EMS Expectations
PREPARING FOR AND COLLABORATING IN EMERGENT SITUATIONS TO OPTIMIZE PATIENT OUTCOMES

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No conflicts of interests or financial relationships of any kind related to this presentation

Learning Objectives

- Review specific fundamental management strategies for enhancing emergency care.
- Identify the essential components of the assessment for optimal transfer of care to the EMS healthcare provider.
- Optimize patient care through awareness of interprofessional skills and professional relationships.

Quick Note About Myself

- Nationally Registered Paramedic
- State of Connecticut Licensed Paramedic
- Emergency Medical Services Instructor
- Current Clinical Quality Assurance / Improvement Coordinator at New Britain EMS
- Undergraduate Degree from Marist College
- Became an EMT to get into PA school and fell in love with pre hospital emergency medicine

Emergent Situations and EMS Activation

- Recent study suggestions 1% and 0.3% of collegiate and high school injuries result in EMS transport respectively.
- Preparing for these uncommon incidents is critical to ensuring optimal patient outcomes.
- Emergency activation plans should involve emergency medical services personnel.
- Collaborative effort with EMS for emergent situations.
- Understanding scope of practice.
- Off season / pre season / pre game face to face for EAP review and input.
- Emergency Equipment preparations and practice.
- Effective initial assessment and injury / emergency management.


- Respondents were asked to indicate access to the following emergency equipment:
  - ACLS (90%)
  - Up to 90% survivability when placed within 1-3 minutes
  - AED (60%)
  - CPR mask (85%)
  - Rectal Thermometer (15%)
  - Other Considerations: Stop the Bleed

Discussion Points:
- 762 fatalities among HS athletes 1982 to 2015 with EMS not present at scene.
- Better patient outcomes can result from better communication, training, and practice.
- 89.1% reported having an EAP; only 9.9% described implementing all 12 components cited in the NATA position paper on EAP’s.

Other Considerations:
- 62% of sudden cardiac deaths.
- May indicate lack of understanding of the importance of review.
- Identify and rectify deficiencies to be identified and addressed prior to an emergency.
- AT’s role: Patient care (32%), EMS is in charge (30%), and assisting “when needed” (17%).


- *The more components of the EAP recommendations adopted the more likely AT’s are to have emergency equipment available*

**Critical Incident Management**

- All Board of Certification has tasked AT’s with:
  - Implementing EAPs for all venues and events to guide appropriate actions to optimize patient outcomes
  - Identifying emergency personnel
  - Ensuring emergency equipment available
  - Having transportation available
  - Communication steps during emergency situations
  - Trage the severity of health conditions

- Implement appropriate evidence-based emergency care procedures to reduce the risk of morbidity and mortality
- Assess the scene to identify appropriate course of action
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Athletic Trainers’ Perceptions of Interprofessional and Collaborative Practice (2017)

- NATA ATEC identifies team approach as essential to optimizing patient outcomes.
- Requires better understanding of others scope of practice.
- Methodology: 2,761 certified members of NATA surveyed on their perceptions of interprofessional and collaborative practices in the clinical setting.


Outcomes: Effective IPCP needs to be intentional. AT’s should conduct a self-assessment in their own environment on how to improve their role in collaborative practice.

Building An Alliance Between Athletic Trainers and EMS

- Introductions and pre planning meetings (IEP involvement)
- Scope of practice details, skill sets, emergency protocols
- Tour of facilities / major points of entry and egress / equipment locations
- EMR and simulations
- Pre game meetings and information sharing.

Assessing the Emergent Patient

- Effective initial assessment and injury / emergency management.
- Determine MOI/NOI and level of consciousness
- Airway
- Breathing
- Circulation
- Disability
- Exposure focussed assessment and ongoing reassessment
- Record findings and assessment outcomes for EMS handoff and continuum of care.

Airway and Breathing

- Airway:
  - Assess the patient for a patent airway.
  - Check the airway using head tilt/chin lift or jaw thrust if suspicious of cervical spine injury.
  - Consider oropharyngeal or nasopharyngeal airway.
- Assess breathing: Rate / Effort / Tidal Volume / Breath sounds
  - If breathing is inadequate, ventilate CPR mask / BVM
  - If breathing is adequate, administer supplemental oxygen if available.
  - Monitor SpO2 to 94% - 99%
  - Lung sounds

Circulation and Disability

- Circulation
  - Assess pulse: Rate, Rhythm, Quality
  - Control active bleeding
  - Direct pressure, pressure bandages, tourniquets, hemostatic bandages (if available)
- Patients skin color, temperature and moisture
- Disability
  - Level of consciousness
  - Alert, verbal, pain, motor, responsive
  - Trauma: Glasgow Trauma score
  - 911 decision
Focused Assessment

- Chief complaint, history of present illness and prior medical history if applicable
- Physical assessment as appropriate for injury
- Pain level
- Consider field diagnostic tests:
  - Blood glucose, SpO2 monitoring, temperature check (rectal when appropriate), stroke assessments, concussion assessments
- Begin Treatment if not already started
- Monitor Vital signs every 15 minutes for stable patients / 5 minutes for unstable

Optimizing Transfer of Care

- Collaborative approach
  - Handoff is situationally dependent depending on patient condition
  - ED will be looking for:
  - Patient demographics (name, age, address, emergency contact info)
  - Verbal Report: SAMPLE History
    - Signs and symptoms
    - Medications
    - Past medical history
    - Events leading up to the current situation
    - Assessment findings, vitals obtained, treatments performed with applicable outcomes

First Responder

- Can arrive prior to the ambulance
- Generally Emergency Medical Responders
  - Possess the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response
  - Often dual certified as police officers or fire department personnel
  - EMR is generally a 50-60 hour course
  - Critical non invasive skills only
  - Certifications: HCP CPR

The Difference Between Emergency Medical Providers: Why It Matters

- EMT’s
  - Provide basic life support and assessment including non-invasive interventions
  - Minimum 150 hours of lecture (2-4 months)
  - 16 hour clinical experience
  - Assist patients with their own medications
  - Common: ASA, oral glucose, check and inject epinephrine, nasal fentanyl
  - Scope: Non-invasive airway interventions, splinting, bleeding control
  - Certifications: HCP CPR
  - Scope of practice state dependent and must work under physician license

911 System Has Been Initiated But Where’s The Ambulance?

- The 911 call matters
- EMS and specifically CT EMS has a variety of EMS deployment models:
  - Not every 911 response and ambulance is created equal
  - Varied response times if not already on site
  - Limited resources
  - Volunteer and paid responders
  - First responders
  - ALS ambulances (EMT’s)
  - ALS ambulances (Paramedic / EMT)
  - ALS fly can (also paramedic)
  - Helicopter response

Emergency Scenes & Human Factors

- Scenes can be intense, fluid and dynamic
- Stress and anxiety can have a huge impact on communication
- As stress increases so does the ability to pay attention to tangent items
- Regardless of our individual ability level in times of increased stress we are not as good as we think we are
- Rely on others
- Maintain a sterile scene
- Limit distractions and outside influences
- Collaborative effort and not about “whose the boss”
- Leave the ego behind!
The Difference Between Emergency Medical Providers: Why It Matters

- **Paramedics**
  - Allied health professional whose primary focus is to provide advanced emergency medical care for critical and emergent patients
  - Must already be an EMT or AEMT
  - 1-2 years; roughly 30-40 credits; can be associates or bachelors
  - Certs: ACLS; PALS; PHTLS; TECC; NRP; HCP CPR

Airway and breathing

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<td>Intraosseous / Intraosseous access</td>
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<td>Surgical Ciclothyotomy</td>
<td>Fluid replacement: Saline, lactated ringers, Whole Blood</td>
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<tr>
<td>Needle Thoracostomy</td>
<td>50+ emergency medicines: Pain management</td>
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High School Sudden Cardiac Death

- National Center for Catastrophic Sports Injury Research Database
  - 276 Sudden Deaths from 2000-2013
  - AT’s present: 38% of the time
  - EMS was not present: 62% of the time
  - When there was a venue specific EAP(66%) it was followed 100% of the time
  - Coaches had emergency training in 78% of cases but applied the training only 58% of the time


Case Review: High School Cardiac Arrest

- **Scenario:**
  - 2:30 pm
  - Wrestling practice has started
  - Students are running laps in the hallway
  - 17 year old male collapses in the hallway
  - Athlete is found by teammates and is unresponsive
  - Near by security guard is made aware and begins CPR
  - 911 is called by a staff member
  - Coach goes to the training room and gets an AED and athletic trainer
  - AED is applied to the patient - 1 shock is delivered and CPR is continued
  - Timeline: Arrest 2:30; CPR 2:31; Defibrillated 2:35; ROSC 2:43 Transport 2:52
Outcome
- Patient taken to local hospital
- Transferred to a children’s hospital and received an implanted defibrillator
- AICD – Automated implantable cardioverter defibrillator
- Shocks at 15-30 Joules
- Battery lasts 5 years or 100 shocks
- Externally monitored
- Discharged from CCMC with no deficits
- Diagnosed with ventricular hypertrophic cardiomyopathy
- Most people have low risk of SCD – thought to be genetic
- Common symptoms: SOB, dizziness, palpitations, syncope
- Thought to be common cause of sudden cardiac death in people under 30
- Thickening of the myocardial septum (can be elsewhere) over time causing heart to work harder to pump the same amount of blood
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Breaking Down The Care
- Athlete suffers a sudden collapse: direct one specific person to call 911
- Check responsiveness
  - If unresponsive assess for breathing and pulse:
  - Caution agonal breaths
- If unresponsive, apneic and pulseless: perform CPR
- 30:2 compressions to ventilations if BVM or one way valve barrier if available
- AED where available while continuing compressions – follow prompts
- If there is enough personnel rotate chest compressors every 2 minutes
- Attempt to track number of CPR cycles and number of defibrillations for EMS
- Attempt to obtain demographic information / medical history / medications / allergies if available

Upon EMS arrival
- Notable differences:
  - Continuous compressions with passive insufflation via NRB (8 minutes)
  - Post 8 minutes: continuous compressions with 1 breath every 10 compressions
- Stay in place and resuscitate (unless significant trauma)


Conclusion
- While rare we need to be prepared for the unexpected
- Up to date emergency action plans that include EMS
- Necessary emergency equipment that is up to date and available
- In heightened states of stress be prepared for situations to not go perfectly
- Communication with EMS
  - Understanding that each department is operating under its own set of guidelines
  - Know who you are interacting with and their level of certification
  - We’re all on the same team – take a patient-centric approach

References
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