Managing a Medical Emergency / EAP

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On the Field Management of the Injured Athlete
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Objectives

- To advocate for the need for emergency planning in athletics
- To analyze an EAP using a Case Study
- To apply the lessons learned from SCA management to the development of an EAP
- To develop guidelines and summarize the components of an effective Emergency Active Plan
March 2006, Vanderbilt University
Davis Nwankwo
- 19 YO basketball player
- Redshirt Freshman
- 6′10″, 240 lbs.
-Collapsed during practice
- No previous symptoms of palpitations, dizziness or syncope
- No family history of sudden death or cardiac abnormalities
Nwankwo was evaluated on court by certified athletic trainer
- He was found to be in cardiac arrest
- AED was applied
  - Analysis < 2 minutes
  - Found to be in ventricular fibrillation
  - One shock delivered
  - He converted to a perfusing rhythm
SCA Case Study

- Two rescue breaths administered following shock; athlete began breathing
- Oxygen administered with non-rebreather mask
- Transported by EMS to local hospital
Angiogram revealed normal coronary arteries
Echocardiogram revealed hypertrophic cardiomyopathy (HOCM)
Implantable cardioverter defibrillator (ICD) implanted two days following SCA
Athlete medically disqualified from further intercollegiate athletic activity; he has remained in good health
SCA Case Study Overview

- Demonstrates effectiveness of EAP
  - Advance preparation
  - Emergency communication
  - Emergency medical equipment
  - Prompt intervention
  - Positive outcome
Learning from case studies

- Learn from positive outcomes such as Nwankwo’s
- Need to remain vigilant with EAP: H.S. Basketball player Star Ifeacho who died April 2017 after collapsing in training room, Kent State OL Tyler Heintz died of likely hyperthermia June 2017 during supervised practice
Importance of emergency action plans in athletics
Importance of avoiding false sense of security given rarity of emergency
Time is of the essence in emergencies, necessitating prior planning
Introduction

- Sudden Cardiac Arrest (SCA)
  - Leading identifiable cause of non-traumatic death in young athletes
  - While healthy appearing, they can have undetected cardiac disease
  - Catastrophic, unexpected death during training or practice
Due to the highly publicized nature of these catastrophic injuries and deaths, there is a heightened public awareness of emergency management. This also leads to medical-legal questions regarding personnel, actions taken, and organizational preparedness.
Proper management of SCA is critical

- Trained medical and allied health professionals
- Preparation is key:
  - Education and training
  - Maintenance of emergency equipment and supplies
  - Appropriate use of personnel
  - Formation and implementation of EAP
Athletes are usually asymptomatic prior to event
- Few identified at risk prior to episode
- Deaths are usually associated with intense physical activity (training, games)
Background

- Obvious need for EAP
- Require rapid, controlled responses in rarely predictable circumstances
- Important to account for athletes, officials, fans, sideline participants
  - Planning for “worst-case scenario”
  - Learn from past experiences
All personnel involved with the organization or sponsorship of athletic activities share:

- Professional responsibility for emergency care
- Legal duty to develop, implement, and evaluate an emergency plan for these activities
Legal Need for EAP

- There is a legal duty as reasonable professionals to ensure high-quality care of participants
  - Standard of Care – Defined by written EAP
  - An absence of an EAP frequently basis for claim/suit on negligence
  - Based on concept of foreseeability (prior incidents)
Development of EAP

- Need for EAP established
- Duty to provide appropriate standards
- Goal = Highest quality care
- EAP should be developed with local EMS
**NATA Position Statement 2002**

Sample Venue-Specific Emergency Protocol

1. Call 911 or other emergency number consistent with organizational policies
2. Instruct emergency medical services (EMS) personnel to “report to _______ and meet _______ at _______ as we have an injured student-athlete in need of emergency medical treatment.”
   - University Football Practice Complex: _______ Street entrance (gate across street from _______ ) cross street: _______ Street
   - University Stadium: Gate _______ entrance off _______ Road
3. Provide necessary information to EMS personnel:
   - name, address, telephone number of caller
   - number of victims; condition of victims
   - first-aid treatment initiated
   - specific directions as needed to locate scene
   - other information as requested by dispatcher
4. Provide appropriate emergency care until arrival of EMS personnel: on arrival of EMS personnel, provide pertinent information (method of injury, vital signs, treatment rendered, medical history) and assist with emergency care as needed

Note:
- sports medicine staff member should accompany student-athlete to hospital
- notify other sports medicine staff immediately
- parents should be contacted by sports medicine staff
- inform coach(es) and administration
- obtain medical history and insurance information
- appropriate injury reports should be completed

Emergency Telephone Numbers

| Hospital | _______ : _______ |
| Emergency Department | _______ : _______ |
| University Health Center | _______ : _______ |
| Campus Police | _______ : _______ |

Emergency Signals

- Physician: arm extended overhead with clenched fist
- Paramedics: point to location in end zone by home locker room and wave onto field
- Spine board: arms held horizontally
- Stretcher: supinated hands in front of body or waist level
- Splints: hand to lower leg or thigh

- EAP must be written document
  - Approved and signed by medical director
- EAP should be distributed to:
  - Attending physicians
  - Athletic training students
  - Institutional and organizational safety personnel and administrators
  - Coaches
Collaboration among physicians and athletic trainers representing national sports and medical associations

Recent Consensus guidelines were updated by the NCAA in 2016 regarding cardiovascular care of the college athlete.
- Education of all members of emergency team regarding EAP
- EAP procedure must be reviewed (At least yearly) and rehearsed
Personnel

- Emergency plan for athletics
  - Identifies the personnel involved in carrying out the emergency plan
  - Outlines qualifications of those executing the plan
Goal of sports medicine team is the delivery of highest possible quality of health care to athlete.

Team must function together as efficient unit to accomplish goals.
Personnel: Roles within Emergency Team

- Immediate care of the athlete
- Emergency equipment retrieval
- Activation of emergency medical system
- Direction of EMS to scene
Emergency training should be required for all athletics personnel associated with practices, competition, skills instruction

- CPR
- First aid
- Prevention of disease transmission: BBP
- EAP

Specialized in-servicing in required skill areas that later need documented

- Advanced training (CPR, EMT, ACLS, etc.)
EAP Protocol Development

- Reviewed and approved by team physician
  - AED
  - Oxygen
  - Airway Adjuncts
- Should specify equipment needed to carry out tasks in event of emergency
  - Location
  - Should be appropriate to level of training of personnel involved
- Should have clear communication trees
EAP Development

- Written and structured EAP for every school/institution sponsoring athletic activities
- Consultation with local EMS, school public safety officials, on-site first responders, and school administrators
- Specific to each venue and encompass emergency communication, personnel, equipment, and transportation to appropriate facilities
EAP should be reviewed and practices at least annually with certified athletic trainers, team and attending physicians, athletic training students, school and institutional safety personnel, administrators, and coaches.

- Training in CPR and AED use for first responders.
- In SCA, access to early defibrillation is essential. Target goal < 3-5 minutes from time of collapse.
Management of SCA

- Begins before it occurs (EAP, CPR/AED training, Access to early defibrillation)
- Early activation of EMS
- Early CPR
- Early Defibrillation
  - Single greatest impact on survival statistics
  - Early CPR + Defib within 3-5 minutes has survival rates as high as 49-75%
  - However, VF decays to asystole during ischemia with survival rate decreasing 7-10% each minute
- Rapid transition to ACLS

Cummins RO Annals Emer Med 1989 18:1269-1275
Management of SCA

- Maintain high suspicion of SCA in collapsed and unresponsive athlete
- Commotion cortis
- Training to avoid pitfalls:
  - Assessing pulse/resp
  - Agonal gasping
  - Myoclonic or seizure-like activity
Management of SCA

- Back to Basics (BLS)
  - Minimize compression interruption
  - After shock immediately resume compressions for 2 cycles
  - Facilitate rapid access to patient for EMS personnel
Establish clear methods of communication to emergency providers
  - Essential for rapid care
  - If EMS on site, communicate prior to event
  - Ensure phone access and 911 availability
  - Back-up communication

Be able to provide your name/location, number of athlete(s) and their condition, first aid given so far, and directions to location
Transportation

- Identify mode of transportation for injured participant
- Emphasis placed on having ambulance on site at high risk sporting events
Emergency Care Facilities

- Ensure Access to Emergency Medical Facility
- Selection based off of location with respect to venue and level of capabilities
- This plan should be reviewed with facility/inservice
EAP rehearsal and updates

- Review and rehearse EAP at least yearly
- Document results of reviews and rehearsals
  - Emergency plan modified?
  - How?
- Copies of a pocket EAP with directions, map, and pertinent medical conditions should be carried by medical staff
Sample EAP format from the Korey Stringer Institute

2 Overview of Emergency Action Plans (EAPs)
   - Introduction
   - Components of an EAP
   - Emergency Personnel
   - Emergency Communication
   - Emergency Equipment
   - Medical Transportation
   - Non-medical Transportation

6 Emergency Contact List

7 Accident/Injury Contact Phone Tree

8 Sample Campus Map

9 Campus Map with AED Locations Marked

10 Venue Information Chart

11 Sample EAP for a given venue (an EAP should be done for each sport at each venue that they may practice or host competitions)

12 Staff Medical Certification Requirements
Sample EAP from CU

Emergency Action Plan
Coors Events and Conference Center
Men’s and Women’s Basketball, Volleyball, Cheer and Dance

Emergency Procedures

1. **Call 911.** Instruct student trainer, coach, or manager to call 911.
   Provide the following information to EMS:
   A. Name, phone number, and where you are: city of Boulder, CU Campus, Coors Events Center, Lower Practice or Main Gym – 950 Regent Drive
      - Directions: From the intersection of Regent Drive/Colorado Ave., go South on Regent Drive for .2 miles and turn left.
      - Entrance to the building is off Regent Drive at the loading dock on the North side of Coors Event Center, CU Parking Lot #420
      - Enter the building through the door on the right side of the loading dock
   B. General information about the injury and situation
   C. HANG UP ONLY WHEN INSTRUCTED BY THE DISPATCHER

2. Provide First Aid and CPR/AED as needed.
3. Instruct someone to meet the ambulance at the loading dock.
4. Continue with care until EMS arrives and they take over.

Emergency Equipment

Located in the Athletic Training Room: AED, Oxygen, Spine Board, Crutches, Emergency Kit
During practices: Medical Kit and AED will be in the gym

Communication

Primary: Cellular phone
Secondary: Another cell phone, Land-line located in Athletic Training Room offices

Transportation

Emergency: 911 for ambulance service
Non-emergency: The Certified Athletic Trainer’s vehicle

Emergency Phone Numbers
Critically important to properly prepare for athletic emergencies
Ownership of athletic department is vital; involve the administration and coaches in EAP development
Review EAP at least once a year with ALL athletic personnel. Also review first aid/CPR training
Provide best possible care with EAP in place and clear communication in an emergency
Resources

Questions?

KEEP CALM AND PLAN AHEAD