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EMERGENCY FIRST RESPONDER

MAKING THE DIFFERENCE

S E C O N D E D I T I O N

WILL CHAPLEAU

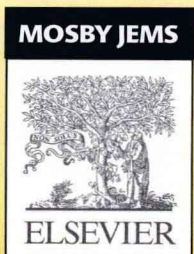
EMERGENCY FIRST RESPONDER

MAKING THE DIFFERENCE



Manager

Advanced Trauma Life Support Program
American College of Surgeons



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EMERGENCY FIRST RESPONDER: MAKING THE DIFFERENCE

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DEDICATION

To Dr. Norman E. McSwain Jr., MD, FACS

I can remember the first time I went to a national conference. It was 1994, and as I was a PHTLS instructor, I attended a PHTLS Division meeting at the annual NAEMT Conference. I had been following Dr. McSwain throughout my career already, as he had written numerous articles and books that were used in my prehospital education. I remember being impressed by how accessible he was and that he truly seemed to feel a part of the prehospital crowd, and treated everyone at the meeting as peers and not subordinates.

Not long after that, I was asked to assist in starting up the PHTLS program in Argentina, and as it turned out, had my first opportunity to work closely with Dr. McSwain for over a week in Buenos Aires. Not only were my initial impressions of him confirmed, but I was consumed by his enthusiasm for prehospital care and the patients who would benefit from their attention. That was the beginning of a professional relationship that has given me many unique opportunities to serve my profession and has certainly influenced my career and the opportunities afforded me.

We have been working together for over two decades now and I am honored to be able to count him as a close friend.

In dedicating this book to him, I am hopefully, in a small way, thanking him for his decades of dedication to care of patients that gives them their best chance of making it safely to the hospital and into the hands of medical professionals that will give them their best outcomes. Dr. McSwain has dedicated his life to trauma patients and has been active in teaching and creating educational material for every level of patient care professionals including prehospital, nursing, and physicians.

I believe that there has been no single person who has had quite the impact on emergency care as he has. Furthermore, in seeking to improve the plight of the injured, he has enhanced my career and countless others by giving them the best tools to do their job and inspiring others to join the fight in getting it right.

About the Author

Will Chapleau has more than 30 years of emergency care experience including 32 years as a paramedic, 20 years as a Trauma Nurse Specialist, and 15 years in the fire service, 6 of those years as chief of the Chicago Heights Fire Department. Currently, he is manager of the Advanced Trauma Life Support Program for the American College of Surgeons.

For more than 25 years, students have had the benefit of Mr. Chapleau's educational expertise in a variety of settings—as an international faculty member for Pre-hospital Trauma Life Support (PHTLS) since 1984, board

member of the National Association of EMS Educators, The National Association of EMTs, and the Society of Trauma Nurses. He also serves on the editorial board for *EMS Magazine*. Mr. Chapleau has contributed to numerous textbooks and journal articles over the course of his career and is well respected by students and peers worldwide.

Will Chapleau has what it takes to bring a project like this together. His experiences lend a perspective and credibility second to none!

How to Use This Textbook

Emergency First Responder: Making the Difference, 2nd edition, focuses on teamwork and the tools you need to be successful in the classroom and in the field:

Lesson Goals are provided at the beginning of every chapter to introduce the chapter's topic, key points, and the learning expectation for the student.

Objectives are listed at the beginning of the chapter. These objectives follow the National Standard Curriculum for the First Responder and the new National Education Standards for the emergency medical responder.

In the Real World case scenarios set the scene for each chapter, giving students a clinical frame of reference. The scenarios are then continued throughout the chapter and resolution is provided at the end.

Caution! boxes featured throughout the text highlight precautions emergency first responders should take when providing care.

Illustrated skill sheets detail easy-to-follow, step-by-step instructions of basic procedures.

Team Work is critical for emergency first responders because working effectively with other emergency personnel is part of the job. This section presents information on how the emergency first responder can assist with more advanced skills, as well as what to expect from interacting with all emergency personnel.

Nuts & Bolts succinctly summarizes the chapter and will help the student review:

Critical Points briefly summarize the take-home message.

Learning Checklists summarize key points in an easy-to-study and review, bulleted format.

Key Terms are highlighted throughout the text and defined at the end of each chapter.

Learning Objectives are presented again for the student to quickly assess his or her retained knowledge from the chapter.

Check Your Understanding is an integrated student workbook that features multiple-choice, matching, labeling, true/false, and fill-in-the-blank questions to test chapter comprehension.

Five Tools for Student Success

Emergency First Responder: Making the Difference, 2nd edition, gives the student three tools to ensure success in the classroom and in the field:

1. Textbook

This textbook is written with a focus on Team Work. Emergency first responders come from all different facets of life, and they must work with many different agencies and individuals to provide excellent patient care.

This textbook is written to follow the current U.S. Department of Transportation National Standard Curriculum for First Responders and the new National Educational Standards for Emergency Medical Responders. However, it goes beyond the curriculum in depth and breadth in areas such as airway management, the human body, and medical emergencies. The unique chapter on Special Populations includes information on such groups as the elderly, patients with disabilities, and those who are critically ill. Two new chapters have been added to this edition. **Communications and Documentation (4)** details how effective communication is absolutely cornerstone to an organized, safe, and successful emergency medical response. **Environmental Emergencies (16)** features descriptions of various environments and the harm they can cause along with the care that can be provided to improve the chances of a positive outcome. It also includes information on allergic reactions and anaphylaxis.

2. Workbook

This revised, integrated workbook makes it easy and inexpensive for students to review material and prepare for tests.

3. RAPID First Responder, 2nd edition

RAPID First Responder, 2nd edition, is included with every textbook. This handy pocket and fluid-resistant pocket guide includes valuable point of care information such as helpful diagnostic tools, assessment sequences, illustrated skills for basic procedures, airway maneuvers, and treatment guidelines. The bulleted format and tabular presentation make for easy access of crucial information.

4. Companion DVD-ROM

This free DVD-ROM features 24 colorful medical animations and skill videos presented in a step-by-step manner. For unmatched visual learning and skills mastery, the Companion DVD complements the text with actual video footage of the procedures explained in the book. You'll see concepts come to life with up-close demonstrations.

5. Evolve Online Resources for Students

Student Resources will include a Spanish/English Glossary, Body Spectrum Coloring Book, PowerPoint Lecture Notes, and Multiple Choice Review questions.

For the Instructor

We include everything instructors may need to teach the emergency first responder. An Instructor's Electronic Resource is available on CD-ROM and on Evolve Online. This resource includes an Instructor's Manual that features Chapter Objectives, Teaching Focus, Instructional Materials, Lesson Checklists, Key Terms, Additional Resources, a Pre-test, Critical-thinking questions, and Classroom Activities. Also on the CD-ROM is a Computerized Test Bank containing approximately 1000 questions in multiple-choice format. Approximately 1000 PowerPoint slides are also available.

The Evolve Course Management System is an interactive learning environment that works in coordination with *Emergency First Responder: Making the Difference, 2nd edition*. It provides Internet-based course content including the Instructor's Manual, Computerized Test Bank, and PowerPoint slides. Learning resources include multiple-choice questions and interactive exercises. Evolve can also be used to publish your class syllabus, outline, and lecture notes; set up "virtual office hours" and email communication; share important dates and information through the online class calendar; and encourage student participation through chat rooms and discussion boards. Contact your Elsevier sales representative for more information about integrating Evolve into your curriculum.

EMERGENCY FIRST RESPONDER

MAKING THE DIFFERENCE

1 Introduction to EMS Systems, 1

Emergencies, 2
The 14 Attributes of a Functioning EMS System, 4
Trauma Systems, 7
Access to the Emergency Medical System, 7
Levels of Training for Prehospital Care Providers, 8
The Developing Future of EMS, 10
In-Hospital Care Systems, 10
Role of the First Responder, 11
Medical Oversight, 13
Specific Statutes and Regulations, 14
Team Work Box, 15
Nuts and Bolts, 16
 Critical Points, 16
 Learning Checklist, 16
 Key Terms, 17
First Responder NSC Objectives, 17
Check Your Understanding, 18

2 Well-Being of the Emergency First Responder, 21

Stressful Situations, 22
Prevention and Promoting Health, 22
Stress Management, 27
Personal Precautions, 29
Scene Safety, 35
Team Work Box, 37
Nuts and Bolts, 38
 Critical Points, 38
 Learning Checklist, 38
 Key Terms, 39
First Responder NSC Objectives, 39
Check Your Understanding, 41

3 Legal and Ethical Issues, 43

Standard of Care, 44
Ethical Responsibilities, 44

Consent, 45
Special Considerations, 49
Confidentiality, 54
Reportable Events, 58
Medical Information Insignia, 58
Documentation, 58
Crime Scenes, 61
Organ Donation, 61
Team Work Box, 61
Nuts and Bolts, 63
 Critical Points, 63
 Learning Checklist, 63
 Key Terms, 64
First Responder NSC Objectives, 65
Check Your Understanding, 66

4 Communications and Documentation, 69

Communication, 70
Emergency Communications, 76
Documentation, 80
Summary, 83
Team Work Box, 84
Nuts and Bolts, 85
 Critical Points, 85
 Learning Checklist, 85
 Key Terms, 86
First Responder NSC Objectives, 87
Check Your Understanding, 88

5 The Human Body, 91

Body Directional Terms, 92
Regions of the Body, 94
Body Systems, 95
Team Work Box, 113
Nuts and Bolts, 114
 Critical Points, 114
 Learning Checklist, 114
 Key Terms, 114
First Responder NSC Objectives, 115
Check Your Understanding, 116

6 Lifting and Moving Patients, 119

Role of the Emergency First Responder, 120

Body Mechanics, 120

Principles of Moving Patients, 121

Patient Positioning, 130

Team Work Box, 134

Nuts and Bolts, 138

Critical Points, 138

Learning Checklist, 138

Key Terms, 138

First Responder NSC Objectives, 139

Check Your Understanding, 140

7 Airway Management and Ventilation, 141

The Respiratory System, 142

A—Airway, 144

B—Breathing, 151

Special Considerations, 156

Team Work Box, 162

Nuts and Bolts, 168

Critical Points, 168

Learning Checklist, 168

Key Terms, 169

First Responder NSC Objectives, 169

Check Your Understanding, 171

8 Patient Assessment, 173

Scene Size-Up, 174

Primary Assessment, 180

Secondary Assessment, 191

Reassessment, 200

Hand-Off Report, 201

Team Work Box, 201

Nuts and Bolts, 210

Critical Points, 210

Learning Checklist, 210

Key Terms, 211

First Responder NSC Objectives, 212

Check Your Understanding, 214

9 Cardiopulmonary Resuscitation and AED, 217

Circulatory System, 218

Cardiopulmonary Resuscitation, 219

Techniques of CPR, 222

Complications of CPR, 234

Family and Bystander Support, 235

Effectiveness of CPR, 235

Automated External Defibrillators, 235

Team Work Box, 240

Nuts and Bolts, 241

Critical Points, 241

Learning Checklist, 241

Key Terms, 242

First Responder NSC Objectives, 243

Check Your Understanding, 244

10 Medical Emergencies, 247

General Medical Emergencies, 248

Specific Medical Emergencies, 249

Team Work Box, 260

Nuts and Bolts, 263

Critical Points, 263

Learning Checklist, 263

Key Terms, 264

First Responder NSC Objectives, 265

Check Your Understanding, 266

11 Bleeding, Soft Tissue Wounds, and Shock Management, 269

Circulatory System, 270

Types of Bleeding, 271

Shock, 275

Soft Tissue Wounds, 280

Team Work Box, 290

Nuts and Bolts, 291

Critical Points, 291

Learning Checklist, 291

Key Terms, 292

First Responder NSC Objectives, 293

Check Your Understanding, 294

12 Musculoskeletal Injuries, 297

Musculoskeletal System, 298
 Mechanisms of Injury, 302
 Types of Musculoskeletal Injuries, 303
 General Assessment of Musculoskeletal Injuries, 304
 Management of Musculoskeletal Injuries, 305
 Special Considerations, 309
 Management, 316
 Team Work Box, 317
 Nuts and Bolts, 321
 Critical Points, 321
 Learning Checklist, 321
 Key Terms, 322
 First Responder NSC Objectives, 322
 Check Your Understanding, 324

13 Childbirth, 327

Anatomy and Physiology of Pregnancy, 328
 Labor, 328
 Delivery, 331
 Initial Care of the Newborn, 338
 Complications, 339
 Team Work Box, 342
 Nuts and Bolts, 344
 Critical Points, 344
 Learning Checklist, 344
 Key Terms, 345
 First Responder NSC Objectives, 345
 Check Your Understanding, 347

14 Infants and Children, 349

Anatomical and Physiological Differences, 350
 Family-Centered Care, 350
 Assessment, 352
 Common Pediatric Conditions, 358
 Child Abuse and Neglect, 364
 Team Work Box, 367
 Nuts and Bolts, 368
 Critical Points, 368
 Learning Checklist, 368
 Key Terms, 369
 First Responder NSC Objectives, 369
 Check Your Understanding, 370

15 Operations, 373

Phases of a Prehospital Response, 374
 Incident Command System, 377
 National Incident Management Systems (NIMS), 379
 Air Medical Considerations, 380
 Fundamentals of Extrication, 382
 Hazardous Materials, 384
 Multiple-Casualty Incidents, 387
 Functions of the Emergency First Responder at a
 Multiple Casualty Incident (MCI), 393
 Team Work Box, 396
 Nuts and Bolts, 397
 Critical Points, 397
 Learning Checklist, 397
 Key Terms, 398
 First Responder NSC Objectives, 398
 Check Your Understanding, 400

16 Environmental Emergencies, 403

Thermoregulation, 404
 Cold-Related Emergencies, 405
 Heat-Related Emergencies, 409
 Poisonings, 410
 Allergic Reactions, 412
 Water-Related Emergencies, 413
 Lightning and Electrocution, 415
 Emergencies in the Wilderness, 415
 Bites and Stings, 417
 Summary, 418
 Nuts and Bolts, 419
 Critical Points, 419
 Learning Checklist, 419
 Key Terms, 419
 First Responder NSC Objectives, 420
 Check Your Understanding, 421

17 Special Populations, 423

Patients with Disabilities, 424
 Critically Ill and Injured Patients, 426
 Chronically Ill Patients, 427
 Geriatric Patients, 427
 Resources and Agencies for Assistance, 433
 Team Work Box, 433
 Nuts and Bolts, 435
 Critical Points, 435
 Learning Checklist, 435
 Key Terms, 436
 Check Your Understanding, 437

Introduction to EMS Systems

LESSON GOAL

This chapter provides a brief introduction to the emergency medical services (EMS) system. You will learn about the administrative elements of EMS and understand that EMS is composed of individuals and institutions that combine various skills and resources to form an effective team with a single purpose—to provide the best medical care for the emergency patient. As an emergency first responder, you have a major role in this system.

OBJECTIVES

1. Define the attributes of emergency medical services (EMS) systems.
2. List the 14 attributes of a functioning EMS system.
3. Differentiate the roles and responsibilities of the emergency first responder from those of other prehospital care providers.
4. Identify how a patient's race, gender, age, and socioeconomic status can affect a First Responder's judgment.
5. Discuss the rationale for maintaining a professional appearance when on duty or when responding to calls.
6. Identify the types of medical oversight and the emergency first responder role in the process.
7. Identify a resource for statutes and regulations pertinent to EMS systems in your state.

In the Real World

While driving down the interstate in your vehicle after work, you notice several motorists pulled over to the side of the road. People are standing on the roadside and pointing to a car resting on its passenger side at the bottom of a small hill. You identify yourself as a member of the local factory's first responder team and ask one of the bystanders what has happened. One young person states that the car had just passed his when the driver apparently lost control of the vehicle and went off the road. You ask if anyone has

called for help yet; one person states that he is just now calling 9-1-1. You advise the caller to describe the incident as a single-vehicle crash located just north of mile marker 113 on the interstate.

You return to your car, get your first-aid kit, and head toward the crashed vehicle. As you approach, you notice that the car appears to have left the interstate at a high rate of speed and rolled over once down the embankment.

Few things are more exciting or rewarding than answering a call for help. As an **emergency first responder** in the **emergency medical services (EMS) system**, you will learn skills that will enable you to assist your neighbors, coworkers, friends, and others when they need help the most. By serving your community, you will become a public asset. Strangers will look to you for help in their darkest hours, and years later you may find out how you touched their lives. The lessons you learn while providing prehospital care can benefit you the rest of your life. You will learn to be organized in the face of chaos and to communicate effectively, lead others, and meet challenges. These personal assets are valuable not only at the scene of an emergency but also in most professions and careers. EMS providers occupy a respected and privileged position in our society.

The EMS system comprises a sophisticated team of emergency care providers. An emergency first responder is defined as the first person from that sophisticated team to see a patient with an injury or sudden illness. The EMS system provides a continuation of care from the prehospital into the hospital environment, and each team member has a unique role and contribution. Often, emergency interventions are needed within the first 4 minutes following an emergency. Care given in those first few minutes can be vital to the patient's survival and outcome. The overall goal of this training is to place emergency first responders everywhere in the community to provide this essential emergency care before advanced medical care providers arrive.

Emergencies

When an **emergency** occurs, the first step is for someone to recognize that an emergency has occurred and activate

the EMS system. Bystanders at the scene may call 9-1-1, for example, or a family member may call 9-1-1 to seek aid for someone in the home. In many modern EMS systems, the 9-1-1 dispatch personnel are trained to give "prearrival" instructions that will guide bystanders in aiding patients before the arrival of prehospital professionals. As an emergency first responder, you may happen upon the scene first and be the one who calls for additional help, or you may be the first medical responder who is dispatched to a scene.

When you arrive at the scene, you should tell the patient you are a trained EMS provider and ask the patient or bystanders what happened. Unlike other prehospital care providers, emergency first responders face the challenge of providing emergency care without assistance from others who have emergency training. Well-meaning but untrained bystanders may surround you, and sometimes you may need to enlist their help. You should communicate your instructions clearly and then ask the person assisting you to repeat your instructions to make sure he or she understands.

A common role for bystanders is to assist you by calling for additional emergency care personnel if EMS has not yet been contacted when you arrive at the scene. The most important information the emergency operator needs is your location, so ask someone who can give detailed and accurate location information to call. If the scene of the emergency is in a remote or industrial setting or anywhere not easily found from the street, you should ask someone to meet the ambulance at the main road and direct the crew to the scene.

After your arrival, additional emergency first responders may arrive, such as firefighters, law enforcement officers, or an industrial response team. Usually local **emergency medical technicians (EMTs)** arrive next, or

paramedics, whose role is described in greater detail later. They will provide additional emergency medical care at the scene and transport the patient to a receiving facility by ground or air ambulance. The patient will then be transferred to the in-hospital care system *first*, or emergency first responders will assist the transport team and in some cases may accompany the ambulance if their assistance is needed (Fig. 1-1).

Emergency Medical Services

As long as 200 years ago, military surgeons were working on care for the injured; their methods would end up setting the pattern for the development of civilian emergency medical services. Battlefield experiences in which soldiers died before getting lifesaving care inspired men like Napoleon's chief surgeon Dominique-Jean Larrey to



Fig. 1-1 Continuation of care in an EMS system.

4 EMERGENCY FIRST RESPONDER: MAKING THE DIFFERENCE

design ambulances and systems for getting injured soldiers from the front to field hospitals. These early attempts at setting field treatment protocols, providing transport, and designating faculties to receive emergency patients provided a template for the development of EMS systems.

History of EMS in the United States

Ambulances have been in service in the United State since the mid-1800s. Modern EMS can be traced back to the Highway Safety Act of 1966. This act created the National Highway Traffic Safety Administration (NHTSA) within the Department of Transportation (DOT). Also in 1966, the Academy of Sciences National Research Council released the famous white paper, "Accidental; Death and Disability, the Neglected Disease of Modern Society." These events led to the rapid development of today's emergency medical services.

9-1-1

The history of the designated emergency phone number, 9-1-1, begins in 1968 when the American Telephone and Telegraph Company (AT&T) designated 9-1-1 as a national emergency number. Today, nearly all Americans live in areas that have 9-1-1 service to hard lines, cell phones, and Internet-based phones. Modern 9-1-1 dispatch centers include personnel trained to give instructions to bystanders to help them provide some care while waiting for trained prehospital professionals to arrive at the scene.

Standardized Curricula

The NHTSA released the first national standard curriculum for EMS in 1968. The EMT curriculum came first followed by curricula for emergency first responders, EMT-intermediates, and EMT-paramedics. The American College of Orthopedic Surgeons released the first dedicated prehospital textbook in 1969. *Emergency Care and Transportation of the Sick and Injured*, popularly known as the "Orange Book," was written specifically to train EMTs. It was not these events that put prehospital care in public eye, however, but a television program. In 1972, *Emergency* hit the American airways, and long before paramedics were available to most of the country, Americans came to expect a new, higher level of trained prehospital care providers.

Prehospital Legislation

Prehospital care got its biggest federal support with the enactment of the EMSS Act of 1973. The law established EMS regions across the United States and provided funding for planning and implementation. The major components of the EMSS act were as follows:

- To establish a lead agency for EMS in the federal government
- To make grants and contract awards for EMS system development
- To promulgate the Department of Health Education and Welfare EMS system requirements (the original 15 components of a functioning EMS system)
- To provide extensive technical assistance to support EMS system design and development
- To provide leadership to the interagency committee on EMS

The 14 Attributes of a Functioning EMS System

The "EMS Agenda for the Future," published by NHTSA in 1996, revised the original 15 components of an EMS system as published in the 1973 EMSS Act. As a member of the EMS system, you need to understand its fundamental components (Fig. 1-2). The 14 attributes identified by the "EMS Agenda for the Future" are as follows:

- Integration of health services
- EMS research
- Legislation and regulation
- System finance
- Human resources
- Medical direction
- Education systems
- Public education
- Prevention
- Public access
- Communications systems
- Clinical care
- Information systems
- Evaluation

The "EMS Agenda for the Future" made the following recommendations for each of the attributes.

Integration of Health Services

- Incorporate EMS within health care networks' structures to deliver quality care.
- Be cognizant of the special needs of the entire population.
- Incorporate health systems within EMS that dress the special needs of all segments of the population.
- Expand the role of EMS in public health.
- Involve EMS in community health-monitoring activities.