EMS SYSTEMS

Topics

- History of EMS
- Components of an EMS System
- National Groups and Associations
- NHTSA Standards

EMS System

- A comprehensive network of personnel, equipment, and resources established to deliver aid and emergency medical care to the community.

OUT-OF-HOSPITAL COMPONENTS OF AN EMS SYSTEM

MEMBERS OF THE COMMUNITY	COMMUNICATIONS SYSTEM	EMS PROVIDERS
PUBLIC UTILITIES	POISON CONTROL CENTERS	FIRE RESCUE HAZMAT

OUT-OF-HOSPITAL COMPONENTS OF AN EMS SYSTEM

EMERGENCY NURSES	EMERGENCY AND SPECIALTY PHYSICIANS
ANCILLARY SERVICES	REHABILITATION SERVICES

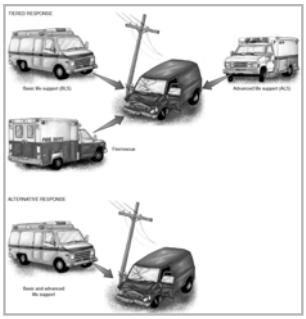
BLS

- …refers to the basic life-saving procedures such as artificial ventilation and cardiopulmonary resuscitation.

ALS

- …refers to advanced life-saving procedures such as intravenous therapy, drug therapy, intubation, and defibrillation.

Some Systems Are Tiered in Which BLS Arrives First and Then, If Required, ALS Arrives Later.



History of EMS

- EMS systems have developed from the traditional and scientific beliefs of many cultures.

Ancient Times

- First "protocols" established in Mesopotamia. Evidence of medications, patient assessment techniques, and bandages.

18th and 19th Centuries

- First efforts of field care developed by one of Napoleon's surgeons. Triage, a method of sorting patients by severity, developed.

20th Century

- World Wars I and II and the Vietnam and Korean conflicts resulted in great advances in patient care delivery systems including transportation and patient care procedures.

1966

- The National Highway Safety Act established the Department of Transportation which provided grants for EMS.

1969

- The EMT-Ambulance program was made public. The first paramedic curriculum followed in 1977.

1971

- White House issues $9 million in EMS grants.

1972

- The Department of Health, Education & Welfare funded initiatives to develop regional systems.

EMS Systems Act of 1973

- Provided funding for a series of trauma projects.
- $300 million was allocated to study EMS planning, operations, expansion, and research.
- Continued funding for regional systems until ’81.

To be eligible for funding a system must address:

MANPOWER	TRAINING	COMMUNICATIONS
CRITICAL CARE UNITS	PUBLIC SAFETY AGENCIES	CONSUMER PARTICIPATION
TRANSPORTATION	ACCESS TO CARE	DISASTER PLANS
EMERGENCY FACILITIES	PATIENT TRANSFER	MUTUAL AID
STANDARDIZED RECORDKEEPING	PUBLIC INFORMATION & EDUCATION	SYSTEM REVIEW & EVALUATION

Two Items the Legislation Omitted:

- System finance
- Medical direction

1981

- …the passage of the Consolidated Omnibus Budget Reconciliation Act (COBRA) wiped out federal EMS funding.

1988

- Regulation
- Resources Management
- Human Resources/Training
- Transportation
- Facilities
- Communications
- Trauma Systems
- Public Information
- Medical Direction
- Evaluation

Today's EMS System

- Every EMS system must develop an EMS system that best meets its needs.
- State and regional-level EMS systems are often responsible for planning, developing protocols, and establishing standards.

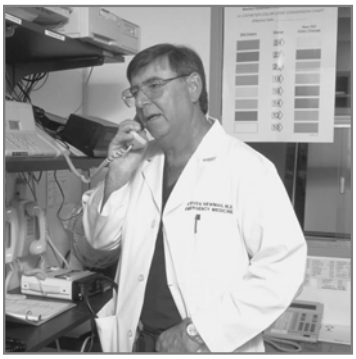
Medical Direction

- A medical director is a physician who is legally responsible for all clinical aspects of the system.

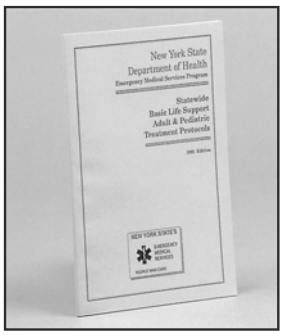
Medical Direction

- The medical director's role in a system is to:
  - educate and train personnel
  - participate in equipment and personnel selection
  - develop clinical protocols
  - participate in problem resolution and quality improvement
  - provide direct input into patient care
  - interface with the EMS system
  - advocate within the medical community
  - serve as the "medical conscience" of the EMS system

The Medical Director can provide on-line guidance to EMS personnel in the field. This is known as on-line medical direction.



Off-line medical direction refers to medical policies, procedures, and practices that medical direction has set up in advance of a call, such as standard protocols or standing orders.



Protocols are the policies and procedures for all elements of an EMS system.

Protocols are designed around the four "T's" of emergency care.

- Triage
- Treatment
- Transport
- Transfer

Public Education

- An essential and often overlooked component of EMS is the public.
- EMS systems should develop plans to educate the public on recognizing an emergency.
  - … accessing the system.
  - … initiating BLS procedures.

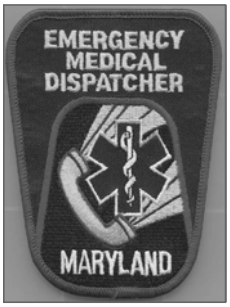
Communications

A coordinated, flexible communications plan should include:

- Citizen Access
- Single Control Center
- Operation Communication Capabilities
- Medical Communication Capabilities
- Communications Hardware
- Communications Software

Emergency Medical Dispatcher (EMD)

- The activities of an EMD are crucial to the efficient operation of EMS.
- EMDs not only send ambulances to scenes, they also make sure that system resources are in constant readiness.
- EMDs must be medically and technically trained.



Education and Certification

- Two kinds of EMS education are initial and continuing education.
  - Initial education is the original training course for prehospital providers.
  - Continuing education programs include refresher courses for recertification and periodic in-service training sessions.

Initial Education

- Based on the EMT-Paramedic: National Standard Curriculum published by the U.S. D.O.T.
  - establishes the minimum content for the course
  - divided into 3 specific learning domains:
    - Cognitive
    - Affective
    - Psychomotor

Once the initial education is completed, the paramedic will become either certified or licensed.

Certification *vs.* Licensure

- Certification is the process by which an agency grants recognition to an individual who has met its qualifications.
- Licensure is the process of occupational regulation.

4 Certification Levels

- First Responder
- Emergency Medical Technician-Basic
- Emergency Medical Technician-Intermediate
- Emergency Medical Technician-Paramedic

The First Responder is Usually the First EMS-trained Provider to Arrive on the Scene.

The EMT-Basic is trained to do all that a first responder can do, plus other complex skills.

The EMT-I Should Possess All the Skills of an EMT-B and Be Competent in Advanced Airway, IV Therapy, and Other Skills.

The EMT-P is the most advanced EMS provider.

Members of EMS are filling a growing number of nontraditional roles:

- Critical Care Transport
- Industrial or Occupational EMS
- Tactical EMS
- Primary Care

National Registry of EMTs (NREMT)

- Prepares and administers standardized tests for the First Responder, EMT-Basic, EMT-Intermediate, and EMT-Paramedic.
- Establishes the qualifications for registration and re-registration, and for establishing a minimal standard of competency.

Belonging to a Professional Organization is a good way to keep informed about the latest technology.

Professional Organizations Include:

- National Association of EMTs
- National Association of Search and Rescue
- National Association of State EMS Directors
- National Association of EMS Physicians
- National Flight Paramedics Association
- National Council of State EMS Training Coordinators

A variety of journals are available to keep the paramedic aware of the latest changes in this ever-changing industry.

These Professional Journals Include:

- Annals of Emergency Medicine
- Emergency Medical Services
- Emergency
- Journal of Emergency Medical Services
- Journal of Emergency Medicine

Patient Transportation

- Patients should be taken to the nearest facility whenever possible.
- Medical direction should designate the facility.
- Patients may be transported by ground or air.

The helicopter has become an integral part of prehospital care.

Military helicopters frequently assist civilian EMS systems.

A Type-I Ambulance

A Type II Ambulance

A Type III Ambulance

Not all receiving facilities are equal in emergency and support service capabilities. Local systems and regions categorize hospitals based on capabilities.

Mutual Aid and Mass-Casualty Preparation

- A formalized mutual aid agreement ensures that help is available when needed.
- Agreements should be between neighboring departments, municipalities, systems, or states.
- Each system should also put a disaster plan in place for catastrophes that can overwhelm available resources.

KEY POINT

An EMS system should have a disaster plan in place that is practiced frequently.

Quality Assurance and Improvement

- Quality Assurance is designed to maintain continuous monitoring and measurement of the quality of clinical care.
- Continuous Quality Improvement (CQI) is designed to refine and improve an EMS system, emphasizing customer satisfaction.

An EMS system must be designed to meet the needs of the patient. Therefore, the only acceptable quality of an EMS system is EXCELLENCE!

Customer satisfaction can be created or destroyed with a simple word or deed.

Research (1 of 2)

- Research programs are essential for moral, educational, medical, financial, and practical reasons.
- Future EMS research must address the following issues:
  - Which interventions actually reduce morbidity and mortality?
  - Are the benefits of a procedure worth the risk?
  - What is the cost-benefit ratio?

Research (2 of 2)

- Has your organization participated in research?

The Components of a Research Program: (1 of 2)

- Identify a problem.
- Identify the body of knowledge on the subject.
- Select the best design for the study.
- Begin the study and collect raw data.

The Components of a Research Program: (2 of 2)

- Analyze the data.
- Assess and evaluate the results.
- Write a concise, comprehensive description of the study for publication in a medical journal.

System Financing

- EMS funding can come from a variety of sources.
- Fee-for-service from Medicare, Medicaid, private insurance companies, or private paying patients is common.
- Public Utility Models are becoming increasingly popular.

Summary

- History of EMS
- Components of an EMS System
- National Groups and Associations
- NHTSA Standards