EMS Subspecialty Certification
Review Course

4.5 Special Operations
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4.5.1.6 Operational Considerations for Provider and Casualty

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Learning Objectives
Upon the completion of this program participants will be able to:
• Explain the safety, diagnostic and treatment challenges to working in a tactical environment.
• Explain the importance of being able to function as a tactical team member in order to best care for patients.
• Discuss methods to maintain covertness while assessing and treating patient.
• Describe techniques to assess Circulation, Airway, Breathing and Neurologic status and to address life threatening injuries in an austere environment.
Learning Objectives

• Discuss the unique aspects of care in a low/no light environment.
• Describe the priorities during care under fire.
• Discuss caring for patients with limited resources.
• Discuss remote access medical care.
• Describe the phases of combat casualty care.
• Discuss operational considerations for the provider and casualty.

Introduction

• Pre-hospital care in a tactical environment requires intimate understanding of law enforcement tactical team methods, priorities, communications, enhancements and limitations.

• There are differences between routine pre-hospital care and care in a tactical environment.
  – Team member safety is a super-priority requiring constant re-evaluation.
  – Patient care is extremely focused on stopping immediate life threats and extrication to safety.

4.5.1.1 Low/No Light Environment of Care

• Often need to maintain covertness (dark and quiet)
• Exam by tactile methodology
  – Slick/wet – blood
  – Holes in uniform or gear
  – Crepitus – air under skin
• Physical Examination Skills focusing on senses other than vision.
Training for Low/No Light Environment of Care

- SDPA – Sensory Deprivation Physical Assessment.
  - No/little light
  - No/little sound.
- Train using blindfolds

4.5.1.2 Care in A Hostile Environment

- SOPA - Sensory Overload Physical Assessment
  - Weapons fire, distraction devices, rendering weapons safe, urgency to move
- Zones of Operation:
  - Inner Perimeter
  - Outer Perimeter
  - Hot Zone
  - Warm Zone
  - Cold Zone
- NOTE: Zones of Operation are different from Phases of Care (discussed later)

Zones of Operation

- Inner Perimeter
  - Tactical area of operations controlled by the Tactical Team
  - Inside the Inner Perimeter is akin to “Hot Zone”
- Outer Perimeter
  - Marks the larger area of law enforcement operations and encompasses the inner perimeter.
  - Outside the Outer Perimeter is akin to “Cold Zone”
- Static v. Dynamic
  - “Static” is a useful concept in planning
  - Operations often become dynamic and areas of safe refuge or egress may rapidly change
Zones of Operation

• Hot Zone
  – The area of greatest risk of injury
  – This may be due to a known threat in the area
  – This may also be due to hazardous materials in the area (meth lab)
  – Patient assessment and treatment in the hot zone is inherently dangerous. The acceptable interventions are:
    • Application of a tourniquet/RAPID control of life threatening hemorrhage
    • Opening an Airway
    • Patient Extraction

• Warm Zone
  – Potential, but not immediate or direct injury threat
  – Medical Care provided in this zone is dictated by assessing the risk/benefit ratio.
  – Spinal immobilization, intubation, IV therapy must be balanced with extrication depending on the perceived level of threat
  – Consider: needle decompression, airway interventions, breathing and circulation assessment and interventions.
  – Evacuation
Zones of Operation

• Cold Zone
  – Neither significant danger nor threat exists
  – Patients may be assessed and treated without significant risk to either patient or EMS personnel
  – More definitive management as the patient is evacuated away from the threat.

Care In A Hostile Environment

• Simple:
  – Prevent further injury
  – Stop life threatening hemorrhage
  – Open airway
  – Extract

4.5.1.3 Care With Limited Supplies

• Level 1: trauma bandage, tourniquet,
  – NPA, CPR mask, IFAK
  – ALL tac team members should carry level 1 equipment
• Level 2: vest/belt/thigh pack
  – For Tactical Medical Providers (TMP)
• Level 3: Medical Backpack
  – Generally not carried on back, set outside building upon entry
• Level 4: Advanced Medical Pack
Care With Limited Supplies

- Goals:
  - Allow no more casualties
  - Rapidly identify immediate life threats
  - Rapidly address immediate life threats
  - Rapidly extract patient to safe environment
- "Call-A-CAB 'N Go"
  - Call for help, communicate
  - A: Abolish threats
  - CAB: Circulation, Airway Breathing
  - 'N: Neurologic status check
  - Go: Extricate patient to ambulance, then appropriate hospital

4.5.1.3.1 Hemostatic Agent Use

- Indicated for topical application to wounds where the bleeding is not amenable to tourniquet use.
- May be used as an adjunct to tourniquet use if the tourniquet needs to be removed (beyond two hours).
  - Apply to stump with direct pressure in advance of tourniquet removal. Apply additional dressing as needed (do not remove previous hemostatic agent).

4.5.1.3.1 Hemostatic Agent Use

- Hemostatic clotting agents still require up to 3-5 minutes of direct pressure
  - Fibrin
  - Chitosan
  - Zeolite
  - Smectite
  - Kaolin (Combat Gauze)
4.5.1.3.2 Airway Management in Low/No Light Environments

- Assessment using senses other than vision
  - Touch and sound
  - Integrity of bony structures?
  - Airway Sounds?
- Treatment without light
  - NPA/OPA
  - Supraglottic Airway
    - Laryngoscope
  - Nasotracheal or Digital Intubation
  - Surgical Airway

4.5.1.4 Remote Assessment

- Assessing a patient in a dangerous location from a distance.
  - Binoculars, Spotting Scope, Rifle Scope, NVG.
- Assessing potential viability in order to make strategic rescue decisions.

- Medicine Across the Barricade
  - Hostage negotiators generally do all the talking, TMP’s advise
    - TMP’s should keep questions/conversation to medical issues.
  - Injured tactical operator

4.5.1.5 Knowledge of TCCC

- Tactical Combat Casualty Care (TCCC, TC-3, TC)
  - Primary Goals:
    - Treat the casualty
    - Prevent additional casualties
    - Complete the mission
- Three Phases of Care:
  - Care Under Fire
  - Tactical Field Care
  - Tactical Evacuation Care
Care Under Fire

- Very little time or opportunity to provide care
- Suppression of enemy fire and movement of the casualty to cover are paramount.

Tactical Field Care

- TACTICAL FIELD CARE
  - +/- Complex depending on circumstances
    - Risk v. Benefit, CAB
    - OPA v. SGA. v. ETT?
    - Needle Thoracostomy?
    - Splint?
    - Spinal Board?
    - Pack w/ Clotting Agent v. Bulky Dressing?

Tactical Evacuation Care

- More “Routine” approach to EMS care in the civilian setting
  - More definitive stabilizing treatment
    - ACLS medications
    - Oxygen
    - Cardiac Monitor with 12-lead capability
### 4.5.1.6 Operational Considerations for Provider and Casualty

- **Team Safety**
  - Operational Security
- **Considerations:**
  - Ingress and Egress routes/Obstacles?
  - Casualty Collection Points/Holding Areas?
  - Ambulance Exchange Points
  - Staging areas for Ambulances
  - Site Access/Security
  - Landing Zone Selection
  - Work/Rest cycles

### 4.5.1.6 Operational Considerations for Provider and Casualty

- Paramedics trained in tactical methods
- Officers trained as paramedics/EMT’s
- Physician tactical team members
- Armed/Unarmed?

### Take Home Points

- This is part of the Special Operations Section of the Core Curriculum which accounts for 20% of the examination.
- Patients are extracted from the Inner Perimeter/HotZone while being provided Care Under Fire which is minimal (hemorrhage control, open airway).
- May or may not get slightly more definitive, Tactical Field Care in the Warm Zone between the Inner and Outer Perimeters depending on Operational Considerations
Take Home Points

- *Tactical Evacuation Care* occurs outside the Outer Perimeter in the Cold Zone, and the patient is *evacuated* to an appropriate hospital.
- Must be able to operate with limited resources, limited support, in environments of sensory deprivation or sensory overload.
- Planning is paramount.
- Versatility is necessary.

EMS Subspecialty Certification Review Course

4.5.2 Casualty Evacuation
4.5.2.1 Evacuation Triage
4.5.2.2 Conventional vs. Unconventional Transport Modalities
4.5.2.3 Knowledge of Ground, Sea and Air Transport
4.5.2.4 Potential for Delayed/Prolonged Evacuation

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A conflict of interest is a particular financial or non-financial circumstance that might compromise, or appear to compromise, professional judgment. Anything that fits this should be included. Examples are owning stock in a company whose product is being evaluated, being a consultant or employee of a company whose product is being evaluated, etc. Taken in part from “On Being a Scientist: Responsible Conduct in Research.” National Academies Press. 1995.

Learning Objectives
Upon the completion of this program participants will be able to:
• Describe considerations for triage during evacuations.
• Discuss conventional and unconventional transportation modalities and methods to choose which is most appropriate for a given situation.
• Demonstrate a working knowledge of ground, sea and air casualty transportation.
• Discuss the implications of when there is a potential for delayed or prolonged evacuation.

Introduction
• Special Operations Casualty Evacuation comes in two forms, individual patients from difficult or unique settings, and the evacuation of large numbers following a large scale disaster
• Evacuation of patients from unique situations are covered in other areas of the class, so the following will focus on large scale evacuations following major disaster situations.
4.5.2.1 Evacuation Triage

- MASS CASUALTY Evacuation
  - Thousands of patients
  - PLANNING CYCLE: Estimate, Plan, Execute, Repeat
  - Notice v. No-Notice

- Triage Systems
  - START, JUMP START, MASS Triage, SALT Triage
  - Casualty Collection Point (CCP)
  - Ambulance Exchange Point (AXP)

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4.5.2.1 Evacuation Triage

- Characteristics of the Area
  - Unique attributes of this particular disaster (weather, terrain, population density, integrity of medical institutions, transportation)

- Estimating Requirements for Medical Evacuation
  - Compromised medical facilities, disruption of services

- Planning
  - "CCP’s:"
    - Hospitals, Nursing Homes, Hospices, LTC, Psychiatric Care Facilities
    - Prisons
    - Home Care/Medically Fragile population

- Execution
  - EMAC, NDMS

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START & Jump START Triage
4.5.2.2 Conventional vs. Unconventional Transport Modalities

- **Conventional** = Ambulances
  - **Unconventional**
    - Trains
      - Intermediate/long distance, ambulatory patients, 48/car
    - Trucks
      - Short distance, Oxygen is high risk complication, need military stretchers
    - Buses
      - Intermediate distance, ambulatory patients, Oxygen is high risk,
        - Ambus: up to 18 +/- litter patients
    - Non-medical helicopters
      - Long distance (~250 miles), ambulatory/litter patients, Oxygen?
    - Commercial or Military aircraft
      - Long distance, sitting patients in need of little medical support
    - Boats, ferries
      - Short distances, ambulatory and litter patients, Oxygen generally OK

4.5.2.3 Knowledge of Ground, Sea and Air Transport

- **Ground**
  - Coordination with EMS
- **Sea**
  - Number of vessels
  - Vessel capacity
  - Vessel balance
- **Air**
  - Helicopter
    - Commercial/Medical, Law Enforcement, Fire
    - Advantages (VTOL, speed, special equip., observ. capabilities)
    - Disadvantages (cost, weather minimums, inherent risks, prisoners)
    - Landing Zone
4.5.2.4 Potential for Delayed/Prolonged Evacuation

- Contingency Plan for Extended Care Scenarios
- On-Line Medical Oversight
  - Physician with EMS/Special Ops familiarity
    - Scope of Practice
    - Equipment

Take Home Points

- This is part of the Special Operations Section of the Core Curriculum which accounts for 20% of the examination.
- PLANNING CYCLE: Estimate, Plan, Execute, Repeat.
- START, Jump START, and SALT triage.
- Unconventional Transportation Assets
- ALWAYS have a contingency plan,...for your contingency plan!