraw from emergency care or transport at any time. It is imperative that the patient is competent and able to make a rational decision before you accept his refusal. Clear and accurate documentation is the key to any patient refusal. Advance directives are predetermined orders that provide for refusal of care or resuscitation, commonly in terminally ill patients.

The most common type of lawsuit filed against an EMT is a tort. A tort is a civil action that often involves negligence. Four elements of negligence must be proven for the action to succeed: (1) that there was a duty to act, (2) that there was a breach in that duty, (3) that an injury occurred, and (4) that

the injury resulted from the actions of the EMT. Other legal issues that the EMT must thoroughly understand are abandonment, battery, assault, false imprisonment, and defamation.

All information related to a patient on an EMS call must be held in the strictest confidence. Any information that could possibly identify the patient must not be released unless in certain legal and acceptable situations, such as to the medical staff to whom you are transferring care of the patient. The Health Insurance Portability and Accountability Act (HIPAA) has strict rules regarding the storage and release of patient information. You must clearly understand and abide by the policies of your EMS agency regarding patient information.

COBRA and EMTALA are federal regulations that have implications on the public's access to emergency health care. These regulations pertain primarily to medical facilities; however, EMS may be affected by these regulations when involved in transferring a patient to another medical facility.

Crime scenes warrant special attention by the EMT. The chain of evidence must not be disrupted and evidence must be preserved for law enforcement use. Disrupt a crime scene only if it is necessary to provide immediate emergency care to the patient. It is also important for you to be able to recognize patients who are obviously dead, whether as a result of crime or from natural causes.

Case Study Follow-up

Scene Size-up

You and your partner are dispatched to the scene of an elderly male complaining of abdominal pain. As you scan for hazards, you notice that there is clutter everywhere in the house and that the inside temperature is very cool. Although the patient's wife is alert, she seems confused. She changes the subject often and keeps asking your partner if she is her daughter Ellen.

Patient Assessment

Your general impression of Mr. Schuman is that he is conscious but disoriented and experiencing abdominal pain. His wife is unsure of his age, so you estimate that he is in his mid-80s. He responds to questions with unintelligible mumbled words. His airway is open; breathing and circulation appear normal. He does not appear to be in acute distress.

Trying to obtain a complete history is impossible, since the patient cannot respond coherently. Instead you perform a rapid assessment, a quick head-to-toe physical exam. Upon palpation of the abdomen, Mr. Schuman tries to force your hand away. If he were competent, you might take this gesture as a refusal of care. However, because of his disorientation, you continue providing care. You measure and record baseline vital signs—breathing

rate; pulse; pupils; skin color, temperature, and condition; and blood pressure.

When you try to obtain a medical history from Mrs. Schuman, she does not understand. All she wants to do is show you her porcelain doll collection.

You prepare Mr. Schuman for transport and help his wife find a coat. During transport, you reassess the patient and find no change in his condition.

An Ethical Obligation

After transferring Mr. Schuman to hospital personnel, you contact the hospital's social service department, as you are required to do in case of elderly abuse or neglect. While you saw no signs of intentional abuse or neglect, you do believe that the Schumans are not capable of caring for themselves, and you are therefore ethically responsible to report the situation to ensure their safety after discharge.

Two weeks later you see the social worker who tells you that Mr. Schuman was diagnosed with a gastric ulcer and organic brain syndrome. Additionally, Mrs. Schuman has been diagnosed with Alzheimer's disease. Both are now residents of a local extended-care nursing home, under 24-hour supervision. The social worker thanks you and your partner for bringing this case to his attention.

IN REVIEW

1. Define a “do not resuscitate (DNR)” order, and explain how an EMT should respond if presented with such an order.
2. Define three types of consent that must be obtained before emergency care is provided.
3. Explain how to handle a refusal of treatment.
4. Describe what must happen for the EMT to be liable for abandonment or negligence.
5. Describe what it means for an EMT to have a duty to act.
6. List the conditions under which an EMT may release confidential patient information.
7. List some ways in which an EMT can preserve evidence at a crime scene.
8. List situations that an EMT may be required to report.

CRITICAL THINKING

You are called to the scene for a 34-year-old female patient complaining of abdominal pain. Upon arrival, you find the patient lying in bed. She is alert and is holding her abdomen. She states that she is having bad “belly pain” that began about an hour prior to her calling 911. You perform an assessment, place the patient on oxygen, and prepare her for

transport. The patient suddenly states, “I don’t want to go to the hospital.”

1. How would you initially gain consent in this patient?
2. How would you manage the patient’s refusal to be transported?
3. What legal issues may you face if you continue with treatment and transport?

ANSWER KEY

IN REVIEW

1. A DNR is a legal document, usually signed in advance by the patient and his physician, that indicates to medical personnel which, if any, life-sustaining measures should be taken when the patient’s heart and respiratory functions have ceased. When presented with a DNR, try to determine whether it is valid and interpret the manner in which the directive should be followed. Be familiar with your local protocols regarding DNRs and consult medical direction early for instructions on how to proceed. It is always better to initiate treatment until the directive can be interpreted and clarified. If in doubt, provide resuscitation.
2. “Expressed consent” must be obtained from every conscious, mentally competent adult before treatment is started and after necessary procedures and related risks have been explained in terms the patient can understand. “Implied consent” occurs when you assume that a patient who is unresponsive, or who is not competent or who is unable to make rational decisions, would consent to emergency care if he could. “Consent to treat a minor” must be obtained from a parent, legal guardian, or other person who has been granted limited rights of decision making by the parent or guardian such as a teacher, stepparent, or other authorized caregiver.
3. In order to refuse care, the patient must be competent. The patient must be informed of and fully understand all potential risks and consequences involved in refusing treatment or transport, up to and including the possibility of death when appropriate. The patient must be able to explain back these consequences to you. The patient must sign an official “release from liability” form—or a patient’s witnessed refusal to sign the form must be obtained—and must be included with a full documentation of the case.
4. An EMT can be charged with abandonment if he discontinues treatment of a patient (unless so ordered by law enforcement personnel) or if treatment is discontinued without ensuring that another health care professional with at least as much expertise has taken over treatment. An EMT can be charged with negligence by deviating from an accepted standard of care through carelessness, inattention, disregard, inadvertence, or oversight, which results in further injury to the patient.
5. The duty to act is an obligation of the EMT to respond to the scene and to provide emergency care to the patient. Once a patient relationship has been established, which is simply done by the EMT making contact with the patient with the intent to provide emergency care, it cannot be terminated without the consent of the patient.
6. Federal law strictly protects the privacy of patient health care information. Releasing confidential patient information requires a written release form signed by the patient or a legal guardian except under the following specific exceptions: (1) when another health care provider needs to know the information in order to continue medical care; (2) if an official public health or governmental agency requires mandatory reporting of information related to your contact with the patient such as incidents of rape, child abuse, communicable diseases, or domestic violence; (3) when requested to report the information to law enforcement as part of a potential criminal investigation; (4) if a third-party billing agency requires the information; and (5) when required by legal subpoena to provide the information.
7. As an EMT, you can preserve evidence at a crime scene by taking the same way into and out of the scene; touching only what you need to touch and remembering to tell a police officer if you move or touch anything; using the telephone only if the police have given permission; moving the patient only if the patient is in danger or must be moved in order to provide care; observing and documenting anything unusual at the scene; not cutting through holes in the patient’s clothing that may have been caused by bullets or stabbing weapons, if possible; and asking the rape patient not to change clothing, use the bathroom, or take anything by mouth.
8. It’s essential that you familiarize yourself with the requirements in your state, but EMTs are commonly required to report the following situations: suspected abuse of children or the elderly; injuries that may have resulted from a crime, including sexual assault; drug-related injuries (which is different from drug addiction); suspected infectious disease exposure; use of patient restraints to treat or transport patients against their will; cases in which a patient appears mentally incompetent or intoxicated; attempted suicides; and dog bites.

GLOSSARY

abandonment the act of discontinuing emergency care without ensuring that another health care professional with equivalent or better training will take over.

advance directive instructions, written in advance, such as a do not resuscitate (DNR) order, a living will, or a durable power of attorney.

assault a willful threat to inflict harm on a person.

battery the act of touching a person unlawfully without his consent.

consent permission that must be obtained before care is rendered.

Consolidated Omnibus Budget Reconciliation Act (COBRA) a federal regulation that ensures the public's access to emergency health care regardless of ability to pay.

defamation an intentional false communication that injures another person's reputation or good name.

do not resuscitate (DNR) order a legal document, usually signed by the patient and his physician, that indicates to medical personnel which, if any, life-sustaining measures should be taken when the patient's heart and respiratory functions have ceased.

durable power of attorney a legal document that designates a person who is legally empowered to make health care decisions for the signer of the document if he is unable to do it himself. Also called a *health care proxy*.

duty to act the obligation to care for a patient who requires it.

Emergency Medical Treatment and Active Labor Act (EMTALA) a federal regulation that ensures the public's access to emergency health care regardless of ability to pay. Also known as the "anti-patient-dumping statute," forbidding turning a patient away at the door or sending him to a public hospital because of inability to pay.

expressed consent permission that must be obtained from every conscious, mentally competent adult before emergency treatment may be provided.

false imprisonment the intentional and unjustifiable detention of a person without his consent or other legal authority.

Good Samaritan law a law that provides immunity from liability for acts performed in good faith to assist at the scene of a medical emergency unless those acts constitute gross negligence.

Health Insurance Portability and Accountability Act (HIPAA) a federal law enacted in 1996 that protects the privacy of patient health care information and gives the patient control over how the information is distributed and used.

implied consent the assumption that, in a true emergency where a patient who is unresponsive or unable to make a rational decision is at significant risk of death, disability, or deterioration of condition, that patient would agree to emergency treatment. Also called the *emergency doctrine*.

informed consent consent for treatment that is given by a competent patient based on full disclosure of possible risks and consequences.

intentional tort a wrongful act, injury, or damage that is committed knowingly.

involuntary consent consent that is assumed when the patient is either mentally incompetent or legally not permitted to make his own medical decisions.

libel the act of injuring a person's reputation or good name in writing or through the mass media with malicious intent or reckless disregard for the falsity of those statements.

living will a legal document that delineates the signer's wishes about general health care issues such as the use of long-term life support measures.

minor consent permission obtained from a parent or legal guardian for emergency treatment of a minor or a mentally incompetent adult.

negligence the act of deviating from an accepted standard of care through carelessness, inattention, disregard, inadvertence, or oversight, which results in further injury to the patient.

physician orders for life-sustaining treatment (POLST) orders that identify the desired level of life-sustaining treatment in patients with a terminal or life-threatening illness who are not likely to survive.

proximate cause the act of deviating from an accepted standard of care through carelessness, inattention, disregard, inadvertence, or oversight, which results in further injury to the patient.

scope of practice the actions and care that an EMT is legally allowed to perform, as typically defined by state laws.

slander the act of injuring a person's reputation or good name through spoken statements with malicious intent or reckless disregard for the falsity of those statements.

standard of care emergency care that would be expected to be given to a patient by any trained EMT under similar circumstances.

tort a wrongful act, injury, or damage. *See also* intentional tort.

Documentation

Documentation

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARD • Preparatory (Content Area: Documentation)

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

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Describe each of the following purposes served by the prehospital care report (PCR):
 - a. Continuity of patient care
 - b. Administrative uses
 - c. Legal document
 - d. Education and research
 - e. Evaluation and continuous quality improvement (CQI)
3. Describe characteristics, including advantages and disadvantages, of both paper and computer-based (electronic) PCR formats.
4. Explain the purposes of the U.S. Department of Transportation (DOT) minimum data set for PCRs.
5. List the elements of the DOT minimum data set for PCRs.
6. Describe the purpose and contents of each of the following sections of a PCR:
 - a. Administrative data
 - b. Patient demographics and other patient data
 - c. Vital signs
 - d. Narrative
 - e. Treatment
7. Give examples of each of the following types of PCR narrative information:
 - a. Chief complaint
 - b. Pertinent history
 - c. Subjective information
 - d. Objective information
 - e. Pertinent negatives
8. Use common abbreviations and medical terminology accurately in PCRs.
9. Explain each of the following legal concerns with respect to the PCR:
 - a. Confidentiality
 - b. Allowed distribution of the PCR or information included in it
 - c. Documenting a patient's refusal of treatment
 - d. Falsification of the PCR
 - e. Correction of errors
10. Discuss how to handle each of the following situations with respect to the PCR:
 - a. Transfer of patient care when returning to service prior to completing the PCR
 - b. Multiple-casualty incidents (MCIs)
 - c. Special reporting situations, such as infectious disease exposure and suspicion of abuse or neglect
11. Accurately and completely record pertinent patient and EMS call information using the SOAP, CHART, and CHEATED methods.

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary.

minimum data set
pertinent negatives

prehospital care report (PCR)
triage tag

Case Study

The Dispatch

EMS Unit 17—respond to 57 Vallejo Road. You have a man injured when his vehicle struck a parked car. Time out is 1321 hours.

Upon Arrival

You and your partner arrive at 1327 hours. As you drive up, you observe four people standing around two vehicles. As you get out of the ambulance, a woman walks over to you from the group. She says, “I called you. That’s my van parked at the curb. I was in the house, heard a crash, looked out, and saw that that car had hit mine. The driver was slumped over the wheel, so I called 911 right away. When I came out of the house, though, he seemed to be all right. He’s the one in the green shirt.”

She indicates a man who is pacing around inspecting the damage to the two vehicles.

You and your partner walk toward the man she points to, who appears to be in his mid-30s. He looks at you and says, “Great! As if I didn’t have enough trouble today, I’ve got to deal with you guys! Go away. I don’t need any help!”

How would you proceed to assess, care for, and document this patient contact?

In this chapter, you will learn about the importance of documenting all your encounters with patients as well as the types of information that go into such documentation. Later, we will return to this case and apply what you have learned.

INTRODUCTION

Assessing a patient, treating him, and transporting him to a facility where he can receive necessary medical care are the most obvious parts of the EMT’s job. But there is another function that you will have to perform as an EMT: documentation of data for each patient you come in contact with. That documentation, in the form of written or electronically generated records, will help ensure that the patient receives the best, most appropriate care at the facility to which he is transported. The most common type of record that is prepared and submitted is the **prehospital care report (PCR)**. The type of PCR varies widely among EMS systems and states; however, the information collected is basically the same. The documentation you generate and report via the PCR and other special reporting forms is important for other reasons as well, as you will learn in this chapter.

FUNCTIONS OF THE PREHOSPITAL CARE REPORT

The documentation you assemble and report via the prehospital care report serves a variety of functions. It can be helpful to the patient, to the medical personnel who treat him, to the organizations that have aided him, to scientists and researchers who may never come in actual contact with the patient, and also to you. These functions are discussed in the following paragraphs.

Continuity of Medical Care

The prime reason for high-quality documentation is, of course, high-quality patient care. Reporting the data you have obtained during your contact with a patient and recording, simply but completely, the emergency care rendered helps ensure continuity of care for the patient throughout his need for medical attention. Your documentation gives emergency department personnel the information they need to provide the most appropriate treatment in a timely manner.

When the emergency department staff study the description of a patient’s mental status as well as the vital signs that you obtained and recorded during assessment and transport, they have a baseline against which that patient’s improvement or deterioration can be measured. When they read your account of the patient’s complaint and the signs and symptoms you have marked down, they have a clearer idea of what course they should follow in the treatment of that patient. When they note the interventions you have or have not performed, they know more clearly what measures to take and which would duplicate earlier efforts. In addition, your documentation will provide details from sources to which hospital personnel may have no access (e.g., bystanders, family, or awake patient).

Administrative Uses

The documentation you provide typically becomes a part of the patient’s permanent hospital record. It will be used in preparing bills and in submitting records to

insurance companies. The information may also be used to contribute to statistics regarding the emergency medical service itself, such as the average response time, time on scene for critical trauma patients, or the number of cardiac arrest patients treated each year.

Legal Document

The medical documentation you prepare may also become a legal document. A run in which you were involved may have been the result of a crime. Or the incident may have led to a civil lawsuit. In either case, you may have to appear in court as a witness. Typically, the person who wrote the report will be the one called to testify in court. As such, you will refer to the documentation you generated for that run months or even years earlier. Legible, accurate, and complete documentation will be of major assistance in such cases. In addition, if you are the subject of a lawsuit, your documentation may be an essential element in your defense. Thus, it is important to clearly document objective and pertinent subjective findings, the status of the patient upon arrival on the scene, what emergency care was provided, when the emergency care was provided, and any changes in the patient's condition upon arrival at the medical facility.

Educational and Research Uses

Your documentation provides data for researchers studying a whole range of issues. Some researchers might be scientists looking to discover positive or negative effects of certain interventions at different stages of patient contact. Others might be experts in administration studying documentation in an effort to deliver services in a more timely or cost-effective manner. The PCR may be used to track or identify various patient presentations and conditions that may require additional education and training.

Evaluation and Continuous Quality Improvement

Reviews of documentation are an integral part of the quality improvement process. Remedial and continuing education courses for EMTs may be based on needs revealed by call documentation. PCRs are also used in medical oversight to determine if EMTs are adhering to protocols and the set standard of care for your area.

COLLECTION OF DATA IN PREHOSPITAL CARE REPORTS

As you can see, the documentation you are responsible for (Figure 1 ■) has a variety of important uses. You should be as careful and thorough as possible when



■ **FIGURE 1** Documentation has a variety of important uses.

assembling it. The prehospital care report is a major piece of documentation you must provide for each patient encounter.

The PCR can have different names in different parts of the country, such as the run report or the trip sheet. The look of the PCR can also vary, depending on the format used for it and the information required on it.

PCR Formats

The most traditional format for the PCR is the written report. This format usually combines check boxes and write-on lines for vital signs and other information that can be entered briefly, along with areas for writing a fuller narrative account of the patient contact (Figure 2 ■).

An alternative format to the written report that is widely accepted and most commonly used is the computerized direct data entry report. The styles of computerized direct data entry reports may vary. Usually, data are entered directly into a laptop computer or a mobile data device that is synchronized with a computer and then transferred to a large central database. (Figures 3a and 3b ■). A smart phone may also have an app for direct data entry (Figure 4 ■).

A variation of the computerized report uses an electronic (computer) clipboard. In some “pen-based” computer systems, the computer clipboard has the capability of recognizing and interpreting the user's handwriting and converting the information he enters into an electronic format. Others offer selection items or lists that require little writing.

Computerized systems offer the promise of storing more information about a patient in a more legible format than written reports. They also allow greater efficiencies in storing, retrieving, and utilizing data the EMT collects. The EMT's computer can be linked to diagnostic and monitoring equipment; to electronic medical records; to computer-aided dispatch (CAD); and to computer systems handling fleet management, inventory control, e-mail, personnel, and payroll.



BEAVER TOWNSHIP FIRE/EMS - EMS Patient Care Report

NEMISIS - 2013

NAME: _____		SEX: M F ?		DAY: _____		TRIP #: _____	
HOME ADDRESS: _____				DATE: _____			
CITY: _____		STATE: _____		ZIP: _____		CAD #: _____	
PHONE: _____		SSN: _____		ALS BLS		CALL	
DOB: _____		AGE: _____		TRAUMA OTHER		DISPATCH	
DR: _____				MEDIC BACK-UP		ENROUTE	
RACE: ☐ WHITE ☐ WHITE/HISP ☐ BLACK ☐ BLACK/HISP ☐ NATV. AMRCN ☐ ASIAN				1st RESPONSE			
CODE STATUS: ☐ DNR-CC ☐ DNR-CCA ☐ LIVING WILL ☐ OTHER ☐ FULL CODE				TRANSPORT CODE: /			
LOCATION OF CALL: _____				ALS ARRIV			
RECEIVING FACILITY: _____				MILAGE TO: *			
REASON FOR FACILITY: ☐ PT/FAMILY ☐ PT PHYSICIAN ☐ LAW ENF. ☐ MANAGED CARE				MILAGE AT: *			
☐ MOST APPROP/CLOSEST ☐ ON-LINE ☐ SPECIALTY ☐ PROTOCOL				WEIGHT: _____			
WEIGHT: _____				CLEAR/CA			

VITAL SIGNS					CREW NAME	LEVEL	STATE #
TIME	ON SCENE	ENROUTE 1	ENROUTE 2	ENROUTE 3	1)	(DRV)	
B/P					2)		
PULSE					3)		
RESP					4)		
SpO2					5)		
ECG					6)		
ETCO2							
SKIN	COLOR: _____	TEMP: _____	CONDITION: _____		IV THERAPY		
PUPILS					ATTEMPTS: _____ SUCCESS: ☐ YES ☐ NO		
LUNGS					LOCATION: _____ SIZE: _____		
GCS	E: _____ V: _____ M: _____ TOTAL: _____	E: _____ V: _____ M: _____ TOTAL: _____			SOLUTION: ☐ NS ☐ 10 ☐ 500 ☐ 1000 ☐ OTHER: _____		
	☐ MONITOR ☐ 12 LEAD ☐ TRANSM.		BGL 1: _____	BGL 2: _____	☐ KVO ☐ BOLUS ☐ SALINE LOCK		
MED HX: HEART: ☐ MI ☐ ANGINA ☐ A-FIB ☐ PACEMAKER ☐ CHF ☐ SYNCOPE					CONDITION: ☐ IMPROVED ☐ WORSENER ☐ UNCHANGED		
BREATHING: ☐ ASTHMA ☐ COPD ☐ BRONCHITIS ☐ EMPHYSEMA					COMPLICATION: _____		
DIABETES: ☐ IDDM ☐ NIDDM CEREbroVASCULAR: ☐ HTN ☐ CVA ☐ TIA					INTUBATION INFORMATION		
☐ SEIZURE ☐ CANCER: _____ ☐ PSYCH ☐ GI ☐ OB/GYN					ATTEMPTS: _____ SUCCESS: ☐ YES ☐ NO		
☐ RECENT SURGERY: _____ ☐ OTHER: _____					SIZE: _____ ☐ ORAL ☐ NASAL ☐ DIGITAL		
MEDICATIONS: _____					mm @ TEETH: _____ TIME: _____		
ALLERGIES: _____					CONFIRM: ☐ AUSCULT ☐ ETCO2 ☐ COLORMET ☐ ETT DETEC		
PRIMARY EMT IMPRESSION: _____					CONDITION: ☐ IMPROVED ☐ WORSENER ☐ UNCHANGED		
SECONDARY EMT IMPRESSION: _____					COMPLICATION: _____		
CHIEF COMPLAINT: _____					CARDIAC ARREST INFORMATION		
HX OF CC: _____					CPR BEGUN: ☐ BYSTANDER ☐ 1st RESPONDER ☐ EMS		
					TIME: _____ AED: Y N		
					TIME TERMINATION : _____ ROSC: _____		
					ON LINE PHYSICIAN: _____		
					CONDITION: ☐ IMPROVED ☐ WORSENER ☐ UNCHANGED		
					COMPLICATION: _____		

■ **FIGURE 2** Beaver Township Fire/EMS, Beaver Township, Ohio: prehospital care report.

continued

On a more basic level, a computerized system can check the EMT's spelling and use of abbreviations, ensuring a more accurate report. Such systems can also monitor data as they are input, alert the EMT if any necessary information has been omitted, and facilitate quality assurance and quality improvement programs as well.

PCR Data

Of course, what makes the PCR useful is the information entered on it. That information should provide a complete and accurate picture of your contact with the patient. Remember these two basic rules when filling out any PCR: "If it wasn't written down, it wasn't done" (no

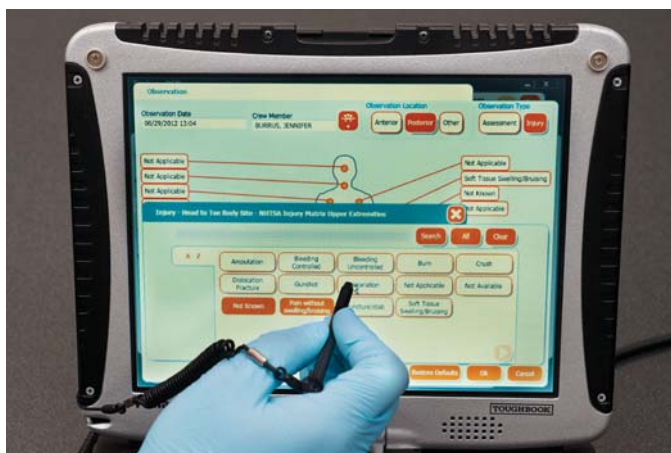
■ **FIGURE 2** Beaver Township Fire/EMS, Beaver Township, Ohio: prehospital care report, continued.

Requirements for information on the PCR vary from system to system and state to state, but the types of information required and the sections of the PCR are generally quite similar.

The U.S. Department of Transportation (DOT) has made an effort to standardize the information collected on PCRs. Such standardization will, it is hoped, lead to a higher general level of patient care across the nation. It will also permit more meaningful comparison and analysis of data from various systems, which may

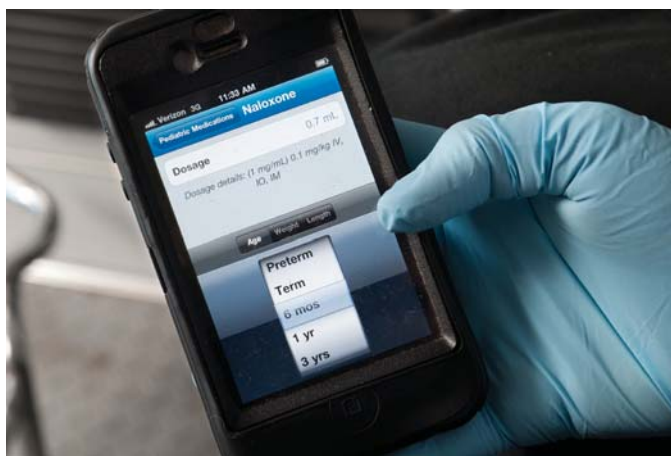


(a)



(b)

■ **FIGURE 3** (a) Information can be entered on a computerized form from a laptop computer. (b) A Toughbook computerized PCR form with patient figure on screen.



■ **FIGURE 4** A smart phone may have an app for direct data entry that is then transferred to a central data base.

speed the implementation of new and better methods of emergency care.

The DOT calls the information it wants on all PCRs the **minimum data set**. Following are the elements of information collected in the minimum data set:

Patient Information

- Chief complaint
- Level of responsiveness (AVPU)—mental status
- Blood pressure for patients greater than 3 years old
- Skin perfusion (capillary refill) for patients less than 6 years old
- Skin color, temperature, and condition
- Pulse rate
- Respiratory rate and effort
- Patient demographics (age, sex, race, weight)

Administrative Information

- Time the incident was reported
- Time the unit was notified
- Time of arrival at the patient
- Time the unit left the scene
- Time the unit arrived at its destination (hospital, etc.)
- Time of transfer of care

Another important element in establishing the minimum data set is the use of accurate and synchronous clocks. This means that all elements of an EMS system should use clocks or timekeeping devices that are accurately set and agree with each other. Dispatch's clock should not show one time, while the watches of the EMTs show another. Accurate timekeeping helps in the gathering of accurate medical information; for example, synchronous timekeeping by dispatch and the ambulance crew makes it easier to determine how long a patient has been in cardiac arrest before CPR or defibrillation was initiated. Accurate timekeeping can also be critical if administrative issues or legal questions over quality of care arise.

Many systems already require gathering the information included in the DOT's minimum data set. Such information is usually arranged in the following sections on the PCR.

Administrative Information

The administrative information section of the PCR is sometimes referred to as the run data. It usually includes the administrative information listed in the minimum data set. In addition, it may also include:

- The EMS unit number and the run or call number
- Names of crew members and their levels of certification
- The address to which the unit is dispatched

Patient Demographics and Other Patient Data

The next major section of the PCR contains primarily demographic patient information and other pertinent data about the patient. Most systems will require the following information:

- The patient's legal name, age, sex, race, birth date
- The patient's home address
- The insurance or billing information
- The location where the patient was found
- Any care given before the arrival of the EMTs

Vital Signs

A third major division of the PCR documents the patient's vital signs. On many forms, boxes are provided for checking off or writing in information. Computerized PCRs have drop-down menus that can be selected or data fields where the information can be entered. This section usually includes much of the patient information called for in the minimum data set. Various systems may also require additional data.

Ideally, at least two complete sets of vital signs should be taken and recorded. It is important to note the patient's position at the time the vital signs were taken (e.g., supine, standing, sitting). It is also critical to record the times at which the vital signs were obtained.

Patient Narrative

The next part of the PCR gives more detailed information about the patient and his problem than allowed for in check boxes or drop-down menus and limited data fields. This critical information sets the tone for the entire course of assessment, treatment, and documentation that will follow. This narrative section contains the following:

- The patient's chief complaint—This should be in the patient's own words or in the words of a bystander, if the patient is unresponsive. Put such statements in quotation marks ("My leg hurts") on the report.
- The patient's history or a description of the mechanism of injury—These data will include an account of when the chief complaint began and how it has progressed, along with other details of the patient history.

In this section of the PCR, you will create a brief but thorough picture of the patient and his problem. Remember that you are recording details for other medical personnel to use, not presenting your own conclusions about an incident. Careful observation of the patient and the scene as well as intelligent questioning of the patient and bystanders are essential. These methods will provide both *objective* and *pertinent subjective* information for the narrative section.

Objective information is measurable or verifiable in some way. It might be a reference to the patient's pulse rate or a statement that the patient has discoloration below both eyes. A sign is an objective observation.

Subjective information is based on an individual's perceptions or interpretations. Subjective information in the narrative section may come from either the patient or the EMT. For example, a patient might say, "I feel light-headed." An EMT might observe, "The patient seems to be in pain." A symptom is a subjective finding.

Subjective information should be *pertinent*; that is, it should relate to the medical circumstances. It should not include attempts at diagnosis. Nor should it include irrelevant observations such as, "The patient's husband offered to transport the patient."

In questioning a patient, be alert to **pertinent negatives**. These are signs or symptoms that might be

expected, based on the chief complaint, but that the patient denies having. A pertinent negative might be a patient's denial of pain after an automobile crash or a lack of difficulty in breathing in a case of chest pain. By noting the absence of pertinent signs and symptoms, you will provide the medical team that takes over care of the patient a fuller picture of his condition.

The narrative should briefly document the physical assessment in the order it was performed (i.e., head, neck, chest, and so on). Include pertinent information about the scene as well as about the patient. Note, for example, the presence of bottles of medication, a suicide note, or a collapsed ladder. If sensitive information is being reported, be sure to note the source of the information. As an example, if a wife states, "My husband is addicted to heroin," note the wife as the source of the highly sensitive but very important information.

Document the time and findings of each patient reassessment. This is especially important when attempting to identify trends in the patient's condition.

Write the narrative in a simple, direct style. Do not use radio codes or nonstandard abbreviations. Table 1 lists common standard abbreviations used by the EMT. A much more comprehensive list of abbreviations is found in Table 2. However, because of the possible confusion associated with the interpretation of even the acceptable abbreviations, it is preferred that the EMT write out each term or word instead of using an abbreviation.

TABLE 1 Commonly Accepted Abbreviations

ā	before
ō	with
NTG	nitroglycerin
O ₂	oxygen
OB	obstetrics
ṑ	after
PE	physical exam, pulmonary embolism
PO	orally, by mouth
Pt	patient
q	every
QID	four times a day
R/O	rule out
Rx	prescription
ṡ	without
s/s	signs/symptoms
SIDS	sudden infant death syndrome
SL	sublingual
SOB	shortness of breath
stat	immediately
Sx	symptoms
TIA	transient ischemic attack
TID	three times a day
TKO	to keep open
Tx	treatment
X	times
y/o	years old
↑	increased
↓	decreased

TABLE 2 Standard Charting Abbreviations**Patient Information/Categories**

African American	AA
Asian	A
Black	B
Chief complaint	CC
Complains of	c/o
Current health status	CHS
Date of birth	DOB
Differential diagnosis	DD or DDx
Estimated date of confinement	EDC
Family history	FH
Female	♀
Hispanic	H
History	Hx
History and physical	H&P
History of present illness	HPI or HOPI
Impression	IMP
Male	♂
Medications	Med
Newborn	NB
Past history	PH or PMH
Patient	Pt
Physical exam	PE
Private medical doctor	PMD
Signs and symptoms	S/S
Vital signs	VS
Weight	Wt
White	W
Year-old	y/o

Body Systems

Abdomen	Abd
Cardiovascular	CV
Central nervous system	CNS
Ear, nose, and throat	ENT
Gastrointestinal	GI
Genitourinary	GU
Gynecological	GYN
Head, eyes, ears, nose, and throat	HEENT
Musculoskeletal	MSK
Obstetrical	OB
Peripheral nervous system	PNS
Respiratory	Resp

Common Complaints

Abdominal pain	abd pn
Chest pain	CP
Dyspnea on exertion	DOE
Fever of unknown origin	FUO
Gunshot wound	GSW
Headache	H/A
Lower back pain	LBP
Nausea/vomiting	n/v
No apparent distress	NAD
Pain	pn
Shortness of breath	SOB
Substernal chest pain	sscp

Diagnoses

Abdominal aortic aneurysm	AAA
Abortion	Ab
Acute myocardial infarction	AMI
Adult respiratory distress syndrome	ARDS
Alcohol	ETOH
Atherosclerotic heart disease	ASHD
Chronic obstructive pulmonary disease	COPD
Chronic renal failure	CRF
Congestive heart failure	CHF
Coronary artery bypass graft	CABG
Coronary artery disease	CAD
Cystic fibrosis	CF
Dead on arrival	DOA
Delirium tremens	DTs
Deep vein thrombosis	DVT
Diabetes mellitus	DM
Dilation and curettage	D&C
Duodenal ulcer	DU
End-stage renal disease	ESRD
End-stage renal failure	ESRF
Epstein-Barr virus	EBV
Foreign body obstruction	FBO
Hepatitis B virus	HBV
Hiatal hernia	HH
Hypertension	HTN
Infectious disease	ID
Inferior wall myocardial infarction	IWMI
Insulin-dependent diabetes mellitus	IDDM
Intracranial pressure	ICP
Mass casualty incident	MCI
Mitral valve prolapse	MVP
Motor vehicle crash	MVC
Multiple sclerosis	MS
Non-insulin-dependent diabetes mellitus	NIDDM
Organic brain syndrome	OBS
Otitis media	OM
Overdose	OD
Paroxysmal nocturnal dyspnea	PND
Pelvic inflammatory disease	PID
Peptic ulcer disease	PUD
Pregnancies/births (<i>gravida/para</i>)	G/P
Pregnancy-induced hypertension	PIH
Pulmonary embolism	PE
Rheumatic heart disease	RHD
Sexually transmitted disease	STD
ST elevation myocardial infarction	STEMI
Transient ischemic attack	TIA
Tuberculosis	TB
Upper respiratory infection	URI
Urinary tract infection	UTI
Wolff-Parkinson-White syndrome (disease)	WPW

Medications

Angiotensin-converting enzyme	ACE
Aspirin	ASA
Bicarbonate	HCO ₃

continued

TABLE 2 Standard Charting Abbreviations *continued*

Birth control pills	BCP	Costovertebral angle	CVA
Calcium	Ca ⁺⁺	Deep tendon reflexes	DTR
Calcium channel blocker	CCB	Dorsalis pedis (pulse)	DP
Calcium chloride	CaCl ₂	Electrocardiogram	EKG, ECG
Chloride	Cl ⁻	Electroencephalogram	EEG
Digoxin	Dig	Expiratory	Exp
Dilantin (phenytoin sodium)	DPH	Extraocular movements (intact)	EOMI
Diphenhydramine	DPHM	Fetal heart tones	FHT
Diphtheria–Pertussis–Tetanus	DPT	Full range of motion	FROM
Hydrochlorothiazide	HCTZ	Full-term normal delivery	FTND
Lactated Ringer's, Ringer's Lactate	LR, RL	Heart rate	HR
Nitroglycerin	NTG	Heart sounds	HS
Nonsteroidal anti-inflammatory agent	NSAID	Hemoglobin	Hgb
Normal saline	NS	Inspiratory	Insp
Oral birth control pill	OBCP	Jugular venous distention	JVD
Penicillin	PCN	Laceration	lac
Phenobarbital	PB	Level of consciousness	LOC
Potassium	K ⁺	Moves all extremities (well)	MAEW
Sodium bicarbonate	NaHCO ₃	Nontender	NT
Sodium chloride	NaCl	Normal range of motion	NROM
Tylenol	APAP	Palpation	Palp
		Passive range of motion	PROM
		Point of maximal impulse	PMI
		Posterior tibial (pulse)	PT
		Pulse	P
		Pupils equal and reactive to light	PEARL
		Pupils equal, round, reactive to light and accommodation	PERRLA
		Range of motion	ROM
		Respirations	R
		Temperature	T
		Unconscious	unc
		Urinary incontinence	UI
Anatomy/Landmarks		Miscellaneous Descriptors	
Abdomen	Abd	After (post-)	$\bar{p}$
Antecubital	AC	After eating	pc
Anterior axillary line	AAL	Alert and oriented	A/O
Anterior cruciate ligament	ACL	Anterior	ant.
Anterior–posterior	A/P	Approximate	$\approx$
Dorsalis pedis (pulse)	DP	As needed	prn
Gallbladder	GB	Before (ante-)	$\bar{a}$
Intercostal space	ICS	Before eating (<i>ante cibum</i> , before meal)	a.c.
Lateral collateral ligament	LCL	Body surface area (%)	BSA
Left lower lobe	LLL	Celsius	C°
Left lower quadrant	LLQ	Change	Δ
Left upper lobe	LUL	Decreased	$\downarrow$
Left upper quadrant	LUQ	Equal	=
Left ventricle	LV	Fahrenheit	F°
Liver, spleen, and kidneys	LSK	Immediately	stat
Lymph node	LN	Increased	$\uparrow$
Midaxillary line	MAL	Inferior	inf.
Posterior axillary line	PAL	Left	Ⓕ
Right lower lobe	RLL	Less than	<
Right lower quadrant	RLQ	Moderate	mod.
Right middle lobe	RML	More than	>
Right upper lobe	RUL	Negative	–
Right upper quadrant	RUQ	No, not, none	Ø
Temporomandibular joint	TMJ	Not applicable	n/a
Tympanic membrane	TM		
Physical Exam/Findings			
Arterial blood gas	ABG		
Bilateral breath sounds	BBS		
Blood glucose level	BGL		
Breath sounds	BS		
Cerebrospinal fluid	CSF		
Chest X-ray	CXR		
Complete blood count	CBC		
Computerized tomography	CT		
Conscious, alert, and oriented	CAO		

TABLE 2 Standard Charting Abbreviations *continued*

Number	No or #	Physical therapy	PT
Occasional	occ	Positive end-expiratory pressure	PEEP
Pack years	pk/yr, p/y	Short spine board	SSB
Per	/	Therapy	Rx
Positive	+	Treatment	Tx
Posterior	post.	Turned over to	TOT
Postoperative	PO	Verbal order	VO
Prior to arrival	PTA		
Radiates to	→	Medication Administration/Metrics	
Right	®	Centimeter	cm
Rule out	R/O	Cubic centimeter	cc
Secondary to	2°	Deciliter	dL
Superior	sup.	Drop(s)	gtt(s)
Times (for 3 hours)	× (× 3h)	Drops per minute	gtts/min
Unequal	≠	Every	q
Warm and dry	W/D	Grain	gr
While awake	WA	Gram	g, gm
With (<i>cum</i>)	̄	Hour	h or hr
Within normal limits (<i>or we never looked</i>)	WNL	Hydrogen-ion concentration	pH
Without (<i>sine</i>)	̄	Intracardiac	IC
Zero	0	Intramuscular	IM
		Intraosseous	IO
Treatments/Dispositions		Intravenous	IV
Advanced cardiac life support	ACLS	Intravenous push	IVP
Advanced life support	ALS	Joules	j
Against medical advice	AMA	Keep vein open	KVO
Automated external defibrillator	AED	Kilogram	kg
Bag-valve mask	BVM	Liter	L
Basic life support	BLS	Liters per minute	LPM, L/min
Cardiopulmonary resuscitation	CPR	Microgram	mcg
Continuous positive airway pressure	CPAP	Milliequivalent	mEq
Do not resuscitate	DNR	Milligram	mg
Endotracheal tube	ETT	Milliliter	mL
Estimated time of arrival	ETA	Millimeter	mm
External cardiac pacing	ECP	Millimeters of mercury	mmHg
Intermittent positive-pressure ventilation	IPPV	Minute	min
Long spine board	LSB	Orally	po
Nasal cannula	NC	Subcutaneous	SC, SQ
Nasogastric	NG	Sublingual	SL
Nasopharyngeal airway	NPA	To keep open	TKO
No transport—refusal	NTR		
Nonrebreather mask	NRM	Cardiology	
Nothing by mouth	NPO	Atrial fibrillation	AF
Oropharyngeal airway	OPA	Ventricular fibrillation	VF
Oxygen	O ₂	Ventricular tachycardia	VT
Per square inch	psi		

Be especially careful in your use of medical terminology. Make sure you are using the proper term and that you are spelling it correctly. Look up spellings and definitions in a medical dictionary if you have any doubts. If you are still uneasy about the meaning of a term, or whether it applies to the situation you are describing, use everyday language instead. Mistakes in medical terminology can cause confusion and lead to delays or errors in treatment.

Treatment

The final information for entry on the PCR involves the treatment provided to the patient. This section should detail in chronological order all treatments you administer to a patient, what time they were administered, and indications of how the patient responded to that treatment. This information should be written in a clear narrative style, following the guidelines cited earlier

in “Patient Narrative.” An emergency physician, nurse, paramedic, or fellow EMT should, by reading your report, be able to learn what treatment was provided, the time it was provided, and whether the patient has improved or deteriorated since then.

It is important to include any other information that may be a local or state requirement. Specific data may be collected to enter into registries or other local or state databases for the purposes of research, education, or service performance.

LEGAL CONCERNS

As noted earlier, the PCR is a legal document. Some legal issues involving documentation are discussed in the following sections.

Confidentiality

You must use care and discretion when handling any information about a patient. Remember that confidentiality is the patient's legal right. The PCR and the information on it are considered confidential. Do not show the form or discuss the information on it with unauthorized individuals. Be familiar with the limitations of release of information mandated by the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

Distribution

Follow state rules and local protocols in distributing the PCR and any additional information about a patient encounter. By law, you are generally permitted to provide confidential information about a patient to a health care provider who needs the information in order to continue care, to the police if they request information as part of a criminal investigation, to a third party if the information is required on a third-party billing form, or in court if required by a legal subpoena.

A copy of the PCR is generally left with the patient in the emergency department or receiving facility. The original is typically retained by the emergency medical services. A third copy may be forwarded to medical oversight or a quality improvement official. Electronic data may be transferred and distributed in a similar manner.

Refusal of Treatment

Any competent adult has the right to refuse treatment. But legal questions often arise after the fact about whether the patient was truly competent. For this reason, you must make extra efforts with a patient who is refusing treatment to ensure that he fully understands what he is doing. You must also document your efforts completely.

1. When you encounter a patient who refuses treatment, try to perform as much of an assessment as possible. The extent of the examination will often depend on what the patient will allow you to do. Doing so may give you information to use in explaining what might happen if the patient continues to refuse treatment.
2. Before leaving the scene always try to make one more effort to persuade the patient to go to the hospital. Ensure that the patient can make a rational, informed decision and is not under the influence of alcohol or other mind-altering drugs, is not suffering from the effects of an illness or injury, and is not suicidal.
3. Inform the patient as clearly as possible why he should go to the hospital. Explain what may happen if he does not go. Discuss the possible consequences of delaying or refusing treatment. Confirm that the patient understands this information.
4. If the patient still refuses treatment, discuss the situation with medical direction as directed by local protocol. Such discussion can provide two major benefits. First, the patient may consider that the doctor's opinion carries more weight than the EMT's, so he may change his mind and accept treatment. Second, if the patient still refuses transport, the doctor can give the EMT direction in providing medical assistance at the scene.
5. If the patient still refuses to accept emergency care and/or transport, document in the PCR any assessment findings you have made, any emergency medical care you have given, and the explanation you gave the patient of the consequences of failing to accept care and/or transport (including potential death). Document if the patient refused to allow you to complete any or all of your assessment and if the patient refused any or all emergency care you intended to provide to him. You must document that the patient is alert and oriented to time, place, and person/self so there is no question that the patient understood the information and instructions you gave him. Then have the patient sign a refusal-of-care form (Figure 5 ■). You should also have a family member, police officer, or bystander sign the form as a witness. If possible, obtain witnesses' addresses in case they must be contacted.
6. If the patient refuses to sign, have a family member, police officer, or bystander sign the form verifying that the patient refused. Each section of the refusal-of-care form must be completed.
7. Before leaving the scene, you should offer alternative methods of getting care (e.g., taking a taxi to a clinic or asking a friend or family member for help in seeing a doctor).
8. Finally, explain that you or another EMT crew will be happy to come back if the patient changes his mind and decides to accept treatment. It would be prudent to explain signs the patient may exhibit or symptoms he may complain of if the condition worsens.

Acknowledgement of Refusal of Treatment and/or Transport

I, THE UNDERSIGNED, HAVE BEEN ADVISED THAT MEDICAL ASSISTANCE ON MY BEHALF IS NECESSARY AND THAT REFUSAL OF SAID ASSISTANCE AND TRANSPORT TO AN EMERGENCY DEPARTMENT MAY RESULT IN DEATH OR MAY IMPAIR MY HEALTH; NEVERTHELESS, I REFUSE TO ACCEPT TRANSPORT AND/OR TREATMENT AND ASSUME ALL RISKS AND CONSEQUENCES OF MY DECISION AND RELEASE BEAVER TOWNSHIP FIRE/EMS, AND BEAVER TOWNSHIP ITSELF AND ALL ITS EMPLOYEES AND VOLUNTEERS FROM ANY LIABILITY FROM MY DECISION.

I ALSO ACKNOWLEDGE THAT I HAVE RECEIVED A COPY OF THE BEAVER TOWNSHIP EMS "NOTICE OF PRIVACY PRATICES". A COPY OF THIS FORM IS AS VALID AS THE ORIGINAL.

Pt Refuses Treatment: ☐ ALL ☐ PARTIAL (list tx. that was refused) _____

SIGNATURE: _____ DATE: _____

PRINT NAME: _____ NPP GIVEN ☐ YES ☐ NO

RELATIONSHIP: _____ IF NO NPP, WHY? _____

■ **FIGURE 5** Beaver Township Fire/EMS, Beaver Township, Ohio: patient refusal section on prehospital report.

Falsification

The PCR documents the nature and extent of emergency medical care an EMT provides. It is meant to be a thorough and accurate record. Any mistake in care must be highlighted on the PCR. In such a situation, the EMT might be tempted to falsify the PCR.

Such falsification of information on a PCR should never occur. When an error of omission or commission occurs, the EMT should not try to cover it up. Instead, the EMT should document exactly what did or did not happen and what steps were taken (if any) to correct the situation. False information may lead to suspension or revocation of EMT certification or license and, potentially, to criminal charges.

More importantly, falsification of patient data will compromise patient care. Other health care providers can get an incorrect impression of the patient's condition from false assessment findings or a falsified report of treatment.

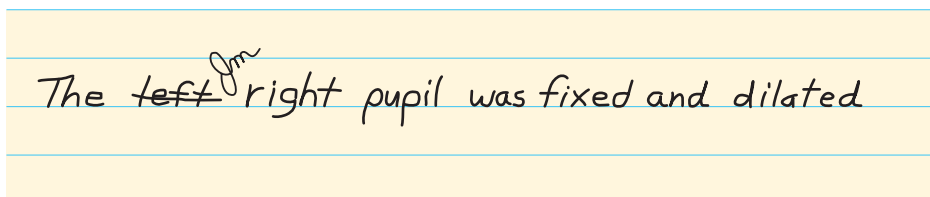
Certain areas of the PCR are more commonly falsified than others. One of those areas is vital signs. An EMT might, for some reason, neglect to take a set of vital signs and be tempted to make up numbers to cover the omission. Another area is treatment. An EMT might assist a patient in taking a medication without the approval of medical direction. Or he might have neglected

to give oxygen to a patient complaining of chest pain. In the former case, the EMT might be tempted to leave out of the PCR the fact that he assisted in administration of medicine, while in the latter he might want to write in that oxygen was given. In none of these cases should the record be falsified. Although the changes might appear insignificant, they could have catastrophic results.

Correcting Errors

Even the most careful EMT will occasionally make errors in filling out the PCR. When such an error is discovered while a paper report is being written, draw a single horizontal line through the error, initial it, and write the correct information beside it (Figure 6 ■). Do not try to erase or write over the error. Such actions could be interpreted as attempts to cover up a mistake or falsify the report.

When an error is discovered after the report form is submitted, draw a single horizontal line through the error, preferably using different-colored ink. Add a note with the correct information. Initial the entry and include the date and time of the correction. If information was omitted, the EMT should add a note with the correct information, the date, and the EMT's initials. Be sure to bring such changes to the attention of those to whom the incorrect report was submitted.



■ **FIGURE 6** The proper way of correcting an error in a prehospital care report is to draw a single line through the error, initial it, and write the correct information beside it.

Most electronic PCR formats provide a method to amend the report that includes a date and time stamp if an error is discovered. If there is no way to electronically amend or submit an amended report, correct a printed copy using the traditional methods described for a paper report and resubmit the PCR as a corrected copy.

SPECIAL SITUATIONS

There are certain circumstances in which the standard PCR will not be appropriate. Examples of such circumstances are discussed in the following sections.

Transfer-of-Care Report

Upon delivery of the patient in the medical facility, under ideal circumstances the EMT will complete a full PCR containing all of the patient data, obtain a transfer-of-care signature from the medical professional who is assuming patient care responsibility, and leave a copy of the full report with the facility. However, this ideal situation may not always exist. It may be necessary for your unit to return immediately to service to answer an additional call, precluding the EMT from submitting a full PCR until a later time.

Some computerized report formats do not provide the ability to print a hard-copy report to leave with the medical facility. Upon completion, the computerized report is downloaded into the EMS system's main computer and printed at a later time, then delivered or faxed to the medical facility.

In such cases, an abbreviated transfer-of-care form or "drop report" may be used to provide minimal patient data and collect a transfer-of-care signature. This abbreviated report can be used as a reference at a later time when completing the full PCR. A copy of the transfer report should be submitted with the full PCR.

Multiple-Casualty Incidents

During multiple-casualty incidents (MCIs), such as plane crashes or multiple-vehicle collisions, rescuers are often overwhelmed with the number of patients requiring treatment. The needs of these patients can sometimes conflict with the need for complete documentation. In these cases, there may not be enough time to complete the standard PCR before turning to the next patient.

Each EMS system has its own MCI plan. Those plans should have some means of recording important medical information and keeping that information with the patient as he is moved for treatment. Often such basic information as chief complaint, vital signs, and treatment provided is recorded on a **triage tag** that is attached to the patient. Information from the tag can be used later to complete the PCR. In MCI situations, the

PCRs will usually be less detailed than those of more typical, single-patient runs. Local plans should contain guidelines for what is expected in the PCRs in those situations.

Special Reports

In some circumstances, EMTs must fill out special documentation other than the usual PCR. These cases require the notification of agencies and local authorities beyond the usual health care network. Such cases might include the following:

- Suspected abuse of a child or elderly person
- Possible exposure to an infectious disease (e.g., meningitis, hepatitis, TB, HIV)
- Injury to an EMS team member
- Other situations that the EMT feels might require special documentation or informing of another agency

State laws and local protocols usually outline the circumstances in which special reports are required and often provide a form for such reports. These special reports should be accurate, descriptive, and objective; should not lead to any conclusions; should contain the names of all individuals, services, and facilities involved; and should be submitted in a timely manner. Always keep a copy for your own agency's records. The procedure for distribution of such reports is also established by local protocol.

ALTERNATIVE DOCUMENTATION METHODS

There are several alternative methods used to organize information on the prehospital care report. Three of these alternative methods are known by the mnemonics SOAP, CHART, and CHEATED—as described in the following sections.

SOAP

The mnemonic SOAP stands for subjective, objective, assessment, and plan. These components can be used to organize the information that needs to be documented on the prehospital care report.

S—subjective—refers to information that the patient must tell you. This is information or symptoms that you cannot see or feel during the physical exam. Symptoms are the patient's descriptions of how he is feeling. For example, the patient states, "I have terrible head pain." You have no physical evidence of the head pain, only the description provided by the patient.

O—objective—refers to information that you identify in the physical examination through inspection,

palpation, and auscultation. Your sense of smell will also provide objective information. This kind of information is referred to as signs. For example, a large laceration is a sign of injury. Whether the patient complains of any pain or not, you are able to see the laceration and make an objective assumption that an injury has occurred.

A—assessment—refers to the field assessment, the general idea you form about the patient's condition on the basis of the information you have collected from the subjective and objective components, along with a scene assessment, the chief complaint, and any other information provided by bystanders or family. For example, you may surmise that a patient with a history of diabetes who is acting bizarrely, is not oriented, and has pale, cool, and clammy skin as well as tachycardia may be suffering from a low blood sugar level (hypoglycemia).

P—plan—refers to the plan of action and the emergency care provided to the patient. In the patient with diabetes, it may include the administration of oral glucose and oxygen and transportation to a medical facility.

The SOAP method may be used by EMS systems as the basis for standard reporting practices. Some variations of the SOAP method exist and may be used to meet the specific needs of an EMS system. For example, the mnemonic SOAPIE may be used. The *I* refers to *intervention* and the *E* refers to *evaluation*. This would allow for a better account of the ongoing assessment that is conducted on the patient.

CHART

Another mnemonic used to organize documentation is CHART, which stands for the following:

C—chief complaint of the patient

H—history of the patient (including the SAMPLE history)

A—assessment findings gathered in the primary assessment, secondary assessment, detailed physical exam, and ongoing assessment

R—Rx for treatment that was provided to the patient

T—transport—any change in the patient's condition en route and the type of transport (e.g., emergency)

CHEATED

A more specific mnemonic used to organize documentation is CHEATED. This mnemonic organizes the documentation as follows:

C—chief complaint

H—history of the patient (including the SAMPLE history)

E—exam—information that was found in the physical examination of the patient

A—assessment—the field impression you derive by processing the history and physical exam findings and determining a condition the patient may be suffering from

T—treatment that was provided to the patient

E—evaluation—the information that is found during the ongoing assessment and any identified improvement or deterioration of the patient's condition

D—disposition—the transfer of patient care at the medical facility or to another health care provider

SOAP, CHART, and CHEATED represent different methods to organize the information expected to be documented on the prehospital care report. Whatever system is developed, it is important that it is used to ensure the most accurate documentation of the patient information.

MEDICAL ABBREVIATIONS

Medical abbreviations can be used in your documentation on the prehospital care report. Abbreviations can save room and time when writing the PCR. However, it is extremely important that you use only universally accepted medical abbreviations and that you do not make up your own, because your made-up abbreviations might imply a different meaning or no meaning to other health care professionals who will read your report. Table 2 lists standard medical abbreviations.

Chapter Review

SUMMARY

Documentation serves many functions in emergency medical services. It is used for the continuity of patient care, case reviews, a permanent record, legal purposes, and education and research. All documentation must be completely accurate and represent what truly occurred during the patient assessment and management. It must be legible and contain only acceptable objective and pertinent subjective information.

Documentation is also imperative in reporting refusal of care and transport. Your documentation may make the difference in proving that you fully informed the patient prior to his refusal. Because documentation is so vital to record keeping, and your PCR is a patient record, there is absolutely no tolerance for falsification of any information contained within the report. If an error is made, you must follow the recommended method for making corrections to the PCR.

Case Study Follow-up

Scene Size-up

You have been dispatched to the scene of an automobile accident. As you pull up, you observe a group of people standing by two vehicles. You note that the left front end of one vehicle that is in the street, a midsize car, is dented in and the headlight is smashed. The right rear of the other, a minivan at the curb, is also dented and the light on that side is broken. A woman explains that the car struck her parked van while she was inside the house, and that she called 911. Your partner inspects the car for signs of damage and clues to mechanism of injury sustained during the collision. You note that the man who was driving the car is in his mid-30s and has a slight bruise on the left side of his forehead. Despite this evidence of trauma, he is on his feet. He angrily says he does not want your help.

Primary Assessment

You remain calm and polite in spite of the driver's initial outburst. You and your partner introduce yourselves, and you say, "I understand that you've had some problems. We're certainly not here to give you any more trouble. We just want to make sure you're OK. Are you feeling all right? Do you have any pain, Mr. . . .?"

"Makynen. Paul Makynen," he replies, appearing to grow calmer. "I'm sorry I flew off the handle, but it's been a bad day. I've been running late. I was on my way to see an important client when a dog ran out into the street. I braked and swerved. I missed it, but hit that van instead. I just bumped my forehead on the inside of the door frame. It's a little sore, I'm a little achy, but that's all. Look, I appreciate your coming out, but I'm OK, really. And I've got to get going."

You note from the patient's answer that he is alert, responsive, and having no difficulty in breathing. However, you recall that the woman who called 911 said that right after the collision Mr. Makynen was slumped over the wheel. You ask him if he thinks he lost consciousness,

however briefly. He denies it and says, "Nah, I just put my head down on the wheel because I was disgusted." You see no signs of bleeding. His skin appears to be normal in color and dry. Mr. Makynen refuses your partner's attempt to provide manual stabilization of his head and neck but permits you to assess his radial pulse. You find that his pulse is slightly rapid but strong and regular and that his skin is warm to the touch.

Secondary Assessment

You explain to Mr. Makynen that you would like to do a physical exam to check for any signs of injury. He becomes angry again and says, "Come on. I'm okay. I don't need that." You ask if you can take his blood pressure and other vital signs, and he says, "No, no. Look, I really feel fine." He also refuses to answer any of the SAMPLE questions except to deny any pain or other symptoms. He rejects your suggestion that he be transported to the hospital.

You are not ready to give up yet. You tell Mr. Makynen that, because of the injury to the head, it would be best that he be checked by a doctor. You explain that head injuries often display no signs at first but can later develop into potentially life-threatening situations. He interrupts to say, "Fine, I'll take that chance, but I am leaving."

Your partner discreetly calls dispatch to say, "Patient is refusing emergency care and transport. We will inform you of our status shortly."

Documentation

Meanwhile, recognizing that you are going to have no success in persuading Mr. Makynen to accept care, you explain to him that before he leaves he must sign a refusal-of-care form. You prepare the PCR and the refusal forms. On the PCR, you note the mechanism of injury, the bruise to the forehead, and your initial findings regarding his alert mental status, open airway, adequate breathing, absence of bleeding, pulse that is rapid but regular and strong, and skin color,

Case Study Follow-up

temperature, and condition indicating adequate perfusion. You write that the patient denies pain and, although a witness reported that he was slumped over the wheel after the collision, the patient denies losing consciousness.

You document that, at this point, the patient refused further care. You also note your recommendation that the patient see a doctor and your explanation of the possible consequences. You add that the patient still refused further care.

You show the PCR to Mr. Makynen and allow him to read it and the refusal form. While he is doing so, your

partner explains the situation to the owner of the van and another bystander and asks them to witness the refusal. They agree and, after Mr. Makynen signs the refusal form, they also sign where you indicate.

As Mr. Makynen gets into his car, you suggest again that he see his personal physician as soon as possible. You add that if he suddenly feels dizzy or in pain, he shouldn't hesitate to call 911 for assistance.

Your partner contacts dispatch and states that the patient has refused treatment and transport. Your unit is now clear and in service.

IN REVIEW

1. Explain the various uses of the documentation that the EMT generates after a patient contact.
2. Describe two common formats for the prehospital care report.
3. Explain the origin and purpose of the minimum data set.
4. Explain what the phrase "accurate and synchronous clocks" means and why they are important.
5. Define pertinent negatives.
6. List the steps you should take if a patient refuses treatment.
7. Explain the meaning and importance of the following two documentation rules: "If it wasn't written down, it wasn't done" and "If it wasn't done, don't write it down."
8. Describe how errors on PCRs should be corrected.
9. Explain how a multiple-casualty incident can affect EMT documentation.
10. Describe circumstances in which an EMT might be expected to file special reports with other agencies.

CRITICAL THINKING

You arrive on the scene and find a 36-year-old female patient who complains of severe abdominal pain. The patient is alert and oriented. Her vital signs are BP 88/64 mmHg; HR 128 bpm; R 24 and adequate chest rise; skin is pale, cool, and clammy; SpO₂ is 96% on room air. Her radial pulses are weak. She states the pain began suddenly about 4 hours ago and has progressively worsened. She was sitting on the couch watching television when it began. Nothing makes the pain better or worse. The pain is dull and aching, and it is intermittent. The pain does not radiate.

The patient rates the severity of her pain as 8 on a scale of 1 to 10. She states she feels light-headed and dizzy every time she stands up, and she also feels nauseated. She has no known allergies and takes over-the-counter Prilosec for heartburn. She has no pertinent medical history. She reports she had her tonsils removed when she was 10 years old. She has had nothing to eat or drink for about 7 hours. She states that she has "not felt real good" for a few days, and other than the time she has spent working at her desk at work, she has been at home on the couch. Her pupils are equal and sluggish to respond. She has no jugular venous distention (JVD). Her breath sounds are equal and clear bilaterally. Her abdomen is rigid and tender. There is no evidence of trauma to the abdomen. She has good motor and sensory function in all four extremities. Her peripheral pulses are very weak.

En route to the hospital, the patient begins to close her eyes. You must verbally instruct her to open her eyes. Her BP is 82/62 mmHg, HR 134 bpm, and R 26 with adequate chest rise. The pulse oximeter is providing an "error" reading. Her skin is more pale, cool, and clammy and her radial pulses are barely palpable.

When preparing to write the PCR, you note her name as Jennifer Sampson. She lives at 1321 Oakridge Drive in Smithville, Ohio.

1. What can this information be used for?
2. How will the medical personnel in the medical facility use the information?
3. What will your EMS use the information for?
4. What would you document in the patient information section of the minimum data set?
5. What would you document in the administrative section of the PCR?
6. What information would you write in the patient narrative section?
7. Should any of the information not be reported in the PCR?
8. If you were to make a mistake while writing the PCR, how would you correct it?
9. If the PCR contains a box for a third set of vital signs, what would you document in this patient?
10. How would you collect additional information needed for your PCR?

ANSWER KEY

IN REVIEW

1. The documentation you collect has a variety of important uses. Documentation ensures continuity of care for the patient throughout his need for medical attention. In addition, the prehospital care report becomes part of the patient's permanent hospital record. It is typically used to aid in administrative functions such as insurance and billing and may be used to provide statistics regarding the EMS service itself, such as response times and number and types of patients served. Finally, the prehospital care report may be used later as a legal document in litigation, and for data gathering as part of educational and research projects.
2. The most traditional format for the PCR is the written report. This format usually combines check boxes, write-on lines, and an area for writing a fuller narrative account of the patient contact. An alternative format widely accepted and used is the computerized report, which varies widely in style and may be entered via sheets scanned into a computer, handheld device, or laptop computer.
3. The U.S. Department of Transportation has made an effort to standardize the information collected on PCRs by creating the minimum data set. It is hoped that such standardization will allow more meaningful comparison and analysis of data from system to system and lead to a high general level of patient care across the nation.
4. "Accurate and synchronous clocks" means that all elements of an EMS system should use clocks or timekeeping devices that are accurately set and agree with each other. This is important because accurate timekeeping helps gather accurate medical information and can be critical if administrative issues or legal questions ever arise.
5. Pertinent negatives are signs and symptoms that might be expected, based on the chief complaint, but that the patient denies having. By noting the absence of pertinent signs and symptoms, you'll provide a fuller picture of the patient's condition.
6. When you encounter a patient who refuses treatment, first attempt to perform as much of an assessment as possible. In order to refuse care, the patient must be deemed competent. The patient must be informed of and fully understand all potential risks and consequences involved in refusing treatment or transport, up to and including the possibility of death when appropriate. The patient must be able to explain back these consequences to you. Consider consulting medical direction. The patient must sign an official "release from liability" form—or a patient's witnessed refusal to sign the form must be obtained—and must be included with a full documentation of the case. Have a witness, preferably a family member or neutral person, sign the report. Before leaving the scene, encourage the patient to seek help if certain symptoms develop and explain that you or another EMT crew would be happy to return should the patient change his mind. Document all assessment findings, all care given, and the explanation given to the patient regarding the consequences of refusing care. Document if the patient refused to allow you to complete any or all of your assessment.
7. "If it wasn't written down, it wasn't done" means that no one, including emergency department staff, will know what was done if it wasn't recorded, and you won't be able to prove it was done, especially in a court of law. "If it wasn't done, don't write it down" means don't falsify information on a report form.
8. Correct errors on a paper PCR by drawing a single horizontal line through the error, initialing it, and writing the correct information beside it. Do not erase or write over the error. Most electronic PCR formats provide a method to amend the report if an error is discovered.
9. Because of the volume of patients encountered by EMS during a multiple-casualty incident, there may not be enough time to complete a standard PCR before turning to the next patient. EMTs may instead use temporary abbreviated forms, such as triage tags, that contain basic medical information. In MCI situations, PCRs will usually be less detailed than those of more typical, single-patient runs.
10. EMTs might be expected to file a special report with an agency or local authority outside the usual health care network in specific circumstances such as suspected abuse of a child or an elderly person, possible exposure to an infectious disease, cases of injury to an EMT team member, or any circumstances that the EMT deems unusual.

GLOSSARY

minimum data set the minimum information the U.S. Department of Transportation has determined should be included on all prehospital care reports.

pertinent negatives signs or symptoms that might be expected in certain circumstances, based on the chief complaint or physical exam, but are denied by the patient or not found on examination.

prehospital care report (PCR) documentation of an EMT's contact with a patient.

triage tag a tag containing key information that is attached to a patient during a multiple-casualty incident.

Communication

Communication

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARD • Preparatory (Content Areas: EMS System Communication; Therapeutic Communication)

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

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Discuss the purposes and characteristics of each of the following EMS system communication components:
 - a. Base station
 - b. Mobile radios
 - c. Portable radios
 - d. Digitalized radio equipment
 - e. Mobile data terminals
 - f. Cell phones
3. Describe the responsibilities of the Federal Communications Commission.
4. Explain the importance of EMS system communication equipment maintenance.
5. Given a radio transmitter/receiver, demonstrate the standard ground rules for radio communications.
6. List key points in an EMS call at which you should communicate with dispatch.
7. Deliver a concise, organized radio report that clearly conveys essential information to medical direction or the receiving facility.
8. Describe the process of receiving and confirming an order from medical direction over the radio.
9. Identify situations in which you should make additional contact with medical direction or the receiving facility after providing an initial radio report.
10. Given a scenario, deliver an oral report to transfer care of the patient to a receiving facility or another EMS provider.
11. Given a scenario, demonstrate effective communication that enhances team dynamics.
12. Discuss the advantages and disadvantages of using radio codes.
13. Convert back and forth between military time and standard clock times.
14. Communicate using commonly used radio terms.
15. Describe the components of the communication process.
16. Discuss factors that can enhance or interfere with effective communication.
17. Give examples of each of the following techniques of therapeutic communication:
 - a. Clarification
 - b. Summary
 - c. Explanation
 - d. Silence
 - e. Reflection
 - f. Empathy
 - g. Confrontation
18. Given a scenario, engage in an effective communication process with a patient.
19. Recognize the potential messages that may be communicated via nonverbal behaviors.
20. Describe the uses, advantages, and disadvantages of open-ended and closed questions.
21. Analyze your communications with a patient in a scenario to recognize the following pitfalls in communication:
 - a. Leading or biased questions
 - b. Interrupting the patient
 - c. Talking too much
 - d. Providing false assurance
 - e. Giving inappropriate advice
 - f. Implying blame
22. Discuss considerations for each of the following situations:
 - a. Communicating with a patient's family
 - b. Getting a noncommunicative patient to talk
 - c. Interviewing a hostile patient
 - d. Cross-cultural communications
 - e. Language barriers
 - f. Communicating with children and elderly patients

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary.

base station
closed-ended questions
communication
culture
decoder
decoding
defense mechanisms

encoder
encoding
ethnocentrism
feedback
gestures
haptics
intimate zone

leading questions
mobile data terminal
open-ended questions
repeaters
SBAR

Case Study

The Dispatch

EMS Unit 2—proceed to 101 Bate Road. You have a man bleeding heavily in the driveway there. Time out is 1128 hours.

“Dispatch, this is Unit 2,” your partner radios back. We copy and are responding to 101 Bate Road. Our ETA is 10 minutes. Do you have any more information on the nature of the problem?”

Dispatch replies, “Unit 2, that is negative. The caller said he was bleeding and was in the driveway. That was all.”

Upon Arrival

Bate Road is in a semirural area with houses widely spaced. Because the dispatch gave little information, you approach the scene with extreme caution, realizing that some act of violence may have led to the call. You park a short distance up the road from the house, which has an attached garage. There is one car in the driveway and only one person in sight, a man sitting on a bench next to the garage and clutching his hand. The scene appears secure, so you pull up and back into the driveway. Your

partner radios, “Unit 2 to dispatch. We are on the scene at 101 Bate Road.” Dispatch responds, “Unit 2 on the scene at 1137 hours.”

Because the dispatch said there was bleeding at the scene, you and your partner put on gloves and protective eyewear. Your partner grabs the jump kit and you both step out. As you walk up the driveway, you scan the scene carefully, looking for any signs of possible danger. The garage door is open, and you can see a workbench at the back of it. No one else is in sight. Meanwhile, the man, who appears to be in his 40s, has gotten off the bench and is walking toward you. You note that his right hand is wrapped in a blood-soaked rag and that his shirt and pants are bloodstained.

How would you proceed to assess and care for this patient? How would you use your communications skills and equipment during contact with the patient?

During this chapter, you will learn about the elements of emergency prehospital care communications and communications systems. Later, we will return to the case and apply the procedures learned.

INTRODUCTION

Years ago, the job of ambulance crews was simply to transport patients to hospitals. The crews had no responsibility to provide emergency care to those patients. With such a limited role to perform, crews had no need for sophisticated communications systems.

Reliable communications systems are an essential part of EMS today. They permit EMTs to reach their patients more quickly and allow hospitals to prepare appropriately for the arrival of those patients. They allow EMTs to call for necessary resources and they also

link EMTs in the field with doctors, enabling the EMTs to provide more lifesaving services than ever through contact with medical direction. For these reasons, understanding EMS communications skills and equipment is an essential part of the EMT’s job.

In order to communicate effectively with a patient, it is important to understand the principles of therapeutic communication. EMTs should be able to communicate in a manner that establishes a positive relationship with their patients. EMTs must also be able to adjust the way they communicate with patients who have special needs.

EMS COMMUNICATIONS SYSTEM

Components of an Emergency Communications System

While emergency prehospital care communications systems vary considerably, many of them employ the components discussed in the next sections.

Base Station

The **base station** serves as a dispatch and coordination area and ideally is in contact with all other elements of the system (Figure 1 ■). The base should be located on a suitable terrain, preferably a hill, and be in proximity to the hospital that serves as a medical command center. Base stations generally use relatively high power output (80 to 150 watts) and should be equipped with a suitable antenna within a short distance. The antenna plays a critical part in transmission and reception efficiency. Transmission power levels are limited by the Federal Communications Commission, and the minimum usable signal level for reception is limited by man-made noise. A good antenna system can compensate to some degree for these limitations.

Mobile Radios (Transmitter/Receivers)

Mobile radios (transmitter/receivers) are vehicle-mounted devices used to communicate within the EMS system. Mobile transmitters usually transmit effectively at lower power than base stations (typically 20 to 50 watts) (Figure 2a through d ■). Most mobile radios are able to transmit over a 10- to 15-mile range on average terrain. The transmission distance of a mobile radio is affected by the terrain and is reduced in mountainous areas or where there are many tall buildings. Mobile transmitters with higher outputs have

proportionally greater transmission ranges than those with lower outputs.

Portable Radios (Transmitter/Receivers)

Portable, handheld transmitter/receivers are useful when you are out of your vehicle or in the patient compartment and must stay in communication with the base, with one another, and with medical direction (Figure 3 ■). Such portable units may also be used by medical direction when they are stationed at a hospital that has no radio. Portable units usually have power outputs ranging from 1 to 5 watts and thus have limited range, although the signal of a handheld transmitter may be boosted by retransmission through a repeater.

Repeaters

Repeaters are devices that receive transmissions from a relatively low-powered source such as a mobile or portable radio and rebroadcast them at another frequency and a higher power. Repeaters make communications possible in EMS systems that cover a wide area or where the terrain makes transmission and reception of signals difficult (Figure 4 ■). Repeaters can be located in emergency vehicles or at fixed sites throughout the area covered by the EMS system.

Digital Equipment

Digitalized radio equipment is common today. With such equipment, an **encoder** breaks down sound waves into unique digital codes, like those used in CD players, while a **decoder** recognizes and responds to only those codes. This equipment allows different mobile and base stations to operate on the same broadcast frequency, allowing more messages to be transmitted over those already crowded frequencies.

Included in digital communication is the use of a **mobile data terminal** that is mounted in the cab of the ambulance. Instead of a voice dispatch to a scene, the mobile data terminal receives a signal from the digital radio and displays the information on the terminal screen. Some equipment will also print the information on a hard copy. The EMT can reply to the dispatch by either hitting a designated button that indicates the unit is en route, or replying by voice communication. The data terminals are often installed to reduce the number of necessary radio transmissions. The EMT may also indicate that he is on the scene, en route to the hospital, at the hospital, and back in service by simply pushing a designated button. This is designed to facilitate communication and not replace voice communication.



■ FIGURE 1 EMS communications center.



(a)



(b)



(c)



(d)

■ **FIGURE 2** (a) A small mobile two-way radio fits next to the driver's seat in the ambulance and (b) can be used to contact dispatch. (c) An EMT using the two-way radio in the ambulance patient compartment to contact medical direction. (d) The ER doc on the radio with the EMT in the ambulance.

Cell (Wireless) Phones

Some EMS communications systems use cell phones as a means of communication. Cell phones transmit and receive through the air rather than over wires (Figure 5 ■). They operate in the following manner: A particular geographical service area is divided into a network of slightly overlapping geographical cells that range from 2 to 40 square miles in size. The cells are the equivalent of radio base stations. When a telephone moves beyond one

cell's range, service to it is automatically picked up by another cell.

Benefits of cell phones include excellent sound quality, availability of channels, easy maintenance, and, often, increased privacy of communications. They are often used as backups to an existing radio system or where the expense of establishing a radio system is too great. The major disadvantage of cellular phone systems for EMS use is that they are part of the public phone



■ **FIGURE 3** A portable hand-held radio.

system and can easily be overwhelmed during multiple-casualty disasters.

Broadcast Regulations

The Federal Communications Commission (FCC) has jurisdiction over all radio operations in the United States, including those used by EMS systems. The FCC licenses individual base station operations, assigns radio call signs, approves equipment for use, establishes limitations for transmitter power output, assigns radio frequencies, and monitors field operations. The FCC has also set regulations to limit interference with emergency



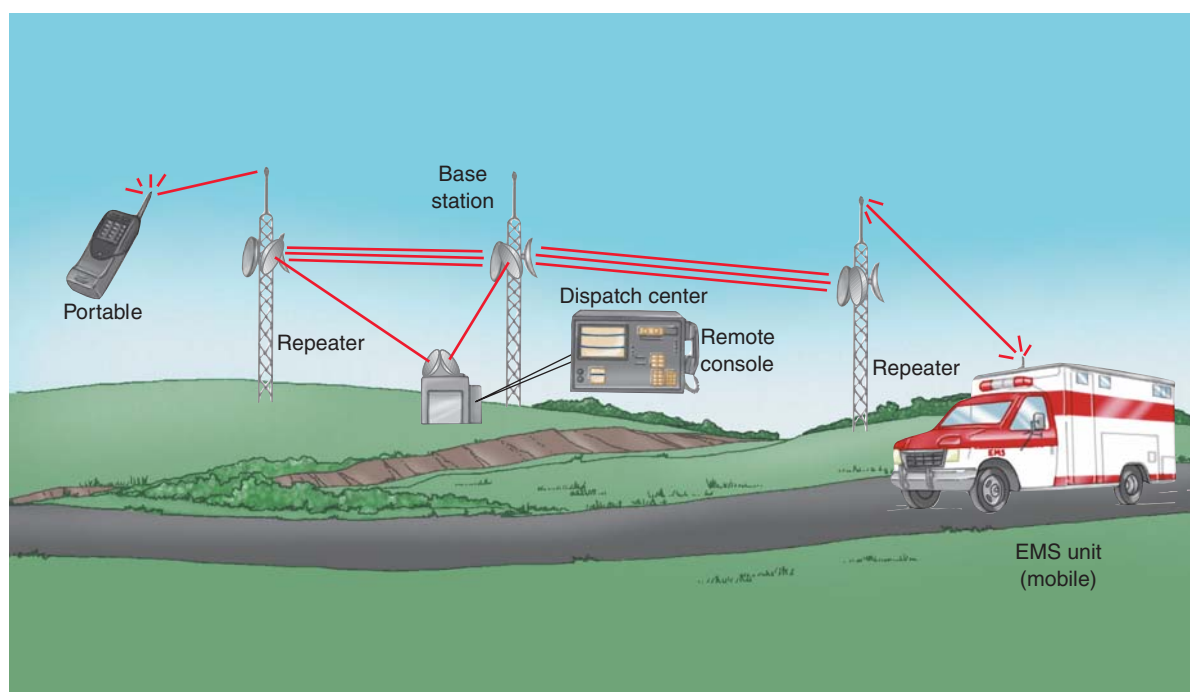
■ **FIGURE 5** Cell phones are common in EMS communications.

radio broadcasts and to bar the use of obscenity and profanity in broadcasts.

System Maintenance

Because a properly working communications system is at the heart of effective delivery of emergency medical services, regular maintenance of the system's equipment is a must. The equipment should not be mishandled or unnecessarily exposed to harsh environmental conditions. Regular cleaning with a damp cloth and a mild detergent should be part of the maintenance program. The communication equipment should also be checked to ensure that it is not drifting from its assigned frequency.

Mobile and portable radios and telephones that operate on battery power should be checked on a daily basis. Most equipment uses rechargeable batteries.



■ **FIGURE 4** Example of an EMS communication system using repeaters.



■ **FIGURE 6** Communication technologies continue to develop and change.

Freshly charged batteries should be inserted every day, while the removed batteries are put in the recharger. In addition, a backup set of fully charged batteries should always be on hand.

EMTs need to be able to communicate with dispatch, contact one another, and consult medical direction. If the equipment is not functioning properly, these communications may be impaired and may cause significant problems within the system. Your service should have some provision for backing up its communications system. Such provisions might include the availability of emergency generators at the base and repeater stations in case of power failure or the supplying of cell phones to EMS units for use in cases of radio failure.

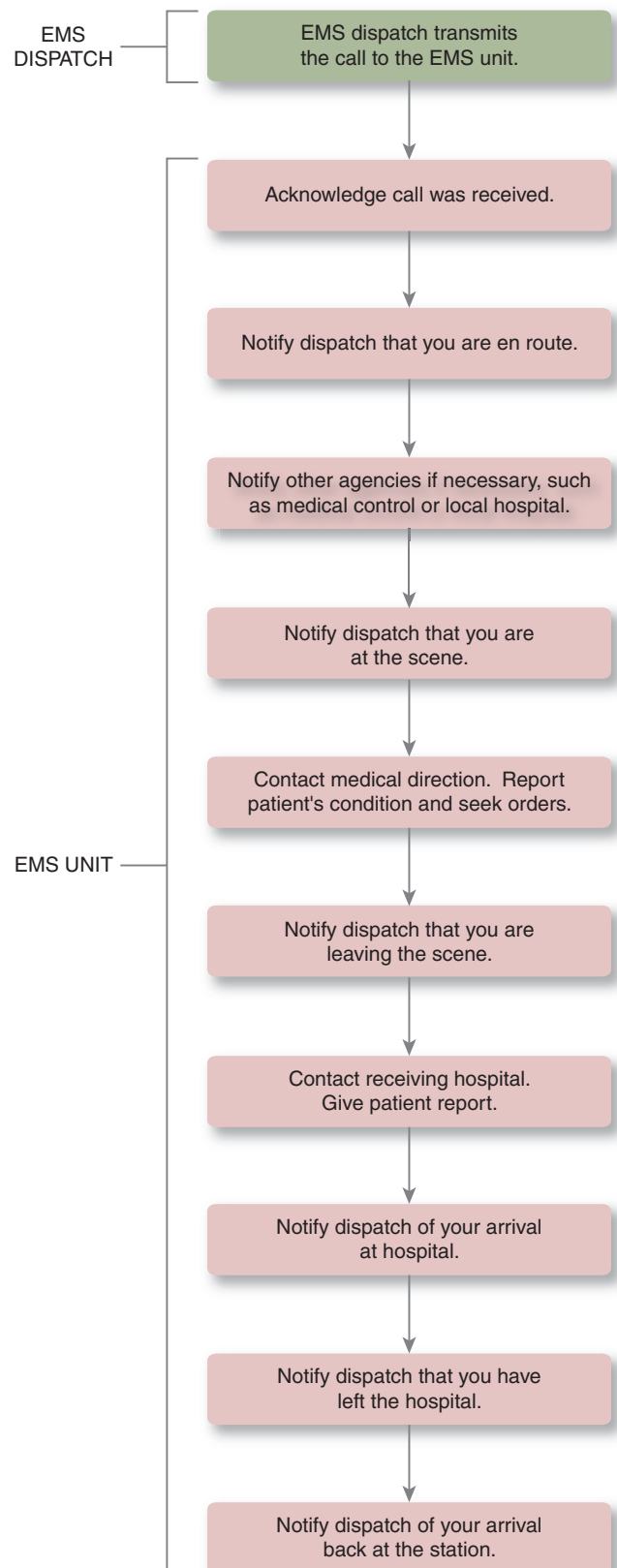
As technology changes, new equipment becomes available that may have a role within the EMS system. This new equipment may have benefits and features that currently do not exist in your present system and may eventually improve the quality of your EMS system's communication (Figure 6 ■).

COMMUNICATING WITHIN THE SYSTEM

As an EMT, you will be expected to communicate not just with your partners and patients but also with EMS dispatch, medical direction, and medical personnel at receiving facilities (Figure 7 ■). What follows are some guidelines for communication within the EMS system.

Ground Rules for Radio Communication

Whenever you are communicating via your radio to other members of the EMS system, there are some basic ground rules to keep in mind. These rules apply to your



■ **FIGURE 7** Progression of radio transmissions.

communications with any part of the EMS system and serve as a standard format for the transmission of information.

1. Turn on the radio and select the correct frequency.
Use EMS frequencies only for EMS communication.

Reduce background noise by closing your vehicle's windows.

2. Listen before transmitting. This ensures that the channel is clear of any other communications and avoids interruption of someone else's transmission. Adjust the radio to a proper volume.
3. Push the "press to talk" (PTT) button and wait 1 second before speaking. This will allow time for system repeaters to operate and will ensure that the initial part of your communication is not cut off.
4. Speak with your lips about 2 to 3 inches from the microphone. Speak clearly, calmly, and slowly in a monotone voice that can be completely understood (Figure 8 ■).
5. Address the unit being called by its name and number, and then identify your unit by name.
6. The unit being called will signal for you to begin transmission by saying "go ahead" or whatever is the standard in your system. If the unit being called responds with "stand by," that means wait to transmit until further notified.
7. Keep transmissions brief. If a transmission should take more than 30 seconds, pause for a few seconds to allow other units the chance to use the frequency for emergency transmissions.
8. Keep your transmission organized and to the point. Use plain English and clear text. Avoid slang and meaningless phrases such as "Be advised." Courtesy is assumed, so one should limit saying "Please," "Thank you," or "You're welcome." Also avoid codes or agency-specific terms unless their use is an accepted part of your system's communications.
9. When transmitting a number that might be confused with another (13 might be heard as 30), say the number ("thirteen"), then the individual digits that make it up ("one-three").
10. Avoid offering a diagnosis of the patient's problem. Instead, remain impartial and give only the objective information (observable, verifiable information such

as vital signs, chief complaint, medications the patient has) and relevant subjective information (opinions or judgments such as, "The patient appears to be in extreme pain") that you have gathered during your patient assessment.

11. When receiving orders or information from dispatch, medical direction, or other medical personnel, use the "echo" method. Immediately repeat the order word for word. Doing so will ensure that you have received the information accurately and understand it.
12. Always write down important information, such as addresses, orders to assist with medication, and so forth that you receive from other parts of the EMS system.
13. The airwaves are public, and scanners, which are popular, can pick up radio and cell phone messages. Protect your patient's privacy by not using his name in your transmissions. Use objective, impartial language in describing the patient's condition. Do not make personalized comments about the patient or his condition; such statements could be grounds for a slander suit. Do not use profanity on the air.
14. Use "we" rather than "I" in your transmissions; an EMT rarely acts alone.
15. Use "affirmative" and "negative" rather than "yes" and "no" in transmissions. The latter words can be difficult to hear.
16. When you are finished, say "Over." Wait for confirmation that the other unit has received your message and does not need to have anything repeated.

Phone/Cell Phone Communication

If your system utilizes phone or cell phone communications to deliver pertinent information, the content and format of the information should be treated similarly to that provided during radio communications. The EMT should be familiar with the cellular technology being used and should be aware of the cellular dead spots in the area. There should be another plan in place in case a cellular transmission fails while giving a report or communicating with another agency. The EMT should also be familiar with important and commonly utilized telephone numbers, such as those for medical direction, the local hospital emergency departments, and the dispatch centers.

Communicating with Dispatch

Your first contact on a run will probably be with your EMS system's dispatch—perhaps a certified Emergency Medical Dispatcher (EMD). Dispatch is the public's point of contact with the EMS system, usually via the 911 universal emergency telephone number. It is the job of dispatch to obtain as much information as possible about an emergency, to direct the appropriate



■ **FIGURE 8** Hold the microphone about 2 inches from your lips as you speak into it.

emergency service(s) to the scene, and to advise the caller on how to manage the situation until help arrives.

A newer technology that may provide the responding EMS crew with additional information is Advanced Automatic Collision Notification (AACN), found as a standard feature in many newer car models. Not only can this technology accurately indicate that the vehicle was involved in a crash, but also it can provide the exact location of the vehicle and indicate change in velocity during the crash, direction of force, airbag deployment, rollover, and occurrence of multiple collisions. Some or all of this information may be made available to the responding EMS unit. In addition, according to the 2009 Centers for Disease Control and Prevention *Guidelines for Field Triage of Injured Patients*, this information may be used to predict injury severity, transportation mode (air versus ground), and medical facility destination (level of trauma center) prior to the arrival of the EMS crew.

In many systems, dispatch records all conversations with initial callers, police, fire personnel, EMT units, and receiving facilities. These communications can all become part of the legal record if a call should eventually lead to a court case. This is another reason to be sure that your radio conversations are professional, concise, and accurate.

You will also note that dispatch gives the time after most communications with you. This will help you in providing times for your written report of a run. Accurate recording of time during a run can also be critical if the run should lead to a lawsuit.

The information that dispatch provides to you will assist you in doing your job. But remember that dispatch coordinates the different parts of the EMS system. Dispatch also needs information from you to ensure that all those parts work together efficiently. Communicate with dispatch at the following points:

1. To acknowledge that the dispatched call information was received.
2. To advise dispatch when the unit is en route to the call.
3. To estimate your time of arrival at the scene while en route and to report any special road conditions, unusual delays, and so on.
4. To announce your unit's arrival on the scene, to request any needed additional resources, and to help coordinate the response. (In some systems, the unit must also report when they reach the patient after arriving on the scene.) Dispatch should be contacted if there is a prolonged on-scene time without communication.
5. To announce the unit's departure from the scene and to announce the destination hospital, number of patients transported (if more than one), and estimated time of arrival at the hospital.
6. To announce your arrival at the receiving hospital or other facility. If you were meeting at a rendezvous point, announce your arrival there.
7. To announce that you are "clear" and available for another assignment after the patient has been transferred.
8. To announce that you are leaving the hospital and are on your way back to the station.
9. To announce your arrival back at the station.

Communicating with Health Care Professionals

On a run, you may have to communicate with medical personnel at various times via your radio. The majority of these communications will be with your system's medical direction and with personnel at the facility to which you are transporting a patient. In some systems, you may need to communicate with other EMS providers to transfer care of the patient.

Communicating with Medical Direction

In some EMS systems, medical direction may be at your receiving facility. In others, it will be at a separate location. You will often be expected to consult with medical direction on a run. There are cases in which medical direction may give you permission to assist in administering a patient's prescribed medication or may direct you to administer a medication from the ambulance's stock. Medical direction may also suggest procedures that you should follow with a patient or tell you not to perform other procedures.

Radio communications between EMTs in the field and their medical direction should be organized, concise, and pertinent. It is helpful to have an efficient and effective standard format for communicating patient information over the radio. This ensures that significant information is related in a consistent manner and that nothing is omitted. When communicating with medical direction, provide the following information:

1. Your unit's identification and its level of service: BLS (basic life support) or ALS (advanced life support). You may identify yourself as the provider giving the report.
2. The patient's age and sex.
3. The patient's chief complaint.
4. A brief, pertinent history of the present illness, including scene assessment and mechanism of injury.
5. Major past illnesses.
6. The patient's mental status.
7. The patient's baseline vital signs.
8. Pertinent findings of your physical examination of the patient.
9. Description of the emergency medical care you (and others) have given the patient.
10. The patient's response to the emergency medical care.
11. The patient's current condition.
12. Request for further actions/interventions at the receiving facility.
13. Estimated time of arrival.

To ensure that you have communicated accurately to medical direction and that you understand their directions completely, follow these additional guidelines:

- Be sure that the information you provide to medical direction is accurate and that you report it in a clear, understandable way. Remember that your patient's life may depend on the decisions that medical direction makes with that information.
- After receiving an order from medical direction to administer a medication or follow a procedure with a patient, repeat the order back word for word. This applies to things that medical direction tells you not to do as well.
- If you do not understand an order from medical direction, ask that it be repeated. Then repeat it back to medical direction word for word.
- If an order from medical direction appears to be inappropriate, question the order. Possibly medical direction misunderstood something in your description of the patient's condition or misspoke in prescribing a course of action. Asking questions may clarify the communication and may prevent the administration of a harmful medication or the application of an inappropriate procedure.

SBAR is a method of organizing your communication into a standard format that would be particularly useful when communicating with medical direction, especially if you are seeking further orders. SBAR is an acronym for situation, background, assessment, and recommendation. *Situation* refers to the problem or reason why you are calling and the patient's chief complaint. *Background* is a concise description of the past medical history and the patient's response to treatment to that point. *Assessment* includes pertinent subjective and objective assessment findings such as mental status, vital signs, neurologic findings, blood glucose level, and Glasgow Coma Score. *Recommendation* is basically what you are requesting for the patient, such as an order to administer another nitroglycerin spray. The following is an example of the SBAR method of organizing communication:

Situation	Dr. White, this is EMT Stockdale. I have a 56-year-old male patient complaining of chest discomfort.
Background	He has a history of a previous MI and has a stent. His pain, which is typical of his previous MI, began 50 minutes ago. He experienced no relief of pain following administration of three nitroglycerin sprays or oxygen therapy. He was also given a 180 mg aspirin tablet.
Assessment	He is alert and his blood pressure is 168/98 mmHg. His heart rate is 108 bpm. He is very anxious.
Recommendation	I would like to administer another nitroglycerin spray.

The primary advantage of using SBAR is that medical professionals involved in the communication have a certain expectation of what information will be given and how the information is to be communicated. This standard approach dramatically lessens the chance for miscommunication, lack of communication, or misunderstanding.

Communicating with the Receiving Facility

As an EMT, you will also be expected to communicate with medical personnel at the receiving facility to which you are transporting a patient. Staff at the facility need as much pertinent information about the incoming patient as possible to prepare for his arrival and to ensure continuity of care. Doctors and nurses may need to assign rooms and set aside equipment for your patient. They may need to request additional personnel to help with the patient upon your arrival. If, through your communication with the receiving facility, you provide an accurate picture of your patient's condition, the correct decisions about the assignment of resources can be made at the facility.

The information the EMT conveys to the receiving facility is quite similar to that given to medical direction. When you are about to leave the scene of a call and begin transport, contact the receiving facility with this information:

1. Your unit's identification and its level of service (BLS, ALS). You may identify yourself as the provider giving the report.
2. The patient's age and sex.
3. The patient's chief complaint.
4. A brief, pertinent history of the present illness, including scene assessment and mechanism of injury.
5. Major past illnesses.
6. The patient's mental status.
7. The patient's baseline vital signs.
8. Pertinent findings of your physical examination of the patient.
9. Description of the emergency medical care you (and Emergency Medical Responders) have given the patient.
10. The patient's response to the emergency medical care.
11. The patient's current condition.
12. Your estimated time of arrival at the facility.

As you transport the patient to the receiving facility, you will continue to reassess him and record your findings. Depending on your local protocol, you may be expected to communicate those findings, especially if the patient's condition is deteriorating, while you are en route. Make it a routine practice to report any deterioration or improvement to the receiving facility. In some systems, it may be necessary to notify the receiving hospital when you have arrived at their facility.



■ **FIGURE 9** You will deliver an oral report at the receiving facility.

The Oral Report

Once you are at the facility and turning the patient over to staff there, you will deliver an oral report that takes into account your reassessment findings (Figure 9 ■). That oral report should summarize the information you already broadcast to the facility, along with updated information from your reassessment. Key items to include are the following:

- The patient's chief complaint
- The patient's vital signs taken en route
- Treatment given to the patient en route and his response to it
- Pertinent history not given in the earlier report to the facility

In addition to your oral reports to the receiving facility, both over the air and in person, you must also supply the facility with a copy of a written report. This document is known as the prehospital care report (PCR).

Transferring Patient Care to Another EMS Provider

Sometimes it is necessary to transfer care of a patient from one EMT to another in the field. Make sure that you follow all your agency's policies and protocols when transferring patient care to another EMT or paramedic. When other EMS personnel arrive on the scene to take over patient care, it is important that you identify yourself and give them a verbal report. This report should include the following:

1. The patient's current condition
2. The patient's age and gender
3. The patient's chief complaint
4. A brief, pertinent history of what happened
5. A description of how you found the patient
6. Any major past illnesses
7. Vital signs you obtained from the patient

8. Pertinent findings of the physical exam
9. Any emergency medical care that was given
10. The patient's response to any emergency medical care that was provided

After giving your report, make sure you ask if they need any additional information before you leave the scene. Also, do not forget to obtain any information that you will need to complete your documentation of the call and transfer of care. Some agencies may request a copy of your documentation before you leave the scene so it can be included with their report to the facility.

The SBAR method of standardized communication can be particularly useful during the handoff from other emergency medical responders at the scene, when seeking orders from medical direction, and when providing the transfer report on arrival at the medical facility.

TEAM COMMUNICATION AND DYNAMICS

The EMT is a member of a team of health care professionals. At many scenes, the EMT will function as part of a team composed of fire, rescue, law enforcement, and other professionals. In these situations, the EMT is expected to communicate professionally with those working within the team as well as with others. Good team communication not only improves how the team accomplishes its goals, it also improves the quality of services provided to the patients and the community.

Taking Charge

It will be necessary for you as an EMT to take charge confidently at the scene to which you have been called. Your personal appearance and professional manner from the time of your arrival throughout your stay at the scene will help communicate to bystanders and family members, as well as to the patient, that you are in charge.

If you arrive on the scene and observe that the patient is alert and that no life-threatening conditions are present, it may be appropriate to be briefed—before you make direct contact with the patient—by the Emergency Medical Responder, whether that person is a police officer, a relative, or someone who has given first aid. This need not take more than a minute.

If the patient is unresponsive and life-threatening injuries are observed, go directly to the patient. Ask questions of the bystanders as you provide emergency care.

If a doctor is present or if fire-rescue personnel or police are also on the scene, an orderly transfer of authority must occur so that you are not simultaneously engaged in a dispute and attempting to care for the patient. Sometimes just asking a clear question like, "We're Emergency Medical Technicians. Is there anything we

need to know before we provide emergency care?” will let rescue and police personnel brief you quickly and allow you to take over patient care. If a doctor is present, say, “We’re certified EMTs, Doctor. How can we help?” In any situation, the EMT must be the advocate for good and proper patient care and not allow secondary issues to interfere with it.

Radio Codes

Some EMS systems use radio codes, either alone or in combination with messages in plain English. Radio codes can shorten radio air time and provide clear and concise information. They can also allow transmission of information in a format not understood by the patient, family members, or bystanders. There are, however, several disadvantages to the use of codes. First, the codes are useless unless everyone in the system understands them. Second, medical information is often too complex for codes. Third, some codes are infrequently used, so valuable time may be wasted looking up a code’s meaning.

Some EMS services still use the Ten-Code system (for example, “10-4” meaning “received and understood”). Published by the Associated Public Safety Communications Officers (APCO), it is used primarily for dispatch and occasionally in EMS. Many EMS systems, however, have abandoned all codes in favor of standard English.

Times

U.S. Department of Transportation guidelines call for the use of accurate and synchronous clocks by EMTs. As an aid to ensuring such accuracy and synchronicity, most systems use military time rather than standard A.M. and P.M. designations in radio and written reports. Military time is a very simple system and correlates with standard time as follows:

1:00 A.M. to 12 Noon = 0100 to 1200 hours

1:00 P.M. to Midnight = 1300 to 2400 hours

Examples of the military time system include the following:

1427 hours is 2:27 P.M.

0030 hours is 30 minutes after midnight

Radio Terms

Radio conversations can be shortened by the use of one- or two-word phrases that are universally understood and employed. The following is a list of frequently used radio terms:

Break—afford a “pause” so that the hospital can respond or interrupt if necessary

Clear—end of transmission

Come in—requesting acknowledgment of transmission

Copy—message received and understood

ETA—estimated time of arrival

Go ahead—proceed with your message

Landline—refers to telephone communications

Over—end of message, awaiting reply

Repeat/say again—did not understand message

Spell out—asking sender to spell out phonetically words that are unclear

Stand by—please wait

10-4—acknowledging that message is received and understood

THERAPEUTIC COMMUNICATION

Principles of Patient Communication

Communication is an essential part of your job as an EMT. You must be able to communicate effectively with all those you come in contact with while you are on a call. Communication involves more than just what you say. Communication is a dynamic process that incorporates verbal and nonverbal expressions into meaningful messages that are received by others. These messages are composed of thoughts, ideas, information, and emotions that are sent by one person and interpreted by another. Many factors such as gender, culture, age, environment, and personal experience can influence how one sends and interprets these messages. As an EMT, you need to know how to communicate with patients in a manner that establishes a positive relationship. Once a positive relationship is formed, it becomes easier for you to get the information you need from the patient and to provide care.

The Communication Process

Communication begins when an individual, the *sender*, uses words and symbols to create a message. This process of converting information into a message is called **encoding**. The encoded message is sent to the *receiver*, the individual for whom the message is intended. To understand the message, the receiver must decode it. The process by which a message is translated and interpreted by the receiver is called **decoding**. Decoding is affected by the receiver’s individual perceptions, values, and experiences. It is important that the intended meaning of the message be accurately decoded. The more closely the decoded message matches the intended meaning of the encoded message, the more effective the communication will be.

One way to ensure that the message is received as it was meant to be is through **feedback**. Feedback is any information that an individual receives about his behavior. It can be verbal or nonverbal, positive or negative. The receiver creates feedback to the message he received, then encodes that feedback to the original

sender. The sender, in turn, must decode the feedback in order to interpret it. Once again, decoding of the feedback message is affected by the decoder's personal perceptions, values, and experiences. This exchange of messages and feedback is repeated throughout the communication process.

Communication Responses

It is necessary to develop and establish a good rapport with your patients. Putting the patient and yourself at ease allows for better communication. If you treat your patients with respect, compassion, and empathy, your communication with them will be easier and more accurate.

As an EMT, you should understand that each patient will interpret your messages differently. You should also be aware that you need to interpret the patient's messages as closely as possible to the way he intends them. Actively listening to your patients will help you to accurately interpret what they mean to tell you and to understand what types of responses are most appropriate for each patient.

Some techniques that may facilitate communication with your patients are:

- **Clarification.** Sometimes it is necessary for the EMT to ask more questions in order to clarify the meaning of a message. Sometimes the patient may be so upset that he can't verbally express what he means to say. Let the patient know that you didn't understand what he meant, and ask him to say it again. If the message is not clear to you, communication will be impaired.
- **Summary.** It may be necessary to summarize your patient's messages in order to understand what he means. Rephrase what you have interpreted, and repeat it to the patient. You can ask if your summary is close to what he meant or felt. If your summary does not accurately represent the patient's feelings or ideas, ask for clarification.
- **Explanation.** As an EMT, you will have to explain many things in response to your patient's questions. You should present the information in a way that he can understand it. Make sure you consider the patient's age and any language barriers when forming your response. You will also need to explain what he should expect to happen before it occurs. This will help establish trust and a good rapport between yourself and the patient. Watch for verbal and non-verbal clues that he does or does not understand your explanations.
- **Silence.** Sometimes what we don't say is more powerful than what we do say. Silence allows time to think and gain insight into what is occurring. It also allows time for patients who may be slow to answer because of language or other barriers to formulate an appropriate verbal response. Silence for an outgoing individual may be therapeutic, but for an individual

coping with depression it may not be beneficial. As an EMT, you must consider your patient's needs when utilizing periods of silence.

- **Reflection.** This technique allows you to let the patient know that you understand what he said or feels. It redirects the patient's feelings and statements back to the patient in a way that promotes empathy, respect, and understanding.
- **Empathy.** Empathy is the ability to recognize and understand someone else's state of mind or feelings. It is the ability to put yourself in the patient's shoes. It is a characteristic that EMTs need to possess. Although you cannot actually experience what your patient has experienced, empathy enables you to understand how it has affected him.
- **Confrontation.** Sometimes it is necessary to confront a patient about discrepancies in his feelings, attitudes, beliefs, or behaviors. This is NOT to be accomplished through anger and aggression by the EMT. It may require an EMT to be more assertive than usual, but with the assertion comes a desire to help the patient overcome his crisis and understand his own feelings and behaviors. Even when you need to confront or challenge him, always respect the patient and act in the patient's best interest.
- **Facilitated communication.** Facilitated communication is done by supporting the patient's hand, wrist, arm, shoulder, or elbow so that he can select letters on a letterboard, electronic keyboard, or other communication device to communicate with you. People with certain developmental or sensory disabilities may require you to act as a facilitator. You must be careful not to influence what is being communicated by the patient to you.

Communicating with the Patient

When you arrive on a call, you may find the people at the scene injured, frightened, anxious, and possibly angry or in shock. These are all high-intensity emotions that can make getting information from and delivering information to people difficult. To establish effective face-to-face communications with people in such circumstances, keep in mind the three Cs: competence, confidence, and compassion. If you convey these qualities in what you say and do, you will get better cooperation and have to deal with fewer hostile or irrational responses. As an EMT, it is important that you build a good rapport with your patient to promote trust. Patients expect that you will provide professional care and have a true concern for their needs.

Patient Contact

Developing rapport and communicating with your patient begins when you arrive on scene. It includes everything from how you present yourself physically to

what you say and do from that first moment on. Follow these guidelines when communicating with the patient:

- First impressions are critical. Before you arrive on scene, make sure that your physical appearance positively reflects the health care professional you are. Just as your patient's appearance makes a first impression on you, your appearance makes an impression on your patient. Dress professionally and approach your patients with compassion and confidence.
- When you approach the patient, introduce yourself as you want to be called. Ask for the patient's name. Also ask what he wishes to be called. With older people, err on the side of formality—"Mrs. Lubeck" or "Mr. Perez"—since they may consider it disrespectful for a stranger to address them by their first name. Remember to continue to use the patient's name throughout your contact with him. This shows respect and conveys interest in the patient as an individual.
- Introduce the rest of your team to the patient. Although you may not be able to give the names of every responder on the call, make sure the patient knows which agencies and personnel are helping him. Your partner and anyone working closely with the patient should be identified by name.
- Be sure also to say, "I'm going to help you. Is that all right?" This will help in gaining consent for treatment.
- Don't be surprised if a patient says, "No!" or "I'm okay!" when you ask about providing assistance. Usually the resistance will be a form of denial or another defense mechanism because he is simply frightened or confused. **Defense mechanisms** are psychological coping strategies the person may use to protect himself from unwanted feelings or thoughts. Although these defense mechanisms are used by patients to protect themselves, they can create barriers to communicating and interacting with them. Keep talking calmly and try to shift the patient's focus or use distraction by saying something like, "Looks like an accident happened here. I can see there's something wrong with your shoulder. Does it hurt?" or "Your husband called us because he's worried about you. Would it be all right if we talked about it for a minute or two?"
- Speak clearly, calmly, and slowly. People who are under stress or in medical shock process information more slowly. Speak distinctly and simply. Try to use language an average person will understand rather than medical terminology, codes, jargon, and abbreviations. Try to speak calmly and give orders quietly. Emotions can escalate quickly in tense situations.
- Use a professional tone of voice. Speak with concern and compassion. Modulate your voice if needed. Raise your voice only if the patient is hard of hearing. Avoid tones that might be perceived as flippant, sarcastic, angry, or otherwise unprofessional.
- Respect the patient's privacy. Try to limit the number of bystanders around the patient. Speak so the patient can hear you, but do not broadcast information to the rest of the crowd. Some patients may be reluctant to discuss their condition, even around friends or family, so try to interview the patient alone if possible.
- Limit interruptions when communicating with your patient. This will give you the chance to actively listen to your patient and help you communicate better with him. Allow interruptions only when absolutely necessary for the patient's care.
- Think about the position you assume in relation to the patient and be aware of your own body language. Be aware of the space between you and your patient.
- Try to control the physical environment. Make sure that the lighting is sufficient for you and the patient to see each other. Limit outside noise and interference so that you may actively listen to what your patient has to say. Turn off distracting equipment if it is not necessary for patient care. Ask for your patient's permission to turn off the television or other loud devices if they interfere with your ability to hear and communicate.
- Be courteous. Patients and bystanders are often emotionally unstable. Explaining what you are doing, giving them choices when possible, being honest with them, and apologizing for necessary discomfort are ways of allowing them a sense of control in the situation.
- Actively listen to your patient. When a patient asks you questions, reply as fully as you can, explaining when you cannot answer a question. Also, give the patient ample time to answer a question before you ask another one.
- Be honest with the patient. If you are able to earn and maintain the patient's trust, it is often easier to provide the care that he needs. If that trust is lost, patient care may become more difficult to provide.

The Patient Interview

It is important to conduct an interview that will provide you with as much information as possible about your patient and the emergency. To do this, you need to know what types of questions to ask your patients and how to ask them. When you combine effective interviewing techniques with genuine compassion and concern, you will be able to gather the information you need to help your patients.

Nonverbal Communication

As stated earlier, your communication with the patient begins before you speak a word. Just as your physical appearance conveys professionalism, your nonverbal communication, or body language, conveys meaning too. Nonverbal communications such as those listed

next speak just as strongly as, if not more strongly than, the words you say.

- **Posture.** The way you position yourself in relation to your patient will impact how you are perceived. Use your arms and body position effectively. Approach the patient with open arms, open hands, and relaxed shoulders. That will convey a message of concern, confidence, safety, and care. If you cross your arms, point your finger, clench your fists, or shake your head negatively, you signal that you are angry, hostile, disgusted, or uncomfortable around the patient (Figure 10a ■). Such signals limit communication and often make the interviewing process uncomfortable and unproductive. Position yourself at the same level as your patient to indicate that you see the patient as your equal (Figure 10b ■). If you stand over him, it suggests that you see yourself as an authority figure,



■ **FIGURE 10a** Standing over a patient with crossed arms conveys an intimidating sense of yourself as an authority figure.



■ **FIGURE 10b** Position yourself at the patient's eye level to indicate that you see the patient as your equal.

which may be intimidating. An exception to this is when a patient seems hostile or aggressive, in which case you may prefer to keep your eye level above his to assert your authority. When addressing children or the elderly, positioning yourself below their eye level may help them feel more comfortable and secure.

- **Distance.** Be aware of the distance between you and your patient. In American culture, the space within less than 1½ feet of an individual is called the **intimate zone**. Entering your patient's intimate zone may be seen as threatening, even though you have to be close in order to make a proper physical assessment. It is best to use a more personal distance of about 1 to 4 feet from your patient when you are communicating with him verbally. Ask and inform your patient about what you need to do before you enter his personal or intimate space. Most patients understand the need for you to enter this space. If you meet resistance, step back until you establish a better rapport and the patient trusts you to enter his space. An acceptable social distance to talk to another person without shouting would be about 4 to 12 feet. In public, most people will keep 12 feet or more between themselves and another person, but it sometimes cannot be done. Other cultures do not share the same spatial zones as Americans. Misunderstandings can occur when too much or too little space is used. Consider a patient's culture and nonverbal responses when invading his personal space. Observe your patient's eye contact and other reactions when you approach him. This may provide a guide as to how much distance to maintain between you.
- **Gestures.** **Gestures** are nonverbal body movements that convey meaning to others. They are composed of movements from any part of the body, including facial expressions. Facial expressions can include winking, smiling, rolling your eyes, pushing your eyebrows together, or any other expression that conveys an emotion. Your patient's facial expressions can indicate fear, anxiety, pain, sorrow, relief, or dismay. It is important that you watch and acknowledge your patient's expressions as indications of how he feels. A warm, kind smile indicates your concern and welcomes communication from your patient.
- **Eye contact.** Make and maintain eye contact when you are speaking with the patient. Doing so helps to communicate your interest and concern. However, you should be aware that some cultures (Asians, Native Americans, Indochinese, and Arabs, for example) consider direct eye contact impolite or aggressive; you may have to modify your behavior if you note that a patient is reluctant to make eye contact with you.
- **Haptics.** **Haptics** is the study of touching. Touch can be one of the most effective ways to help calm the patient and express your compassion and empathy. Holding a hand, patting a shoulder, giving a hug, or laying your hand on a forearm can be more



■ **FIGURE 11** Most patients welcome a warm, compassionate touch.

powerful than words if done sincerely (Figure 11 ■). Most patients welcome a warm touch from the EMT who has come to help them. A patient's age, gender, culture, and experiences may influence how the touch is perceived. Maintaining eye contact can help you decide if the patient will allow you into his intimate space so that when you need to touch the person, that touch is not perceived as encroachment.

Both the EMT and the patient communicate verbally and nonverbally throughout the entire emergency call. Remember that nonverbal communication is individually interpreted by both of you and is exchanged just as verbal communication is. Culture, age, gender, and experience influence how nonverbal communication may be perceived. Sometimes, what is said verbally is contradicted by nonverbal expressions. When this contradiction occurs, the meaning of the message is primarily derived from what was expressed nonverbally.

Asking Questions

Most patients are more than willing to talk to you. Most will provide answers to the questions you ask without hesitation. Make sure that you ask one question at a time. Give the patient adequate time to respond to your question, and listen to his response before you ask another question. Choose language that the patient can understand. Avoid using professional jargon that your patient is not familiar with. Also, consider the patient's age and stage of development when asking a question. Adjust your communication strategies and techniques when interviewing children, elderly patients, patients with special needs, and patients from different cultures. Take notes so that you can remember the information the patient provides to you. Different types of questions promote different responses from your patient.

- **Open-ended questions.** Questions that allow the patient to give a detailed response in his own words are called **open-ended questions**. This form of questioning will provide you with the most information. For example, when you arrive on scene you need to obtain the patient's chief complaint. If you ask "What seems to be the problem?" it allows the patient to state his chief complaint in his own way. "How are you feeling?" is another open-ended question that will provide significant information about your patient's condition. Keep in mind that some patients may not be able to provide a lot of detail because of their physical or emotional state during the emergency. If possible, however, ask open-ended questions throughout the patient interview.
- **Closed-ended questions.** Questions that call for specific information from the patient are called **closed-ended questions**, or direct questions. These types of questions are helpful when you need to get information quickly or to obtain additional information that may not have been provided from an open-ended response. They can be used to direct and control the flow of the interview. "What medications do you take?" and "When did the pain begin?" are examples of closed questions. The patient will normally respond with only the information you have asked for. These questions are usually easier for the patient to answer. Many of the questions that you ask during your history taking will be closed questions.

Considerations in Interviewing

It is important to keep the patient interview moving in a therapeutic direction. Some considerations to keep in mind when you are interviewing the patient include the following:

- **Do not ask leading or biased questions.** **Leading questions** are questions that suggest an answer guided by the individual who is asking the question. An example of a leading question would be "So you're having chest pain. It really hurts badly doesn't it?" This type of question promotes answers that may not be accurate or beneficial to the patient interview and may lead the EMT to ask a series of questions that may not relate to the patient's actual complaint or symptoms.
- **Do not interrupt your patient when she is speaking.** You cannot listen or communicate effectively if you are not paying attention to what your patient is saying or doing. You may miss pertinent information that could affect your patient care if you do not allow the patient to finish her thoughts (Figure 12 ■).
- **The patient or the EMT may talk too much.** When a patient is overly talkative, one way to help the interview progress is to ask more closed questions. This will



■ **FIGURE 12** Look at your patient as she speaks to be sure she knows you are listening. Enter the information on your report only when she has finished what she has to say.

help keep the answers shorter while still providing useful information. If you are overly talkative, you will not be able to actively listen to what your patient has to say.

- **Do not provide false assurance.** Never lie to your patient. Be honest but not heartless. Remember that most patients are overwhelmed by the emotions and situation they are enduring and look to you for safety, empathy, and assurance. If you genuinely address their concerns, they will typically feel more at ease.
- **Do not give inappropriate advice.** As a medical professional, you will be asked for advice by your patients. They want to have answers about their condition, but the best advice you can give them is to be evaluated by a physician at the hospital. You should not offer any form of diagnosis of your patient's condition, nor should you discourage your patient from receiving prompt medical treatment. Remember that you are an authority figure, and your opinion matters to your patients. Do not overstep or abuse the trust they have placed in you.
- **Do not ask "why" questions that imply blame.** Remain impartial and nonjudgmental at all times. Remember that your primary concern is for your patient. By asking questions like "Why did you do that?" you are creating an intimidating atmosphere that will impede both your communication and your patient care.
- **Family preference issues.** Although most family members are trying to help the patient, it is important to know your department's policies about interacting with family. Adults who are capable of providing their own informed consent are entitled to make their own decisions, regardless of their families' preferences. Explain the patient's rights to the family in an empathetic way. However, it is necessary to consider the families' preferences when treating and transporting children who require parental consent. Similarly, if the patient is mentally incompetent or is incapable of providing informed consent for any other reason,

family preferences should be considered and honored if possible. If, for whatever reason, the patient's situation dictates the use of a facility that is not preferred by the family or patient, explain kindly to the family why the facility you suggest is necessary. For example, if you have a major trauma patient but the family requests that you take the patient to a small local community emergency department, you can explain that the facility they want to go to may not have the staff or equipment to properly care for their loved one's injuries. Most patients and family members will be responsive to the change if you explain why it is in the patient's best interest.

- **Motivating the unmotivated patient to talk.** Start the interview in the normal way. Attempt to use open-ended questions to gain pertinent information. Make sure the patient understands the questions you are asking. Reassure him that you are there to help him. If your patient speaks a different language, you may choose to use a language line, which is an interpreter service provided by telephone. If the patient still has difficulty or refuses to answer your open-ended questions, ask closed questions instead. Provide positive feedback to any answers you receive and continue to build rapport. Continue to ask questions your patient can understand and continue to provide positive feedback to him. If your patient has any special needs, make sure you address them appropriately.
- **Interviewing a hostile patient.** Sometimes you must interview a patient who is hostile and does not want your help. Some patients may be under the influence of street drugs or alcohol while others may have psychological or other behavioral issues. Remember that if your safety is compromised, you must not approach the patient until the scene is safe. Request help from law enforcement if necessary. Some patients may require restraint. If they do, know your department's protocols and policies. It also may be necessary for you to have additional personnel available with you in case the patient becomes violent or makes false accusations. Once the scene is secured and safe, begin the interview as usual. To overcome some of the hostility, try to establish a good rapport with the patient. Make sure that you maintain a professional nonthreatening demeanor. Advise the patient that you are there to help him, and explain the benefits of having his cooperation. Inform your patient what conduct and behaviors are acceptable, and provide him with alternative ways to express himself. Then, conduct the interview in the same way that you would for any other unmotivated patient.

Special Circumstances

There are some categories of patients with whom you will have to make extra efforts to establish effective communications (Figure 13 ■). You must adjust your



■ **FIGURE 13** You may need to make a special effort to communicate with some patients, for example the elderly or those who don't speak English.

communication strategies to meet the needs of your patients. Remember that, even when you are having problems communicating with someone, you should remain calm, confident, and caring. The following sections describe special communication circumstances that should be addressed by the EMT.

Transcultural Considerations

When providing care to a patient, the EMT should consider how the patient's culture will influence the dynamics of the call. **Culture** is composed of the thoughts, communications, actions, and values of a racial, ethnic, religious, or social group. It impacts how information is received, how illness is viewed, and what treatments are preferred by the individual patient. It is important to understand that both the EMT and the patient bring cultural stereotypes to a professional relationship. These stereotypes must be overcome to achieve a therapeutic relationship. **Ethnocentrism** is the view that one culture's way of doing things is the right way and any other way is inferior. EMTs should not view any culture as superior to another. It is important for the EMT to respect the patient's culture and avoid any cultural imposition. You should never impose your beliefs or values on your patients.

When addressing a patient from a different culture, you should begin by introducing yourself as you want to be called. Pay careful attention to the space between yourself and the patient. Remember that various cultures view space differently. Be sure to watch your patient for nonverbal signs that you are or are not maintaining an appropriate amount of space between you. In other cultures, many people accept the role of the sick person in different ways. Some of your patients may use established folk medicine practices before calling for your assistance.

Some patients may not speak English, and you may not speak their language, thus creating a language

barrier between you and them. You can ask if relatives or bystanders can interpret for you. If no one at the scene can assist, check with dispatch or medical direction to see if they have anyone who can interpret for you over the radio. Toll-free interpreter lines are available. Remember to consider who has interpreted the information for you.

Considerations for Elderly Patients

Be prepared to take extra time in communicating with elderly people. Aging can bring with it potential problems with hearing and vision. Do not assume that all elderly patients have such problems, but if you detect signs of them, show understanding. Speak slowly, distinctly, and more loudly to such patients. Obtain their glasses or hearing aids for them. This will help in building a good rapport and communicating more effectively.

When dealing with a person who has a hearing problem, be sure your lips are visible as you speak. Make sure that you speak clearly, slowly, and distinctly. If a patient is deaf but indicates he can communicate through American Sign Language (ASL), check to see if relatives or bystanders can interpret for you. Also consider writing notes on a pad to communicate.

Never appear brusque or impatient, especially when helping an elderly patient. Always listen to the patient and allow ample time to answer your questions. Elderly patients may require extra assistance in collecting valuable information or their medications at the scene. Remember that these patients may easily become tired, and offer to help them get what you need for them. Many elderly patients resent being talked to as if they are children or mentally incapacitated. Make sure that you treat elderly patients, as you do for all patients, with respect and compassion and without condescension.

Considerations for Children

Working with children requires extra patience and effort. Having a child's parents present can aid in communicating with the child, but be sure the parents understand that they should remain calm and confident in front of the child. If they seem too frightened or disoriented by the situation, they will communicate those feelings to the child and complicate your ability to assist him.

Positioning yourself close to the patient's eye level is especially important with children. A uniformed figure towering overhead can be terribly upsetting to a child. Crouch down to the child's level or sit on the floor if the circumstances seem to suggest it. Maintain eye contact and speak calmly. Try to give clear explanations of what you are doing by using simple language and without talking down to the child. Always be honest with a child. If you lie to him, it will be extremely difficult to ever regain his trust.

Chapter Review

SUMMARY

Communication is one of the most fundamental functions performed in emergency medical services and is involved in all phases of a call. The call is initiated by communication between the patient, a relative, or a bystander, and the call taker. You are then notified by either verbal or digital communication to respond to the scene. At the scene and at the receiving facility, you will communicate with members of your team and with other health care professionals.

Communication during patient assessment and care is a primary means for gathering information from and about the

patient and for providing appropriate emergency care to the patient. It should be performed in a manner that achieves a positive relationship with the patient and that will benefit the patient's outcome. You can adjust your communication strategies to develop a good rapport and facilitate communication with the broad variety of patients that you will encounter.

You will provide a verbal report to the receiving medical facility over the radio and finally in person. As communication systems continue to become more technologically sophisticated, you must refine your communication practices to meet the needs of the system.

Case Study Follow-up

Scene Size-up

You have been dispatched to 101 Bate Road with a report of a man bleeding. You approach the scene carefully, looking for any signs of danger. You see nothing that causes you concern, but you still exercise caution as you and your partner don gloves and protective eyewear and get out of the ambulance. As you do, a man who had been sitting next to the garage approaches you. He is holding a blood-soaked rag around his right hand. His shirt and pants are also bloodstained. The man appears pale and seems to be sweating a little.

As you start toward him, the man says, "You guys got here fast. I'm glad to see you. I feel like an idiot having to call, but no one else was home and I felt a little dizzy seeing all the blood. The bleeding's almost stopped now, though. Oh, yeah. Hi. I'm Dave Behrens."

You introduce yourselves and lead Mr. Behrens to the ambulance where he can sit down. When he's seated, you ask, "How did you injure yourself, Mr. Behrens?" He replies, "I was cutting some molding with my saber saw at my workbench. That's in the garage. I think the cat must have gotten in and knocked over a bottle. Anyway, it startled me. I turned to look and ran my hand into the blade. Idiot."

Primary Assessment

Your general impression of the patient is of a male in his mid-40s, injured, and alert. Because he responds fully to all questions, you see he has no breathing problems and his airway is patent. You assess his radial pulse on the uninjured side and find it to be slightly fast, but strong. The rag wrapped around the hand he says he injured is blood soaked, but no blood appears to be dripping from the wrapping now. Because the bleeding appears to be controlled and Mr. Behrens displays no signs or

symptoms of shock, he is not considered a priority for rapid transport.

Secondary Assessment

Mr. Behrens has already given you the mechanism of injury, a cut from the blade of a saber saw. You now expose the injury, carefully removing the greasy rag in which he has wrapped the hand. The injury is an approximately 3-inch-long laceration across the base of the palm. The wound is now bleeding only minimally. You apply a sterile dressing to the wound and bandage it in place.

You assess distal perfusion by observing skin color, which appears normal, and by feeling the injured hand, which is warm and moist. You ask Mr. Behrens if he can gently wiggle the fingers of the injured hand and he does so. You then ask him to turn his head to one side and identify the fingers on the injured hand that you touch. He does so successfully.

You and your partner obtain a set of baseline vital signs. Mr. Behrens's blood pressure is 148/86 mmHg. His heart rate is 92 per minute. His respirations are 14 per minute, full and adequate. His skin is normal color, warm, and moist.

You take a history. It reveals the following: Mr. Behrens says the wound is causing slight pain; he has an allergy to penicillin; he is not currently taking any medications; he denies having any significant medical problems; he had a cup of coffee about 15 minutes before cutting himself; he denies that there were any strange or unusual problems prior to the accident.

You explain to Mr. Behrens that a doctor should look at and treat the cut and that you will transport him to the hospital. He refuses, however, to ride on the cot, saying, "It's bad enough that I had to call you for a dumb mistake.

continued

Case Study Follow-up *continued*

I'm not going to go in like something from *ER*." He agrees to ride on the jump seat and you secure him to it.

As you start off, you radio in a report: "Dispatch, this is Unit 2. We are en route to Columbia Memorial Hospital with a nonpriority patient." Dispatch replies, "Unit 2 en route to Columbia Memorial at 1143 hours."

Reassessment

Your partner is riding in the back with Mr. Behrens. She performs the reassessment. She finds that Mr. Behrens remains completely alert and oriented. Blood has not soaked through the dressing, an indication that bleeding has been controlled. She takes another set of vital signs, then radios ahead to the hospital: "Columbia Memorial, this is Craryville BLS Unit 2 en route to you with an ETA of 10 minutes. We have a 46-year-old male with a 3-inch laceration of the right hand caused by a saber saw. The patient is alert and oriented. The patient says he is allergic to penicillin. His vital signs are blood pressure 146/84, radial pulse 80, respirations 14 and of good quality, skin normal, warm, and moist. We have dressed and bandaged the wound. Bleeding appears to have stopped and patient acknowledges only slight pain from the wound."

Your partner continues to monitor Mr. Behrens during transport, but notes no major changes in his condition other than that he now seems completely relaxed. As you pull up to the hospital, you radio this message: "Dispatch. This is Unit 2 arriving at Columbia Memorial." Dispatch acknowledges with "Unit 2 at Columbia Memorial at 1152 hours."

You and your partner assist Mr. Behrens from the ambulance and transfer him to the care of the hospital staff. Your partner says to the emergency department nurse, "This is Mr. David Behrens. He has a 3-inch laceration to the palm of his right hand from a saber saw. Mr. Behrens is allergic to penicillin. We applied a dressing and bandages to the wound and the bleeding appears to have stopped completely. His vitals are blood pressure 144/82 mmHg, pulse 80 bpm, respirations 14 per minute, skin color, temperature, and condition are normal."

The nurse takes charge of Mr. Behrens while your partner fills out the prehospital care report. You begin to straighten and clean the back of the ambulance. When your partner returns, you radio, "Dispatch, this is Unit 2. We are available for assignment." Dispatch replies, "Unit 2 available for assignment at 1207 hours." You then start back to base, remembering that you will radio dispatch upon your arrival there.

IN REVIEW

1. List the standard components of an EMS communications system.
2. Explain the function of a repeater.
3. Explain legal considerations that apply to EMS communications.
4. List the points at which EMTs on a run are expected to communicate with dispatch.
5. Explain the procedure that should be followed when medical direction orders an EMT to administer a medication or follow a designated procedure with a patient.
6. List the information that the EMT should provide to the receiving facility while en route with the patient.
7. List the information the EMT is expected to provide in the oral report when turning a patient over at a receiving facility.
8. Explain the importance of eye contact with a patient.
9. Explain the possible effects on communication with a patient of (a) the EMT's body position and (b) touch.
10. Explain what measures an EMT might take when trying to communicate with a patient who is deaf or hearing impaired.
11. Explain the process of communication.
12. Identify special interview situations that require communication adjustments.
13. Explain how culture can influence communication.
14. List hazards associated with interviewing patients.
15. Describe how to use questions to obtain specific information from a patient.
16. List possible types of responses that are common in communication.
17. Describe how to build a good rapport with a patient.

CRITICAL THINKING

You arrive on the scene and find a 36-year-old female patient who complains of severe abdominal pain. The patient is alert and oriented. Her vital signs are BP 88/64 mmHg; HR 128 bpm; R 24 and adequate chest rise; skin is pale, cool, and clammy; SpO₂ is 96% on room air. Her radial pulses are weak. She states the pain began suddenly about 4 hours ago and has progressively worsened. She was sitting on the couch watching television when it began. Nothing makes the pain better or worse. The pain is dull and aching, and it is intermittent. The pain does not radiate.

The patient rates the severity of her pain as 8 on a scale of 1 to 10. She states she feels light-headed and dizzy every time she stands up, and she also feels nauseated. She has no known allergies and takes over-the-counter Prilosec for heartburn. She has no pertinent medical history. She reports she had her tonsils removed when she was 10 years old. She has had nothing to eat or drink for about 7 hours. She states that she has “not felt real good” for a few days, and other than the time she has spent working at her desk at work, she has been at home on the couch. Her pupils are equal and sluggish to respond. She has no JVD. Her breath sounds are equal and clear bilaterally. Her abdomen is rigid and tender. There is no

evidence of trauma to the abdomen. She has good motor and sensory function in all four extremities. Her peripheral pulses are very weak.

En route to the hospital, the patient begins to close her eyes. You must verbally instruct her to open her eyes. Her BP is 82/62 mmHg, HR 134 bpm, and R 26 with adequate chest rise. The pulse oximeter is providing an “error” reading. Her skin is more pale, cool, and clammy and her radial pulses are barely palpable. Your estimated time of arrival at the hospital is 7 minutes.

1. What techniques would you use to communicate with this patient?
2. Are there any special circumstances that you would consider when communicating with this patient?
3. Would you contact medical direction during your management of this patient?
4. What information is important to relay in the radio report to the receiving medical facility?
5. What information would you provide in your oral report to the medical personnel at the receiving medical facility during the transfer of care?
6. What information would you report regarding the change in the patient's condition?

ANSWER KEY

IN REVIEW

1. EMS communications are typically composed of a base station, mobile radios (transmitter/receivers), portable radios (transmitter/receivers), repeaters, digital equipment (encoders, decoders, and mobile data terminals), and cell phones.
2. Repeaters receive transmissions from a relatively low-powered source such as a mobile or portable radio and rebroadcast them at another frequency and a higher power. Repeaters make communications possible in EMS systems that cover a wide area or where the terrain makes transmission and reception of signals difficult.
3. The Federal Communications Commission (FCC) has jurisdiction over all radio operations nationally, including those in EMS systems. They license base stations, assign radio call signs, approve equipment for use, limit transmitter output, assign radio frequencies, and monitor field operations. The FCC also sets regulations to limit interference with emergency radio broadcasts and bars obscenity and profanity in radio communications.
4. Communicate with dispatch at the following points: (1) to acknowledge the call information was received; (2) to advise dispatch when the unit is en route to the call; (3) to estimate your time of arrival at the scene while en route and/or to report any special road conditions or unusual delays; (4) to announce your arrival on the scene (some systems must additionally report when they reach the actual patient); (5) to announce the unit's departure from the scene and announce the destination, number of patients transported (if more than one), and estimated time of arrival to the destination/hospital; (6) to announce your arrival at the receiving hospital or other facility or if you were meeting at a rendezvous point, announce your arrival there; (7) to announce that you are clear and available for another assignment after the patient has been transferred; (8) to announce that you are leaving the hospital and are on your way back to the station; and (9) to announce your arrival back at the station.
5. After receiving an order from medical direction to administer a medication or follow a procedure with a patient, repeat the order back word for word. This applies to things you're told not to do as well. If you do not understand an order, ask that it be repeated and then repeat it back to medical direction word for word. Orders that appear inappropriate should be questioned in case a misunderstanding may have occurred.
6. Report the following information to the receiving facility while en route with the patient: your unit's identification number and level of service (BLS or ALS), patient's age and sex, chief complaint, pertinent history including scene assessment and mechanism of injury, major past illnesses, patient's mental status, baseline vital signs, pertinent findings of the physical exam, description of the care you've provided, the patient's response to care, the patient's current condition, and ETA.
7. Once at the facility and turning the patient over to staff in the receiving facility, report the following information during your oral report: the patient's chief complaint, vital signs taken en route, treatment given and response to it, and pertinent history not included in the earlier radio report.
8. Making eye contact with the patient when you are speaking communicates your interest and concern. But be aware that some cultures consider direct eye contact as impolite or aggressive. You may have to modify your behavior if you note that the patient is reluctant to make eye contact with you.
9. The way you position yourself in relation to your patient will impact how you are perceived. Use your arms and body position effectively by approaching with open arms, open hands, and relaxed shoulders to convey a message of concern, confidence, safety, and care. Position yourself at the same level as your patient unless the patient seems hostile or aggressive; you may find it preferable to keep

your eye level above his to assert your authority. Be sensitive to the power of touch and the comforting, reassuring message it can send. Remember that you have to be comfortable, though, so as to not come across using it as a gimmick.

10. If the patient is deaf but indicates he can communicate with you through American Sign Language (ASL), check to see if relatives or bystanders can interpret for you. Also consider writing notes on a pad to communicate.
11. Communication begins when an individual, the sender, uses words and symbols to originate a message. Converting information into a message is called encoding. Once a message is encoded, it is sent to another individual, the receiver, to be decoded—a process of translation and interpretation. The closer that the decoded message matches the meaning of the encoded message, the more effective the communication can be. We refine the message through a process of feedback, and this exchange of messages and feedback is then repeated throughout the communication process.
12. Some categories of patients will require you to make adjustments to your communication methods in order to be most effective. When addressing a patient from a different culture, begin by introducing yourself as you want to be called and remember to pay careful attention to the space between yourself and the patient. When communicating with elderly patients, be prepared to take extra time; never appear brusque or impatient with helping an elderly patient. Make sure you always treat them with respect and compassion. Communicating with children also requires extra time, patience, and effort. Have the parents present to aid in communication and position yourself at eye level with the patient to avoid towering overhead. Give clear explanations and use simple language.
13. Culture is the thoughts, communications, actions, and values of racial, ethnic, religious, or social groups. It impacts how information is received, how illness is viewed, and what treatments are preferred by each individual patient.
14. One hazard of interviewing patients is that they may be hostile toward you. They may not want your help or may be under the influence of street drugs or alcohol.

Attempting to establish a good rapport and maintaining a professional and nonthreatening demeanor may help in gaining their cooperation. But ultimately, your safety is paramount and you should use law enforcement help if necessary in case the patient becomes violent.

15. Using questions to obtain specific information from a patient is an important part of the interview because different types of questions promote different responses. First, be sure to ask only one question at a time and give the patient enough time to respond. Listen to the answer before asking another question; sometimes we're so busy thinking about our next question that we forget to listen to the last answer. Asking "open-ended" questions will provide you with the most information, compared to a closed or direct question. For example, asking "What seems to be the problem?" (open-ended question) versus "When did the pain begin?" (closed question) will generate very different answers from the patient.
16. Common responses in communication are clarification, asking more questions to clarify the meaning of a message; summary, summarizing a patient's messages in order to better understand what they mean; explanation, presenting information in a way the patient can understand; silence (sometimes what we don't say is more powerful than what we do say); reflection, letting the patient know that you understand what he said or feels; and empathy, the ability to understand and recognize someone else's state of mind or feelings.
17. Building a good rapport with your patient starts with first impressions, your physical appearance, and professional dress. Upon approaching the patient, do so respectfully and err on the side of formality with older people. Introduce your team and emphasize that you are there to help while gaining consent. Be prepared if the patient initially denies that there is anything wrong and approach confidently, competently, and compassionately. Make and maintain eye contact, respect the patient's privacy, be aware of your body position, and work to control the physical environment and the presence of family members where appropriate. Be honest, be courteous, and actively listen.

GLOSSARY

base station the central dispatch and coordination area of an EMS communications system that ideally is in contact with all other elements of the system.

communication a dynamic process that incorporates verbal and non-verbal expressions into meaningful messages that are received and interpreted by others.

culture the thoughts, communications, actions, and values of a racial, ethnic, religious, or social group.

decoder device that recognizes and responds to only certain codes imposed on radio broadcasts.

decoding process by which a received message is translated and interpreted.

defense mechanisms psychological coping strategies individuals use to protect themselves from unwanted feelings or thoughts.

encoder device that breaks down sound waves into unique digital codes for radio transmission.

encoding process of converting information into a message.

ethnocentrism the view that one culture's way of doing things is the right way and any other way is inferior.

feedback any information that an individual receives about his behavior.

gestures nonverbal body movements that convey meaning to others.

haptics the study of touching.

intimate zone in American culture, the space within less than 1 1/2 feet of an individual.

leading questions questions that suggest an answer guided by the individual who is asking the question.

mobile data terminal device that is mounted in the cab of an ambulance, receives a signal from a digital radio, and displays the information on the terminal screen. Some mobile data terminals will also print a hard copy of the information.

open-ended questions questions that allow the patient to give a detailed response in his own words.

repeaters devices that receive transmissions from a relatively low-powered source such as a mobile or portable radio and rebroadcast them at another frequency and a higher power.

SBAR acronym for *situation, background, assessment, and recommendation*; a method of organizing communications about a patient.

Lifting and Moving Patients

Lifting and Moving Patients

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARD • Preparatory (Content Areas: Workforce Safety and Wellness)

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

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Explain the importance of always using proper techniques when lifting, carrying, and moving patients and equipment.
3. Define the term *body mechanics*.
4. Demonstrate each of the four principles of body mechanics listed in the text when lifting and moving patients and equipment.
5. Explain the roles of proper body posture and physical fitness in preventing injuries resulting from lifting and moving patients.
6. Describe considerations in teamwork and communication with partners and patients when lifting and moving patients.
7. Apply the general guidelines for lifting and moving patients that are described in the text.
8. Discuss the advantages, disadvantages, and steps of each of the following lifting and moving techniques and processes:
 - a. Power lift
 - b. Power grip
 - c. Squat lift
 - d. One-handed equipment carrying
 - e. Reaching
 - f. Log roll
 - g. Pushing and pulling
9. Differentiate between scenarios in which emergency, urgent, and nonurgent moves are indicated.
10. Given a scenario, demonstrate an appropriate moving technique to be used, including:
 - a. Armpit-forearm drag
 - b. Shirt drag
 - c. Blanket drag
 - d. Rapid extrication
 - e. Direct ground lift
 - f. Extremity lift
 - g. Direct carry
 - h. Draw sheet method
11. Demonstrate the steps required to securely “package” a patient for transport.
12. Describe the proper use, advantages, disadvantages, and limitations of each of the following pieces of equipment used in lifting and moving patients:
 - a. Wheeled stretcher
 - b. Portable stretcher
 - c. Stair chair
 - d. Backboard
 - e. Scoop stretcher
 - f. Basket stretcher
 - g. Flexible stretcher
 - h. Devices for bariatric patients
13. Given a scenario involving any of the following types of patients, demonstrate proper positioning of the patient:
 - a. Unresponsive patient
 - b. Patient with chest pain or difficulty breathing
 - c. Patient with known or suspected spinal injury
 - d. Patient in shock
 - e. Patient with nausea or vomiting
 - f. Patient in third trimester of pregnancy
 - g. Infant or toddler
 - h. Elderly patient
 - i. Patient with a physical disability
14. Discuss special considerations when preparing patients for air medical transport.
15. Discuss special considerations when using a neonatal isolette.

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary .

body mechanics
emergency move
kyphosis

lordosis
nonurgent move
power grip

power lift
urgent move

Case Study

The Dispatch

EMS Unit 101—proceed to 605 Lindsey Drive in Rockaway—a 72-year-old patient has a routine transfer to Dover General—time out is 0910 hours.

Upon Arrival

You are a probationary EMT accompanied by a training officer and an experienced EMT. Your training officer tells you that she knows the patient, Amanda Sanchez, and that this is one of three prescheduled visits Mrs. Sanchez takes to the hospital dialysis center every week. She tells

you the patient cannot walk without assistance and will need help getting down one flight of stairs. As your partner parks the ambulance, he remarks that there is still snow and probably ice on the walk to the house.

How would you proceed to package and transport this patient?

During this chapter, you will read about how to lift and move patients using good body mechanics and equipment designed to assist in patient movement. Later, we will return to the case study and apply the procedures learned.

INTRODUCTION

A key skill that you will perform with almost every patient contact is the lifting and/or moving of a patient from where he is to your cot, then to the ambulance, and eventually to the hospital cot. Unfortunately, too many EMTs are injured every year because they attempt to lift patients or equipment improperly. The knowledge and use of proper body mechanics are a necessary foundation for your health, longevity, and effectiveness as an EMT.

The best way to move a patient in any circumstance is generally the easiest way that will not cause injury or pain to your patient or to yourself. Let your equipment do the work whenever possible. If you must lift, do it with a device designed for that purpose, if possible. As a rule, get as much help as you can to carry patients and equipment. Never risk falling or injuring yourself. And always follow the rules of body mechanics.

BODY MECHANICS FOR SAFE LIFTING

As an EMT you are required to lift and carry patients and heavy equipment. If you perform these tasks improperly, bodily injury, strain, and lifelong pain can be the result. With conscious planning, good health, and skill, you can perform these tasks with minimum risk to yourself. Apply the principles and techniques of proper

lifting and moving every day. Practice often enough for them to become automatic. Make them a habit that increases your safety and performance—even in the most stressful emergency situations.

Four Basic Principles

Body mechanics are defined as the safest and most efficient methods of using your body to gain a mechanical advantage. They are based on four simple principles:

- *Keep the weight of the object as close to the body as possible* (Figure 1 ■). Back injury is much more likely to occur while reaching a great distance to lift a light object than while reaching a short distance to lift a heavy object.
- *To move a heavy object use the leg, hip, and gluteal (buttocks) muscles plus contracted abdominal muscles.* The use of these muscles will help you generate a huge amount of power safely. Always avoid using back muscles to move a heavy object.
- *“Stack.”* Visualize the shoulders stacked on top of the hips, and the hips stacked on top of the feet (base). Then move them as a unit. If any of the three are not aligned with the others, you can create twisting forces that are potentially harmful to the lower back.
- *Reduce the height or distance through which the object must be moved.* Get closer to the object or reposition it before lifting (Figure 2 ■). Lift in stages if necessary.



■ **FIGURE 1** Using proper body mechanics, the weight is kept close to the body as it is lifted.

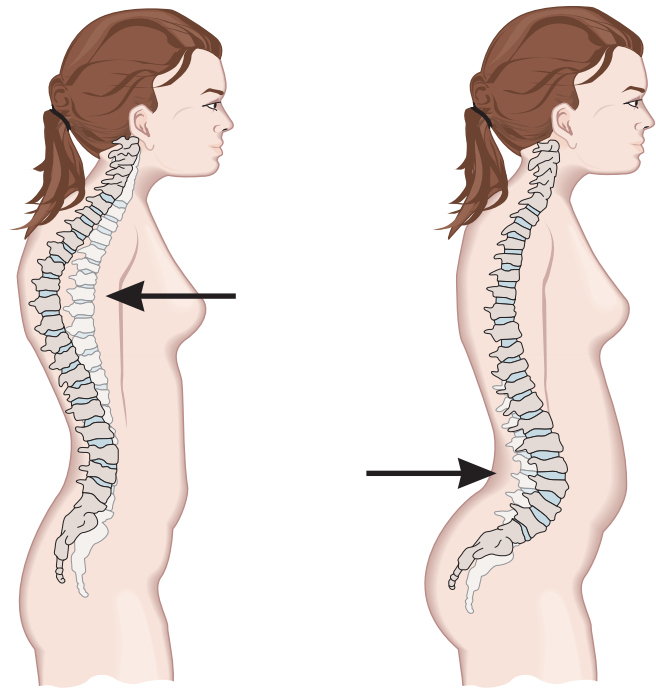


■ **FIGURE 2** Reduce the height or distance through which the object must be moved. Get closer, reposition it, or move it in stages.

Lifting, carrying, moving, reaching, pushing, and pulling are all activities to which proper body mechanics should be applied. One important key to preventing injury is correct alignment of the spine. Maintaining a normal inward curve in the lower back significantly reduces the potential for spinal injury. Keeping wrists and knees in normal alignment can also help to prevent injury of the extremities. In addition, whenever possible, substitute equipment for manual force.

Posture and Fitness

One much-overlooked aspect of proper body mechanics is posture. Because you will spend a great deal of time sitting or standing, poor posture can easily fatigue back and abdominal muscles, thereby making you vulnerable to back injury.



Excessive kyphosis
(slouch)

Excessive lordosis
(swayback)

■ **FIGURE 3** Extremes of poor posture are excessive lordosis (swayback) and excessive kyphosis (slouch).

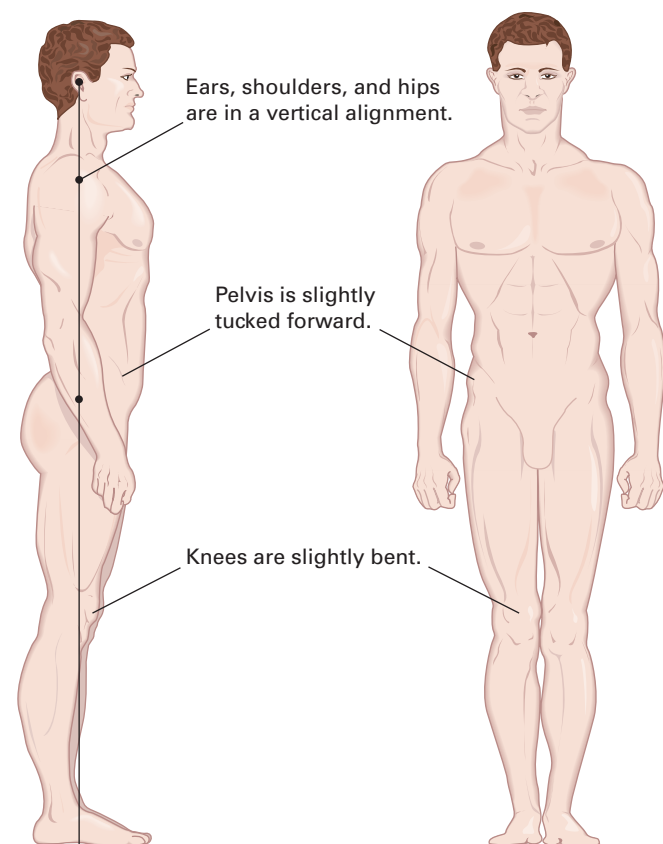
One extreme of poor posture is the swayback, or excessive **lordosis**. In this posture the stomach is too anterior and the buttocks are too posterior, causing excessive stress on the lumbar region of the back. Another extreme is the slouch, or excessive **kyphosis**. In this posture the shoulders are rolled forward, which results in fatigue of the lower back and increases pressure on every region of the spine (Figure 3 ■).

Be aware of your posture. While standing, your ears, shoulders, and hips should be in vertical alignment, with knees slightly bent and pelvis slightly tucked forward (Figure 4 ■). In the proper sitting position, your weight should be evenly distributed on both ischia (lower portion of the pelvic bones), with your ears, shoulders, and hips in vertical alignment, and your feet should be flat on the floor or crossed at your ankles. If possible, your lower back should be in contact with the support of the chair (Figure 5 ■).

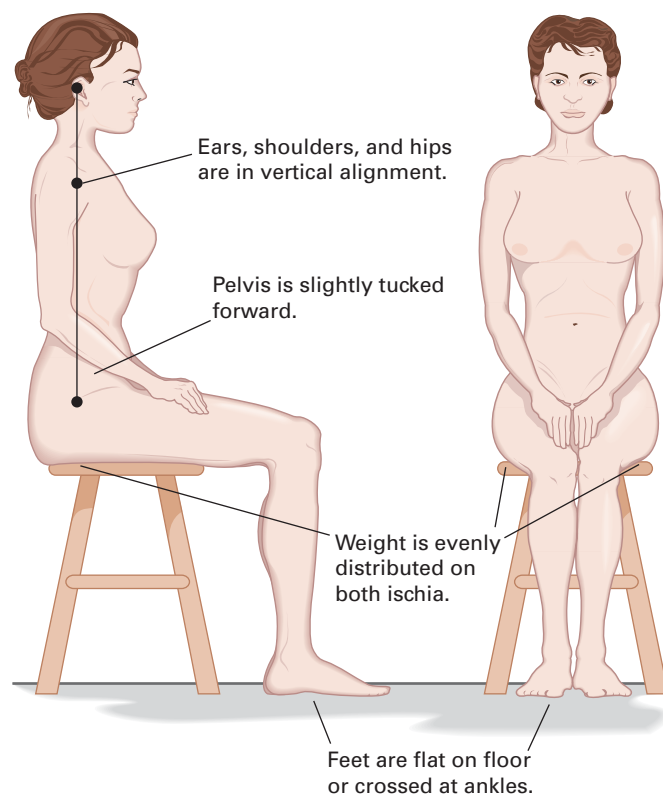
Proper body mechanics cannot sufficiently protect you if you are not physically fit. A proactive, well-balanced physical fitness program should include flexibility training, cardiovascular conditioning, strength training, and nutrition. Such a program can help you prevent injury, enhance performance, and manage stress.

Communication and Teamwork

In an emergency, teamwork and effective communication among team members are essential. Patients come



■ **FIGURE 4** Proper standing posture.



■ **FIGURE 5** Proper sitting posture.

in all sizes, shapes, and strengths. Just as a football coach positions players according to their abilities, rescuers should capitalize on their abilities to ensure the best outcome in an emergency.

All team members should be trained in the proper techniques. Problems can occur when partners are greatly mismatched, and not only to the overloaded weaker partner. The stronger partner can also be injured if the weaker one fails to lift. Ideally, partners in lifting and moving a patient or object should have adequate and equal strength and height. Two adequately strong but weaker rescuers are as efficient and safe as the pairing of two stronger rescuers.

In order for team members to work together effectively, they need to communicate throughout all lifting and moving tasks. Use commands that are easy for team members to understand. Verbally coordinate each lift from beginning to end. Good teamwork will also allow you to:

- Size up the scene immediately and accurately.
- Consider the weight of the patient and recognize the need for additional help.
- Be aware of the physical abilities and limitations of each team member.
- Select the most appropriate equipment for the job.

Just as important as the communication between team members is the EMT's communication with the patient. If startled or frightened, the patient might shift body weight while you attempt the lift. Shifts in weight can cause disabling injury to rescuers as well as cause significant additional injury to the patient. Whenever a patient is able to understand, explain the plan before any action is taken. This will improve patient confidence and can engage the patient in assisting in his own rescue.

GENERAL GUIDELINES FOR LIFTING AND MOVING

Know your own physical abilities and limitations. Do not overestimate yourself or other rescuers. Before lifting, know or find out the weight of the patient as well as the weight limitations of the equipment being used. Call for additional help whenever necessary. Even though your first impulse may be to jump in and help the patient, you must not proceed until you know you can do so safely.

Always try to use an even number of rescuers to maintain balance. Two-rescuer teams should carry heavy loads for 1 minute or less. More time can generate a high level of muscle fatigue, which can significantly increase the potential for injury. Whenever possible, transport patients and equipment on wheeled stretchers or other rolling devices.

When you must carry, keep the weight as close to your body as possible. Keep your back in a locked-in

position. Do not hyperextend your back, or lean back from the waist. Refrain from twisting, and never lift and twist simultaneously. First lift, then turn as a unit.

The Power Lift

The **power lift** is the technique that offers you the best defense against injury and protects the patient with a safe and stable move. It also is a useful technique for rescuers with weak knees or thighs. In performing this technique, keep your back locked and avoid bending at the waist. Follow these steps (EMT Skills 1):

1. Place your feet a comfortable distance apart. For the average-sized person, this is usually about shoulder width. Taller rescuers might prefer a little wider stance since this brings them closer to the object to be lifted.
2. Turn your feet slightly outward. Most people find that this helps them feel more comfortable and more stable.
3. Bend your knees to bring your center of gravity closer to the object to be lifted. As you bend your knees, you should feel as though you are sitting down, not falling forward.
4. Tighten the muscles of your back and abdomen to splint the vulnerable lower back. The back should remain as straight as comfortable (there is normally a slight inward curve), with your head facing forward in a neutral position.
5. Straddle the object. Keep your feet flat with your weight evenly distributed and just forward of the heels.
6. Place your hands a comfortable distance from each other to provide balance to the object as it is lifted. This is usually at least 10 inches apart.
7. Always use a **power grip** to get maximum force from the hands (Figure 6 ■). That is, your palm and fingers

should come in complete contact with the object and all fingers should be bent at the same angle.

8. As lifting begins, your back should remain locked in as the force is driven through the heels and arches of your feet. Your upper body should come up before the hips.
9. Reverse these steps to lower the wheeled stretcher or other object.

The Squat Lift

The squat lift is an alternative technique you can use if you have one weak leg, one weak ankle, or if both your knees and legs are strong and healthy (Figure 7 ■). In performing this technique, avoid bending at the waist.

1. Place your weaker leg slightly forward. This foot should stay flat on the ground throughout the lift.
2. Squat down until you can grasp the cot, stretcher, or other patient-moving device. Be sure to use the power grip.
3. Push yourself up with your stronger leg. Make sure your back is locked and your upper body goes up before your hips. Lead with your head.

While performing any lift, always remember to use your leg muscles—not your back—to lift, keep the weight as close to your body as possible, position yourself correctly, and communicate clearly and frequently with your partner.

One-Handed Equipment-Carrying Technique

There are times when you will want to lift and carry certain equipment with one hand. When you do, be sure to keep your back in a locked position. Maintain proper body mechanics and avoid leaning to the opposite side too much to compensate for the imbalance.

To use a one-handed carrying technique (Figure 8 ■) to lift and move a patient-carrying device, first stagger



■ **FIGURE 6** In the power grip, palms and fingers should come in complete contact with the object and fingers should be bent at the same angle.



■ **FIGURE 7** In the squat lift, your weaker leg stays slightly forward and you push up with your stronger leg.



■ **FIGURE 8** One-handed carrying technique.

your feet with one knee up and one knee pointing toward the ground. Bend at the hips, not the waist, and do not let your trunk go any farther forward than 45°. On command from the rescuer at the patient's head, simultaneously drive upward through the arch and heel of the front foot and the ball of the back foot.

Reaching

Generally, a person can sustain a 100 percent effort for 6 seconds and a 50 percent effort for only 1 minute before becoming fatigued. After that minute, the potential for injury greatly increases. So, to minimize effort, whenever possible reposition the object or get closer to the object to avoid or reduce reaching and lifting. Especially avoid situations in which prolonged strenuous effort (more than 1 minute) is required.

Many times EMTs find it necessary to reach for equipment or for a patient (as in a log roll). When it is necessary, reach no more than 15–20 inches in front of the body. If an object is more than 20 inches away, move closer to it before attempting to reach and lift. When reaching, keep the back in a locked position. Do not twist. Use your free arm to support the weight of your upper body whenever possible. If you reach overhead, avoid hyperextending (that is, do not lean back from the waist).

When performing a log roll, lean from the hips, not the waist, and keep the back straight. Use the stronger shoulder muscles to assist whenever possible.

Pushing and Pulling

Occasionally you will have to decide whether to push or pull an object. Whenever possible, push rather than pull (Figure 9 ■). If an object must be pulled, keep the load between your shoulders and hips and close to your body. Keep your back straight and slightly bend your knees. This will help to keep the line of pull through the center of your body.

When pushing, push from the areas between your waist and shoulders, if possible. If the weight is below waist level, use the kneeling position to avoid bending.



■ **FIGURE 9** Proper pulling and pushing.

Keep your elbows bent, with your arms close to the sides of your body. This will help to increase the force you can apply. Due to the inherent danger, even likelihood, of injury, avoid pushing or pulling an object that is overhead.

LIFTING AND MOVING PATIENTS

As mentioned at the beginning of the chapter, the principles of proper body mechanics and lifting techniques must be applied to all situations in which the EMT has to lift patients or move equipment. Although these principles are not expressly stated in the following discussions of specific lifting and moving techniques, it is expected that you, as an EMT, will always recall the principles of body mechanics to ensure your own safety and that of your partners and patients. Maintain a straight, rigid back by contracting the abdominal and gluteal muscles. Bend at the hips, not at the waist. Keep your head in a neutral position, not flexed forward or extended backward, and use your leg muscles, not your back, to lift, move, or drag the patient (Table 1).

There are three categories of patient moves: an emergency move, an urgent move, and a nonurgent move. In general, an **emergency move** should be performed when there is *immediate danger to the patient or to the rescuer*. An **urgent move** is performed when the patient is suffering an *immediate threat to life* and the patient must be moved quickly and transported for care. Finally, a **nonurgent move** is one in which *no immediate threat to life* exists and the patient can be moved in a normal manner when ready for transport.

Emergency Moves

The top priority in emergency care is to maintain the patient's airway, breathing, and circulation. The rule of

TABLE 1 Summary of Proper Body Mechanics

- Use teamwork, equipment, and imagination to make sure you are always in the position of using proper body mechanics.
- Use the power lift and power grip techniques as a best defense against injury.
- Reduce the height or distance through which an object must be moved. Lift in stages if necessary.
- Lift an object as close to your body as possible to avoid back injury.
- Avoid using back muscles to lift.
- Use legs, hips, and gluteal muscles plus abdominal muscles for safe, powerful lifts.
- While you are carrying an object, keep shoulders, hips, and feet in alignment.
- Use the proper posture—ears, shoulders, and hips in vertical alignment—when standing and sitting.
- Improve personal physical fitness to build strength and manage stress.

thumb is to control any life-threatening problems and stabilize the patient before moving him. However, when the scene of an accident is unstable, or threatening to your life and the patient's, your priority changes. You must move the patient first. Make an emergency move only when no other options are available. Follow local protocol. Always take appropriate precautions to be sure you do not become an additional victim of the emergency.

In general, an emergency move should be performed when there is immediate danger to the patient or to the rescuer. Consider an emergency move under the following conditions:

- *Immediate environmental danger to the patient or rescuer*, such as:
 - *Fire or danger of fire.* Fire should always be considered a grave threat, not only to patients, but also to rescuers.
 - *Exposure to explosives or other hazardous materials.* When a patient is directly exposed to substances that can cause grave injury or death, move the patient immediately.
 - *Inability to protect the patient from other hazards at the scene.* Move the patient to safety when, for example, you haven't the resources to protect him from uncontrolled traffic, physically unstable surroundings, extreme weather conditions, or hostile crowds.
- *Inability to gain access to other patients who need life-saving care.* In cases where more than one patient has been injured, you may need to move one in order to gain access to another. This may apply to moving a moderately injured person in order to gain access to one who has life-threatening injuries.

- *Inability to provide lifesaving care because of the patient's location or position.* There will be times when you need to change a patient's position, for instance to control hemorrhage, to defibrillate, or to perform CPR.

Remember: The greatest danger to the patient in any emergency move is the possibility of aggravating a spinal injury. Yet, it is impossible to move a patient quickly and still provide as much protection to the spine as would a spine board. In every such emergency, however, make every effort to provide as much protection to the spine as possible. And always make sure you pull the patient in the direction of the long axis of the body.

Three types of emergency moves are the armpit-forearm drag, the shirt drag, and the blanket drag.

The Armpit-Forearm Drag

In general, if the patient is on the floor or ground, you can move him by inserting your hands under the patient's armpits from the back. Grasp the patient's left forearm with your right hand, the right forearm with your left hand, and drag. Make sure you pull the patient in the direction of the long axis of the body (Figure 10 ■).

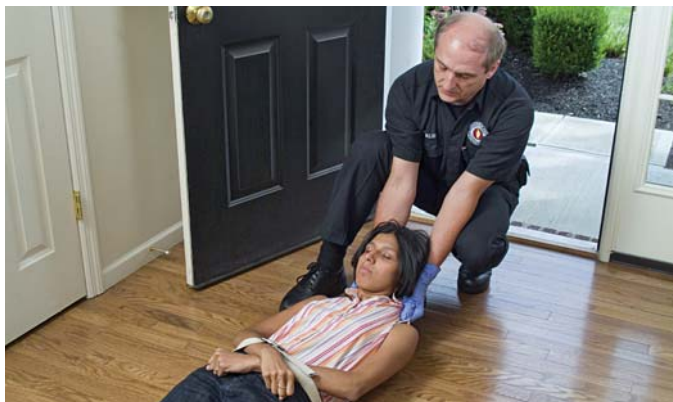
The Shirt Drag

If the patient is wearing a shirt, you can use it to support the patient's head and pull (Figure 11 ■). Note that the shirt drag cannot be used if the patient is wearing only a T-shirt.

1. Fasten the patient's hands or wrists loosely together. If possible, link them to a belt or pants with a small Velcro strap or self-adherent bandage. This will serve to prevent the patient's arms from flopping or slipping out of the shirt.
2. Grasp the neck and shoulders of the shirt so that the patient's head rests on your fists.



■ **FIGURE 10** The armpit-forearm drag. Slide your hands under the patient's armpits and grasp the forearms. Drag along the long axis of the patient's body.



■ **FIGURE 11** The shirt drag.

3. Then using the shirt as a handle, pull the patient toward you. Be careful not to strangle the patient. The pulling power should engage the armpits, not the neck. Reposition your hands if you notice excessive pressure or strain from the shirt on the patient's neck.

The Blanket Drag

The blanket drag is an effective way for a single rescuer to move a patient to safety (Figure 12 ■). If you do not have a blanket, use a coat to drag the patient. Follow these steps:

1. Spread a blanket alongside the patient. Gather about half into lengthwise pleats.
2. Roll the patient away from you onto his side. Tuck the pleated part of the blanket as far beneath the patient as you can.
3. Roll the patient back onto the center of the blanket and onto his back.
4. Wrap the blanket securely around the patient.
5. Grab the part of the blanket that is beneath the patient's head, and drag the patient toward you.



■ **FIGURE 12** The blanket drag.

Urgent Moves

Many times a patient in a motor vehicle collision must be quickly removed from the vehicle for emergency care and immediate transport, and the application of a short spine board or vest to immobilize the spine would take too much time. The rapid extrication move is designed for this situation. Medical patients may also require an urgent move. A patient in cardiac arrest who is found lying on the couch would need to immediately be placed on the floor or a hard surface to effectively carry out resuscitation.

Rapid Extrication

Rapid extrication should be used in patients with any abnormality of the airway, breathing, oxygenation, or circulation and for those with critical injuries and illnesses.

Indications for an urgent move using the rapid extrication technique include but are not limited to the following:

- Altered mental status
- Inadequate respiratory rate or tidal volume
- Indications of shock (altered mental status; pale, cool, clammy skin; tachycardia; increased respiratory rate)
- Injuries to the head, neck, chest, abdomen, pelvis
- Fracture of both femurs
- Major bleeding

A summary of the rapid extrication procedure from a motor vehicle follows:

1. One rescuer should bring the patient's head into a neutral in-line position and provide manual stabilization. This is best achieved from behind or to the side of the patient.
2. A second rescuer should apply a cervical-spine immobilization collar as a third places a long backboard near the door. The third rescuer should then move to the passenger seat.
3. The second rescuer should support the patient's thorax as the third frees the patient's legs from the pedals or from under the dashboard.
4. The second and the third rescuer rotate the patient in several short, coordinated moves until the patient's back is in the open doorway and his feet are on the seat.
5. Since the first rescuer can no longer support the patient's head, another rescuer should support the head until the first rescuer exits the vehicle and takes over supporting the head from the door opening.
6. The end of the long backboard is placed on the seat next to the patient's buttocks. Assistants support the other end of the board as the first and second rescuers lower the patient onto it, the first maintaining in-line stabilization of the head and neck.

7. The second and third rescuers should then slide the patient into the proper position on the board in short, coordinated moves as the first continues manual stabilization.

Several variations of this technique are possible. The most critical factor is that this procedure must be accomplished rapidly, but without any compromise to the patient's spine. In addition, operating inside a vehicle places the rescuer's lower back in a vulnerable position. Whenever possible, you should support your weight with a free arm or by resting your chest against the seat backs.

Nonurgent Moves

When there is no immediate threat to life, take the time to choose the best equipment and positioning for moving the patient safely. Generally, the best way to move a patient is the easiest way that will not cause injury or pain. That includes "walking" the patient, if he is able, while supporting him. Never walk a patient who becomes light-headed or sweaty upon standing or who is having chest pain or respiratory problems, has an injured lower extremity, or has suspected spinal injury.

Whenever you move, lift, or carry a patient, remember to move him as a unit. Keep the patient's head and neck in a neutral position. If you suspect head, neck, or spinal injury, take all necessary spinal precautions. Be sure that all rescuers understand what is to be done before any move is attempted, and make one rescuer responsible for giving commands.

There are many ways to move patients. You are only limited by your imagination and the basic principles of body mechanics and patient safety and comfort. The direct ground lift, extremity lift, direct carry, and draw sheet methods are accepted nonurgent moves that provide the greatest safety to both you and the patient.

Direct Ground Lift

Note that the direct ground lift is not recommended for a heavier patient. When lifting a patient from the ground, it is usually safer and more mechanically efficient to use a long backboard. However, when this cannot be accomplished, follow these steps (EMT Skills 2):

1. Two or three rescuers should line up on the same side of the patient.
2. Each rescuer should kneel on one knee, preferably the same knee for all rescuers.
3. The second rescuer should place the patient's arms on the chest, if possible.
4. The first rescuer should then cradle the patient's head by placing one arm under the patient's neck and shoulder. Then he should place his other arm under the patient's lower back.

5. The second rescuer should place one arm under the patient's knees and one arm above the buttocks.
6. If a third rescuer is available, he should place both arms under the waist. The other two rescuers then should slide their arms either up to the midback or down to the buttocks as appropriate.
7. On signal from the first rescuer, they should lift the patient to their knees and roll the patient in toward their chests.
8. On signal from the first rescuer, they should stand and move the patient to the stretcher or other patient-carrying device.
9. To lower the patient, the steps are reversed.

Remember that you should bend at the hips and not at the waist, your back should remain straight, and the lifting force should be generated from your legs and buttocks, not the back.

Extremity Lift

Use the extremity lift to move a patient from the ground to a patient-carrying device (EMT Skills 3). Note that this lift should not be used on a patient with suspected spinal or extremity injuries.

1. The first rescuer should kneel at the patient's head. A second rescuer should kneel at the patient's side by the knees.
2. The first rescuer should place one hand under each of the patient's shoulders, while the second rescuer grasps the patient's wrists.
3. The first rescuer should slip his hands under the patient's arms and grasp the patient's wrists.
4. The second rescuer can then slip his hands under the patient's knees.
5. Both rescuers should move up to a crouching position, keeping their backs straight and heads in neutral alignment.
6. On signal from the first rescuer, they should stand up simultaneously and move with the patient to a stretcher or other patient-carrying device.

While lifting the patient, each rescuer must maintain a straight back and contract the abdominal muscles. The rescuer's head must remain in line with the back. (If the head were to be extended backward, the rescuer would be forced to use the lower back muscles. Flexing the head forward would also put undue force on the lumbar disks.) When lifting the patient, the rescuer should drive upward with leg and gluteal muscles.

Direct Carry Method

The direct carry is one way of transferring a supine patient from a bed to a wheeled stretcher or from any patient-carrying device to another (EMT Skills 4):

1. Position the wheeled stretcher perpendicular to the bed, with the head of the device at the foot of the bed.
2. Prepare the wheeled stretcher by unbuckling straps and removing other items. Both rescuers should stand between the bed and stretcher, facing the patient.
3. The first rescuer then slides an arm under the patient's neck and cups the patient's shoulder.
4. After the second rescuer slides a hand under the patient's hip and lifts slightly, the first rescuer should slide an arm under the patient's back. The second rescuer then places his arms under the patient's hips and calves.
5. The rescuers slide the patient to the edge of the bed, lift and curl the patient to their chests, and then rotate and place the patient gently onto the wheeled stretcher.

Draw Sheet Method

Another way of transferring a supine patient from a bed to a wheeled stretcher or from any patient-carrying device to another is the draw sheet method (EMT Skills 5):

1. Loosen the bottom sheet of the bed.
2. Position the wheeled stretcher next to the bed. Prepare it by adjusting height, lowering rails, unbuckling straps, and so on.
3. Reach across the stretcher and grasp the sheet firmly at the patient's head, chest, hips, and knees. As you reach across the stretcher, use your hips to support yourself against the stretcher.
4. Slide the patient gently onto the wheeled stretcher. Be sure to contract your abdominal and gluteal muscles to splint the lower back.

PACKAGING FOR TRANSPORTATION

Packaging simply means readying the patient for transport. That is, once the patient is stabilized and all interventions have been checked, you must select and prepare the appropriate carrying device, safely transfer and secure the patient to the carrying device, and finally move the patient and carrying device to the ambulance for loading and unloading.

Some general considerations: Make sure the carrying device is locked in the open position before positioning the patient. Use an appropriate lifting, moving, or carrying technique to place the patient on the carrying device. Generally, place a sheet or blanket on the carrying device and, when the patient is positioned, cover him as appropriate with sheets or blankets to maintain body temperature. Then secure him with straps. Make certain all straps and ties are tucked in or positioned so that they will not cause you to trip and fall. When the

patient is placed in the ambulance, be sure both the patient and the carrying device are secured properly before the ambulance moves.

Note: If you suspect head, neck, or spinal injury, take all necessary spinal precautions before, during, and after packaging.

Equipment

Both medical and trauma patients need to be moved, packaged, and transported in ways that will not make their conditions worse. To make the best choices of equipment for your patients, learn the advantages and disadvantages of each type (Table 2). Practice often, and follow manufacturer instructions for inspection, cleaning, repair, and upkeep.

Wheeled Stretcher

The wheeled stretcher (also called an ambulance gurney or cot) is the patient-carrying device most commonly used by rescue personnel (Figure 13 ■). It is also the safest and most comfortable means of transferring a patient. Most wheeled stretchers are designed to accommodate weights up to 650 pounds and can be adapted to almost any patient position. They also can serve as a means of securing and carrying equipment to the patient's location.

To roll a wheeled stretcher, the rescuer at the head pushes and the rescuer at the foot guides. One limitation of the device is that rolling is usually restricted to smooth terrain. However, four rescuers—one at each corner—can keep it stable and move it over rough ground. Two rescuers can carry a wheeled stretcher in narrow spaces. However, they would need to face each other from opposite ends, the stretcher could be easily unbalanced, and the lift and carry would require considerable strength (Figures 14a and 14b ■).

There are two basic types of wheeled stretchers in the United States: the lift-in cot and the roll-in cot (Figures 15a and 15b ■). Each weighs about



■ **FIGURE 13** EMTs move a wheeled stretcher into position to load into the ambulance.

TABLE 2 Patient-Carrying Devices

Device	Advantages	Disadvantages
Wheeled stretcher	- Enables movement without carrying - Accommodates variety of positions, heights, and lengths - Safe traversal of stairways and curbs - Can be lifted or lowered from ends or sides - Durable - Mechanically simple - Comfortable	- X-ray opacity - Difficult to maneuver over uneven ground - Adds significant amount of weight when lifting is necessary
Portable stretcher	- Lightweight - Compact - Excellent for use as auxiliary stretcher - Can be used in spaces too confined or narrow for wheeled stretcher - Some models have folding wheels and posts for easier movement - Easily loaded and off-loaded - Can be folded for storage	- Must be carried - Metal styles interfere with some X-rays
Stair chair	- Good for use on stairways, narrow corridors and doorways, small elevators - Some models can be converted into portable stretchers - Newer models have tracks that eliminate carrying down steps	- Must be carried (older models) - Does not accommodate trauma patients - Should not be used for patients with altered mental status or lower extremity injury - Fairly complex - Consumes considerable space
Backboard	- Good spinal immobilizer - Good lifting device - Can float - Lightweight - Compact - Can serve as CPR surface - Mechanically simple - X-ray translucency - Can be carried and loaded from ends or sides - Integrates well with various other equipment	- Must be carried - Usually must be left with patient - Unstable for moves up or down inclines - Uncomfortable
Scoop stretcher	- Can be used in confined areas in which other stretchers will not fit - Allows easy application of restraints - Integrates well with various other equipment	- Must be carried - Requires padding of head and body prominences - Metal scoop stretcher should be prewarmed if air temperature is cold - Not recommended for patients with suspected spinal injury - Consumes considerable space
Basket stretcher	- Good for traversing rough terrain - Can be fitted with flotation harness for water rescue - Extremely durable - Can be carried from sides or ends - Integrates well with various other equipment	- Must be carried - Bulky - High cost - Usually must be left with patient - Metal style interferes with some X-rays - Needs special training for use in rope or ladder rescues
Flexible stretcher	- Especially useful for narrow and restricted hallways - Can be carried from sides or ends	Must be carried



■ **FIGURE 14a** Two-rescuer stretcher carry.



■ **FIGURE 14b** Four-rescuer stretcher carry.

70 to 95 pounds and is constructed of aluminum alloy. The lift-in cot requires two attendants, one on each side, when loading and unloading from the ambulance. The roll-in cot uses special wheels at the head to simplify the loading and unloading procedure (EMT Skills 6). The roll-in type significantly reduces the amount of twisting and lifting that is required of rescuers.

Some roll-in cots use pneumatic, hydraulic, battery, or a combination of mechanisms to lift and lower the cot, some with only the touch of a button. These stretchers are often referred to as power cots and have the major advantage of reducing the spinal loading associated with the repetitive movements required of the EMT when lifting and lowering the stretcher. Repetitive spinal loading frequently leads to back injury. Although these power cots typically weigh much more than traditional stretchers, some up to 140 pounds, the lifting and lowering mechanisms reduce the work and wear on the EMT's spine. Some stretcher systems have a power loading device that actually lifts and lowers the stretcher in and out of the ambulance.



■ **FIGURE 15a** Wheeled stretcher, lift-in type. (© Ferno Corporation)



■ **FIGURE 15b** Wheeled stretcher, roll-in type. (© Ferno Corporation)

Trained emergency personnel should stay with a patient on a wheeled stretcher at all times. The patient should never be left unattended, even when secured. Before loading a wheeled stretcher into the ambulance, be sure there is enough lifting power. Load hanging stretchers before wheeled stretchers. Once in the ambulance, be sure the stretchers and patients are secure before the ambulance moves.

Bariatric Stretchers and Devices

With an ever-growing overweight population, specialized stretchers and other devices have been designed to transport morbidly obese patients. These stretchers and devices are called *bariatric devices* (EMT Skills 7). Some bariatric stretchers are designed to hold patients up to 1,600 pounds in a wheels-down position. The stretchers have larger wheels for stability, wider cot dimensions, and more heavily constructed frames. Some stretchers are part of a bariatric transport system that includes an

ambulance ramp and winch. There are even specialized bariatric transport ambulances now available.

Portable Stretcher

The portable ambulance stretcher is standard equipment (Figures 16a and 16b ■). It is usually made of a continuous tubular metal frame, canvas or coated fabric bottom, and straps to secure the patient. It may also be referred to as a soft cot. It is a conventional carrying device that is particularly useful when the patient must be removed from a space too confined or narrow for a wheeled stretcher. It is often used as an auxiliary to the wheeled stretcher when there is more than one patient to transport. It can be loaded easily into an ambulance and off-loaded easily once in the ambulance.

The portable ambulance stretcher generally is available in three styles: the basic model, the basic with folding wheels and posts, and the breakaway. The basic model is used as an auxiliary stretcher, which can be placed on the squad bench or suspended from hanging hardware inside the ambulance. It is very light and, though it has a load capacity of up to 350 pounds, it is not recommended for that much weight. Most models can be folded in half for storage.

One type of portable stretcher is the pole stretcher or canvas litter (Figure 16b), which has been used worldwide for centuries. It is lightweight and folds compactly. The vinyl-coated model is easy to clean. It is comfortable for the patient, especially when the head is padded,



■ **FIGURE 16a** Portable ambulance stretcher with continuous tubular metal frame.



■ **FIGURE 16b** Pole stretcher, or canvas litter.

though it should not be used when spinal immobilization is necessary unless it is used with a long backboard. One drawback is that care must be taken when placing the patient on rocky ground for any length of time. Soft tissue injury may result. When you are going to use the canvas pole stretcher to transport a patient, take care to see that the crosspieces are locked in place. When lifting a patient on a pole stretcher, it is preferable to have four or more rescuers.

Stair Chair

A stair chair (Figure 17 ■) is useful when a wheeled stretcher cannot traverse narrow corridors and doorways, small elevators, and stairways. Some models can be converted into portable stretchers. Do not use a stair chair when the patient has an altered mental status, suspected spinal injury, or injuries to the lower extremities.

To move a patient up or down stairs on a stair chair, explain to the patient everything you plan to do. Check to be sure all straps are secure. Then the rescuers should proceed with the following (EMT Skills 8):

1. One rescuer should stand behind the chair at the head, and another should stand at the foot facing the patient. A third rescuer, if available, should prepare to “spot” by standing behind the rescuer who will be moving backward (up or down the stairs). Instruct the patient not to reach out.
2. As the chair is tilted back by the rescuer at the head, the rescuer at the foot should grasp the chair by its legs.
3. Both rescuers should lift and begin to carry simultaneously. If the chair has wheels, they should not be allowed to touch the steps.
4. As the rescuers descend (or ascend) with the patient, the spotter should count out the steps and identify upcoming conditions.



■ **FIGURE 17** Stair chair. (© Ferno Corporation)

Tracked Stair Chair. A newer model stair chair is also available and is designed with a track that can be lowered behind where the patient is sitting (Figure 18 ■). This track comes into contact with the steps as the patient is being moved down stairs, and allows the chair to glide down the steps with minimal effort exerted by the EMT. It



(a)



(b)

■ **FIGURE 18** (a) A stair chair with a mechanical track allows easier patient movement over stairs. (b) A power stair chair that can move patients up to 500 pounds. (Photo b: © Ferno Corporation)

still requires two rescuers, one at the head and one at the foot of the patient, for stabilization of the device. While this style chair still has all the same features as more common models, the new design eliminates the need to lift the chair while moving down the steps.

Backboards

Standard operating equipment in any emergency vehicle is the backboard (Figure 19a ■). It can protect the patient from rocky ground surfaces, and it acts as a spinal immobilizer. Straps and a head immobilizer device usually can be applied and secured without problems.

Long and short backboards are made of lightweight plastic or composite materials with molded handholds. Common styles are the Farrington (rectangular with round corners) and the Ohio (with mitered corners and tapering sides). The Ohio fits into most basket stretchers and can be more easily maneuvered in and out of cars. Long backboards may also be referred to as long spineboards.

Short backboards usually are used to immobilize noncritical sitting patients before moving them. One special type of short backboard is the vest-type or corset-type immobilizer such as the Ferno Kendrick Extrication Device (KED) (Figure 19b ■). Once a short backboard is applied, the patient should be placed on a long backboard.

Also available is a full body vacuum mattress that can be used as both a backboard and a moving device once the patient is placed on it (Figures 20a and 20b ■). This design uses vacuum technology to conform the mattress into whatever shape is necessary given the patient. It eliminates the need to pad any extra voids between a traditional rigid backboard and the patient's body, and it becomes rigid enough after the vacuum has been applied to allow two or more EMTs to lift and carry the patient. Several benefits of this equipment are that it is lightweight, it conforms to the patient's shape, it fits within a basket stretcher, and it is designed with several hand grips for the care providers to grasp when preparing to lift the patient.

Scoop Stretcher

Designed for patients weighing up to 300 pounds, the scoop or orthopedic stretcher is made to be assembled and disassembled around the patient (Figure 21 ■). An advantage is that it can be used in confined areas where other conventional stretchers will not fit. It can also be used for pelvic fractures or bilateral femur fractures to prevent further injury. A disadvantage is that some devices are constructed entirely of metal, which picks up the temperature of the environment. Note also that the scoop stretcher is not recommended for patients with suspected spinal injury.



■ **FIGURE 19a** Long backboard.



■ **FIGURE 19b** Kendrick Extrication Device (KED). (© Ferno Corporation)

To use a scoop stretcher properly, you must have access to the patient from all sides. At least two rescuers are required—one to prepare and position the stretcher and one to move the patient. Follow these steps (EMT Skills 9):

1. Adjust the stretcher to the length of the patient.
2. Separate the stretcher halves, and place one on each side of the patient. Keeping the patient's spine in-line, gently roll the patient onto one side. Slide half of the stretcher under the patient.
3. If you have not been able to examine the patient's back before this time, do so now. Then return the patient to a supine position.
4. Assemble the head end of the scoop stretcher.
5. Roll the patient's body to the other side. Swing the remaining half of the stretcher into a closed (assembled) position. Latch the foot end of the stretcher.
6. Pad the patient's head and any bony prominence with a pillow or a folded sheet.
7. Secure the patient with at least three body straps.



(a)



(b)

■ **FIGURE 20** Full body vacuum mattress can be used for immobilization or for moving the patient. (a) The device is shaped around the patient and air is withdrawn. (b) The patient is then secured to the rigid, conforming vacuum mattress.



■ **FIGURE 21** Scoop stretcher.

Basket Stretcher

Most commonly called the Stokes basket, a basket stretcher is shaped like a long basket and comes in two basic styles (Figures 22a and 22b ■). One style has a welded metal frame fitted with a contoured chicken-wire web. The other style has a tubular aluminum frame riveted to a molded polyethylene shell. Either will accommodate a scoop stretcher or Ohio-type backboard. Basket stretchers will fit onto wheeled stretchers which can be used to move the patient. Be sure to secure the basket to the wheeled stretcher prior to any movement.



■ **FIGURE 22a** Basket stretcher.



■ **FIGURE 22b** Using a basket stretcher to move a patient over rough terrain.

A basket stretcher has the advantage of enabling you to completely immobilize a patient who is already on a backboard and to move him over any kind of terrain. The lightweight polyethylene style slides easily and smoothly over snow and rough terrain while protecting the patient from branches and twigs. *Note:* Do not move a patient in a basket stretcher by rope or ladder unless you have been specifically trained to do so.

Place the mattress from a wheeled stretcher into a basket stretcher to increase patient comfort and insulate him from the cold. If you choose not to use a mattress, be sure to pad the patient's head. If you anticipate especially rough transport, pad the edges of the patient's body with rolled blankets and strap him securely into place with nylon webbing.



■ **FIGURE 23** Flexible stretcher.

Flexible Stretcher

A flexible (or Reeves) stretcher is a special transfer device made of canvas or synthetic materials (Figure 23 ■). It has six large lifting and carrying handles, three on each side. It is especially useful for narrow and restricted hallways such as those found in mobile homes. A patient on a backboard can be placed inside the flexible stretcher for moves down stairs or over rough terrain.

Patient Positioning

Generally, a patient is placed on a carrying device in a supine or sitting position, unless the patient's condition dictates otherwise.

- *An unresponsive patient with no suspected head, neck, or spinal injury* should be placed in a left lateral recumbent position (coma or recovery position) to face the rescuer once in the ambulance. This position aids in draining fluids or vomitus from the mouth and helps prevent aspiration into the lungs.
- *A patient with chest pain or discomfort or with breathing difficulties* should be placed in a position of comfort, usually sitting up, if hypotension is not present.
- *A patient with suspected spinal injury* should be immobilized on a long backboard. Once immobilized, the patient and backboard can be tilted as a unit to place the patient on his left side for drainage from the mouth.
- *A patient in shock (hypoperfusion)* should be placed in a supine position unless your protocol indicates otherwise.
- *An alert patient who is nauseated or vomiting* should be transported in a sitting or a recovery position. That position should allow you to manage the patient's airway.
- *A pregnant patient in her third trimester* should be positioned on her left side.

Consider the following suggestions when moving and positioning patients with special needs:

- *Pregnant women.* A pregnant woman will probably feel more comfortable on her left side. That position takes the weight of the baby off the large blood vessels and nerves in the abdomen, preventing supine hypotensive syndrome (dizziness, drop in blood pressure, and decreased cardiac output). If there is excess vaginal bleeding, place the woman in a supine position. If you suspect a prolapsed umbilical cord, place the woman on her back and elevate her hips with a pillow. Follow local protocol.
- *Infants and toddlers.* An infant or toddler who is not critically injured can usually be carried easily in an infant car seat. When possible, use the child's own car seat to reduce fear of being in an unfamiliar environment. You can also use the car seat as an immobilizer. Simply pack the space around the child with rolled towels or folded sheets taped as padding. Note that the car seat should be used only if it is not damaged.

- *Elderly patients.* A possible limitation in an elderly patient is osteoporosis, a loss of mass that makes the bones extremely brittle and prone to fracture. In these cases, take extra care to avoid accidental injury. Make sure the patient understands what is happening and where you are taking her.
- *Patients with physical disabilities.* Use common sense in handling patients who have physical disabilities. The nature of the disability will let you know how to compensate. If, for example, the patient has fused joints or twisted limbs, position the patient to provide the greatest comfort. Take extra care in strapping. Whenever possible, use a rolled towel or other padding to support areas that might need it. Ask the patient to explain what positions are possible and comfortable for him.

Packaging Patients for Air Transport

When the distance to the appropriate hospital is great or the patient's condition is critical, the use of a helicopter or fixed-wing aircraft for patient transportation might be considered. In this situation, there are some special considerations in packaging the patient to ensure safety of the patient, rescuers, and helicopter crew. Follow local protocols for use of air ambulance service. Following are some basic guidelines for preparing a patient for air transport:

1. Be sure that a patient who has been contaminated by a hazardous material has been thoroughly decontaminated. Especially in the confined space of a helicopter, it is possible for the crew to be overcome by hazardous fumes and lose control of the craft.
2. If at all possible and appropriate, have the patient's airway managed with an endotracheal tube prior to the arrival of the aircraft.
3. Leave the chest accessible if the patient is intubated so the aircraft crew can assess the patient's breath sounds prior to transport.
4. If the patient is to be transported by helicopter and is immobilized on a backboard, be sure the board is one that can be accommodated in the model of helicopter that will respond.
5. Be sure the patient is well secured to the backboard so as not to be jostled while moving to the aircraft or in flight.
6. Secure all equipment, blankets, sheets, and so on with tape so they cannot blow off the patient and into the rotor or engine of the aircraft. Secure all loose equipment at the scene.
7. Communicate to the patient what you are doing and prepare him to expect the noise and rotor wash of an incoming helicopter.
8. Cover the patient's eyes, ears, and exposed wounds to protect them from the noise and rotor wash.

9. Consider having an engine company wet the landing zone to prevent dust and debris from being blown onto the rescuers, crew, and patient.
10. Have rescuers remove loose clothing or hats to avoid their being blown into the rotor or engine.
11. Do not approach the aircraft with the patient until instructed by the pilot or crew. Unless otherwise instructed, let the crew assist you in loading the aircraft. Stay well clear of the tail rotor, and observe all safety and danger placards. For everyone's safety, learn how to approach an aircraft BEFORE an emergency call.
12. When moving the patient to be loaded into a helicopter, lay an IV bag on the patient's chest instead of having it held up by a rescuer.
13. When loading a patient into a helicopter, minimize the number of people under the rotors at all times. Refer to local protocols and air transportation companies for further guidelines.

GENERAL GUIDELINES FOR CARRYING A PATIENT USING A BACKBOARD, PORTABLE STRETCHER, OR FLEXIBLE STRETCHER

As mentioned previously, a wheeled device should be your preference to move a patient whenever possible. However, there are many situations in which the wheeled device is not feasible, such as moving a patient down or up steps, in a narrow hallway with angles, or over rough terrain. In those cases, you will use a backboard, portable stretcher, or flexible stretcher to move the patient either to the wheeled stretcher or directly to the back of the ambulance, depending on the situation. The method in which you position yourself to carry the patient is dependent on the number of EMTs or other emergency response personnel at the scene to assist with the lift and carry.

Some general guidelines for moving a patient on these devices are:

- Secure the patient to the device using a minimum of three straps.
- Secure the patient's hands in the device so they cannot reach out and grab you or your partner, a railing, or other objects that may throw you and your partner off balance.
- Always carry the device with the patient's feet first when going down steps or downhill.

- Always carry the device with the patient's head first when going up steps or uphill.
- Consider your and your partner's limitations as to weight and your ability to move the patient safely without further injury to the patient or yourselves.
- Know your limitations when considering moving patients from a unique situation such as a hillside, an unstable area, or a high angle, and seek assistance from properly trained rescuers.
- Constantly communicate with your partner or team to coordinate the move.
- Keep the patient's weight as close to your body as possible.

Two-Person Carry

If only you and your partner are available for a carry, one EMT is positioned at the head of the patient while the other is at the foot. The stronger person should be at the head since most of the weight is at that end. The EMT at the foot end faces the EMT at the head end. This requires the EMT at the foot end to walk backward.

Be extremely cautious when employing this type of carry. One problem is that the EMT at the foot end can lose his balance by tripping over an unseen object. If a third person is available, place him behind the person at the foot end to act as a spotter. This person will often grasp the belt of the EMT at the foot end to provide balance and stabilization to that EMT. He will also call out obstacles to the EMT at the foot end. Another problem in this situation is that there is no EMT or rescuer to provide stabilization at the sides of the patient, so the carrying device can easily become unbalanced from side to side. Additionally, because only two EMTs are carrying the entire weight of the patient, they can fatigue quickly, which places them and the patient at greater risk for injury.

Four-Person Carry

When four emergency personnel are available, a different carrying configuration is often used. One rescuer is placed at the patient's head. Another is placed at the foot end, facing forward with his hands behind his body to grasp the carrying device. The other two rescuers are placed at each side, facing forward and grasping the carrying device with the hand closest to the patient. This puts all rescuers facing forward, forming a diamond configuration.

An alternative rectangular configuration may be used when four rescuers are present. Two rescuers are placed on opposite sides of the carrying device on the head end and two rescuers on opposite sides at the foot end of the carrying device. All rescuers face forward and grasp the carrying device with the hand that is closest to the patient.

Carrying a Supine Patient on Stairs

A stair chair should be the device of choice to move a patient up or down stairs if the patient's mental status and condition allow it. If the patient must be placed in a supine position to be moved up or down stairs, be sure the patient is secured to the device so he cannot slide out from either the foot or head end of the device. Also, be sure to secure the patient's hands within the device so he cannot grab you, a railing, or any other object that could throw you off balance while carrying him.

When a supine patient is to be carried down stairs, typically one EMT is placed at the head end of the device facing the patient and the other is placed at the foot end of the device facing the patient with his back to the stairs. If possible, a spotter is placed behind the EMT at the foot end to provide guidance and stabilization and to count off the steps. The EMT at the foot end is first down the steps. This configuration is often used because of the limited width of a stairwell that doesn't allow EMTs to be on both sides of the patient.

When moving a patient up steps, the same EMT configuration is used. The patient is carried head first; therefore, the EMT at the head end moves backward up the steps. If available, the spotter will be ahead of and guiding the EMT at the head end.

Neonatal Isolette

You may be required to transport a neonate from one medical facility to another in a neonatal isolette (Figure 24 ■). The isolette is designed to keep the neonate in a warm environment to prevent hypothermia. Isolettes are wheeled devices that engage the typical stretcher mounts in the ambulance. It is important to ensure that the isolette can be properly secured in the ambulance. The isolette is either lifted into the ambulance or rolled in up a ramp.



■ FIGURE 24 Neonatal isolette. (© Austin/Travis County START Flight)

EMT SKILLS
1**Power Lift**

■ **1A** Get in position. Your feet should be about shoulder width apart, turned slightly outward, and flat on the ground.



■ **1B** As lifting begins, your back should remain locked and your feet should remain flat. Tighten the muscles of your back and abdomen to splint the lower back.



■ **1C** As you return to a standing position, make sure your back is locked in and your upper body comes up before your hips.

EMT SKILLS
2**Direct Ground Lift**

■ **2A** Position your arms under the patient. Be sure to cradle the head. If a third rescuer is available, he should slide both arms under the waist while the first two rescuers move their arms up and down as appropriate.



■ **2B** Lift the patient to your knees and roll toward your chests.



■ **2C** On signal, move the patient to the carrying device.

EMT SKILLS

3

Extremity Lift



■ **3A** One rescuer should put one hand under each arm and grasp the wrists. The other should slip hands under the knees.



■ **3B** Both rescuers should move up to a crouching and then standing position.

EMT SKILLS

4

Direct Carry



■ **4A** Position your arms under the patient and slide the patient to the edge of the bed.



■ **4B** Lift the patient and curl toward your chests.



■ **4C** Rotate and place the patient gently on the carrying device.

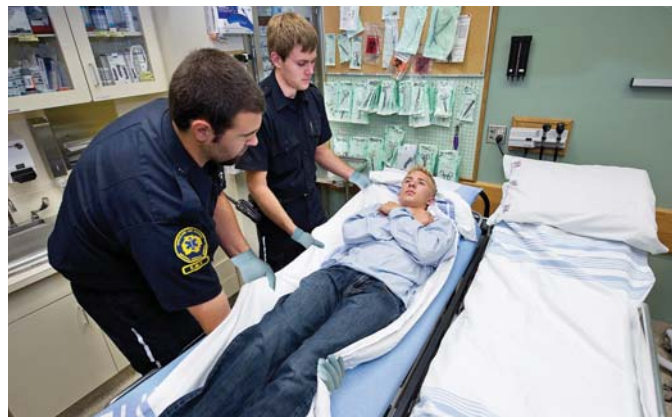
EMT SKILLS

5

Draw Sheet Method



■ **5A** Reach across the stretcher and grasp the sheet firmly.



■ **5B** Slide the patient gently onto the carrying device.

EMT SKILLS

6

Loading the Roll-In Wheeled Stretcher



■ **6A** Roll the stretcher to the ambulance.



■ **6B** Roll the front of the stretcher into the ambulance until the safety mechanism engages.



■ **6C** Disengage the carriage lock at the foot and roll the stretcher into the ambulance.



■ **6D** Lock the stretcher into position.

EMT SKILLS

7

Bariatric Stretchers



■ **7A** The Ferno LBS (large body surface) board converts a Ferno cot into a bariatric cot handling up to 1,000 pounds.
(© Ferno-Washington, Inc.)



■ **7B** The Stryker MX-PRO® Bariatric Transport cot will handle patients from 850 to 1,600 pounds and can be used with accessory winch and ramp loading devices. (© Stryker Corporation)

EMT SKILLS

8

Moving a Patient on a Stair Chair



■ **8A** Moving a patient up stairs in a stair chair—spotter above.



■ **8B** Moving a patient down stairs in a stair chair—spotter below.

EMT SKILLS

9

Applying the Scoop Stretcher



■ 9A Adjust length of the scoop stretcher.



■ 9B Separate the stretcher halves.



■ 9C Gently slide half of the stretcher under the patient.



■ 9D Swing the remaining half of the stretcher into a closed position.



■ 9E Close and lock the stretcher halves.



■ 9F Lift the stretcher from its ends.

Chapter Review

SUMMARY

Lifting and moving patients is a fundamental task performed by EMTs. Patients are often found on the second floor of a home, in a basement, around the corner in the bedroom, or down a narrow hallway—all of which require special techniques to move the patient safely to the wheeled stretcher and into the ambulance. To reduce your incidence of injury, always practice proper body mechanics and lifting techniques.

When moving a patient, be sure you know and understand how to perform the moves and what equipment is the safest for you and the patient. Always communicate with your

team members and with the patient. Your priority is to avoid injury to you, your partner, other members of the emergency response team, and the patient. Select the best possible equipment to allow the patient to be moved in the safest manner, taking into consideration his condition. As an example, a patient with severe shortness of breath will not want to be moved lying supine. Thus, it may be necessary to use a stair chair to move him to the first floor.

Once the patient has been successfully moved, reassess the security of the straps and the device. Never leave the patient alone on the wheeled stretcher, especially if it is in a raised position.

Case Study Follow-up

Scene Size-up

You have been dispatched to a 72-year-old female patient, Amanda Sanchez, to take her on a routine transfer to the hospital dialysis center. As your partners unload the stair chair and blankets from the ambulance, you shovel the short walk to the front of the house and apply salt. While you are upstairs, the ice will have a chance to melt.

The patient's daughter opens the door and sends you up a flight of narrow stairs to the bedroom. Mrs. Sanchez greets you there, and you notice that she is using a walker. Your partners take in the stair chair and prepare it for the patient.

Patient Assessment

The training officer suggests that you practice taking a history and vital signs.

Lifting and Moving the Patient

After taking a history and vital signs, you listen as your training officer explains the procedure to the patient. She explains that you and your partner will place Mrs. Sanchez on the hospital blanket in the stair chair, tuck her in so she'll be warm, and secure her for a safe trip down the stairs.

Mrs. Sanchez asks if she will need her winter overcoat. Your partner explains that a warm hat and scarf would be okay, but the overcoat may be too bulky for the move. He promises her the blankets and the ambulance will keep her warm. He also says she can take the coat with her in case she needs it later. You and your partners then package the patient and move her to the stairwell.

At the top of the stairs, your training officer explains exactly what will be done next, while you and your partner quickly check the straps. When she's finished, the training officer says, "Mrs. Sanchez, remember? You

may feel as if you're falling for a second. But you won't fall. We'll be holding you. Is it okay that we begin now?"

Mrs. Sanchez agrees, and you get behind the chair at the head. Your partner, who is taller than you, stands at the foot facing the patient. The training officer moves to the top of the steps to "spot." As you tilt the chair back, your partner grasps it by its legs. You then open the space between your feet, tighten your muscles to lock your back, make sure your hands and fingers are properly positioned, and bend from the hips to pick up the patient. You make sure you can keep the weight and arms as close to your body as possible. When you're both ready, you both say so.

Your training officer tells you how many steps there are ahead. Both of you start the descent. The training officer counts out the steps as you descend. You and the other carrier are keeping pace and checking in. The three of you sound like this:

One step. Okay. Okay.

Two step. Okay. Too fast, slow down.

Three step. Okay. Okay. (and so on)

You and your partner place the stair chair down at the bottom of the steps to rest for a minute. Mrs. Sanchez's daughter opens the front door, and the training officer checks to see that the walkway is clear of obstacles and ice. When you are all assured it is safe, you wheel the chair out to the ambulance and load the patient onto the ambulance cot.

Reassessment

Inside the ambulance, you make certain the patient is comfortable, loosening her scarf and the blankets. You perform a reassessment en route and arrive at the hospital without any change in the patient's condition. You and your partners transfer Mrs. Sanchez to the hospital staff, complete the necessary paperwork, and then proceed to ready the ambulance for the next call.

IN REVIEW

1. List the four basic principles of body mechanics.
2. Explain how to perform the power grip, and when you should use it.
3. Explain how to perform the power lift, and when you should use it.
4. Name the three categories of patient moves, and explain when each should be used.
5. List some of the guidelines and safety precautions for carrying.
6. Explain, briefly, how to perform (a) a direct ground lift, (b) an extremity lift, (c) a direct carry, and (d) the draw sheet method.
7. Name the device that is recommended for carrying a patient up and down stairs, whenever possible, and explain the function of the spotter.
8. Name types of patient-carrying devices you would consider using if the spaces you need to traverse are too narrow or too confined for a wheeled stretcher.
9. Explain the proper body mechanics for reaching while doing a log roll.
10. Explain the safety guidelines for pushing and pulling.

CRITICAL THINKING

You are on the scene providing emergency care to a 76-year-old female patient who was found in bed on the second floor of her home. She is propped up in bed, using several pillows, and complains that she cannot breathe when lying flat. The bedroom is located down a narrow hallway.

1. What device should you use to move the patient to the ambulance?
2. What special circumstances should you consider when selecting the equipment?
3. How would you move the patient from the bed to the device being used to move her?
4. What body techniques will you use to prevent injury to yourself when performing the moves?

ANSWER KEY

IN REVIEW

1. Four principles for safe lifting include (1) keeping the weight of the object as close to your body as possible; (2) using your leg, hip, and gluteal (buttocks) muscles plus contracted abdominal muscles to move an object; (3) “stacking” your shoulders, hips, and feet and moving them as a unit; and (4) reducing the height or distance through which the object must be moved.
2. To perform a power grip, your palm and fingers should come in complete contact with the object and your fingers should be bent at the same angle. A power grip should always be used for getting the maximum force from your hands when lifting or moving an object.
3. To perform the power lift, place your feet shoulder width apart and turn them out slightly; bend your knees and tighten the muscles of the abdomen; keep your back straight with your head facing forward in a neutral position; straddle the object, keeping feet flat with weight evenly distributed and just forward of the heels; place your hands about 10 inches apart; and use a power grip to lift. Your back should remain locked in as the force is driven through the heels and arches of your feet. Your upper body should come up before the hips. A power-lift technique helps prevent injury while lifting and protects the patient with a safe and stable move. Use it whenever possible. It is also the lift of choice for rescuers with weak knees or thighs.
4. Patients are generally moved in three ways. First, the “emergency move” is used when there is immediate danger to the patient or rescuer. Second, the “urgent move” is used when the patient is suffering from an immediate threat to life and must be moved quickly and transported for care. Finally, a “nonurgent move” is used when no immediate threat to life exists and the patient can be moved in a normal manner when ready for transport.
5. Guidelines and safety precautions for carrying patients and equipment include: keep the weight as close to your body as possible; keep your back in a locked-in position; do not hyperextend your back; keep shoulders, hips, and feet (base) in alignment; refrain from twisting; strenuous effort should be sustained for no longer than 1 minute; and whenever possible, carry patients and equipment on devices that can be rolled.
6. (a) Direct ground lift: two or three rescuers should line up, kneeling on one knee, on the same side of the patient. The first rescuer should cradle the patient's head by placing one arm under the patient's neck and shoulder and then place his other arm under the patient's lower back. The second rescuer should place the patient's arms on his chest and then place one arm under the patient's knees and one arm above the buttocks. A third rescuer, if available, places both arms under the waist. The other two rescuers then slide their arms either up to the midback or down to the buttocks. On signal from the first rescuer, they should lift the patient to their knees and roll the patient in toward their chests. On signal from the first rescuer, they should stand and move the patient to the stretcher or other patient-carrying device. (b) Extremity lift: the first rescuer kneels behind the patient at the patient's head and places one hand under each of the patient's shoulders until he can slip his hands through under the patient's arms to reach around and grasp the patient's wrists. The second rescuer slips his hands under the patient's knees. Both rescuers move up to a crouching position, keeping their backs straight and heads in neutral alignment. On signal from the first rescuer, they stand up simultaneously and move the patient. (c) Direct carry: position the stretcher perpendicular to the patient's bed. The first rescuer slides an arm under the patient's neck and cups the patient's shoulder. The second rescuer slides a hand under the patient's hips and lifts slightly so that the first rescuer can slide an arm under the patient's back. The second rescuer then places an arm under the hips and calves. The crew

then slides the patient to the edge of the bed, lifts and curls the patient to their chests, and rotates the patient gently onto the stretcher. (d) Draw sheet method: first loosen the bottom sheet of the bed and position the stretcher next to the bed. Reach across the stretcher and grasp the sheet firmly at the patient's head, chest, hips, and knees. Slide the patient gently onto the stretcher.

7. The stair chair is recommended for carrying a patient up or down stairs. The spotter directs the move, for example, warning the rescuers of the number of stairs ahead. A newer model, the tracked stair chair, allows the chair to glide down stairs with less effort and eliminates the need to lift the chair while moving it down steps.
8. In a narrow or confined space, a portable stretcher, a stair chair, a backboard, a scoop stretcher, or a flexible stretcher may be used.

9. When reaching during a log roll, it is important to lean from the hips and not from the waist. Keep your back straight and use your stronger shoulder muscles to assist you whenever possible.

10. Whenever possible, it is safer to push rather than pull. However, if an object must be pulled, keep the load between your shoulders and hips and close to your body. As always, try to keep your back straight and bend your knees slightly. When pushing, do so from the areas between your waist and shoulders. Always avoid pushing or pulling any object that is overhead.

GLOSSARY

body mechanics application of the study of muscles and body movement (kinesiology) to the use of the body and to the prevention and correction of problems related to posture and lifting.

emergency move a patient move that should be performed when there is immediate danger to the patient or to the rescuer.

kyphosis abnormal curvature of the spine with convexity backward. Also called *slouch*.

lordosis abnormal anterior convexity of the spine. Also called *swayback*.

nonurgent move a patient move made when no immediate threat to life exists.

power grip recommended gripping technique. The palm and fingers come in complete contact with the object and all fingers are bent at the same angle.

power lift recommended technique for lifting. Feet are apart, knees bent, back and abdominal muscles tightened, back as straight as possible, lifting force driven through heels and arches, upper body rising before hips.

urgent move a patient move made because there is an immediate threat to life because of the patient's condition and the patient must be moved quickly for transport.

Anatomy, Physiology, and Medical Terminology

Anatomy, Physiology, and Medical Terminology

The following items provide an overview to the purpose and content of this chapter. The Standard and Competency are from the National EMS Education Standards.

STANDARDS • Anatomy and Physiology; Medical Terminology

COMPETENCIES • Applies fundamental knowledge of the anatomy and function of all human systems to the practice of EMS. Uses foundational anatomical and medical terms and abbreviations in written and oral communication with colleagues and other health professionals.

OBJECTIVES • After reading this chapter, you should be able to:

1. Define key terms introduced in this chapter.
2. Explain the importance of knowledge of anatomy and physiology to patient assessment and care.
3. Define the terms *anatomy* and *physiology*.
4. Describe each of the following terms of position:
 - a. Anatomical position
 - b. Supine
 - c. Prone
 - d. Lateral recumbent
 - e. Fowler's position
 - f. Semi-Fowler's position
 - g. Trendelenburg position
 - h. Shock position
5. Identify each of the following anatomical terms:
 - a. Midline
 - b. Sagittal plane
 - c. Frontal plane
 - d. Transverse plane
 - e. Midaxillary line
 - f. Midclavicular line
 - g. Anterior and posterior
 - h. Dorsal and ventral
 - i. Right and left
 - j. Superior and inferior
 - k. Medial and lateral
 - l. Proximal and distal
 - m. Plantar
 - n. Palmar
 - o. Abdominal quadrants: right upper quadrant, left upper quadrant, left lower quadrant, right lower quadrant
6. State the function of each of the following musculo-skeletal system structures:
 - a. Skeletal muscle
 - b. Tendons
 - c. Ligaments
 - d. Bone
7. Describe each of the following components of the skeleton, including its location, the bones that make it up, and its function:
 - a. Skull
 - i. Cranium
 - ii. Face
 - b. Spinal column
 - i. Cervical spine
 - ii. Thoracic spine
 - iii. Lumbar spine
 - iv. Sacral spine
 - v. Coccyx
 - c. Thorax
 - i. Sternum (including manubrium, body, and xiphoid process)
 - ii. Ribs
 - d. Pelvis
 - i. Ilium and iliac crest
 - ii. Ischium
 - iii. Pubis
 - iv. Acetabulum
 - e. Upper extremities
 - i. Clavicle
 - ii. Scapula, including acromion process
 - iii. Humerus
 - iv. Radius
 - v. Ulna, including olecranon process
 - vi. Carpals
 - vii. Metacarpals
 - viii. Phalanges

- f. Lower extremities
 - i. Femur
 - ii. Patella
 - iii. Tibia, including medial malleolus
 - iv. Fibula, including lateral malleolus
 - v. Tarsals, including the calcaneus
 - vi. Metatarsals
 - vii. Phalanges
8. Demonstrate each of the following joint movements:
 - a. Flexion and extension
 - b. Adduction and abduction
 - c. Circumduction
 - d. Pronation and supination
9. Describe each of the following types of joints:
 - a. Ball-and-socket
 - b. Hinge
 - c. Pivot
 - d. Gliding
 - e. Saddle
 - f. Condylloid
10. Differentiate between skeletal (voluntary), smooth (involuntary), and cardiac muscle.
11. Identify the basic functions of the respiratory system.
12. Identify the following structures of the respiratory system:
 - a. Upper airway: nose, mouth, pharynx, nasopharynx, larynx
 - b. Lower airway: trachea, bronchi, bronchioles, alveoli
 - c. Epiglottis
 - d. Lungs
 - e. Pleura
 - f. Diaphragm
13. Identify important differences in respiratory system anatomy in children.
14. Describe the basic mechanics and physiology of normal ventilation, respiration, and oxygenation, including:
 - a. Inhalation and exhalation
 - b. Use of intercostal muscles and diaphragm
 - c. Negative and positive pressure
 - d. Nervous system control of respiration
 - e. Alveolar/capillary exchange of oxygen and carbon dioxide
 - f. Capillary/cell exchange of oxygen and carbon dioxide
15. Identify characteristics of both adequate and inadequate breathing.
16. List the functions of the circulatory (cardiovascular) system.
17. Describe the anatomy and physiology of the heart to include:
 - a. Location and size
 - b. Tissue layers
 - c. Chambers
 - d. Valves
 - e. Blood supply
 - f. Blood flow through the heart
 - g. Conduction system
18. Discuss the anatomy and physiology of the blood, circulation, perfusion, and metabolism to convey basic comprehension of:
 - a. Arteries and arterioles
 - b. Capillaries
 - c. Veins and venules
 - d. Blood composition
 - e. Perfusion and capillary exchange
 - f. Cell metabolism
19. Describe the basic functions of the nervous system.
20. Differentiate between the structural components and basic functions of the central nervous system and peripheral nervous system.
21. Differentiate between the functional divisions of the peripheral nervous system:
 - a. Voluntary (somatic) nervous system
 - b. Involuntary (autonomic) nervous system
 - i. Sympathetic division
 - ii. Parasympathetic division
22. Describe the basic role of the reticular activating system (RAS) and cerebral hemispheres in consciousness and unconsciousness.
23. Explain the overall function of the endocrine system.
24. Discuss the location and general function of each of the following components of the endocrine system:
 - a. Thyroid gland
 - b. Parathyroid glands
 - c. Adrenal glands
 - d. Gonads
 - e. Islets of Langerhans of the pancreas, insulin, and glucagon
 - f. Pituitary gland
25. Describe the general actions of epinephrine and norepinephrine on β_1 , β_2 , α_1 , and α_2 receptors of the sympathetic nervous system.
26. List the general functions of the integumentary system.
27. Identify the structures of the integumentary system, including the epidermis, dermis, and subcutaneous layer.
28. Describe the basic anatomy and physiology of each of the following structures of the digestive system:
 - a. Stomach
 - b. Pancreas
 - c. Liver
 - d. Gallbladder
 - e. Small intestine (duodenum, jejunum, ileum)
 - f. Colon
29. List the basic structure and function of the organs of the urinary or renal system to include:
 - a. Kidneys
 - b. Ureters
 - c. Urinary bladder
 - d. Urethra
30. State the basic structure and function of the organs of the male and female reproductive systems:
 - a. Male
 - i. Testes
 - ii. Accessory glands
 - iii. Penis
 - b. Female
 - i. Ovaries
 - ii. Fallopian tubes
 - iii. Uterus
 - iv. Vagina
 - v. External genitalia
31. Explain the importance of knowledge of medical terminology in communication among health care team members.
32. Apply knowledge of common prefixes, suffixes, and roots to interpret medical terms.

KEY TERMS • Page references indicate first major use in this chapter. For complete definitions, see the Glossary.

anatomy
circulatory system
digestive system
endocrine system

integumentary system
musculoskeletal system
nervous system
physiology

reproductive system
respiratory system
urinary/renal system

Case Study

The Dispatch

EMS Unit 108—respond to Centennial Park on Highland Avenue—you have a female patient at that location who suffered a burn—time out 1306 hours.

Upon Arrival

After positioning the ambulance out of the flow of traffic, you scan the scene for hazards and exit. A woman runs up to you and says, “A woman over here was trying to refuel her son’s model airplane when the gas tank blew

up or something.” You approach the patient and find that she is sitting on a patch of grass about 15 feet away from a smoldering model plane.

How would you proceed to assess and care for this patient?

During this chapter, you will read a brief overview of the human body. Later, we will return to the case study and put in context some of the information you learned.

INTRODUCTION

Knowledge of the human body and its systems is essential to high-quality patient assessment and emergency care. That understanding will help you recognize when the body is working as it should and when there are life-threatening deviations to normal function. Your ability to use proper terminology to describe the human body will also allow you to communicate patient information to other health care professionals concisely and accurately.

ANATOMICAL TERMS

Basic knowledge of the human body includes the study of anatomy and physiology. The word **anatomy** refers to the structure of the body and the relationship of its parts to each other (how the body is made). The word **physiology** refers to the function of the living body and its parts (how the body works).

As you proceed through your course, you will encounter descriptive terms you may not have heard or used before. Study and learn them. It is essential that you use them correctly to describe position, direction, and location of a patient and his illness or injury. Using correct terms minimizes confusion and helps to communicate the exact extent of a patient’s problem based on a careful physical assessment.

One term that is essential for you to understand and use is the **anatomical position**. Unless otherwise

indicated, all references to the human body assume the anatomical position: The patient is standing erect, facing forward, with arms down at the sides and palms forward. This basic position is used as the point of reference whenever terms of direction and location are used. Other terms of position include (Figures 1a to 1f ■):

- **Supine.** The patient is lying face up on his back.
- **Prone.** The patient is lying face down on his stomach.
- **Lateral recumbent (recovery) position.** The patient is lying on his left or right side. Be sure to place the patient on the side so that you can easily monitor the airway. Also, be careful not to allow excessive pressure on the chest that might impair the breathing status of the patient. To avoid possible injury from impaired blood flow to the lower arm, turn the patient to the opposite side if he is in the recovery position for greater than 30 minutes.
- **Fowler’s position.** The patient is lying on his back with his upper body elevated at a 45° to 60° angle.
- **Semi-Fowler’s position.** The patient is lying on his back with the upper body elevated at an angle less than 45°.
- **Trendelenburg position.** The patient is lying on his back with the legs elevated higher than the head and body on an inclined plane (head down, legs up). *This position, which was once used in the management of shock, is no longer recommended.* With the patient in the Trendelenburg position, the abdominal organs may be pushed up against the diaphragm, from gravity, and make breathing more difficult for the patient.



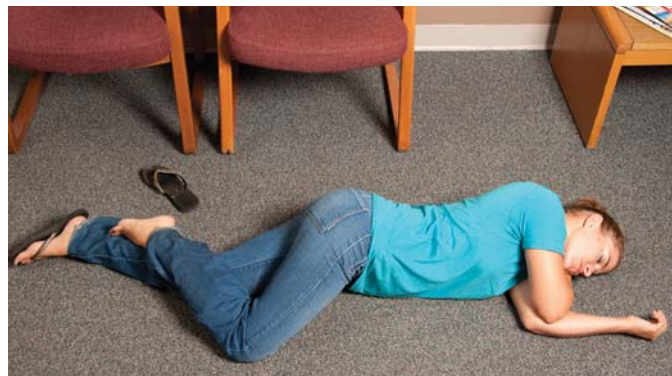
■ **FIGURE 1a** Supine position.



■ **FIGURE 1b** Prone position.



■ **FIGURE 1c** Right lateral recumbent position.



■ **FIGURE 1d** Left lateral recumbent position.



■ **FIGURE 1e** Fowler's position.



■ **FIGURE 1f** Trendelenburg position.

It may also increase the pressure inside the skull in patients with a head injury. *It is definitely contraindicated in a patient with a suspected spine injury.*

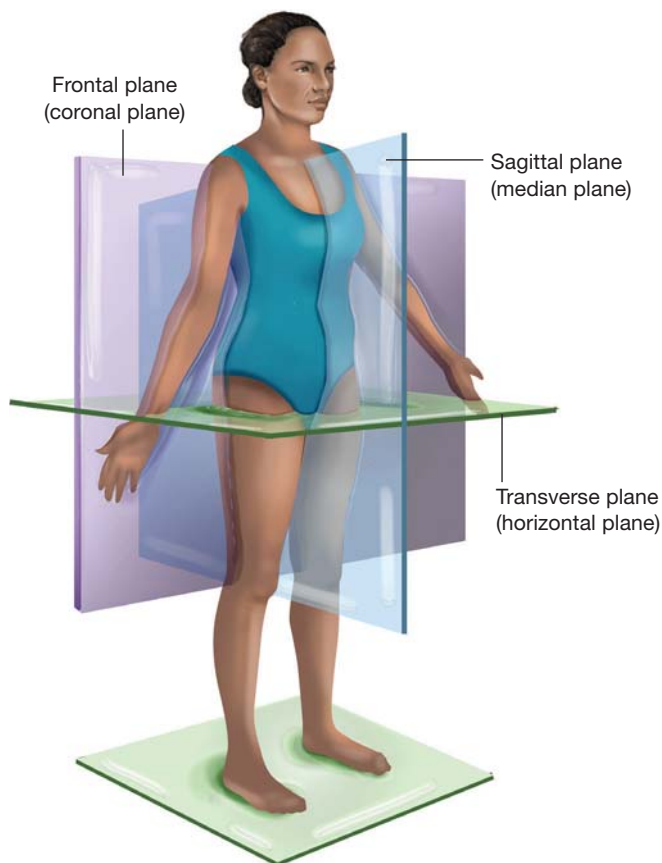
- **Shock position.** This is an alternative to the Trendelenburg position, where only the feet and legs are elevated approximately 12 inches. *Like the Trendelenburg position, the shock position is no longer recommended in the treatment of shock. This position is also contraindicated in a patient with a suspected spine injury.* You may find this position still used for the patient who has suffered a simple faint.

In assessing a patient's condition, it is important to know certain external and internal landmarks, or

the anatomical regions of the body and related parts (Figures 2 ■ through 9 ■). Referring to these landmarks makes your description of the patient's condition more understandable, especially when you are seeking on-line medical direction.

Imaginary divisions of the body are called **anatomical planes**. There are also anatomical lines used to reference points on the body. These planes and lines indicate the internal body structure and the relationship of different groups of organs to others. Anatomical planes and lines are delineated by the following (Figures 2 ■ and 3 ■):

- **Sagittal plane.** The sagittal plane, or median plane, is a vertical plane that runs lengthwise and divides the



■ **FIGURE 2** Anatomical planes.

body into right and left segments. The segments do not have to be equal. If the plane divides the body into two equal halves it would be referred to as the **midsagittal plane**.

- **Frontal or coronal plane.** The frontal or coronal plane divides the body into front and back halves.
- **Transverse or horizontal plane.** The transverse or horizontal plane is parallel with the ground and divides the body into upper and lower halves. It may also be referred to as the axial plane.
- **Midline.** Visualize the normal anatomical position (the patient is facing you). Now imagine a line drawn vertically through the middle of the patient's body, beginning at the top of the head and continuing down through the nose and the navel and to the ground between the legs. Midline corresponds with the midsagittal plane because it divides the body into equal halves.
- **Midaxillary line.** Visualize a patient standing in profile. Now draw an imaginary line vertically from the middle of the patient's armpit down to the ankle. This is the midaxillary line. A vertical line drawn side to side through the body from the midaxillary line on one side to the midaxillary line on the opposite side forms the frontal plane and divides the body into the **anterior plane** (the patient's front) and the **posterior plane** (the patient's back).

- **Transverse line.** Visualize the normal anatomical position. Draw an imaginary line horizontally through the patient's waist. This is the transverse line. A horizontal line drawn through the body, front to back, at the waist forms the transverse plane and divides the body into the **superior plane** (above the waist) and the **inferior plane** (below the waist).

Other descriptive terms include (Figure 3):

- **Anterior and posterior.** *Anterior* is toward the front. *Posterior* is toward the back.
- **Superior and inferior.** *Superior* means toward the head or above the point of reference. *Inferior* means toward the feet or below the point of reference.
- **Dorsal and ventral.** *Dorsal* means toward the back or backbone (spine). *Ventral* means toward the front or belly (abdomen).
- **Medial and lateral.** *Medial* means toward the midline or center of the body. *Lateral* refers to the left or right of the midline, or away from the midline of the body. Note that **bilateral** refers to both left and right, meaning "on both sides." *Unilateral* refers to one side. *Ipsilateral* refers to the same side, *contralateral* to the opposite side.
- **Proximal and distal.** *Proximal* means near the point of reference. *Distal* is distant, or far from the point of reference.
- **Right and left.** Always the patient's right and left.
- **Midclavicular and midaxillary.** *Midclavicular* refers to the center of each of the collarbones (clavicle). The midclavicular line (Figure 5 ■) extends from the center of either collarbone down the anterior thorax. *Midaxillary* refers to the center of the armpit (axilla). The midaxillary line (Figure 7 ■) extends from the middle of the armpit to the ankle.
- **Plantar and palmar.** *Plantar* refers to the sole of the foot. *Palmar* refers to the palm of the hand.

The abdomen may be referred to as if it were divided by horizontal and vertical lines drawn through the umbilicus (navel). The four parts, or **abdominal quadrants** (Figure 10 ■), are the right upper quadrant (RUQ), right lower quadrant (RLQ), left upper quadrant (LUQ), and left lower quadrant (LLQ).

BODY SYSTEMS

The Musculoskeletal System

The **musculoskeletal system** of the human body consists of a bony framework, or skeleton, held together by *ligaments* that connect bone to bone, layers of muscles, *tendons* that connect muscles to bones, and various other connective tissues. The system must be strong to



■ **FIGURE 3** Terms of direction.

provide support and protection, jointed to permit motion, and flexible to withstand stress.

The Skeletal System

The skeletal system serves four functions:

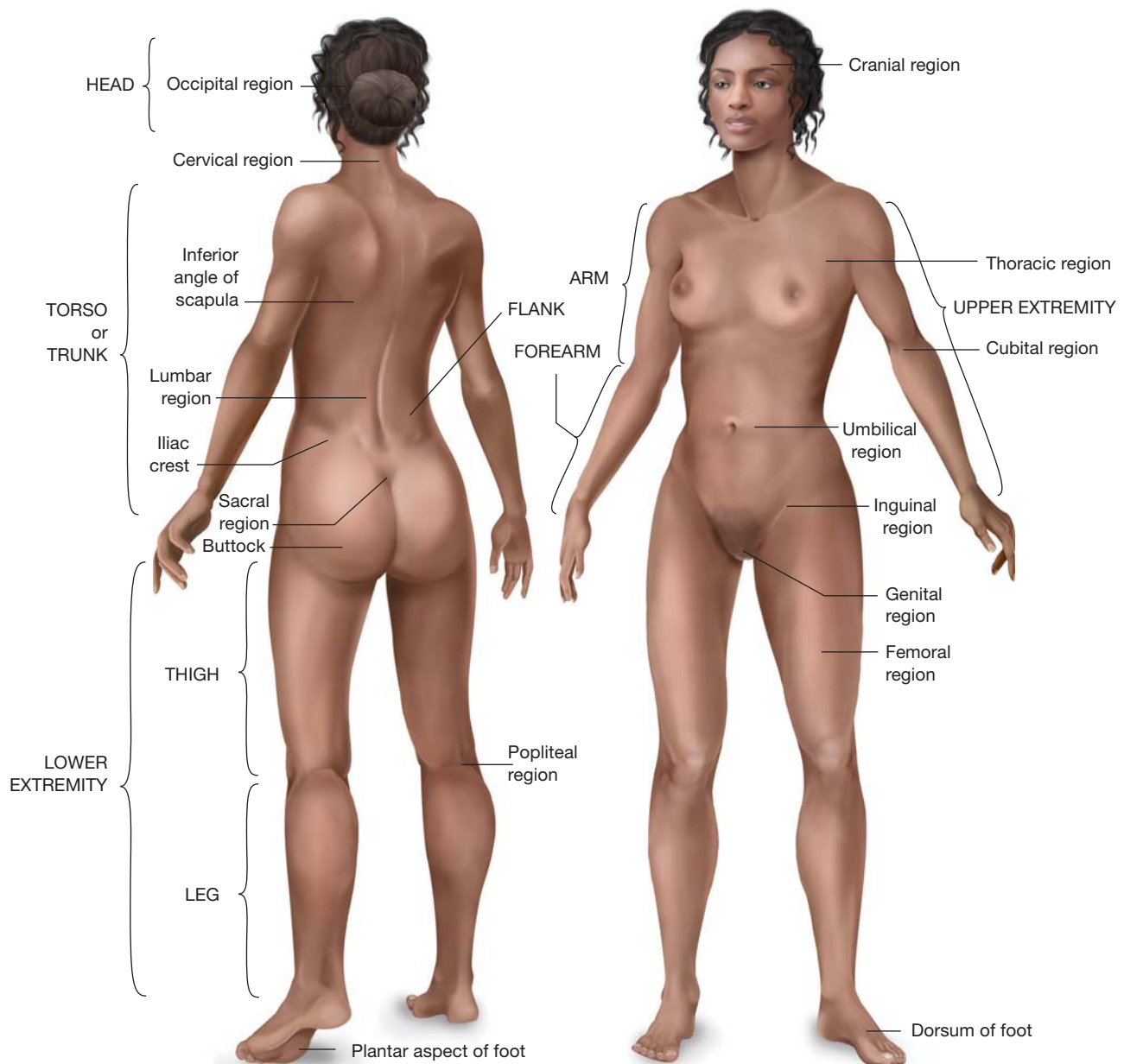
- Giving the body its shape
- Protecting the vital internal organs
- Allowing for movement
- Storing minerals and producing blood cells

The skeletal system has six basic components: the skull, spinal column, thorax, pelvis, and the upper and

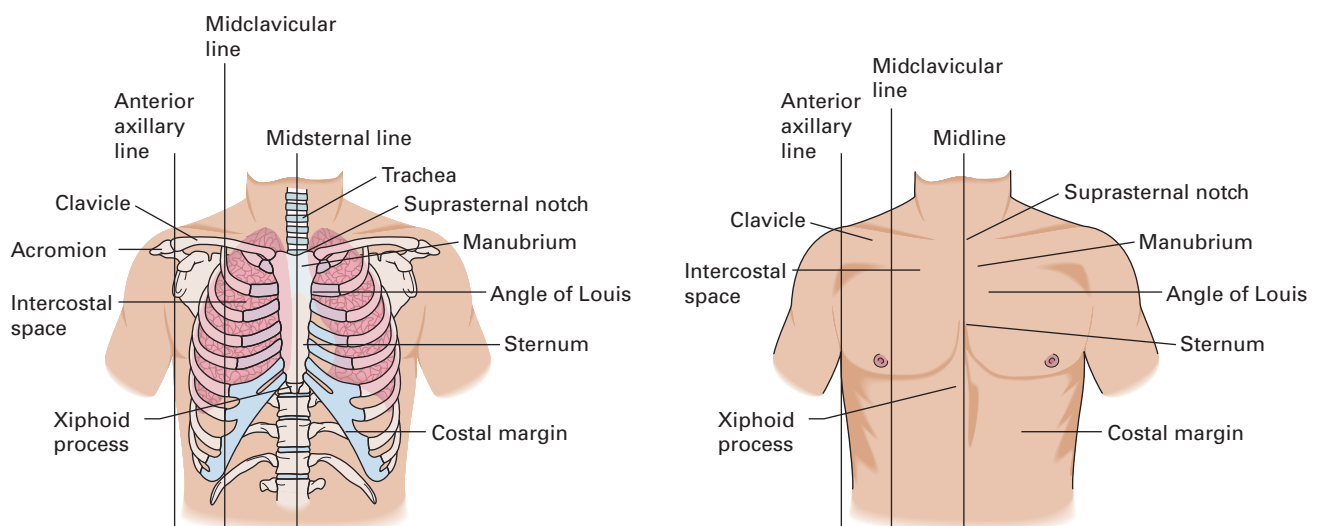
lower extremities (Figure 11 ■). The bones of the adult skeleton are classified by size and shape (long, short, flat, or irregular).

The Skull. The **skull** rests at the top of the spinal column and houses and protects the brain. It has two parts: the cranium and the face.

The **cranium** forms the top, back, and sides of the skull plus the forehead. The interlocking bones of the cranium—the *occipital*, two *parietal*, two *temporal*, and the *frontal*—are typical flat bones. The outer layer of the cranium is thick and tough. The inner layer is thinner and more brittle. Though this arrangement provides for maximum strength, lightness, and elasticity, the cranium may still be fractured. The brain is commonly lacerated



■ **FIGURE 4** Regions of the body.



■ **FIGURE 5** Terms describing the anterior chest.