Module Five: EMS System Responsibilities

Wisconsin EMS Medical Director’s Course
Objectives

• Outline five factors that should be considered when planning EMS for a mass gathering
• Outline the EMS Component of the Incident Command System
• Discuss key issues in prehospital research
• Discuss potential for EMS involvement in public health
Overview of the Module

• Disaster Management
• EMS at Special Events
• EMS Research
• Public Health Issues
Disaster Management

- Definitions
- Phases of Disaster Management
- System Components
- Incident Command System
- EMS Sector Operations
- Triage, Treatment, Transportation and Staging
- Communications
- Interagency Cooperation
- The Government’s Role
- Special Situations
Definition of Disaster

• Any event that overwhelms the capabilities and resources of the local emergency response system
• Disaster management is synonymous with emergency management
Mass Casualty Incident

- Mass casualty incident (MCI) is an event that produces multiple casualties.
Phases of Disaster Management

• Mitigation
  o Efforts to reduce the impact before disaster strikes

• Planning
  o Efforts to prepare for an emergency response to disaster

• Response
  o Efforts to manage the impact after disaster strikes

• Recovery
  o Restoring the community to pre-impact status
Disaster Response System

- Planning
- Mutual aid agreements
- Notification
- Multi-agency response
- Incident Command System (ICS)
- Search and Rescue
- Triage
- Communication
- Treatment
- Transportation
- Evacuation
- Debriefing/Mental Health Support
- Recovery
- Record Keeping
Incident Command System (ICS)

- Set of personnel, policies, procedures, facilities and equipment, integrated into a common organizational structure designed to improve emergency response operations of all types and complexities
- A structured organizational system that defines the lines of authority and responsibility
ICS Terminology

Version 1.0 Wisconsin EMS Medical Director’s Course 10
ICS Concepts

• Unified Command
  • All agencies involved contribute to the command process

• Command Post
  • One location on-scene where all agency representatives involved in the unified command meet to direct operations

• Emergency Operations Center (EOC)
  • An off-scene resource center to coordinate and support disaster management activities during large or complex emergencies
ICS Concepts – (cont.)

- Integrated Communications
  - Managing scene communications with a communications plan
- Action Plan
  - Mental or written plans to achieve strategic goals, tactical objectives and support activities
- Comprehensive Resource Management
  - Identifying and monitoring activities to promote effective resource utilization
ICS Concepts – (cont.)

• Span of Control
  o Number of subordinates one manager can effectively supervise

• Modular Format
  o Five functional areas of the ICS (Command, Operations, Finance, Logistics and Planning) are added as the size and complexity of the incident require

• Staging Area
  o Place where resources assemble while waiting to execute a specific assignment
ICS Structure

- Command
  - Information
  - Safety
  - Liaison

- Operations
  - Branch
    - Divisions & Groups
      - Strike Teams & Task Forces
        - Resources
  - Branch

- Logistics
  - Service Branch
    - Communications
      - Medical
      - Food
    - Support Branch
      - Supply
      - Facilities
      - Ground Support
  - Resources Unit
  - Situation Unit
  - Demobilization Unit
  - Documentation Unit
  - Technical Specialists

- Planning
  - Time Unit
  - Procurement Unit
  - Compensation
  - Cost Unit

- Finance
EMS in the ICS
Incident Commander Role

• Incident commander is usually the fire chief of the jurisdiction where the disaster occurs
• Law enforcement may be required to assume this role in criminal events
• Large or complex events may require state or federal officials to assume incident command
• Physician role is controversial and not specifically defined
  - Physicians tend to be too detail oriented which makes them less effective at disaster scenes
  - Well trained prehospital providers can adequately manage triage, treatment and transportation duties
  - Physicians likely to be more effective in the emergency department than on-scene
  - Physicians may play specialized roles in the care of entrapped patients
ICS and Hospital Disaster Plans

• Joint Commission on the Accreditation of Hospital Organizations (JACHO) requires hospitals to integrate ICS into hospital disaster plans

• More information available in *Hospital Emergency Incident Command System*, developed by San Mateo Health Services Agency
EMS Branch Operations

- Three work groups
  - Triage
  - Treatment
  - Transportation
- The EMS Branch Director reports to the Operations Section Chief
- Triage, treatment and transportation group supervisors report to the EMS Branch Director
Triage Overview

- From a French word meaning “to sort”
- The goal: to provide the greatest good for the greatest number
- The major pitfalls: getting lost in the details of patient care and trying to resuscitate the dead
- Requires a method for sorting wounded into priority categories
“The needs of the many outweigh those of the few or the one.”

- Mr. Spock, before making the ultimate sacrifice in “Star Trek II: The Wrath of Kahn”
Triage Groups

• Immediate
  o Those who will live *because* of what we do

• Delayed
  o Those who will live *regardless* of what we do
  o Can wait for treatment until immediate group is cared for

• Non-transport
  o Those who will die *regardless* of what we do
  o Resources should not be devoted to this group
Immediate

• Individuals with potentially salvageable injuries

• Respiratory
  o Obstructed Airway, Tension Pneumothorax, Open Pneumothorax, Respiratory Distress

• Cardiovascular
  o Major Hemorrhage, Shock, Cardiac Tamponade, Major Burns

• Neurological
  o ALOC, Spinal Cord Injury
Delayed

• Individuals with a likely recovery
• Non-ambulatory patients require ambulance transfer (e.g., major orthopedic trauma)
• Ambulatory patients may use other conveyances (e.g., minor lacerations and abrasions, minor orthopedic trauma)
Non-Transport

• Deceased or moribound

• Examples of non-survivable injuries:
  o Decapitation
  o Transected torso
  o Cardiopulmonary arrest
  o Obviously non-salvageable injuries
“START” Method of Triage

• START = Simple Triage and Rapid Treatment

• The START method of triage is simple and fast
  o First, assess ventilation (breathing)
  o Next, assess perfusion (circulation)
  o Then, assess mental status

• Tag the patient accordingly, then move on to the next one
Ventilation Assessment

- Not Breathing
  - Reposition Airway
    - Breathing?
      - No
        - Deceased (Black)
      - Yes
        - Immediate (Red)

- Breathing
  - >30 per minute
    - Immediate (Red)
  - <30 per minute
    - Assess Perfusion (Next Slide)
Capillary Refill Assessment

Perfusion

Capillary Refill > 2 sec or no radial pulse

Control Bleeding

Immediate (Red)

Capillary Refill < 2 sec or radial pulse present

Assess Mental Status (Next Slide)
Mental Status Assessment

Mental Status

Fails to follow simple commands
- Immediate (Red)

Follows simple commands
- Delayed (Yellow)
Triage Status

- Ambulatory patients with minor injuries are triaged to a delayed transport status and given a green tag.
- If a patient’s condition changes, their triage status should be upgraded or downgraded accordingly.
Treatment Strategy

• Goal: Keep it simple!
  o Relieve airway obstruction
  o Provide oxygen
  o Control bleeding
  o Initiate fluid resuscitation
  o Immobilize spine and fractures
  o Treat pain
Treatment Strategy (cont.)

- Caveat: Avoid interventions that are labor intensive, time consuming or futile (e.g., CPR)
- Educate providers about the need to distribute resources appropriately
Transportation

- Don’t transfer the disaster to the hospital
- Distribute casualties as evenly among available hospitals as possible
- Transport casualties to hospitals able to meet their needs
- Carefully track where each patient goes
Staging

- The purpose of staging is to gather all the transport units that will be needed.
- Stage close enough to the treatment area to be effective, but far enough away to be safe and avoid traffic congestion.
- Staging supervisor must brief crews on their roles and responsibilities.
Communications

- Increased radio traffic crowds available frequencies
- Cell phones may be ineffective due to crowding of channels
- Dispatch centers may be overwhelmed with phone and radio traffic
- Pre-planning can avert some of these problems
- ICS emphasizes “plain language” instead of “10 Codes”
Interagency Coordination/Cooperation

- EMS agencies from different jurisdictions need to cooperate with each other
- Ambulance companies that normally compete must cooperate with each other
Operational Level Cooperation

- Public safety agencies that normally function under different command and control structures must function as a single team with a common purpose
Cooperation with Authority

• Local authorities need to work together with representatives from state and federal agencies
• Private contractors may need to get involved in disaster operations
Hospital Coordination and Cooperation

- Hospitals that normally compete need to communicate and cooperate
  - Assure adequate distribution of patients and effective resource utilization
Hospital Coordination and Cooperation (cont.)

- Hospitals in a city, region or network must establish a common plan for communications and cooperation
- EMS physicians must provide the needed leadership
The Government’s Role

- Federal Agencies
- State Agencies
- County and Municipal Agencies
- The National Disaster Medical System (NDMS)
Federal and State Emergency Management

- Federal Emergency Management Agency (FEMA)
  - Part of Executive Branch of federal government
  - Regional FEMA headquarters are in Chicago

- Wisconsin disaster management lead agency is Wisconsin Emergency Management (WEM)
  - Six regional offices that oversee activities of county emergency management office
  - Municipalities may also have their own emergency management office
FEMA

- FEMA is an independent agency of the federal Government
- The director reports to the President
- Mission includes mitigation, planning, response, recovery, prevention and preparedness
FEMA (cont.)

- May become involved in a local disaster with major property loss or when there is a declaration of a federal disaster area
- Federal involvement may be days or weeks after the event
WEM

- Agency within the Wisconsin Department of Military Affairs
WEM (cont.)

• Functions:
  - Training, Response, Planning and Recovery resources
  - Administrative support
  - Liaison with other state agencies
  - Liaison with federal agencies
  - Coordination
WEM (cont.)

- State assistance is provided when local officials request it
- The state can provide resources not available at the local level
County and Municipal Emergency Management

- All 72 Counties and some municipalities have organized emergency management offices.
- Community disaster plans are developed in the Office of Emergency Management.
National Disaster Medical System

• Established in the 1980s by the DOD, VA, DHHS and FEMA
• Combines civilian, veterans and military hospitals to meet catastrophic disasters of either military or natural origin
• Disaster Medical Assistance Teams (DMAT) include physicians, nurses and EMTs who are organized to respond to catastrophic emergencies
Special Situations

- Hazardous Materials
- Terrorism
- Clandestine Laboratories

All of these situations pose a hazard for EMS, public safety and health care professionals, whether in the form of secondary contamination or booby traps planted to hinder or injure emergency responders!
EMS at Special Events

- Wisconsin requires an operational plan for special events
- Considerations of the plan:
  - Analyzing the Event
  - Staffing the Event
  - Interagency Cooperation
  - Financial Issues
  - Safety Issues
  - Preventive Health Issues
  - Record Keeping
  - Planning Guides
Analyzing the Event

- Know the facility
  - Structure
  - Location
  - Physical boundaries of the coverage area
Analyzing the Event (cont.)

- What is the nature of the event?
  - Fairs, concerts, political rallies
  - Indoors or outdoors
  - Stadium, fairground or park land
  - Risk of violence
  - Risk of injuries
Analyzing the Event (cont.)

- Crowd size and demographics
- Associated factors
  - Drugs, alcohol
- Start time
- Duration
Staffing the Event

• Personnel issues
  o Number and type of providers
  o Duty hours and peak load staffing
  o Staff briefings
  o Security issues
    ▪ ID badges
    ▪ uniforms
    ▪ access to secure areas
Staffing the Event (cont.)

- **Transportation**
  - Number and type of vehicles
  - Pathways for safe access and egress
  - Traffic conditions

- **Equipment**
Staffing the Event (cont.)

• Aid Stations
  o Fixed stations
    ▪ Number and location
    ▪ Easily identifiable
    ▪ Heating/cooling issues
  o Mobile crews
    ▪ Easily identifiable
    ▪ Portable radios
    ▪ Transportation needs
Interagency Coordination

• Law enforcement
  o local agencies
  o US Secret Service
  o other state and federal agencies
• EMS
• Fire Service
• Event Security
• Military
Financial Issues

- Support for personnel, equipment and supplies
- Malpractice insurance
Safety Issues

- Scene safety
- Personal security
Public Health Strategies

- Provision of potable water
- Provision of sanitary facilities
- Public information and education
EMS at Special Events

• Medical Record Keeping
  o Patient identification
  o Transfer of records to receiving facilities and follow-up physicians

o Planning Guides for Special Events
  o *Provision of Emergency Medical Care for Crowds*
    ▪ By the American College of Emergency Physicians (ACEP) EMS Committee
EMS Research

• EMS has evolved rapidly
  o EMS research has been slow

• EMS innovations were made prior to development of evidence to support implementation
  o Many implementations are based on studies outside of the prehospital setting

• Volume/quantity of EMS research pales in comparison to other fields of medical research
EMS Research (cont.)

- Research is needed to secure the future of EMS
- To determine the effectiveness, efficacy and efficiency of prehospital emergency care
EMS Research (cont.)

- Lack of informed consent restricts prehospital research
- Lack of funding
- Importance of research is underappreciated in EMS
- Lack of outcomes based research
- Few academic centers committed to EMS research
Ways to Improve EMS Research

- Funding needed
- Commitment of academic physicians & institutions
- Improve quality of prehospital research
- Reduce informed consent barriers
- Refine study methods
- Systems Analysis
Public Health Issues

• Prevention and Control of Injury and Illness

• Role of EMS - Present and Future
Prevention and Control of Injury and Illness

• EMS deals with injuries and illnesses associated with significant morbidity and mortality, which are costly to society and have profoundly negative effects on the community.
• EMS providers should work to reduce morbidity and mortality through community prevention efforts.
• This requires increasing surveillance activities to identify problem areas.
• It also requires involvement in public policy formulation and public information and education.
The Role of EMS

**EMS at the Present**
- Transportation and treatment: sick and injured
- Isolated from other components of the health care system
- Does not make follow-up referrals to other providers
- Not integrated with public health or social services

**EMS in the Future**
- Expanded role in public health
- Monitoring community health for at-risk and special-needs populations
- Integration with health care providers and networks
- Promulgate public policy for healthier communities