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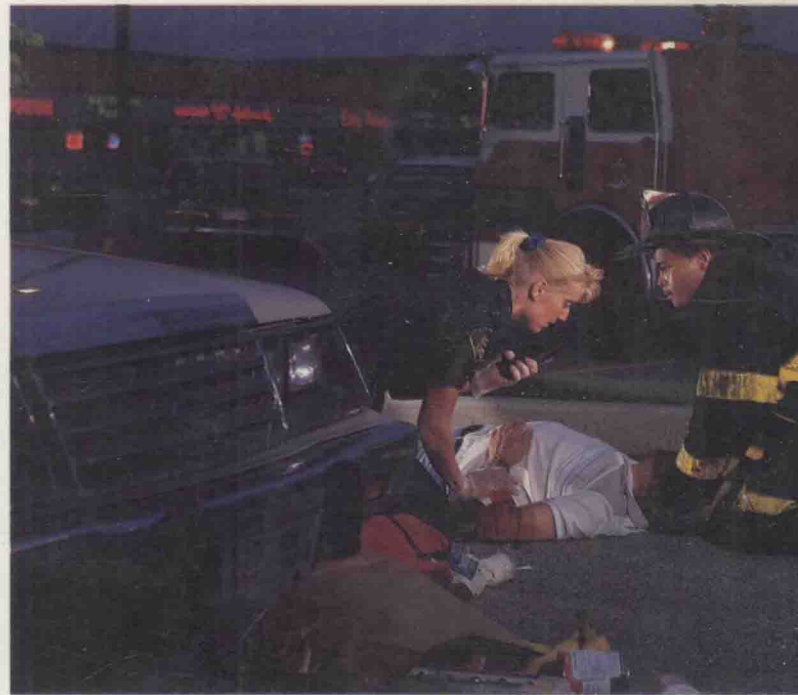


**National  
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# ***First Responder***

**Revised Edition**

***Your First Response  
in Emergency Care***



# ***First Responder Your First Response in Emergency Care***

***Revised Edition***

**James D. Heckman, MD  
Editor**



***By the American Academy of Orthopaedic Surgeons***



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This textbook is intended solely as a guide to the appropriate procedures to be employed when rendering emergency care to or transporting the sick or injured. It is not intended as a statement of the standards of care required in any particular situation, because circumstances and the patient's physical condition can vary widely from one emergency to another. Nor is it intended that this textbook shall in any way advise emergency personnel concerning legal authority to perform the activities or procedures discussed. Such local determinations should be made only with the aid of legal counsel.

# Foreword

In the evolution of an orderly approach to the prehospital care of victims of acute injury and illness, several levels of emergency care providers have emerged, most notably emergency medical technicians (EMTs)—basic, intermediate, and paramedic. As the EMT evolved from this progressive organization of prehospital emergency medical services (EMS), it quickly became evident that there was a critical need for another level of response before the arrival of the EMT. Thus, the first response level of care within the EMS system evolved. First responders today are recognized and essential—often life-saving—participants in the EMS system.

The advent of the U.S. Department of Transportation (DOT) first responder curriculum gave further credence to the growing recognition that first responders were indispensable members of the EMS team and the task then became to provide educational materials to support the training program. As one who has strongly supported the need for standardization of training for all levels of prehospital EMS providers, I am particularly pleased with this new textbook, *Your First Response in Emergency Care*. It is obviously not sufficient to have only a curriculum; supporting educational materials, most importantly a textbook, are mandatory. In my judgment this book, for several reasons, fulfills all criteria for an ideal textbook for first responders.

First, there is no one I know in EMS more qualified to contribute to this text than Dave Schottke and Garry Briese. They not only have the educational qualifications and background but they also know first-hand the experience of “working in the pits.” That combination is evident both in the writing style and level throughout the book, making its content easily understood. Given the varied backgrounds of knowledge and experience from which first responders-to-be come, this ease of understanding is critical. The “information-transfer” is further enhanced by the abundance of medically accurate color illustrations and photographs.

Secondly, this text conforms to the content of the U.S. DOT curriculum for first responders. This has obvious advantages to both student and instructor. In addition, it expedites the training of first responders because it provides a textbook containing all the information the student must know and that the instructor must have available for teaching in accord with the national curriculum objectives.

Thirdly, this text has been carefully scrutinized by the book’s editorial board composed of orthopaedists and an emergency physician, and has been published by the American Academy of Orthopaedic Surgeons, ensuring that the information it conveys is contemporary and in accord with accepted medical knowledge and practice. Under the guidance of James Heckman, MD (also editorial chairman for *Emergency Care and Transportation of the Sick and Injured*), this book fulfills these ideals in every respect. As just one example, the guidelines on infectious diseases are timely, practical, and medically precise and accurate.

There is little doubt that the role of the first responder in EMS will continue to expand. For example, it is very likely that early defibrillation will be delivered more and more commonly by first responders who function as integral, medically-controlled members of an EMS system. (“Early Defibrillation by First Responders,” Chapter 21). The availability of the American Heart Association’s early defibrillation training program will expedite the incorporation of this additional level of knowledge and skill into many first responder training programs.

With confidence I can recommend this textbook for use in all first responder training programs across the United States. Furthermore, not only participants in training programs but already trained first responders should have this text readily available as a reference and as an ongoing source of review and updating. Everyone who has a role in educating first responders has a responsibility to ensure that the information conveyed is easily understood and up-to-date, in compliance with the national curriculum, and is medically correct. This text will readily fulfill that responsibility. At the same time, it will help give first responders the knowledge they will need to fulfill their own responsibility as emergency caregivers in EMS systems across the country.

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# Preface

The recent development of the emergency medical services (EMS) system represents a nationwide expansion of prehospital health care. Although the early EMS system did not include first responders, the need for their prompt, basic care of persons involved in accidents or other emergency situations became a necessity in order for the more advanced skills to be successfully carried out by EMTs and paramedics. Thus, although first responders are first on the scene of an accident or illness, they have been the last ones incorporated into the EMS system. Because a chain is only as strong as its weakest link, first responder training must be enhanced so that first responders become as effective as other EMS team members.

*Your First Response in Emergency Care* provides the framework around which first responders can gain the knowledge, skills, and confidence needed to care for victims of sudden illnesses and accidents, which may occur in urban, suburban, and rural settings. They will learn

- how to function when no specialized equipment is available;
- how to work effectively with limited equipment; and
- how to perform as key assistants to the emergency medical technician (EMT) or paramedic who arrives on the scene to provide more complete medical care for the patient.

Finally, and perhaps most importantly, this book will teach first responders what **not** to do.

The organization and content of this book follow the most recent first responder training course curriculum developed by the U.S. Department of Transportation (DOT) and the standards for Emergency Medical Care developed by the National Fire Protection Association (NFPA). Some topics in this text, such as patient assessment, pediatric emergencies, infectious disease control, psychological emergencies, and multiple-casualty incidents have been expanded to provide first responders with additional knowledge and skills. Optional skills, such as helicopter operations, RapidZap defibrillation, and other special situations, are also included for EMS systems that use these skills.

Some EMS systems may choose to train first responders in skills not included in this book. In these cases, first responder courses should be developed in close consultation with the medical and EMS communities.

This text contains the DOT objectives and NFPA standards for first responder training. In addition, each chapter presents a glossary of technical words introduced in that chapter. The chapter introduction and objectives will help the reader to understand and retain the information that is presented. Learning aids are included at the end of each chapter: “You Should Know” lists the information with which first responders should be familiar. “You Should Practice” lists those skills in which first responders should be proficient. By working to master this knowledge and these skills, first responders will prepare themselves to function as valuable members of the EMS team.

The knowledge and skills that first responders will gain from this book can be carried with them 24 hours a day. Their training will be valuable not only to those people they will encounter when functioning as a first responder, but also to their families and friends if they experience sudden illness or injury.

We welcome any comments or suggestions that might help make this book more useful to you or to others.

The Editors

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# Chapter 1

## Introduction

### **NFPA Standard 1001 Emergency Medical Care**

This standard does not specifically include the material covered in this chapter.

### **U.S. Department of Transportation First Responder Training Course**

#### **Lesson Objectives**

- Describe course scope, emphasis, and administrative procedures.
- State the three major roles of the first responder covered in the course.
- Describe all applicable legal aspects relative to providing emergency care as a first responder.

## Key Terms

**acquired immunodeficiency syndrome (AIDS)** • a fatal disease caused by a virus. It is spread through direct contact with body fluids of infected individuals.

**actual consent** • consent actually given by a person authorizing the first responder to provide care or transportation.

**advanced life support (ALS)** • the use of specialized equipment, such as cardiac monitors, defibrillators, intravenous fluids, drug infusion, and endotracheal intubation, to stabilize patients who have experienced sudden illness and injury.

**appropriate medical facility** • a hospital with adequate medical resources to provide continuing care to sick or injured patients who are transported after field treatment by first responders.

**basic life support (BLS)** • emergency lifesaving procedures performed without invasive procedures to stabilize patients who have experienced sudden illness or injury.

**defibrillation** • delivery of an electric current through a person's chest wall and heart for the purpose of ending a lethal heart rhythm called ventricular fibrillation.

**duty to act** • a first responder's legal responsibility to respond promptly to an emergency scene and provide medical care (within the limits of training and equipment).

**emergency medical technician (EMT)** • a person who is trained and certified to provide basic life support and certain other noninvasive prehospital medical procedures.

**emergency services dispatch center** • a fire, police, or emergency medical services (EMS) agency; a "911" center or a seven-digit telephone number used by one or all of the emergency agencies.

**first responder** • the first medically trained person present at the scene of sudden illness or injury.

**Good Samaritan laws** • laws that encourage individuals to voluntarily help an injured or suddenly ill person by minimizing the liability for any errors or omissions in rendering good faith emergency care.

**hepatitis** • a serious, long-term illness caused by a virus. Signs and symptoms are nausea, vomiting, fatigue, abdominal pain, and jaundice.

**implied consent** • consent to receive emergency care that is assumed because the individual is unconscious, underage, or so badly injured or ill that he or she cannot respond.

**living wills** • legal documents with specific instructions that the patient does not want to be resuscitated or kept alive by mechanical support systems.

**standard of care** • the manner in which an individual must act or behave when giving care (often defined by national organizations such as the American Heart Association).



## Introduction

This book is meant to be used as part of a training course for first responders. Although you may gain some knowledge from the book alone, it is strongly suggested that you take an approved first responder course. A first responder course is designed to teach you the basics of good patient care and the skills you need to care appropriately for the victim of an accident or sudden illness until more highly trained emergency personnel arrive.

The skills and knowledge you will learn in this course are important, because they are the foundation of the entire emergency medical services (EMS) system. Your actions can prevent a minor situation from becoming serious or may even determine whether a patient lives or dies.

## Objectives

The objective of this chapter is to introduce you to the content, structure, study materials, and general procedures of the first responder course. In addition to giving you a general understanding of the course, this chapter should enable you to:

1. State the major roles and responsibilities of the first responder.
2. Describe the general legal considerations that relate to the role of the first responder.

## First Responder Training

In the first responder course, you will learn how to examine patients and how to use the emergency medical skills needed by a first responder. These skills are divided into two main groups: (1) those that are used for patients who have been injured; and (2) those that are used for patients suffering from illness or serious medical problems (Figure 1.1).

You will learn the following skills to stabilize and treat persons who have been injured:



**Figure 1.1** A typical emergency scene.

- Control of airway, breathing and circulation.
- Control of external bleeding.
- Treatment of shock.
- Treatment of wounds.
- Splinting of broken bones or dislocations.

In addition to these trauma skills, you will learn to recognize, stabilize, and provide initial treatment for the following medical conditions:

- Heart attack
- Stroke
- Seizures
- Diabetes
- Alcohol and drug abuse
- Poisoning
- Bites and stings
- Emergency childbirth
- Problems associated with excessive heat
- Problems associated with excessive cold

### Goals of First Responder Training

One of the primary goals of first responder training is to teach you how to evaluate, stabilize, and treat patients using a minimum of specialized equipment. First responders frequently find themselves in situations where little or no emergency medical equipment is readily available. Therefore, it is important to understand these basic principles of first responder training. You should know:

- What you should not do.
- How to use your first responder life support kit.
- How to improvise.
- How to assist other EMS providers.

### Know What You Should Not Do

The first goal of this training is to teach you what not to do! For example, it may be better for the first responder to leave a patient in the position found rather than attempt to move the patient without the proper equipment or an adequate number of trained personnel.

**ABOVE ALL, DO NOTHING THAT WOULD FURTHER HARM THE PATIENT!**

The first responder provides immediate treatment. The care is immediate because the first responder is, by definition, the first medically trained person to arrive on the scene. Your immediate care is usually followed by more extensive care given by emergency medical technicians (EMTs), paramedics, nurses, and physicians. The care you give as the first responder is essential because it is given first.





### ***Suggested Contents of a First Responder Life Support Kit***

#### ***Patient Examination Equipment:***

- 1 flashlight

#### ***Personal Safety Equipment:***

- 5 sets gloves
- 5 face masks

#### ***Resuscitation Equipment:***

- 1 mouth-to-mask resuscitation device
- 1 portable hand-powered suction device

#### ***Bandaging and Dressing Equipment:***

- 10 gauze-adhesive strips 1"
- 10 gauze pads 4" × 4"
- 5 gauze pads 5" × 9"
- 2 universal trauma dressings 10" × 30"
- 1 occlusive dressing for sealing chest wounds
- 4 conforming gauze rolls 3" × 5 yd
- 4 conforming gauze rolls 4½" × 5 yd
- 6 triangular bandages
- 1 adhesive tape 2"
- 1 burn sheet

#### ***Patient Immobilization Equipment:***

- 2 (each) cervical collars: small; medium; large
- 3 rigid conforming splints (SAM splints) OR
- 1 set air splints for arm and leg OR
- 2 (each) cardboard splints 18" and 24"

#### ***Extrication Equipment:***

- 1 spring-loaded center punch
- 1 set gloves—heavy leather type

#### ***Miscellaneous Equipment:***

- 2 blankets—disposable
- 2 cold packs
- 1 bandage scissors

#### ***Other Equipment***

- 1 set personal protective clothing (helmet, eye protection, turnout coat)
- 1 reflective vest
- 1 fire extinguisher (ABC dry chemical 5 pound minimum)
- 6 fuses

**Figure 1.3** Suggested contents of a first responder life support kit.



used by EMTs and paramedics cannot be performed correctly by fewer than three people. First responders often assist under these circumstances. Thus, you must be trained to assist with certain specialized procedures.

## Course Variations

First responders operate in a variety of settings. Many problems encountered in an urban center differ sharply from those encountered in a rural area. In addition, regional variations in climate create conditions that affect the situations you encounter and require that you use different skills and equipment to treat patients.

Certain skills and equipment mentioned in this book are beyond the essential and minimum level of knowledge you need for the successful completion of a first responder course. However, these supplemental skills and equipment may be required in your local EMS system.

## The Emergency Medical Services System

The EMS system was developed as a result of evidence that patients who receive appropriate emergency medical care before they reach a hospital have a much greater chance of surviving a major accident or sudden illness than patients who do not receive such care. It is important that you understand the operation and complexity of an EMS system.

Problems that occur in the “prehospital” phase of the EMS operation are often those of control and coordination of resources and personnel. The smooth operation of an EMS system, in both “routine” and multiple-casualty situations, depends on mutual understanding of their roles by all agencies and personnel involved in the system. This understanding can only come through close cooperation, planning, and continual effort.

You can best understand the EMS system by examining the sequence of events involved in an injured or ill patient’s progress through the system.

### Reporting

The EMS system is activated by the reporting of the emergency incident. The report is often received by telephone in an emergency services dispatch center. The dispatch center may be a fire, police, or EMS agency; a 911 center, or a seven-digit emergency telephone number used by one or all of the emergency agencies (Figure 1.4).

### Dispatch

Once notification of the emergency incident has been given to the dispatch center, appropriate equipment and personnel are dispatched to the scene. Communities vary as to how notification occurs (pager, telephone, and so forth) and even in what agencies, personnel, and equipment are involved in the first response (Figure 1.5).



**Figure 1.4** *Reporting an emergency.*