

Pre-event 'medical time out'

Ron Courson¹, Glenn Henry,¹ Kyle Borque,² Douglas J Casa,³ Micki S Collins,⁴ Christianne Eason,⁵ Greg Elkins,⁶ Jim Ellis,⁷ Warne Fitch,⁸ Richard Hunt,⁹ James Kyle,¹⁰ Lawrence J Lemak,¹¹ Bert Mandelbaum,¹² Kevin Morley,¹³ Catherine S O'Neal,⁴ Robb S Rehberg,⁷ Fred Reifsteck,¹⁴ Samantha E Scarneo-Miller,¹⁵ Allen Sills⁷

Medical emergencies are an inherent risk in any sport, transcending boundaries and impacting athletes globally. From a cervical spine injury on the (American) football field to a sudden cardiac arrest (SCA) on the soccer pitch or an exertional heat stroke during a high school track meet, the potential for emergencies underscores the importance of preparedness and vigilance at every level and in all sport settings. Despite their varying contexts and levels of medical resources, sports share a common vulnerability to emergencies, emphasising the critical need for proactive measures to safeguard the health and well-being of athletes. Indeed, preparedness is paramount for handling medical emergencies effectively.

To enhance athlete safety at sporting events, we propose the implementation of a pre-event medical meeting, referred to as the 'medical time out' (MTO). The objective of the MTO is to gather sports medicine and emergency care personnel prior to a game or competition to review the emergency action plan (EAP) and enhance coordination before an emergency occurs. The aim of this commentary is to highlight key elements of MTO and promote its adoption throughout sport.

¹Athletic, University of Georgia, Athens, Georgia, USA

²Houston Methodist Hospital, Houston, Texas, USA

³Kinesiology, University of Connecticut, Storrs, Connecticut, USA

⁴LSU, Baton Rouge, Louisiana, USA

⁵University of Connecticut System, Storrs, Connecticut, USA

⁶Southern West Virginia Health System, Hamlin, West Virginia, USA

⁷NFL, New York, New York, USA

⁸Vanderbilt University, Nashville, Tennessee, USA

⁹HHS, Washington, District of Columbia, USA

¹⁰The Kyle Group, Lewisburg, West Virginia, USA

¹¹Lemak Health, Birmingham, Alabama, USA

¹²Santa Monica Orthopaedic and Sports Med Group, Santa Monica, UK

¹³Nashville Predators, Nashville, Tennessee, USA

¹⁴University of Georgia, Athens, Georgia, USA

¹⁵Division of Athletic Training, West Virginia University, Morgantown, West Virginia, USA

Correspondence to Ron Courson, Athletic, University of Georgia, Athens, Georgia, USA; rcourson@sports.uga.edu

KEY CONSIDERATIONS FOR AN MTO

Given the unpredictable nature of medical emergencies during sport, facilitating a rapid and efficient response is essential to deliver optimal care.¹⁻³ The MTO should be conducted prior to each sporting event and functions as a comprehensive checklist review of the venue's EAP. Home and visiting team medical staff (athletic trainers, physiotherapists and team physicians), venue medical staff and on-site emergency medical personnel should be present for the MTO.

The National Athletic Trainers' Association endorsed the MTO in 2012,⁴ and it has gained increasing recognition and application over the past 12 years. The term 'time out' is familiar in both sports and medicine. In sports, it is used for strategic discussions or play calls, while in medicine, presurgical timeouts are conducted before procedures to confirm critical details. Similarly, the MTO aims to optimise emergency medical care delivered on the field-of-play by reviewing response procedures and defining roles before an emergency occurs.

The MTO plays a pivotal role in establishing a coordinated emergency response, which can positively impact outcomes. Typically, athletic trainers or physiotherapists are the first responders in sporting emergencies, but other healthcare professionals, from physicians to emergency medical technicians, may also be involved. Including all responders in pre-event meetings ensures everyone is informed, as effective communication is vital for delivering optimal care.

Drawing inspiration from Dr Atul Gawande's 'The Checklist Manifesto,' the MTO employs a basic checklist to guide actions and improve outcomes. 'The Checklist Manifesto,' illustrated how simple checklists can significantly improve outcomes across various professions. The WHO surgical checklist has saved numerous lives in over 20 countries.⁵ An example in sports is the FIFA poster for emergency action planning, which supports and promotes a consistent level of emergency care on the soccer pitch.⁶ Healthcare providers can enhance athlete care during emergencies by crafting and

implementing an EAP that incorporates the MTO and uses a basic checklist (box 1) to guide the meeting. By addressing these critical elements in advance, athlete healthcare providers are better prepared to respond effectively to emergencies, protecting the safety and well-being of athletes and participants.

PREPARATION FOR WORST-CASE SCENARIOS

The MTO should prioritise prompt recognition and initial management of potential catastrophic athlete injuries. Athlete healthcare providers should discuss management techniques for potential emergencies, including SCA (eg, rapid recognition with prompt cardiopulmonary resuscitation and defibrillation), head and spine injury (eg, specific attention to preferences for spinal immobilisation techniques and equipment as well as potential associated airway compromise), exertional heat illness (eg, covering core temperature measurement and rapid cooling techniques prior to transport), haemorrhage control and awareness of participating athletes with relevant medical conditions. It is imperative for athlete healthcare providers to stay updated on current consensus statements, evidence-based protocols and best practices⁷⁻¹⁰ and to regularly practice and rehearse these essential skills.

Emergency medical services (EMS) training officers and event organisers should encourage the development of venue-specific protocols for sporting events prior to event coverage, with a focus on injuries that are unique to that sport as well as preparedness for mass casualties.

EMS should strategically position ambulance units, staff and equipment to enhance the emergency response, especially in remote locations with limited resources. If both a portable automated external defibrillator (AED) and a manual defibrillator supplied by EMS are available at the sporting event, clarification of which device would be used in the case of SCA should be discussed during the MTO. A team approach that encourages direct communication between sideline athlete healthcare providers and EMS personnel enhances precision in responding to serious athlete injuries or life-threatening situations during sporting events.

IMPLEMENTING THE MTO IN RESOURCE-LIMITED SETTINGS

Medical professionals and emergency care personnel may not be present at many high school and youth sporting events and other resource-limited settings. When a medical professional is not present, the MTO should be led and attended by a designated coach

Box 1 Key aspects of a medical time out

1. **Timing:** athlete healthcare providers (and other athlete support personnel, as appropriate) should meet prior to the start of each sporting event to review the emergency action plan.
2. **Role and location assignment:** clearly determine the roles and locations of every individual, from athletic trainers and physiotherapists to emergency medical technicians to physicians, who will be involved in an emergency response. Understanding where each person is stationed and clearly defining roles is vital for a coordinated response.
3. **Communication protocol:** establish the method of communication and identify the primary and secondary means of communication; this may include voice commands, radio communication and hand signals. Having both primary and backup methods ensures redundancy in communication, even in challenging situations.
4. **Emergency equipment:** confirm the presence and location of emergency equipment. Clarify what type of equipment is available and where it is located (ie, an automated external defibrillator, a spine board and spinal motion restriction equipment, a cold tub for rapid cooling, airway equipment and trauma kits). Ensure that all equipment is regularly checked to ensure proper working order and readiness for immediate use.
5. **Ambulance presence:** an ambulance should be present, if possible, at all events when a high-risk of serious medical injury exists. Discuss the location, planned entrance/exit routes and unobstructed pathways. Determine the level of care that the emergency medical services personnel are providing, for example, advanced life support or basic life support. Clarify whether the ambulance is dedicated to the event or on standby. Have a contingency plan for calling an ambulance if it is not already on-site.
6. **Designated hospital:** identify the designated hospital in case of emergency transport. Select the most appropriate facility based on the nature of the injury or illness to ensure swift and suitable medical care. Considerations include hospitals capable of managing head and neck trauma, orthopaedic trauma and advanced cardiopulmonary resuscitative care.
7. **Potential plan-altering factors:** assess any potential issues that could impact the execution of the emergency action plan and adjust plans accordingly. This may include factors such as ongoing construction, road closures, adverse weather conditions or traffic and crowd flow dynamics.

(or other identified staff member) from the home and away teams. Lay responders can still effectively activate an EAP, call for EMS, begin cardiopulmonary resuscitation and retrieve and use emergency equipment. During the MTO, rescuer roles should be reviewed, as should the location of emergency equipment (eg, the closest AED).

WORKING EXAMPLES OF THE MTO

The MTO has become the standard at all major professional sports leagues and many collegiate sporting events in the USA. The supplemental material provides examples of how the MTO has been successfully implemented from the professional sports level (eg, National Football League, Major League Soccer and National Hockey League) to intercollegiate sports to secondary school and youth sports (see online supplemental material).

In conclusion, the MTO prioritises prompt recognition and management of catastrophic injuries, covering various emergencies such as SCA, head and spine injuries, exertional heat illness and haemorrhage control. By implementing the MTO, athlete

healthcare providers will be better prepared to respond effectively to medical emergencies on the field-of-play. The MTO has been successfully implemented across various sports levels, from professional to youth sports, enhancing preparedness and prioritising athlete safety.

X Micki S Collins @mickiscollins

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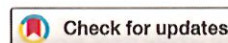
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ORCID ID

Ron Courson <http://orcid.org/0009-0005-1798-9622>

REFERENCES

- 1 Courson R, Reilsteck F, Scarneo-Miller S. Emergency action plans in football. In: Farmer KW, ed. *Football Injuries*. Springer Nature Switzerland AG, 2021.
- 2 Drezner JA, Courson RW, Roberts WO, et al. Inter-Association task force recommendations on emergency preparedness and management of sudden cardiac arrest in high school and college athletic programs: a consensus statement. *J Athl Train* 2007;42:143–58.
- 3 Betz BB. JEMS; EMS Integration into the Preparation for Sports Medicine Emergencies, 2023. Available: <https://www.jems.com/patient-care/ems-integration-into-the-preparation-for-sports-medicine-emergencies/> [Accessed 6 May 2024].
- 4 National Athletic Trainers' Association Official Statement on Athletic Healthcare Provider "Time Outs" Before Athletic Events, Available: <http://www.nata.org/official-statements> [Accessed 6 May 2024].
- 5 Gowande A. *The checklist manifesto*. New York, NY: Metropolitan Books, 2009.
- 6 Patterson M, Gordon J, Boyce SH, et al. Set-piece approach for medical teams managing emergencies in sport: introducing the FIFA poster for emergency action planning (PEAP). *Br J Sports Med* 2022;56:715–7.
- 7 Resuscitation Council UK. Resuscitation on the field of play: A best practice guideline. Resuscitation Council UK; 2024. Available: https://www.resus.org.uk/sites/default/files/2023-12/Resuscitation%20on%20Field%200f%20Play_0.pdf
- 8 Patricios JS, Schneider KJ, Dvorak J, et al. Consensus statement on concussion in sport: the 6th international conference on concussion in sport-Amsterdam, October 2022. *Br J Sports Med* 2023;57:695–711.
- 9 Mills BM, Conrick KM, Anderson S, et al. Consensus recommendations on the Prehospital care of the injured athlete with a suspected catastrophic Cervical spine injury. *J Athl Train* 2020;55:563–72.
- 10 Racinais S, Hosokawa Y, Akama T, et al. IOC consensus statement on recommendations and regulations for sport events in the heat. *Br J Sports Med* 2023;57:8–25.

Supplemental Materials

The Pre-Event “Medical Time Out” (MTO)

Use of the 60-Minute Meeting in the National Football League (NFL)

In 2017, the NFL implemented the “60-Minute Medical Meeting.” This meeting, which is conducted 60 minutes prior to kickoff at every NFL game, is essential to ensure officiating crews, club medical staff, and game day medical personnel are aware of in-game player health and safety procedures. [Note: the 60-Minute Medical Meeting should not be confused with the NFL’s in-game “Medical Time Out,” the term used to describe situations when athletic trainer spotters stop the game to have a player removed from the game due to injury behavior that indicates the need to activate the NFL/NFLPA concussion protocol.]

Personnel required to attend the 60-Minute Medical Meeting include the referee, head team physicians and athletic trainers, Unaffiliated Neurotrauma Consultants (UNCs), Airway Management Physician (AMP), Emergency Response Physician (ERP), Athletic Trainer (AT) Spotters, field emergency medical services (EMS) personnel, X-ray technicians, and field Injury Video Replay Operators. The meeting follows a standard format (Appendix 1), and begins with the referee reviewing communication procedures with the AT spotters in the event of an in-game medical time out, and confirming visual identification of club medical staff for each team. After the referee introductions, the home head team physician will conduct the meeting, starting with introductions of all present. Next, a review of logistics, including location of emergency medical equipment, field ambulance, and emergency exits and the X-ray room is then conducted, followed by a review of the emergency action plan, personnel roles, communication methods, and the identification of hospitals that will be used for specific types of injuries and illnesses. In addition, the ERP is designated as the “code leader” for any situation that would require an emergent resuscitation. Finally, club medical staff will provide emergency medical rosters to the AMP and ERP, and procedures for requesting prescription medications are discussed with the visiting team.

In 2023, an additional “Field Emergency Preparedness Meeting” (also known as the “90-Minute Meeting”) was implemented to ensure all emergency medical equipment and supplies are present and in working order, and to confirm the presence of all medications that may be needed in an emergency. This meeting is attended by the AMP, ERP, and field EMS personnel. A review of emergency personnel roles, responsibilities, and procedures for responding to an on-field medical emergency is also conducted.

60-Minute Medical Meeting



90-Minute Meeting



Photos courtesy of Cincinnati Bengals/NFL

Use of the Medical Time Out in Major League Soccer (MLS)

The mission of Major League Soccer's medical program is to manage the health and safety of the athlete and the team through Prevention, Optimizing Performance, and Injury and Illness care. MLS, the MLS Players Association, and Club Medical Staff work collaboratively year-round to prepare for potential medical emergencies because a rapid medical response from trained individuals improves the odds of a favorable outcome.

The sudden cardiac death of Marc Vivien Foe from Cameroon on the field at the FIFA Confederations Cup in Lyon, France in 2003 changed the world and soccer medicine forever. Subsequently, FIFA and the MLS developed the Pre-Competition Medical Assessment (PCMA) that included a general medical assessment with full cardiac and orthopaedic evaluations. This included physicals and an electrocardiogram (EKG) and echocardiogram that became standard for World Cup 2006. In 2012, Piermario Morosini, a professional soccer player in Italy, had a sudden cardiac arrest (SCA) during a match. When they attempted to treat him, they found the gate to bring the rescue team on the field was locked and could not get the team and equipment on the field. The resuscitation was unsuccessful and the player died. This event raised awareness that our standard protocols needed to be evaluated and improved. Using existing protocols in other areas like a surgical timeout and a pilot checklist, our medical team at MLS subsequently developed and instituted a pregame checklist called the "Timeout".

Every match day, MLS requires the following to be present: at least two certified athletic trainers/therapists on each bench, a physician on the home team bench, a Venue Medical Director (VMD), as well as two ambulances (with Advanced Life Support and Emergency Medical Technicians). A MTO is performed 30-40 minutes before all MLS matches and is attended by the VMD, the head athletic trainer from both teams, the Fourth Official, emergency medical technician (EMT) staff, personnel from Club Operations and Security Staff. The meeting begins with an introduction by each member present including their name and role that they were filling for the match. The VMD confirms that each person understands their responsibilities for different emergencies, outlines the hierarchy and methods of communication and details the location of emergency equipment and ambulances. In addition, locations of EMS transport as well as head injury evaluations on-field versus off-field are reviewed.

Before pre-season training begins, each club is required to submit their On-Field Emergency Action Plan (EAP) for Club venues, including practice, competition, and strength training/performance, to the MLS. EAPs include chain of command, roles and responsibilities, equipment information and location (e.g., AED, spine boards, splints), transportation plans, and nearby emergency facilities (e.g., closest hospital for cardiac, neurological or trauma). These plans are formally practiced by each team's staff to confirm that each member understands their responsibilities, communication patterns and equipment location. There may be separate EAPs submitted for the training facility and stadium depending on the organization and setup of the Club. Collectively, the use of the PCMA, serial EKGs, echocardiography, and implementation of EAPs and Timeout protocols are the core essentials of the soccer medicine program's focus on prevention, optimization of performance and efficient care of the athletes.

Use of the Medical Time Out in the National Hockey League (NHL)

The NHL's approach for emergency preparedness takes a two-prong approach: 1) the development of an EAP among home club and venue staff which includes a preseason rehearsal and 2) a pregame MTO involving home and visiting team medical staff.

Prior to the start of each season, each club is required to develop a detailed EAP that is described in a venue-specific, standardized poster displayed in home and visitor dressing rooms, detailing the location of AEDs, the triage room, ingress and egress routes, and contact information for medical and facility staff and hospital locations. In addition, prior to the first game, teams bring their game-coverage crews of paramedics, EMTs, emergency medicine physicians, athletic trainers, and team physicians to the arena to walk through and rehearse a variety of scenarios relating to the emergency management of athletic injury and emergencies. Hockey emergencies have the added challenge of a response on ice and potential for severe lacerations. Access for providers onto and off the ice as well as procedures getting equipment on and off the ice are reviewed and practiced. Rehearsals include scenarios simulating spinal injury, cardiac emergency, and catastrophic laceration and may include injuries occurring at different locations on and off the ice.

The purpose of the MTO, which occurs in advance of each NHL game, is to familiarize the visiting team medical staff, generally limited to the Head and Assistant Athletic Trainers/Therapists, with the in-arena EAP and the host team medical providers including the athletic trainer/therapist, the emergency medicine physician, paramedics, and EMTs. Following introductions and role delineation, the MTO addresses personnel locations, responsibilities in the event of an emergency, player and staff transportation to a designated local medical center, preferred methods of communication within the emergency response team, and location/availability of emergency equipment and triage room. There is a dedicated triage room with standardized emergency equipment including suction at each venue and its location and access are reviewed. Special attention is also called to any venue-specific equipment, such as a “clamshell” or “scoop” stretcher as opposed to the traditional spine board.

In summary, NHL medical staffs prepare themselves for emergencies with regular education, practice, review and implementation of current policies and procedures.

Use of the Medical Time Out in Intercollegiate Sports

In 2023, the National Athletic Trainers' Association, supported by the American Academy of Sports Physical Therapy, American Medical Society for Sports Medicine, and American Orthopaedic Society for Sports Medicine, launched an Inter-Association Collegiate Standard of Care Toolkit to ensure the health and safety of college and university athletes.

The toolkit includes 16 standard of care domains with more than 1,000 educational resources for collegiate athletic trainers at every level: <https://www.nata.org/collegiate-standard-care-collaterals>. The Emergency Response section recognizes the MTO as an “essential” component.

In 2022, the Southeastern Conference (SEC) achieved a significant milestone by becoming the first NCAA conference to implement the MTO conference wide. The conference recommended MTO implementation for all sports during the 2021-22 athletic season and subsequently adopted the MTO as a standard starting in the 2023 athletic season. The SEC employs a MTO template, akin to Table 1. Each sport operates with different pre-event timeframes; therefore, the conference delegates the timing of the MTO to the discretion of the sports medicine staff at the host institution. It is the responsibility of the host institution to collaborate with the visiting team or teams and medical personnel to plan the emergency response. This ensures that a well-coordinated emergency approach is in place incorporating all members of the athlete healthcare team.

Football MTO's are scheduled approximately 50 minutes before kickoff to allow for the majority of medical personnel to be involved. The home athletic trainer leads the MTO. All healthcare providers convene on the field at a designated location, where they introduce the medical staffs from both the home and visiting teams, as well as the X-ray technologist, SEC Medical observer, and EMS personnel. The teams review the EAP and discuss specific protocols for situations such as head injuries, spinal

injuries, SCA, respiratory arrest, and heat-related illnesses. Other topics covered include the location of the designated hospital, the placement of ambulances and emergency carts for on-field emergencies, the availability and location of emergency equipment, the presence of X-ray units, and communication methods (e.g., radios and hand signals). Additionally, the teams review the conference's medical observer policy, distribute medical observer pagers to the head athletic trainer and the head team physician for each institution. During the MTO, sideline video replay procedures, also added in the 2023 season, are reviewed. For other sports, the MTO follows the same template, with the pre-event MTO occurring at a pre-determined time that aligns with the specific sport's schedule and requirements.



Photos courtesy of The Sports Institute at UW Medicine

Use of the Medical Time Out in High School Sports



Photos courtesy of the Kyle Group

Managing emergency situations in high school sports, while sharing similarities with college and professional sports, presents unique challenges. The most significant differences are the sheer number of participants involved and limited presence of on-site medical professionals. Thus, there is a diverse array of resources available for providing emergency care to high school athletes, which varies widely across locations. Some events have access to physicians and athletic trainers, while others do not. In the event that a medical professional is not present at a high school event, the MTO should be attended by a

designated coach from the home and away teams. Most importantly, rescuer roles should be reviewed as well as the location of emergency equipment (e.g., closest AED).

Furthermore, due to staffing shortages in EMS personnel, on-site ambulance coverage is often uncertain until game time. Ambulance personnel also may be called away from high school sporting events for other emergencies like motor vehicle accidents or spectator medical incidents such as chest pain. These resource disparities emphasize the challenges of the MTO in high school sports settings, not just in football but in all sports, far more than obstacles to adopt the MTO in college or professional sports.

High School MTO Overview

The MTO checklist (*Appendix 2*) should be conducted approximately 15 to 30 minutes before the event. Participants should introduce themselves and share names and cell phone contacts. The locations of AEDs and other emergency equipment at the venue as well as hand signals for EMS response to the field-of-play should be reviewed. Specific emergency protocols should be reviewed for situations such as such as head injuries, spinal injuries, SCA, respiratory arrest, and heat-related illnesses. AED locations in the venue should be recorded. Signs of SCA in an athlete should be reviewed by all potential responders, including a sudden collapse, unresponsive to verbal stimuli or shoulder tap, presence of seizure-like activity, agonal gasping, and having the eyes open and rolled back.*.

Plans for responding to cheerleader and band member injuries, as well as designated responders for spectator illnesses, should be addressed during the MTO. Assignments for crowd control and Incident Designee staff are also essential. Consider backup EMS assignments as well as providing aero-medical landing zone coordinates. This can be crucial, especially in geographically isolated locations where coverage may be limited.

* Terry GC, Kyle, JM, et al. sudden cardiac arrest in athletic medicine. *Journal of Athletic Training*. 2001. 36(2):205-209.

* Pelto HF, Drezner JA. Design and Implementation of an Emergency Action Plan for Sudden Cardiac Arrest in Sport. *J Cardiovasc Transl Res*. 2020. 13(3):331-338.

Other Considerations for the High School MTO

- Having a standardized universal “All-Call” signal (see Appendix 1: arms crossed overhead) for indicating a serious athlete injury or illness, along with immediate activation of the venue's EAP, can facilitate a rapid response from the team physician and fully equipped EMS to the field-of-play.
- Assigning crowd control and incident designee leaders during the MTO with predefined roles when the EAP is activated is crucial. Effective crowd control maximizes coordination among the rapid response team. Positioning teammates away from the injured athlete and near the sideline, with support from the appointed "Incident Designee" for acute stress management and family outreach, is optimal.
- Mental health awareness should be integrated into EAP development, a recommendation endorsed by the National Federation of State High School Associations (NFHS) leadership.
- Involving the head official during the pregame medical checklist is recommended.

Use of the Medical Time Out with the Korey Stringer Institute

The Korey Stringer Institute (KSI) actively promotes the MTO by providing a link to a template version of a suggested document for easy access and by educating athletic trainers and other school officials about the advantages of implementing this procedure. Through their Team Up for Sports Safety (TUFSS) project, which is sponsored by the NFL and NATA, KSI discusses the importance of emergency action planning, including the MTO, with secondary school athletics stakeholders across the United States, with the goal of increasing policies requiring these important measures for high school sports. Furthermore, KSI offers a wealth of supportive materials that can serve as the basis for creating EAPs, establishing policies and procedures, and developing documents to enhance the adoption of current best practices (ksi.uconn.edu).

As part of their mission to prevent sudden death in the athlete, warfighter, and laborer, KSI sends a team of medical volunteers to the Falmouth Road Race each year to help recognize and treat the numerous cases of exertional heat stroke. The Falmouth Road Race, established in 1973, is an annual 7-mile race held in August. Data from 26 years shows a 100% survival rate among 454 cases of exertional heat stroke treated in the finish line medical tents.** This data highlights the importance of quick recognition and prompt treatment from medical providers. Before each race, KSI staff and their Chief Medical Officer, spend approximately 20 minutes reviewing signs and symptoms of exertional heat stroke and demonstrating appropriate use of rectal thermometry and whole-body cooling via cold-water immersion. For most new volunteers, this race is the first time they will witness and treat a patient with exertional heat stroke. Medical volunteers are provided with an opportunity to ask questions about all protocols to ensure they are ready to treat patients appropriately.

** Stearns, R.L., Hosokawa, Y., Belval, L.N., Martin, D., Huggins, R.A., Jardine, J.F., Casa, D.J. Exertional Heat Stroke Survival at the Falmouth Road Race: 180 New Cases with Expanded Analysis. *Journal of Athletic Training*. 2023, Online First. Doi:10.4085/1062-6050-0065.23

Appendix 1: NFL 60-Minute Medical Meeting



60-MINUTE MEDICAL MEETING

PURPOSE

The 60-Minute Medical Meeting is essential to ensuring officiating crews, club medical staff, and gameday medical personnel are aware of in-game player health and safety procedures. This meeting should occur one hour prior to game time outside the official's locker room. The home club's head team physician or head athletic trainer should facilitate the meeting.

MEETING OVERVIEW

REFEREE INTRODUCTIONS*

- ✓ Referee reviews communication procedures with AT Spotters
 - ✓ Confirm how Medical Time Out will be called, and review backup plan
 - ✓ Confirm when radio tests will be completed
 - ✓ Confirm visual ID of Head Athletic Trainers and Head Team Physicians for each club
- * Referee may leave meeting after completed

MEDICAL STAFF INTRODUCTIONS

- ✓ Introduction of Head Athletic Trainer and Head Team Physician for both clubs
- ✓ Introduce remaining team members (name and role):
 - ✓ Club medical staff (physicians & athletic trainers)
 - ✓ Unaffiliated Neurotrauma Consultants (UNCs)
 - ✓ Airway Management Physician (AMP)
 - ✓ Emergency Response Physician (ERP)
 - ✓ Emergency Medical Services (EMS) Personnel
 - ✓ Athletic Trainer (AT) Spotters
 - ✓ Injury Video Review (IVR) Field Operators
 - ✓ X-Ray Technicians
 - ✓ NFL Football Operations representative

REVIEW OF LOGISTICS

- Verify location of equipment:
 - ✓ Ambulance
 - ✓ Transport cart
 - ✓ Spine Board
 - ✓ Defibrillator
 - ✓ Advanced airway equipment
 - ✓ Cold tub (if applicable)
- Review location of:
 - ✓ Stadium emergency exit for emergency transport scenario
 - ✓ Location of X-Ray equipment and technicians
- ERP will confirm Field Emergency Preparedness (90-minute) Meeting was completed

REVIEW OF EMERGENCY ACTION PLAN

- Procedures for medical emergencies (cardiac arrest, neurological emergency, heat illness, etc.)
- Confirm ERP as Code Leader for situations requiring resuscitation
- Review designated "all come" hand signal, and any other signals to be used (spine board, medical cart, etc.)
- Procedures for transport to medical facility
- Identify medical facilities used for trauma, neurological, medical emergency, etc.

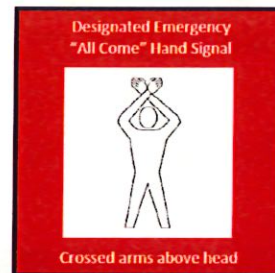
AT SPOTTER/CONCUSSION PROTOCOL REVIEW

- Confirm who will "close the loop" for each club following head/neck evaluation
- AT Spotters to confirm communication preferences with visiting club


REVIEW OTHER QUESTIONS OR CONCERNS

ITEMS TO DISCUSS PRE OR POST-MEETING

- Exchange contact information
- Discuss the procedure for medications needed by visiting club with ERP
- Provide emergency medical rosters to stadium EMS and AMP



Appendix 2: Friday Night Medical Time Out Checklist


2023 CHECKLIST

Review this checklist before any athletic event.

<input type="checkbox"/> ACLS EMS <input type="checkbox"/> Sideline AED <input type="checkbox"/> Sentinel Seizure/ Agonal Respiration Awareness <input type="checkbox"/> Sideline EPI Pen/Rescue Inhaler <input type="checkbox"/> Hemorrhage Control Kit <input type="checkbox"/> Face Mask & Equip. Removal Tools <input type="checkbox"/> Spinal Motion Restriction Equipment <input type="checkbox"/> C-Spine Protocol <input type="checkbox"/> Environmental Risk Status <input type="checkbox"/> Game Day Special Circumstances	<table style="width: 100%; border-collapse: collapse;"> <tr><td colspan="2">EMS Squad: Name/Number</td></tr> <tr><td>EMS Providers:</td><td>Name</td></tr> <tr><td></td><td>Cell</td></tr> <tr><td></td><td>Name</td></tr> <tr><td></td><td>Cell</td></tr> <tr><td colspan="2">Designated Hospital</td></tr> <tr><td colspan="2">ED Contact Number</td></tr> <tr><td colspan="2">Game Administrator: Name</td></tr> <tr><td></td><td>Cell</td></tr> <tr><td colspan="2">Incident Designee:</td></tr> </table>	EMS Squad: Name/Number		EMS Providers:	Name		Cell		Name		Cell	Designated Hospital		ED Contact Number		Game Administrator: Name			Cell	Incident Designee:					
EMS Squad: Name/Number																									
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<p>Hand Signals:</p> <p>ACLS to Field <small>(Use hand signals)</small></p> <p>Spinal Immobilization <small>(Use one hand on each side)</small></p> <p>Concussion <small>(Use one hand on forehead)</small></p> <p>Airway Emergency <small>(Use hand cup over head)</small></p> <p>Additional Signals</p>	<p>Designated Responders:</p> <p>Cheerleading Injury Response</p> <p>Band Injury Response</p> <p>Spectator Incident Response</p> <p>Scene Control Response</p> <p>AeroMedical Land Zone Coordinates & Location</p> <p>Fire/Rescue Dept: <small>Name/Number</small></p> <p>Law Enforcement: <small>Name/Number</small></p>																								

