SPORTS TRAUMA AND EVENT MEDICINE (STEM)
Team Physicians Course 2017

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Objectives

• Consolidate information regarding the sideline and event care for athletes
• Review most common cause of collapse and potential death in athletes
• Approach athletes in the relatively austere environment of the field of play
• Plan for mass casualties and incident command system at sport events
Introduction
The Downed Athlete

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Introduction

• STEM is sideline medicine “101”
• Grew from resident and fellow training
• All materials will be covered in more detail during your fellowship
• Little evidence basis for sideline medicine
• Nothing you wouldn’t do in your clinic
Introduction

• Sports Medicine is practiced
  – Clinic
  – Hospital
  – OR
  – In the PUBLIC
• With video cameras
Attitude

• “It’s only a high school game”
  – Do not be a coach
  – Do not consider the importance of the athlete to the game
  – Do consider the importance of the game to the athlete.
Introduction

• Life threatening injuries are relatively rare events
• Pre-planning is the key
• Proper equipment and support
• Appropriate training
Field Protocol

• Knowledge of field conditions, hazards, entry points, access to athletes

• Arrive 30 minutes before competition

• Meet and introduce yourself to
  – other physicians, athletic trainers, nurses and other members of the sports medicine team including emergency medical personnel
  – If possible also to security, coaches, officials
Medical Organization

• Physician—provide leadership
• Athletic Trainers, nurses and others may make first contact on field
• Emergency personnel called in for emergent transport or life or limb threatening problems
Dress Code

- Team shirt
- Credential and ID
- Comfortable shoes (closed toe)
- No lab coat or scrubs
Medical Bag

• Physician Bag
  – Bandages, wound care
• Sideline Equipment Bag
  – Splinting, bandages
• Medications
• Snacks and personal gear should be kept by each individual
Decision Process

• Emergency
• Transport
• Urgency
• Return to play
  – Worsen injury?
  – Predispose to other injury?
Emergency Action Plans

• Specific for each location
• All medical personnel should become familiar with Emergency Action Plan
• Roles for each participant may change dependent on circumstance
Emergency Action Plans

- Location
  - Name of venue
  - Location of medical tent/staff
- Medical response
  - Who responds to initial event and attends to the athlete
- Communications
  - What is available (cell, radio, other)
  - Who is assigned to make calls
Emergency Action Plans

• Security
  – Who keeps the area around the athlete clear for medical care
  – Who opens gates, doors
  – Who guides responding medical staff to location

• Public information
  – Who talks to family and team members
  – Who talks to press
Injury Evaluation

• First Priority—Immediate threat to life
  – A B C

• Second Priority—Potential threat
  – Head, Neck, Back, heat stroke, hypothermia, MI, near drowning

• Third Priority—Most common injuries
  – musculoskeletal, lacerations, other trauma
A B C D E F

- Airway
- Breathing
- Circulation
- Disability / Defibrillation
- Exposure / Examination
- Final Disposition
Collapsed athlete

- Heat / Hydrate
- Head
- Heart
Heatstroke
Heatstroke

- Caused by failure of body to regulate temperature.
- Key symptom is a marked change in mental function (collapse with LOC, ALOC, or mental stimulation).
- Hallmark is elevated rectal temp ≥40°C.
- More common in short distance races done at very high work rate.
Heatstroke (Predisposing Factors)

- Environmental conditions (high heat and especially humidity).
- Speed at which the athlete runs.
- Individual susceptibility.
- Dehydration is probably a minor factor.
Kory Stringer
A Preventable Death?

• 27 y.o., 336 lb. tackle for the Minnesota Vikings.
• Coming off first All Pro season.
• Dies of heat stroke on July 31, 2001 during second day of 2-a-day practices.
• First heat stroke death in NFL history.
• Tragic chain of events leads to his death.
Chain of Events

• Training camp located at Minnesota State University in Mankato, MN.
• Heat index the day he died was 110°, one of the hottest days in a decade in that area (cattle moved to shade).
• Stringer and the other offensive linemen wore in dark jerseys that day.
• Stringer has a known history of heat illness.
Chain of Events

- Day before – Stringer vomits 5 times and is unable to finish practice.
- He is not given IV fluids and sweats profusely during the night.
- Picture of Stringer vomiting picked up on AP wire.
- Next day is the Vikings first in full pads.
- Stringer is determined to make it through practice.
Chain of Events

• Near the end of the 2 ½ hour practice, Stringer takes a knee while doing a bag drill and shortly after collapses.
Chain of Events

• Stringer taken to local hospital, approximately 75 min after his collapse.
• Rectal temp was 108.8
• Dies 13 hours later from massive shut down of his internal organs.
• Ephedrine products found in his locker.
• Lawsuit thrown out on technicality.
And Just When You Thought it Could Never Happen Again:

- Steve Bechler, 23 yr Baltimore Oriole pitcher.
- Using Ephedra to lose weight.
- Warm day in spring training. Gets dizzy while doing sprints.
- Said to be nauseous, pale and disoriented.
- Pulled out of run day before "laboring and sweating profusely."
Steve Bechler

• Taken to locker room… and then to hospital
Steve Bechler

• Has oxygen, but no ice or apparent cooling measures!
• Dead by the next day
Heatstroke

- Victims usually collapse during activity or prior to finish with altered LOC.
- **Exam**: temp > 40 C; Elevated HR; Decreased BP, ALOC.
- **Treatment**: need active cooling ASAP (immerse in ice water 5-10 minutes until temp ≤ 38 C ).
Marine Corps Marathon
Keys to Prevention

• Keep cool during practice (white uniforms, cutoff shirts, remove helmets, shade, cold fluids etc.)

• Watch for warning signs (weakness, dizzy, staggering, delirium, LOC).

COOL FIRST, TRANSPORT SECOND CONTINUE TO COOL ENROUTE
Hydrate

Exercise Associated Collapse
Exercise Associated Collapse (EAC)

• Diagnosis
  – Most often occurs at finish
  – Postural hypotension

• Differential
  – Hyperthermia
  – Hyponatremia
  – Dehydration
  – Cardiac
Hyponatremia

• Discussion
  – 10-40% of endurance athletes
  – May be overhydrated, euhydrated, or dehydrated

• Diagnosis
  – >130mg/dl-usualy asymptomatic
  – <125-altered mental status, lethargy, confusion, seizures
  – Overhydrated
    • edema, increased body weight from start, tight wristband
Hyponatremia

- Treatment
  - Overhydrated
    - Time, observation, await athlete diuresis NO indication for use of diuretics
    - To hospital if serious symptoms
    - Consider hypertonic saline
  - Hypovolemic
    - Normal saline
Head Injury
Scope of problem

- At least 300,000 sports related brain injuries per year in US
  - 250,000 in high school football
  - 1.3 million HS, 75,000 college players
- 8 deaths per year from head injury
- 0 from concussions
Estimated TBIs treated in U.S. hospital emergency rooms 2009.

- Cycling: 85,389
- Football: 46,948
- Baseball and Softball: 38,394
- Basketball: 34,692
- Water Sports: 28,716
- Recreational Vehicles: 26,606
- Soccer: 24,184
- Hockey: 8,145
- Bowling: 153
Helmets

- Helmets in football not designed to prevent concussion
  - New helmets make claims
- Generally to prevent subdural hematoma
Concussion
No one has ever died from a concussion
Concussion

- Athletes die from
  - Subdural Hematoma
  - Epidural Hematoma
  - Intracranial Bleed
  - Cerebral Edema
Concussion
(Traumatic Brain Injury)

- Impulsive force transmitted to head
- Acute onset and quick resolution of neurological impairment
- Symptoms are functional, not structural
- Resolution involves a step-wise course
- Associated with normal imaging
Concussion: Sideline Management

- NCAA and CIF Guidelines
  - No Return to Play (RTP) the same day with concussion symptoms, despite quick resolution
  - RTP in stepwise fashion, generally over 7 days
- California AB 2127
Heart
Hank Gathers  
Feb 11, 1967-Mar 4, 1990 (23)
Abnormal coronary arteries

Pete Maravich
June 22, 1947-Jan 5, 1988 (40)
Coronary arteries disease

- Myocardial infarction
  - HTN
  - Fam history

Sergei Grinkov
Feb 4, 1967-Nov 20, 1995 (28)
Coronary artery disease

Jim Fixx
April 23, 1932-July, 20 1984(52)
Sudden Cardiac Arrest

• Heart disease remains leading cause of death in the US
• Many of these are SCA
  – 220,000 deaths per year
  – 600 per day
  – 25 per hour
Defibrillation

- Survival decreases by 7-10% for every minute delay
- After as few as 10 minutes
  - Very few resuscitation attempts are successful
Abdomen, Chest, Pelvic Trauma

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Abdomen trauma

- Severe abdominal trauma is rare
- 10% of abdominal injuries are sports related
- Significant injuries may have delayed symptoms and findings
Sideline Response

- ABC’s
- Symptoms may be delayed
- Re-exam!!
- Does athlete appear off or ill
- Ashen/Pale, Nausea, Vomiting
- To clinic, ED or EAP
Chest Trauma

- Thoracic Cage
- Pulmonary
- Cardiovascular
Sideline Response

• ABC’s
• Get the mechanism
  – High velocity
• Look, listen, feel
• Labored breathing
• Delayed symptoms are possible

* If serious chest injury suspected
  * Activate EAP and transport ASAP
Pulmonary Trauma

- Pneumothorax
  - Simple v Tension v Hemopneumo
  - Index of suspicion
    - SOB, pleuritic chest pain
    - Do not fly athlete home before CXR
- Pulmonary Contusion
Cardiovascular Trauma

• Commotio Cordis (*cardiac concussion*)
  – Low-impact force - blow or projectile
  – High mortality from fatal arrhythmias
  – Timing of the blow most important
  – 50% of reported cases from baseball/softball
  – Healthy young adult males most common
  – Early AED’s best chance of survival

• poor survival rate
Cardiovascular Trauma

- Contusio Cordis
  - High impact - myocardial damage on autopsy
    - Similar to ischemia
    - Heart pinched between sternum and spine
- Myocardial and Great Vessel Rupture
  - Very high impact or rapid deceleration
Genito-Urinary and Pelvic Trauma

• Kidney
• Testicle/Scrotum
• Urethra/Penis
Sideline Response

• Back/Flank blow
• Trauma from low blows should not be ignored!!
• Private place to exam with chaperone or parent
Kidney Trauma

- Direct blow to flank or rapid deceleration
- Contusion, laceration, fracture of kidney
- Signs
  - Grey-Turners (Flank Ecchymosis ‘bruising’)
  - Hematuria
  - Commonly Associated with lower rib fractures
- Minor renal trauma-85% of all cases
- Major renal trauma-15%
Kidney Trauma

• Suspect if significant blow to back
• Transport immediately if any signs/symptoms of shock.
• Do not give anything by mouth
• Avoid NSAIDs
Testicle/Scrotum

- Contusion
- Rupture, dislocation
- Torsion
  - probable genetic predisposition
  - often associated with trauma
  - pain increase with lifting testicle above symphysis (epididymitis pain usually decreases with same maneuver)
Sideline Orthopedics

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Evaluation

• Mechanism can tell you quite a bit about the injury
• Expose the involved extremity
• Visualize extremity for obvious deformities and skin disruption
• Check Neurovascular Status!!!!
  – Distal pulse, sensation, cap refill, and motor function
• Focused exam
Sideline Ortho Emergencies

- Open fracture/dislocations
- Any neurovascular compromise
- Dislocation of major joints
- Compartment syndrome
- Femur Fractures
- Pelvic Fractures
Open Fractures/Dislocations

• Risk of contamination/infection
• Control bleeding with direct pressure
• Cover wound with moist sterile dressing
• Splint to stabilize
• Transport by ambulance immediately
  – <6hrs to obtain proper definitive tx
Neurovascular Compromise

• Check:
  – distal pulse
  – sensation
  – motor function
  – capillary refill

• Immediate transport by EMS

• Reduction or realignment of limb
Dislocations of Major Joints

- Hip, Elbow, Ankle, Knee, Shoulder
- Associated with neurovascular compromise both immediate and delayed, fractures, skin injury
- Need for reduction?
- Splint and Transport
  - urgency varies
Compartment Syndrome

• Signs
  – Pain out of proportion
  – Paresthesia
  – Pallor
  – Pulselessness
  – Paralysis

• Check splints/wraps - loosen

• Transport immediately
Femur/Pelvis Fractures

- Activate EAP
- Severe internal hemorrhage possible
- Dual femur fractures considered life threatening “load and go” criteria by paramedics.
- Femur - Traction Splint
- Pelvis - MAST trousers
Closed Fractures

- Fingers, Toes, and in between….
- Neurovascular status
- Splint
  - Comfort, prevent displacement, position of function
- Consider realignment of grossly displaced fractures for comfort, splinting, and ease of transport
Dislocations

“to reduce or not to reduce
...that is the question”
Value of immediate reduction

• Less difficult
• Pain relief
• Preserve skin vascularity
• Decompress neurovascular compromise
• Ease of splinting & transport
Problems associated with delayed reduction

• Persistent pain
• Increased muscle spasm
• Increased difficulty of reduction
• Compromised vascularity, esp skin
• Increased need for anesthesia
• Difficulty transporting patients
Disadvantage of on-site reduction

• May do further harm
  – Displace fracture
  – Create neurovascular injury
  – Joint damage
• No X-Ray to Document
• No X-Ray to Assist Reduction
Reduction Summary

- Only do if adequately trained
- Rarely emergent
- Can provide relief
- May be easier if done immediately before muscle spasm sets in
- All need neurovascular testing before and after reduction
- All need x-ray after reduction
Appropriate Care of the Spine Injured Athlete

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New Guidelines - NATA

- June 24, 2015: Appropriate Care of the Spine Injured Athlete Inter-Association Consensus Statement
- Recommendation 4: Protective athletic equipment should be removed prior to transport to an emergency facility for an athlete-patient with suspected cervical spine instability.
- Recommendation 5: Equipment removal should be performed by at least three rescuers trained and experienced with equipment removal at the earliest possible time. If fewer than three people are present, the equipment should be removed at the earliest possible time after enough trained individuals arrive on the scene.
Rationale for Equipment Removal

- In the past, it was recommended that protective equipment (e.g., helmets and shoulder pads in football, hockey and lacrosse) be left in place for transport and removed upon arrival in the hospital Emergency Department.
Rationale for Equipment Removal

• It is essential and now recommended that, when appropriate, in an emergency situation with equipment-intensive sports (e.g., helmets and shoulder pads in football, hockey and lacrosse), the protective equipment be removed prior to transport to the hospital.
Rationale for Equipment Removal

- Rescuers should be able to recognize when it is NOT appropriate to remove equipment on field of play and have a plan to best manage the patient. The rationale for consideration of equipment removal on the field includes:
  - Advances in equipment technology
Rationale for Equipment Removal

• Equipment removal should be performed by those with the highest level of training – often the athletic trainer who may have greater exposure to equipment removal training than other medical team members or hospital emergency staff.

• Expedited access to the athlete-patient for enhanced provider care

• Chest access is prioritized
New Guidelines - NATA

- Recommendation 7: A rigid cervical stabilization device should be applied to spine injured athlete-patients prior to transport.
New Guidelines - NATA

• Recommendation 8: Spine injured athlete-patients should be transported using a rigid immobilization device
  – in the case of a potentially spine injured athlete it is recommended that a long spine board or other immobilization device be used for transport.
Face, eye, dental, skin
Facial Injuries

• Initial exam
• Assure no airway compromise or associated injury (HEAD or NECK)
  – Physical exam
    • Identify active bleeding
    • Inspect nasal septum, ear for hematomas
    • Look for signs of orbital blowout fx
    • Early recognition of facial asymmetry before swelling increases
Facial Injuries

- Tests
  - Ring test for CSF leak
    - Also associated with salty taste in the mouth
    - Rim of clear fluid around blood
  - Transfer to medical center for further evaluation
    - Plain radiograph facial series
    - If suspect additional facial fractures
    - CT can further delineate fractures
Nasal Injuries

• Background
  – Common injuries include fractures and contusion
  – Epsitaxis common
    • Anterior bleed from Kiesselbach’s subpapillary plexus
      – Upright patient
      – Direct pressure to septum
      – Ice to neck
      – Persistent bleeding requires packing
    • Posterior bleed due to SPA artery bleeding needs specialist referral
Septal Hematoma

- Bulging, bluish, septal mass
- Forms hours from surgery
- Diagnosis and treatment within one day
- Failure to drain may lead to “saddle nose”
Nasal Fractures

- Treatment
  - On-field focuses on hemostasis, and decreased swelling
  - Displaced fractures reduced within one hour or referral to head and neck
- Will often reduce 3-5 days later (after swelling decreases)
Ear Injuries

- Usually due to shearing injuries
- Mostly seen in wrestling, rugby
- Auricular hematoma
  - Palpable collection of fluid
  - Painful and throbbing
  - May lose anatomic landmarks due to swelling
Auricular Hematoma

• Early treatment
  – Ice and compression
  – Prompt drainage/incision

• Late prevention
  – Compression for 7-14 days
    • Dental rolls, button
    • Silicone splint
    • Antibiotics

• Main complication- “cauliflower” ear
Eye Injuries

• Mostly due to baseball (ball) and basketball (fingers) injuries
• Best treatment is prevention
• Categories of eye trauma
  – Blunt
    • Smaller object than orbit – rapid eye compression
    • Larger object than orbit – orbital fracture
  – Penetrating
    • Mild abrasions to serious lacerations
Eye Injuries

• Immediate referral
  – Blunt trauma
  – Unsure extent of eye injury
  – Never forcibly open eye swollen shut

• On-site treatment
  – Check vision if possible
  – Protect eye (shield, cup)
  – Transport in seated position
Dental Injuries

• Three categories
  – Fracture
    – Tooth split in two – one in socket, one free
  – Luxation
    – Shift in tooth position, at level of root, but not removed from socket
  – Avulsion
    – Tooth entirely removed from socket
Fractured Tooth

• Pulp exposure
  – Painful: limit exposure to air, saliva, temperature changes
  – Can seal nerve with dental wax or sugar free gum
  – Gently biting into gauze/towel will minimize bleeding
  – Needs dental referral

• Minor fractures/chips
  – No immediate referral
Luxation

• Three types
  – Extruded
  – Lateral displacement
  – Intruded

• All require dental referral

• Extruded tooth appears longer
  – Laterally displaced teeth are off center
  – Firmly grasp tooth with glove & reposition

• Intruded tooth
  – Appears shorter
  – **Do NOT reposition**
Avulsion

• Management
  – Reposition tooth if athlete conscious
    • Usually here a “click” once root in place
    • Key to increasing chances for success
    • Can temporary splint tooth with foil, silly putty, sugar free gum
  – If unable to replace
    • Stored in moist environment
    • Most protective fluids in order “Sav-A-Tooth,” cold milk, cold saline, saline gauze on ice, athlete’s cheek, athlete’s tongue, cold water
Skin injuries

- Contusion (Bruise)
- Laceration
- Infection
- Cold Injury (frostbite)
  - Not likely unless over treated with cold therapy (ICE)
Lacerations

- Sharp
- Blunt
- Friction/Abrasion
- Clean
- Contaminated
Lacerations

• Universal (Standard) Precautions
• Stop the bleeding, then ask questions
  – Direct pressure to the wound
• When?
• Tetanus Status?
• Allergies to anesthetics, antibiotics, latex?
• Medications (blood thinners)?
Lacerations - Exam

• Where is it?
  – Extremities (joint, vessel, nerve, tendon, bone)

• Neurovascular Status

• Clean/Rinse gently

• Anesthetic before full exploration and clean/debride

• Explore
  – depth, foreign bodies, nerve/vessel, muscle, tendon, joint
  – open fracture?
Lacerations - Cleaning

- 60ml irrigation for each centimeter
- 60ml syringe with 18-g needle
- OTC sterile saline contact solution bottle
- Closure?
Bleeding

- Direct Pressure
- Avoid tourniquet use (life saving in severe injuries)
- Special Situations
  - Stop the contest until bleeding controlled
  - Medical team must supervise cleaning blood from uniforms, sports equipment and surfaces and let officials know that play can resume
Sunburn

• Definition
  – Any reddening (erythema) of the skin that lasts at least 12 hours, received either from being exposed to the sun or tanning bed/sunlamp
Why is this important?

• Epidemiology:
  – 121,840 Americans developed Melanoma in 2009
  – The risk for melanoma strongly correlates with UV exposure before the age of 18
Prevention

• Avoidance
• Protective Clothing
• Sunscreen
  – minimum SPF 15
Lacerations - Repair

• Materials (cont)
  – Cyanoacrylate
    • Fast, good results, low tension wounds
    • Not too practical for on-field use
  – Bandages/Steristrips
    • Superficial, low tension wounds
Lacerations - Return

• Immediate
  – Hemostasis, Low tension, No associated injury
  – Consider complete repair after contest

• Delayed
  – Tension, Poor hemostasis, associated injury

• Peroxide on blood splattered uniforms OK

• Cannot RTP with blood soaked uniform
Disasters at Sporting Events

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Role at the game?

- Large gatherings of people create potential problems beyond the care of the athlete
  - Accidents
  - Fights
  - Mass panic
  - Terrorism
Role at the game?

• Larger events should have designated medical care for spectators
• Cannot ignore life/limb threatening conditions
• Will need to interact with others
• “Play nice” with fire, police, rescue, ambulance, others
Skills

- Awareness
- Emergency action plans (EAP)
- Mass Casualty Incident (MCI) and the Incident Command System (ICS)
- Triage
- Basic Trauma Life Support
Awareness

• Sporting venues are not exempt from disasters
  – Natural
  – Accidental
  – Intentional
Awareness

• Sporting venues are not exempt from disasters
  –Natural
Awareness

• Sporting venues are not exempt from disasters
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Awareness

- Sporting venues are not exempt from disasters
  - Natural
  - Accidental
  - Intentional
Awareness

• Large gatherings create special problems
  – Access
  – Crowd dynamics
  – Concentration density of people

• Terrorism
  – Are things out of place?
Munich Olympics, 1972
Munich Olympics 1972
Birthplace of Modern Terrorism
The world number one women's tennis player, Monica Seles, has been stabbed in the back during a quarter-final match in Hamburg. 4/30/93
What is a disaster?

“I’ll know it when I see it”
What is a disaster?

• Earthquake
• Fire
• Intentional and Accidental Act
  – Hazardous Materials
  – Explosives, Nuclear, Biologic, Chemical
• Auto Accidents
• Sporting Events
Sports Disasters

1985 May 29th. Belgium, Brussels, Heysel Stadium: Rioting before the European Cup Final between Italy's Juventus Turin and English club Liverpool caused a concrete wall to collapse; 39 people died and up to 400 were injured.


1989 April 15th. U.K., Sheffield, Hillsborough Stadium: a crowd surge crushed packed fans against barriers at the English F.A. Cup semifinal match between Liverpool and Nottingham Forest; 95 people died and at least 200 were injured.

1991 January 14th. South Africa, Johannesburg: people became crushed against a stadium fence, trampled underfoot or stabbed as thousands of fans surge towards a jammed exit to escape rival brawling spectators after a soccer match between Kaizer Chiefs and Orlando Pirates; 40 people died and at least 50 were injured.


1992 May 5th. Corsica, Bastia: a temporary stand at the Furiani stadium collapsed minutes before the kick-off at the French Cup semifinal between second division Bastia and Marseille; 16 people died and approximately 600 were injured.

1992 July 19th. Brazil, Rio de Janeiro, Maracana Stadium: during a soccer game parts of the fence gave; 50 people were hurt due to a 15 foot fall from the upper tier.

1995 April 8th. Sierra Leone, Freetown: the main gate collapsed on hundreds of fans scrambling for tickets outside a packed stadium, at least 400 people were injured.

1996 June 16th. Zambia: stampede at Zambia/Sudan World Cup qualifiers' match in Lusaka; at least 7 people died.

1996 October 16th. Guatemala, Guatemala City: in a mass panic an avalanche of fans tumbled down seats and a flight of stairs at a World Cup qualifying match between Guatemala and Costa Rica; 83 people died and 147 were injured.

1996 December Zaire, Kinshasa, National Stadium: stampede during a soccer match; at least 2 people died.

1996 Nigeria, Lagos, National Stadium: 5 people were crushed to death when a crowd of 40,000 tried to leave after Nigeria/Guinea World Cup qualifier.

1996 Liberia, Tripoli: troops opened fire to stop pro- and anti-Gadaffi sentiments being expressed in stadium; 8 people died and 39 were injured.

1998 November Democratic Republic of Congo: at Kinshasa derby between Vita Club and Motema Pembe at the Stade De Martyrs; 4 people died when troops opened fire.

1999 January 11th. Egypt, Alexandria: stampede after a derby between Korm and Al Ittihad, 11 people died.

2000 April 5th. Turkey: riots between English and Turkish fans during the Uefa Cup match between Galatasary Istanbul and Leeds United; 2 people were stabbed to death.

2000 July Zimbabwe: stampede following rioting in World Cup qualifier between Zimbabwe and South Africa caused by Zimbabwean police who fired tear gas during the match; 13 people died.

2001 April 11th. South Africa, Johannesburg: stampede during a soccer game, at least 47 people died.
What is a response?

- Bystander
- First Responder
- Definitive response (Fire/Rescue)
- Expanded response (Incident command system)
- Primary Emergency Room
- Hospitalization
Incident Command System
Incident Command System (ICS)

- Organizational system to provide a “chain of command”
- Allows each “leader” to control actions of 3 to 7 “subordinates”
Command and General Staff

- Command
  - Incident Commander
  - Safety officer
  - Liaison officer
  - Public Information Officer (PIO)

- General
  - Operations
  - Planning
  - Logistics
  - Finance
Where do you fit in?

• Team physician or trainer
• In a Mass Casualty Incident (MCI)
  – May be the I/C until F.D. arrives.
  – May provide direct patient care
  – May be placed in charge of patient care area
    • Treatment
    • Triage
Triage, Treatment, Transport

• Most important component of Medical Group

• Doing this effectively means a smooth MCI
The lines

- Incident Commander
  - Safety
  - Liaison
  - PIO
- Operations
  - Rescue
- Planning
  - Medical
  - Fire Suppression
    - Triage
    - Treatment
  - Transport
- Logistics
- Finance
  - Haz Mat
What is Triage

• “To Sort”
• Systematic approach to do the most good to the most people
• Prioritizing
• Communicating priority of patients usually by “tagging”
Simple Triage and Rapid Treatment (START)

- Respond
- Size-up (Scene Safety)
- “Walking Wounded”
- May be potential helpers
START-RPM

• Respirations
• Perfusion
• Mental Status

• 30
• 2
• Can do
START

Walk to the sound of my voice

Able

Tag
Minor

Not

Assess
Respirations
Assess Perfusion

>2 seconds

Capillary refill

<2 Seconds

Mental Status

Follows commands

NO

Tag Immediate

YES

Tag Delayed

NO

Tag Immediate

YES

Tag Delayed
Control hemorrhage

- Use “walking wounded”
- Use Bystanders
- Await arriving resources
- Universal precautions
START-RPM

- Respirations
- Perfusion
- Mental Status

- 30
- 2
- Can do
Thanks
Bibliography

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