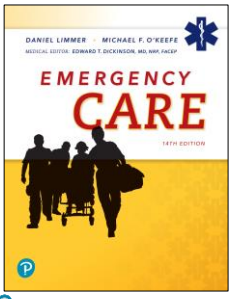
Emergency Care

Fourteenth Edition



Chapter 1

Introduction to Emergency Medical Services

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Topics

- The Emergency Medical Services System
- Components of the EMS System
- Roles and Responsibilities of the EMT
- The EMS Role in Public Health
- Research
- Special Issues

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The Emergency Medical Services System

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How It Began (1 of 3)

- 1790s
  - French began to transport wounded soldiers away from the scene of battle for care by physicians.
  - Earliest documented Emergency Medical Service
- Civil War
  - Clara Barton began emergency service for wounded and later helped establish American Red Cross.

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How It Began (2 of 3)

- World War I
  - Volunteer ambulance corps
- Korea/Vietnam
  - Medical teams produced advances in field care.
  - Battlefield advances led to civilian advances such as specialized emergency medical centers devoted to the treatment of trauma.

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How It Began (3 of 3)

- Nonmilitary ambulance services began operating in early 1900s in U.S.
  - Transport services only with little or no emergency care
  - Did not develop in smaller communities until late 1940s
  - Operated by local undertaker or fire service
  - Need to organize systems for emergency prehospital care and train personnel recognized

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EMS Today

- 1966
  - Department of Transportation charged with developing EMS standards
- 1970
  - Founding of the National Registry of EMTs (NREMT)
- 1973
  - National Emergency Medical Service Systems Act passed by Congress

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NHTSA Standards for EMS Systems (1 of 5)

1. Regulation and policy
   - Each state establishes laws, a lead EMS agency, a funding mechanism, policies, procedures, and regulations.
2. Resource management
   - Centralized coordination of emergency treatment and transport resources

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NHTSA Standards for EMS Systems (2 of 5)

3. Human resources and training
   - Assure EMS personnel are trained and certified to minimum standards.
4. Transportation
   - Provide safe, reliable transportation.

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NHTSA Standards for EMS Systems (3 of 5)

5. Facilities
   - Transport to closest appropriate facility
6. Communications
   - Universal system access number (911)
   - Dispatch-to-ambulance, ambulance-to-ambulance, ambulance-to-hospital, and hospital-to-hospital communications

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NHTSA Standards for EMS Systems (4 of 5)

7. Public information and education
   - Educate public about their role in EMS, access to EMS, prevention of injury.
8. Medical direction
   - Medical Director is accountable for EMS personnel within system.

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NHTSA Standards for EMS Systems (5 of 5)

9. Trauma systems
   - Develop trauma triage, transport, and treatment protocols.
10. Evaluation
   - Establish program for evaluating and improving effectiveness (QI, QA, TQM).

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Components of the EMS System

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Components of the EMS System (1 of 2)

- Emergency medical dispatchers
  - Activation of EMS in response to patient emergency
- EMS responders
  - Emergency medical responders and EMTs
- Emergency department/hospital
  - Doctors, nurses, allied health personnel

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Components of the EMS System (2 of 2)

- Specialized care facilities
  - Trauma centers
  - Burn centers
  - Pediatric centers
  - Cardiac centers
  - Stroke centers

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Think About It 1

- What medical services are available in your community?
- How important is it that EMS personnel know the capabilities of community medical facilities?
- What are the possible consequences of transporting a patient to a facility not equipped to handle the problem?

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Accessing the EMS System (1 of 4)

The chain of human resources making up the EMS system. **Emergency Department staff photo: © Edward T. Dickinson, MD**

For long description, see slide 61: Appendix 1

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Accessing the EMS System (2 of 4)

- 911 telephone access
  - Available in most communities
- Enhanced 911
  - Provides caller number and location for landline phones

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Accessing the EMS System (3 of 4)

- Emergency medical dispatchers
  - Can provide instructions to callers on how to provide emergency care until EMS personnel arrive
  - Research has consistently pointed to the importance of early access and prompt initiation of emergency care and CPR.

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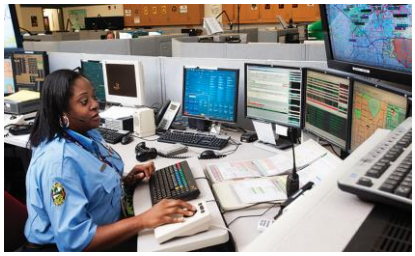
Accessing the EMS System (4 of 4)



Emergency medical dispatchers
Photo: © Edward T. Dickinson, MD

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Critical Decision Making

- Critical decision making is a very important concept in EMS.
  - Gather information from scene, patient assessment, and other sources.
  - Synthesize (interpret) information to make decisions regarding treatment and transport options.
- When information is not enough
  - Ask more questions.
  - Perform additional examinations.

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Examples of Critical Decisions

- Should you take your patient to the closest hospital or to a more distant specialty hospital?
- Will this medication help the patient's current condition? Could it make the condition worse?

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Levels of EMS Training

- Four general levels of EMS training and certification that may vary from place to place
  - Emergency Medical Responder
  - Emergency Medical Technician
  - Advanced Emergency Medical Technician
  - Paramedic

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Roles and Responsibilities of the EMT

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Roles and Responsibilities of EMTs

- Personal safety
- Safety of crew, patient, and bystanders
- Working with other public safety professionals
- Patient assessment and care
- Lifting and moving
- Transport
- Transfer of care
- Patient advocacy

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Think About It 2

- How would it impact an older adult patient if they were transported to the hospital without glasses, hearing aid, or dentures?
- On a routine call, would taking the time to gather these items have a negative effect on the patient's care?
- How about ensuring the home is secure and locked before leaving?

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Think About It 3

- Could the concept of patient advocacy also extend to the community (fall prevention programs for the elderly, poisoning awareness, pool and water safety programs for children)?

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Physical Traits of a Good EMT

- Ability to lift and carry equipment and patients up to 125 pounds
- Good eyesight (distance and reading)
- Awareness of any problems with color vision
- Good communication skills (oral and written)

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Personal Traits of a Good EMT (1 of 4)

- Pleasant
- Sincere
- Cooperative
- Resourceful

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Personal Traits of a Good EMT (2 of 4)

A professional appearance inspires confidence.

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Personal Traits of a Good EMT (3 of 4)

- Self-starter
- Emotionally stable
- Able to lead
- Neat and clean
- Of good moral character and respectful of others

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Personal Traits of a Good EMT (4 of 4)

- In control of personal habits
- Controlled in conversation and able to communicate properly
- Able to listen to others
- Nonjudgmental and fair

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Education (1 of 2)

- Maintain up-to-date knowledge and skills
  - Refresher courses
  - Continuing education courses
  - Conferences, seminars, and lectures

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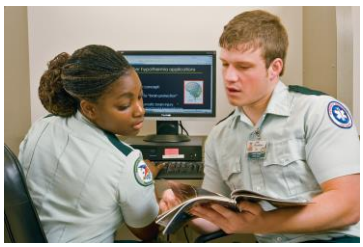
Education (2 of 2)



Many EMS/rescue operations adopt new procedures and equipment on the basis of research providing evidence that they are effective.

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Think About It 4

- How will you refresh your knowledge and stay current once you are out of the classroom?
- What qualities would you like to see in an EMT who is caring for you? How can you come closer to being this kind of EMT?

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Where Will You Become a Provider? (1 of 2)

- Ambulance services
- Fire departments
- Rural/wilderness teams
- Urban/industrial settings
- Volunteering

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Where Will You Become a Provider? (2 of 2)

Career opportunities for EMTs include work in rural/wilderness settings.
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National Registry of Emergency Medical Technicians

- Registration for EMRs, EMTs, AEMTs, and paramedics who successfully complete NREMT examinations
- May help in reciprocity (transferring to another state or region)
- Beneficial when applying for employment

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Quality Improvement (1 of 2)

- Continuous self-review with the purpose of identifying aspects of the system that require improvement
- Develop plans to correct deficiencies and improve performance.

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Quality Improvement (2 of 2)

- Everyone in organization has a role.
  - Preparing carefully written documentation
  - Becoming involved in the quality process
  - Obtaining feedback from patients and hospital staff
  - Maintaining your equipment
  - Continuing your education

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Medical Direction

- All patient care performed under direction of Medical Director
  - Ultimate responsibility for patient care
  - Oversees training
  - Develops treatment protocols
  - Issues off-line medical direction (standing orders)
  - Provides on-line medical direction

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The EMS Role in Public Health

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EMS Role in Public Health

- Injury prevention for geriatric patients
- Injury prevention for youth
- Public vaccination programs
- Disease surveillance

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Research

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Research

- Two ways research affects EMS
  - Focus on improving patient outcomes
  - Through evidence-based techniques
- Evidence-based process
  - Forming a hypothesis
  - Reviewing literature
  - Evaluating the evidence
  - Adopting the practice if evidence supports it

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The Basics of EMS Research (1 of 2)

- Dynamic nature of treatment makes research difficult.
  - Not all research is created equal.
  - Embrace best practices of conducting and evaluating research
- Rely on the scientific method.
  - General observations turned into hypothesis
  - Predictions tested to prove or disprove hypothesis

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The Basics of EMS Research (2 of 2)

- Types of medical research
  - Peer-reviewed research in medical journals
  - Articles in EMS magazines
    - Not original research
    - Not peer reviewed

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Special Issues

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Special Issues (1 of 2)

- Throughout the course we will discuss:
  - Local issues
  - Administrative matters
    - Course description
    - Class meeting times
    - Requirements for certification as an EMT

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Special Issues (2 of 2)

- The Americans with Disabilities Act (ADA) has set strict guidelines preserving the rights of Americans with disabilities.

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Chapter Review

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Chapter Review (1 of 3)

- The EMS system has been developed to provide prehospital as well as hospital emergency care.
- The EMS system includes 911 or another emergency access system, dispatchers, EMTs, hospital emergency department, physicians, nurses, physician's assistants, and other health professionals.

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Chapter Review (2 of 3)

- The EMT's responsibilities include safety; patient assessment and care; lifting, moving, and transporting patients; transfer of care; and patient advocacy.

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Chapter Review (3 of 3)

- An EMT must have certain personal and physical traits to ensure the ability to do the job.
- Education (including refresher training and continuing education), quality improvement procedures, and medical direction are all essential to maintaining high standards of EMS care.

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Remember (1 of 2)

- EMS dates back to Napoleonic times.
- Modern EMS standards come from 1960s–1970s and National Emergency Medical Service Systems Act (NEMSSA).
- There is a chain of human resources involved in EMS.
  - Critical decisions are made by each member of the chain.

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Remember (2 of 2)

- There are certain personal and physical traits that help you to be a successful EMS provider.
- An EMS provider should actively pursue opportunities to improve personal knowledge and abilities as well as the unit's overall quality.

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Questions to Consider

- What innovation was introduced in the Korean and Vietnam wars that is now common in many EMS systems?
- What are the four levels of EMS providers?
- Requesting orders from a physician by radio is an example of what kind of medical control?

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Critical Thinking

- Your patient is hesitant to go to the hospital because she is worried about her dog. What can you do to assist in this situation? What part of your role as an EMT is this an example of?

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Appendix 1

A flowchart displays the following images in order:

- A patient sitting in a motor vehicle, presumably following an accident.
- A concerned citizen calls 911.
- An emergency medical dispatcher takes the call and dispatches the emergency personnel.
- Emergency medical responders stabilize the patient at the scene.
- EMT's transport the patient to an ambulance.
- Emergency department staff treat the patient in an emergency room.
- Allied health staff examine the patient in a treatment room.

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