EMS Subspecialty Certification

2.4.5 Service Delivery Models
2.2.2.1 Response and Transport Vehicles
2.2.2.2 EMS Provider Levels
2.2.2.3 Service Delivery Models
2.2.2.4 Equipment Design and Supply Issues

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Question 1

Which of the following statements are true about multi-tier response systems?

a. A typical multi-tier response would consist of an ambulance staffed by providers at the paramedic and EMT levels.
b. First responders arrive on scene quickly and can rapidly transport critically ill or injured patients to the hospital.
c. Fire Departments are a poor choice as first responders since they are typically busy fighting fires and performing prevention activities.
d. In a Public-Private partnership, the Municipality could provide the first responders and the Private Service provides the transport unit.

Question 2

Which of the following statements is (are) true about Fire-based EMS systems?

a. Fire fighting activities tend to limit availability to respond to EMS calls.
b. The FLSA Overtime 2 (b) exemption does not apply to fire fighters performing EMS duties.
c. Firefighters often have high job satisfaction and low attrition.
d. All of the above.
Learning Objectives

Upon the completion of this program participants will be able to:

• Discuss the types and categorization of EMS Vehicles.
• Identify key components of a tiered response system.
• Discuss the advantages and disadvantages of the most common service delivery models in EMS.
• List the 4 levels of EMS providers described in the 2005 National EMS Scope of Practice Model.
• Discuss equipment and supply chain issues commonly associated with EMS systems.

Vehicles

• Transport vs. Non Transport
  – Quick Response, First Responders, Supervisors
  – Specialty – i.e., Rescue, Scuba, HazMat, etc.
• Level of care
  – BLS
  – ALS
  – Critical Care
• Vehicle type
  – Helicopter, Boat, Ground Ambulance...
  – KKK standards

Type I
Truck, cab-chassis with modular ambulance body

Type II
Van, integral cab-body ambulance

Type III
Van, cab-chassis with integrated modular ambulance body
Tiered Response

• A temporal level of response
  – Historically combinations of BLS and ALS
    • **Single tier** - one resource to each request for service
    • **Multi tier** - two or more resources
      – First Responders (often BLS)
      – Transport Unit (often ALS)

Fire First responders tend to have fast response times
- They tend to have stations placed strategically in the jurisdiction
- There are few fires so the units are available.
Can help meet response times goals and if properly equipped with AEDs,
Can have various combinations
First responders that are BLS, transport ambulance ALS
First responders that are ALS, transport unit BLS. First responder staffs unit PRN to make it ALS
Public Private partnership Municipality supplies first responders- Private Service provides transport

4 Tiers

• **First Tier – Dispatch**
  – Referral to RN line, poison control, etc.
  – Non emergency dispatch (no L&S)
  – Emergency Dispatch

• **Second Tier – Rapid response**
  – First Responders –usually BLS, growing percentage of ALS

• **Third Tier – Transportation**
  – BLS/ALS or all ALS

• **Fourth Tier –Selected non transport response**
  – Advanced practitioners, critical medics, etc...
First Tier
- Options
  - Referral line i.e., Poison Control, Nurse line, etc
  - Non Emergency Response
  - Emergency Response

Second Tier
- Quick response often using BLS First Responders
- Unclear role for ALS on these units, i.e., ALS engine companies (providers get limited experience and dilute the critical interventions performed by paramedics.

Third Tier – Transportation
- BLS and ALS or all ALS
- All ALS is most efficient but need large paramedic pool, diluted experience for paramedics,

Fourth – Selected non transport response
- Advanced practitioners, critical medics, etc…
- Can rendezvous with BLS or augment ALS
- Can be a MD

EMS System Delivery Models

- Fire Departments
  - Emergency transports only with referral of non-emergency to private ambulance agency
  - All transports
- Hospitals
- Privately Owned
- "Third Service"
- "Public Utility Model"
- Franchises
- Paid
- Volunteer
- Unionized
- Mass Gathering Care
- Wilderness
- Disaster Response
- Many more….

Service Delivery Models

Fire-based EMS Systems

- Largest group of EMS providers (in personnel #s)
- Low fire freq = availability to medically respond
- Infrastructure exists
  - First responders
  - Short response times
  - Cross train (all or some)
  - Rescue
Fire departments are the single largest group of providers for EMS in the United States. Fire suppression represents a small percentage of the emergency workload for most fire departments. Government officials realized that fire departments and sufficient equipment and personnel to provide rapid first response medical care.

Many municipal 3rd service or private ambulance services could not meet time response goals. Integration of EMS into fire service around 80% of fire departments provide 1st responder EMS services.

Fire departments have unique attributes that make them ideally suited to provide EMS:

- Short response time
- Infrastructure is already in place
- Personnel are on duty at all times
- Dispatch and communication are in place
- Adding EMS to pre-existing duties requires setting equipment, training, and supervision to the already standing emergency response system
- “Cross-trained” firefighter as paramedic
- Fire department gets to employees for the price of one
- Existing model uses a meeting company staffed with 4 firefighters train to the level of certified 1st responder or EMT-B.
- Alternative response is one or two “cross-trained” firefighter/paramedic in addition to 2 or 1 EMT-B
- This concept also integrates medical care into rescue operations

### Service Delivery Models

**Fire-based EMS Systems**

**Pros**

- Job satisfaction
- FLSA Overtime (7 k) exemption
- Overtime payment after 53hrs (not 40hrs) even for FF doing EMS
- Depth of resources

**Cons**

- Can’t bill if they don’t transport
- Medical director
  - Must learn fire service culture, fire ground ops, policies...
  - Potential clash of roles of suppression/EMS/culture
  - In traditional model, fire suppression, not medicine, is paramount

### Job satisfaction and attrition

Unlike many EMS providers, firefighters often have high job satisfaction and low attrition.

Dual function firefighter/paramedic have a tremendous variety of work assignments, which may decrease burnout.

The opposite is true for single function paramedics.

### Cost-effectiveness

Firefighters are not paid overtime until they work over 13 hours per week.

In contrast, EMS personnel must be paid overtime after they’ve worked 40 hours in a seven-day period.

This “7 (k) exemption” for fire service is in effect for all fire department personnel for fire suppression certified.

Only the private ambulance company or Third Service EMS can bill the patient or insurance company.

This may impact finances of the fire-service EMS provider.

If a private ambulance company transports, fire department resources are released for other use.

This is particularly important with emergency department overcrowding causing prolonged waits for ambulance crews in hospitals.

### Role of the medical director

For the medical director must remember that a physician is rarely in charge at a fire scene.

Under the ICS operations, the medical director serves as a technical advisor to the incident commander.

Even though he may be ultimately responsible for all patient care at the scene.

The medical director should have an understanding of the fire-ground operation, ICS, and fire department field procedures.

### Benefits to the fire service

Demand for EMS services has increased as overall fire activity has declined.

The provision of EMS also helps to maintain the positive impact of the fire service in the community.

### Challenges

- Do firefighters have a desire to provide EMS?
- Do the fireground/paramedic want to fight fires or to become a paramedic?
- Supervisors and administrative personnel may not have EMS credentials.
“Third Service” EMS

- Unique public safety entity
  - Police and Fire are considered first and second services
  - Large urban areas with single governmental agency
- Medical Director Issues
  - Medical culture amongst personnel and management
  - A multi-agency medical director may be the only visible unifying factor in that community’s EMS system
  - Medical director may or may not provide oversight for other agencies in the community
  - Lack of control of services provided by other agencies, i.e., rescue or other specialty areas.

Unique public safety entity
   Police and Fire are considered first and second services
The 3rd service: EMS model is most prevalent in large urban settings
Medical Director Issues
   - Medical culture amongst personnel and management—Typically are current or former paramedics
   - Dealing with management focused only on EMS
   - A multi-agency Medical Director may be the only unifying factor
   - Medical director may provide oversight to police, fire, 911, rescue. Can work on common goals
   - Medical director may not provide oversight for other agencies
   - Lack of control of services provided by other agencies, i.e., rescue or other specialty areas.

If not providing oversight for other agencies, may have to deal with other medical directors
Fire service often serves as First responders, but is administered under a separate bureau, dept., etc.
Very common service model in the past, now in decline primarily due to consolidation, merging, and/or take over by Fire.
Past Examples: NYC, Philadelphia, San Francisco
Current Examples: Pittsburgh, Boston

“Third Service” Advantages

- Ability to focus on pre-hospital care
  - Budget and policies are directed towards EMS operations
- Personnel focused on emergency medical care
  - No additional duties/training i.e., fire fighting
- Fire fighting and EMS duties are distinct
  - Personnel may have aptitude/desire for one
  - Hiring can focus on candidates with strong medical background
“Third Service” Concerns

- EMS is often viewed as the “stepchild” service
  - Smaller funding and budgets
  - EMS providers often are paid less
- Ongoing concerns of merger/consolidation
  - Fire departments take on EMS duties to preserve their budget and personnel.
  - Perception that EMS can be run more efficiently if integrated into another agency

Concerns

- Fire and police must be funded by the government, no governmental mandate to fund EMS
- Perception is that EMS can be more efficiently funded by incorporation into another agency
- Paramedics are often paid less than firefighters
- Integration and collaboration with other public service agencies
- Municipal fire departments are typically much larger than EMS agencies
- Larger political weight
  - EMS may be lumped in with other emergency responders
  - EMS may fail to receive recognition for efforts
- Many fire departments want to enter EMS to preserve budget
- Ongoing threats of merger with fire, a trend seen in several major cities
  - The 3rd service may live under the threat of being merged with the fire department
  - Success may be judged by political and monetary issues
  - True success from the provider standpoint would be improved satisfaction, salary, and work conditions
  - From the patient viewpoint, success would be improved patient care and satisfaction

Private Sector EMS

- History - EMS can be a lucrative business
- EMS contracts with community
  - First response may be done by fire
  - Funded by patient or third-party payer
  - Fiscally responsible
- Medical Direction
  - Ideally provided by local EMS medical director, not a remote/corporate physician
- Future
  - Threats – reimbursement, takeover by competitor or gov
  - Opportunities - partnerships
History
EMS became lucrative
Mega consolidations lead to a economy of scale and more
Local government offering subsidies to ambulance services
Hospitals and hospitals contracting for services for nonemergency and interfacility transportation
Medicare/Medicaid and private insurance started to pay for transports based on “medical necessity”

EMS contracts with community
- For expenses may be shared by fire
- Funded by patient or third-party payer
- Finally responsible since it is their money and they can be held to standards set by the community, i.e., response times
- The fiscal nature of private contracting can also result in:
  - Efficiency in the organization
  - Innovation and service delivery
  - Quality and enhanced patient service
- The latter may be seen as cost-efficient or attractive to additional business opportunities

The role of an operational director should ideally work for local government and not be directly compensated by the private company.  
This is critical to ensure the direction of the private company’s contract.

- Efficiency in terms of quality and service delivery
- Accountability if the type of service is reimbursed
- Establish a synergistic relationship with the service manager
- Establish a synergistic relationship with the service manager

The future of Private EMS
Opportunities
- The baby boomers are entering retirement and there will be a steady increase in ambulance transports
- Medicare/Medicaid and private insurance started to pay for transports based on “medical necessity”

Threats
- Reimbursement and fee schedules will shrink
- Fire service is absorbing EMS operations
- Federal disaster preparedness dollars are available
- Operating expenses are increasing

Solutions
- Public-private partnerships

Service Delivery Models
Hospital
- Based on the hospital
- EMS integrated within a healthcare system
  - Hospital-based purchasing, employment, training, oversight
- EMTALA
  - 1994 Hospital-based ambulance is like the ED
  - 2003 The ED is at the closest appropriate hospital

- Adjunct to the services of the hospital
  - Personnel often work within facility
  - Paramedics can perform other duties

Introduction
Hospital-based EMS systems are unique; their identity is tied to a single hospital or healthcare system.
Not by a natural evolution, many EMS systems grew from their hospital counterparts. They fill a unique niche in the prehospital care system.
For example, in Atlanta, Grady emergency medical services is the sole provider of 911 ambulance service for the city of Atlanta. (50 emergency vehicles, 35 ALS vehicles, 100,000 calls per year)
In rural areas, hospital-based systems are the only providers of expertise and financial resources for a high-level EMS system.

Advantages of integration
- Enhanced medical direction and oversight
  - Opportunity for continued and direct feedback
  - Improved patient management process
  - Enhanced medical record from field to patient care in hospital
  - Enhanced personnel relationships with hospital staff
  - Enhanced human resources, logistics, and system finance
  - Enhanced benefits for the EMS provider
  - Enhanced benefit for the EMS provider

EMTALA and hospital-based systems
The Centers for Medicare and Medicaid Services have determined that if a patient is in an ambulance owned by a hospital, the patient is considered to have entered the hospital. This means that the relationship between the hospital and the patient starts at the patient contact.
- In 2003, this ruling was modified to allow transport to the closest appropriate facilities.
“Public Utility” and Franchise Model EMS

- Public Board of Directors
- Authority establishes parameters
  - Performance-based contract with private company for service
  - May assess penalties if parameters not met
  - Clinical sophistication
- Public utility model
  - Authority owns the system assets
  - Authority bills for services
  - Authority pays private company monthly or per transport $$
- Franchise model
  - Private company bills, collects reimbursement and maintains assets
  - Contract is more complex

EMS Provider Levels

- 1996 >40 levels of certification
  - Scopes of practice varied
- 2005 National EMS Scope of Practice Model*
  - Emergency Medical Responder (EMR)
  - Emergency Medical Technician (EMT)
  - Advanced Emergency Technician (AEMT)
  - Paramedic

*This is still far from reality. Multiple state levels exist.

Equipment and Supplies

- Equipment
  - Durability
  - Size
  - Cost
- Supplies
  - Restock strategy that works 24/7/365
    - Hospital restocking
    - Central supply
  - Medications/controlled substances
Take Home Points

• The EMS Physician should have familiarity with
  – Different delivery models for EMS and their pros and cons
  – The four tiers of response
  – EMS provider levels

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   [Corrected: In a public partnership, the Fire Department provides the first responders and the Private Service provides the transport unit.]

Question 2

Which of the following statements is (are) true about Fire-based EMS systems?

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b. The FLSA Overtime/70-hour exemption does not apply to firefighters performing EMS duties.
   [Corrected: Firefighters often have high job satisfaction and low attrition.]
c. All of the above.