



## Components of an EMS System

An Emergency Medical Service (EMS) system is a coordinated arrangement of personnel, equipment and facilities organized to respond to medical emergencies regardless of the cause. An EMS system covers the spectrum from prevention of initial injuries through rehabilitation of injured persons. The EMS system is a complex arrangement of components including:

- Governmental legislation
- System management
- Human resources and training
- Communications
- Transportation
- Public information and education
- Hospitals
- Medical direction and evaluation

Each local EMS system is different. Members of the EMS system interact differently in each locale and some do not exist in all EMS systems. Telecommunicator's must know what medical resources are available in their local EMS system.

Most EMS systems utilize multiple types of responding resources. These resources are defined at the state or local level and equipment types vary. Patient transport capability, available treatments and training for attending personnel are also typically unique to the area.

There are as many EMS-system structures as there are places that have EMS systems. These systems usually are broken down into layers or "tiers." Each tier has a different level of response based on local EMS-system design. In general there are four tier types based on Department of Transportation (DOT) titles/certifications for EMS. Not all systems have all tiers.

### **Tier 1**

Tier 1 resources consist primarily of First Responders. First Responders are trained to provide immediate response to events that are determined to be highly urgent. The personnel are often trained in basic life support and can provide immediate treatment or stabilization of the patient. Because of the availability and

proximity of these units, they are able to provide quick response and early-access care to patients while the ambulance is enroute to the scene.

## **Tier 2**

Tier 2 resources consist of Basic Life Support (BLS) units. BLS units are usually staffed by Emergency Medical Technician - Basic (EMT-B) personnel. EMT-Bs have approximately 110 hours of training in patient assessment and treatment of fractures, lacerations and other minor injuries. They are CPR trained and are able to provide appropriate patient care. EMT-Bs provide treatment and transport for the sick and injured in cases where more advanced treatments and interventions are not required. They also may assist more advanced-level EMS responders.

## **Tier 3**

Tier 3 resources consist of Advanced Life Support (ALS) units. ALS units are usually staffed by Emergency Medical Technician – Intermediate (EMT-I) or Emergency Medical Technician – Paramedic (EMT-P) personnel who have advanced training in the care and treatment of the sick and injured.

## **Tier 4**

Tier 4 resources are typically Air Ambulances/Aeromedical Services. Aeromedical Services are usually ALS services staffed by paramedics and/or nurses. These resources can be fixed wing (airplane) or rotor (helicopters) and can be hospital based or independently operated. Many EMS systems have air-ambulance support available if needed. These resources are used in severe cases where transport time to the hospital may be the determining factor in patient survival. They are also utilized in remote areas where EMS ground transport units have difficult access.

All levels of EMS function under medical control and have a physician medical advisor responsible for the medical content of the program. EMS personnel can perform a variety of medical functions depending on their level of certification. These include, but are not limited to, basic life support, advanced cardiac life support and EKG interpretation, establishing intravenous lines and administering specific cardiac medication and other therapeutic medications and airway maintenance techniques such as endotracheal intubation.

Fire service personnel are often part of the local EMS system because they have received specialized medical training. As such, they are used as resources for emergency medical services. In many systems fire department personnel will provide emergency medical treatment on scene but private or third party EMS personnel will transport the patients to the hospital.

Law enforcement officers are also part of many EMS systems. They typically receive basic first-aid training and sometimes carry emergency medical equipment such as an automated external defibrillator (AED). They frequently

assist responding personnel in reaching patients and providing scene safety. In some areas law enforcement agencies may be responsible for the Aeromedical services provided to the EMS system.

Some communities have decided to focus their resources into one specialized group. These agencies, commonly referred to as Public Safety Departments, will have cross-trained personnel that serve as firefighters, EMS personnel and law enforcement officers.

Hospital emergency departments and other emergency care facilities are also included in most EMS systems. Frequently, EMS field personnel at the scene of an incident will request the Telecommunicator contact these resources to obtain specific medical information and relay patient data to hospital staff.

Most systems have additional resources to assist the primary responders. These resources are usually dispatched in special situations. You should be familiar with the resources and procedures to access them, should they be necessary.

These can include, but are not limited to hazardous materials units, beach patrol, sexual assault centers, hyperbaric centers, trauma centers, poison control centers, burn centers and language translator services.

Regardless of the resource, your agency should always have the following information for each resource:

- Basic and special capabilities of each resource
- Resource location and status
- Procedures for activating resources

These are just some examples of EMS resources that may be available in your community and the services they provide. Always refer to your supervisor and/or your agency policy manual for more information on your resources, how they are dispatched and the services they provide. For more information on the APCO Institute visit our website at [www.apcoinstitute.org](http://www.apcoinstitute.org)

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### **Resources**

*Emergency Medical Dispatcher* 5<sup>th</sup> Edition, Version 2, APCO Institute

*EMD Concepts* 1<sup>st</sup> Edition, APCO Institute

*EMD Manager* 2<sup>nd</sup> Edition, APCO Institute

*Public Safety Telecommunicator 1* 6<sup>th</sup> Edition, APCO Institute

*National Standard Curriculum for EMD*, NHTSA

## Quiz

### **CDE Article – Components of an EMS System**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Agency: \_\_\_\_\_

Address: \_\_\_\_\_

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Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

1. An EMS system covers the spectrum from prevention of initial injuries through
  - a. Rehabilitation of injured persons
  - b. Dispatch of response units
  - c. Arrival at the hospital
  - d. Delivery of Pre-Arrival Instructions
  
2. Most EMS systems utilize multiple types of responding resources that are defined at the state or local level.
  - a. True
  - b. False
  
3. Tier 1 resources consist primarily of:
  - a. First Responders
  - b. Basic Life Support units
  - c. Advanced Life Support units
  - d. Air Ambulances/Aeromedical Services

4. Tier 2 resources consist primarily of:
  - a. First Responders
  - b. Basic Life Support units
  - c. Advanced Life Support units
  - d. Air Ambulances/Aeromedical Services
  
5. Tier 3 resources consist primarily of:
  - a. First Responders
  - b. Basic Life Support units
  - c. Advanced Life Support units
  - d. Air Ambulances/Aeromedical Services
  
6. Tier 4 resources consist primarily of:
  - a. First Responders
  - b. Basic Life Support units
  - c. Advanced Life Support units
  - d. Air Ambulances/Aeromedical Services
  
7. All levels of EMS function under medical control and have a physician medical advisor responsible for the medical content of the program.
  - a. True
  - b. False
  
8. Your agency should always have the following information for each resource: basic and special capabilities of each resource, resource location and status and:
  - a. Names of staff members
  - b. Address and physical location
  - c. Average response times
  - d. Procedures for activation