

## **REVIEW OF IN-GAME PLAYER SAFETY PROCEDURES / COMMUNICATION PLAN**

### **Introduction:**

This document provides a summary of the various elements of a comprehensive on-field health and safety program as implemented at Michigan Athletics, and includes recommendations for improvement of protocols and processes across those elements identified through the Department's self-review. This document was created following an in depth study of each of the areas identified below by appropriate members of the Michigan Athletics medical team during the Fall/Winter 2014, and was revised in Spring 2015 to reflect recommendations made by three external reviewers. As such, this document serves as a working document by which the Department may measure its progress in implementing (and periodically reviewing) its self-identified improvement measures. This summary and review document and the procedures and protocols referenced within and attached to it will be reviewed at least annually. Specific sections and/or procedures or protocols may be reviewed more frequently as appropriate based upon emerging best practices or self-identified improvement opportunities.

The on-field health and safety program elements discussed herein include:

- I. Medical Team Model
- II. On-Field Medical Team Staffing
- III. On-Field Medical Team Roles and Responsibilities
- IV. On-Field Communication Plan
- V. On-Field Injury Management Process
- VI. On-Field Chain of Command and Return to Play Decision Making
- VII. Policy & Procedure Review Process
- VIII. On-Field Emergency Action Plan
- IX. Catastrophic Incident Plan
- X. Concussion Position Statement and U-M Concussion Plan
- XI. Cervical Spine Injury Management Plan
- XII. Concussion Education Process for Coaches
- XIII. Concussion Education Process for Student-Athletes
- XIV. On-Field Medication Management
- XV. Other U-M Athletic Teams

This plan has been benchmarked against those of the other Big Ten Conference schools, as well as various institutions of the ACC, SEC, Pac 12 and Big 12 Conferences.

This document references policies and protocols that are attached as appendices. External reviews of this document, conducted in December, 2014 – January, 2015, also are appendices.

## I. Medical Team Model:

Student-athlete safety on and off the field is managed using a “medical team model” in which a number of professionals work together to safeguard the health and welfare of student-athletes. The leadership of the Medical Team is comprised of the Head Team Physician, the Head Orthopedic Team Physician / Director of Surgical Services, and the Associate Athletic Director- Student-Athlete Health and Welfare (**Darryl Conway, ATC**). This latter position was recently added to the medical team and the Athletic Department’s Leadership Team and reports directly to the Director of Athletics. The group of physicians serves as clinical supervisors for the certified athletic trainers, and the Associate Athletic Director- Student-Athlete Health and Welfare serves as the liaison to the Team Physicians. The Associate Athletic Director also brings expertise and experience to the role of administrator for the certified athletic trainers, sports dietitians, equipment managers, and Olympic strength and conditioning coaches employed within the Department.

The Associate Athletic Director- Student-Athlete Health and Welfare, Head Team Physician, and Head Team Orthopedic Physician / Chief of Surgical Services reviewed Michigan’s overall model of medical personnel assigned to care for student-athletes. The Team Physician model utilized by the University of Michigan is similar to models used at other universities in that the team physicians are not hired and/or supervised by the Athletic Department. University of Michigan Team Physicians are hired by and have a reporting and supervisory structure separate from the Athletic Department through the U-M Health System and the U-M Health Service. Team physicians include:

- **Dr. Dan Hendrickson, MD**- Head Team Physician / Director of Medical Services (University Health Services)
- **Dr. James Carpenter, MD**- Head Team Orthopedic Surgeon / Director of Surgical Services (UMHS- Department of Orthopedics)
- **Dr. Bruce Miller, MD**- Team Physician / Orthopedic Surgeon (UMHS- Department of Orthopedics)
- **Dr. Asheesh Bedi, MD**- Team Physician / Orthopedic Surgeon (UMHS- Department of Orthopedics)
- **Dr. Ed Wojtys, MD**- Team Physician / Orthopedic Surgeon (UMHS- Department of Orthopedics)
- **Dr. Amy Miller, MD**- Team Physician / Primary Care Sports Medicine (UMHS- Department of Family Medicine)
- **Dr. Jeff Housner, MD**- Team Physician / Primary Care Sports Medicine (UMHS- Department of Orthopedics)
- **Dr. Jeff Kutcher, MD**- Team Neurologist (UMHS- Department of Neurology)

To support the University’s academic mission, the medical team also includes two (2) Orthopedic Fellow Physicians, two (2) Primary Care Sports Medicine Fellow Physicians, and multiple Orthopedic Resident physicians, all of whom have various roles within the Team under the auspices of the attending physicians.

The certified athletic trainers responsible for the health and safety of football student-athletes include:

- **Paul Schmidt, ATC, PT**- Head Football Athletic Trainer
- **Phil Johnson, ATC**- Athletic Trainer
- **Lenny Navitskis, ATC**- Athletic Trainer
- **Tyler Cronin, ATC**- Graduate Assistant Athletic Trainer
- **Vahan Agabian, ATC**- Rehabilitation Specialist (*joint position with U-M MedSport; no direct on-field, game day responsibilities; assists with rehabilitation of football student-athletes Monday – Friday*)
- Other U-M certified athletic trainers may be present as available on-field for football game days to assist

The Director of Michigan Athletics Compliance Services consults with departmental Student-Athlete Health and Welfare personnel on various issues as needed or requested. University legal counsel is available to the Student-Athlete Health and Welfare group and consults with those personnel on a variety of issues as needed.

It should be noted that members of the medical team do not report to coaches. Physicians report up through their supervisory structure within the U-M Health System and the University Health Service as noted earlier, and the athletic trainers report directly to the Team Physicians and the Associate Athletic Director- Student-Athlete Health & Welfare. Michigan Athletics also follows the NCAA guideline that athletics health care providers are empowered to have the authority to enter the field of play and/or remove a student-athlete from the field of play if they feel as though a student-athlete is at risk and to determine management and return-to-play of any ill or injured student-athlete without risk of employment status change. The Director of Athletics and Sport Administration communicates this to coaches annually and/or more frequently as needed or warranted. During the 4<sup>th</sup> quarter incident on September 27, 2014, there is no indication that any coach influenced or attempted to assert authority over medical team personnel as the incident unfolded.

There are a number of different medical team structures that were reviewed and benchmarking completed before and after the incident with other NCAA Division I schools indicates that the medical team structure within Michigan Athletics is not unique and is frequently utilized among other schools. All members of the Big Ten Conference utilize a structure for their team physicians similar to that in place at Michigan Athletics except Indiana University, Purdue University and Rutgers University. Less frequent but viable medical team organizational structures within college athletics include: Team Physicians hired solely by an athletic department; Athletic trainers having a reporting and supervisory structure outside athletics to University Health Services and/or Health Systems; and Athletic trainers being hired by outside third parties. The evaluation and benchmarking of the medical team model in place is ongoing and reviewed at least annually or more frequently as new best practices are published.

## **II. On-Field Medical Team Staffing:**

A review of appropriate on-field staffing for medical team personnel was conducted by the Associate Athletic Director- Student-Athlete Health and Welfare, U-M Team Physicians, and certified athletic trainers assigned to football. Currently, at U-M Football Home games, the following medical team personnel are present on the field in working capacities: Minimum of four (4) certified athletic trainers that carry out traditional bench and injury response duties; One (1) certified athletic trainer that serves as a liaison to the on-field EMS personnel; One (1) attending Orthopedic Team Physician; One (1) attending Primary Care Team Physician; One (1) attending Team Neurologist; One (1) orthopedic fellow physician; One (1) primary care sports medicine fellow physician; One (1) orthopedic chief resident physician; Two (2) HVA Ambulance on-field paramedics; and One (1) Associate Athletic Director who is also a certified athletic trainer. There are seven (7) athletic training students who are enrolled in Michigan's Athletic Training Education Program and completing their required clinical affiliation. These students work with the team on a daily basis and have on-field duties that include student-athlete hydration, wound care, set-up / breakdown, and other duties as assigned. Additional medical team personnel who may be present to assist with various on-field duties based on their other clinical duties include: One (1) certified athletic trainer that assists with hydration, wound care, locker room treatment of injured student-athletes, and visiting team liaison duties; One (1) Orthopedic Surgeon Team Physician; and One (1) Primary Care Sports Medicine Team Physician. In addition to the aforementioned medical team personnel serving on Michigan's sidelines, one (1) U-M certified athletic trainer and two (2) U-M athletic training students serve during the game as on-field athletic trainers for U-M's cheerleading and dance teams, and as a medical liaison for the visiting team.

All Michigan Athletics team physicians are board certified. Any decisions regarding levels of medical team staffing are made by the Medical Executive Committee, comprised of the Head Team Physician/Director of Medical Services, Head Team Orthopedic Surgeon/Director of Surgical Services, and the Associate Athletic Director – Student-Athlete Health and Welfare, following thorough discussion with, and possibly input from, other members of the medical team and/or athletics administration.

All physicians on the sidelines have various responsibilities during a game, particularly in the event of an emergency situation, visiting team injuries, or situations involving potential injury to multiple student-athletes. It is understood, however, that physicians other than the primary physicians for a particular game, are in a “back up” or “on deck” role (currently, Drs. Bedi, Carpenter, A. Miller, and resident and Fellow physicians) and are not to enter the team space (between the 25 yard lines) unless called upon to do so. As the University of Michigan is an academic medical institution, the inclusion of Fellow and resident physicians is believed by the medical team to be appropriate and necessary for training.

An ATC is specifically assigned to the visiting team, but is separate from the ATC who is assigned to the ambulance.

Benchmarking by the Department completed before and after the incident with other NCAA Division I Bowl-Subdivision schools and their corresponding on-field medical personnel indicates that Michigan’s on-field staffing is similar to that of other peer schools with comparable numbers of on-field physicians and certified athletic trainers. Every person working on the sidelines has a specific role and falls within the established chain of command as identified in Sections III and VI. The additional clinicians serve a worthwhile purpose in the event of multiple injuries, catastrophic injuries, injuries requiring locker room care, diagnostic testing, and/or transportation to a medical facility.

While Department Medical Team personnel believe upon review that the correct types and numbers of medical professionals were present on the field, they recognize that there may be “blind spots” on the field during live action in which all student-athletes may not be easily observed. As a means of overcoming the unique challenges presented to personnel viewing live game action from the sidelines, one (1) certified athletic trainer (Associate Athletic Director- Student-Athlete Health and Welfare) who was traditionally stationed on the field will be relocated to a position within the press box as a “Spotter” / “Eye-in-the-Sky”. This will allow personnel to better observe the live action on the field from a different and less obscured vantage point, have access to video replay, identify possible student-athletes that may need further evaluation by a member of the medical team on the field, and communicate immediately and directly with medical team members. This concept has been utilized within the NFL for a couple of years and its use is growing within college football. The Spotter attends and is in place for all home and away games. It is too early to determine whether the newly passed Big Ten Conference rule mandating a spotter at every game will impact the role and communications of the Spotter utilized by Michigan Athletics, as the implementation plan for the conference-required spotter will not be developed by the member institutions until Spring - Summer 2015.

An additional Department recommendation would be to not increase medical team staffing without thoughtful consideration of the team member’s roles and responsibilities. Too many medical team members on the sidelines could possibly lead to confusion of roles, duties, and/or chain of command.

### III. On-Field Medical Team Roles and Responsibilities:

The roles and responsibilities of those medical team personnel who are on the field during a U-M football game were reviewed by the Head Football Athletic Trainer, Head Team Physician, Head Orthopedic Team Physician / Chief of Surgical Services, the Football Orthopedic Surgeon, and the Associate Athletic Director-Student-Athlete Health & Welfare. Every member of the medical team has specific on-field and locker room roles and responsibilities that may change and/or shift depending on injury and game management situations. The Roles and Responsibilities table above has been amended to provide more detail of specific roles and duties for each sideline physician as recommended by external reviewers. These roles and responsibilities include, but are not limited to:

<b>Personnel</b>	<b>Duties</b>
<b>Orthopedic Team Physician (Primary Person)</b>	<ul style="list-style-type: none"> <li>• Evaluate, manage, and determine return-to-play status for orthopedic issues</li> <li>• Respond as needed and/or warranted on the field for an orthopedic injury</li> <li>• Refer to and collaborate with specialty physicians as needed and/or warranted</li> </ul>
<b>Orthopedic Team Physician (Secondary Person(s))</b>	<ul style="list-style-type: none"> <li>• Evaluate, manage, and determine return-to-play status for orthopedic issues as needed and/or directed</li> <li>• Respond as needed and/or warranted on the field for an orthopedic injury</li> <li>• Refer to and collaborate with specialty physicians as needed and/or warranted</li> </ul>
<b>Primary Care Team Physician (Primary Person)</b>	<ul style="list-style-type: none"> <li>• Evaluate, manage, and determine return-to-play status for medical issues</li> <li>• Respond as needed and/or warranted on the field for a medical injury</li> <li>• Refer to and collaborate with specialty physicians (e.g. Neurology, Cardiology, etc.) as needed and/or warranted</li> </ul>
<b>Primary Care Team Physician (Secondary Person(s))</b>	<ul style="list-style-type: none"> <li>• Evaluate, manage, and determine return-to-play status for medical issues as needed and/or directed</li> <li>• Respond as needed and/or warranted on the field for a medical injury</li> <li>• Refer to and collaborate with specialty physicians (e.g. Neurology, Cardiology, etc.) as needed and/or warranted</li> </ul>
<b>Team Neurologist</b>	<ul style="list-style-type: none"> <li>• Perform the medical evaluation and make return-to-play determinations of student-athletes with neurological issues in tandem with the Primary Care Team Physician(s)</li> <li>• Respond as needed and/or warranted on the field for an injury</li> <li>• Communication link with "Spotter" / "Eye-in-the-Sky"</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Head Football Athletic Trainer</b>	<ul style="list-style-type: none"> <li>• Serve as the case manager and primary communication link to physicians and coaching staff</li> <li>• Respond as needed and/or warranted for on-field student-athlete injuries</li> <li>• Provide initial evaluation and triage of injuries</li> <li>• Refer injured student-athletes for physician evaluation as needed and/or warranted</li> <li>• Consult with physicians as per return-to-play status as needed</li> <li>• Other duties as needed</li> </ul>

<b>Football Athletic Trainers</b>	<ul style="list-style-type: none"> <li>• Serve as the secondary case manager and communication link to physicians and coaching staff</li> <li>• Respond as needed and/or warranted for on-field student-athlete injuries</li> <li>• Provide initial evaluation and triage of injuries</li> <li>• Refer injured student-athletes for physician evaluation as needed and/or warranted</li> <li>• Consult with physicians as per return-to-play status as needed</li> <li>• Travel with injured student-athletes to locker room and/or medical facility as needed</li> <li>• Communication link with “Spotter” / “Eye-in-the-Sky”</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Orthopedic Fellow Physician</b>	<ul style="list-style-type: none"> <li>• Assist the Orthopedic Team Physician(s) as needed and/or requested</li> <li>• Assist with locker room management of injured student-athletes as needed</li> <li>• Assist the visiting team liaison as needed</li> <li>• Communication link with “Spotter” / “Eye-in-the-Sky”</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Primary Care Sports Medicine Fellow Physician</b>	<ul style="list-style-type: none"> <li>• Assist the Primary Care Team Physician(s) as needed and/or requested</li> <li>• Assist with locker room management of injured student-athletes as needed</li> <li>• Assist the visiting team liaison as needed</li> <li>• Communication link with “Spotter” / “Eye-in-the-Sky”</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Orthopedic Chief Resident</b>	<ul style="list-style-type: none"> <li>• Assist the Orthopedic Team Physician(s) as needed and/or requested</li> <li>• Assist with locker room management of injured student-athletes as needed</li> <li>• Assist the visiting team liaison as needed</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Athletic Training Students</b>	<ul style="list-style-type: none"> <li>• Sideline &amp; locker room equipment &amp; hydration set-up and breakdown</li> <li>• Student-athlete hydration</li> <li>• Student-athlete wound care</li> <li>• Assist with injured student-athletes in the locker room</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Certified Athletic Trainer / EMS Liaison</b>	<ul style="list-style-type: none"> <li>• Serve as the primary liaison to the HVA Ambulance on-field paramedics</li> <li>• Activate the on-field emergency action plan when needed for injury situations taking place for Michigan and/or the visiting team</li> <li>• Primary communication liaison to U-M Hospital if student-athlete transport is necessary</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>HVA Ambulance On-Field Paramedics</b>	<ul style="list-style-type: none"> <li>• Primary responsibility for emergency management of all on-field injuries / illnesses</li> <li>• Transportation of injured student-athletes to locker room as needed</li> <li>• Communication with other HVA units &amp; dispatcher as needed</li> <li>• Coordination of transportation for injured student-athletes as needed</li> <li>• Other duties as assigned and/or needed</li> </ul>

<b>Additional Certified Athletic Trainer(s)</b>	<ul style="list-style-type: none"> <li>• Assist with hydration and wound care</li> <li>• Assist with sideline injury response and management</li> <li>• Assist with locker room management of injured student-athletes as needed</li> <li>• Assist the visiting team liaison and Cheerleading / Dance athletic trainer as needed</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Associate Athletic Director- SA Health &amp; Welfare</b>	<ul style="list-style-type: none"> <li>• Assist with hydration and wound care</li> <li>• Assist with sideline injury response and management</li> <li>• Assist with locker room management of injured student-athletes as needed</li> <li>• Assist the visiting team liaison and Cheerleading / Dance athletic trainer as needed</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Cheer / Dance Certified Athletic Trainer</b>	<ul style="list-style-type: none"> <li>• Primary athletic trainer for Cheerleading &amp; Dance teams</li> <li>• Assist visiting team medical liaisons as needed</li> <li>• Other duties as assigned and/or needed</li> </ul>
<b>Visiting Team Medical Liaison Students</b>	<ul style="list-style-type: none"> <li>• Serve as main medical liaison to visiting team medical staff</li> <li>• Assist Cheerleading &amp; Dance athletic trainer as needed</li> <li>• Other duties as assigned and/or needed</li> </ul>

Department benchmarking completed before and after the incident with other NCAA Division I Bowl-Subdivision schools and their corresponding on-field medical personnel indicates that the roles and responsibilities of Michigan’s on-field medical team personnel are similar to that of other comparable schools.

Department recommendations for improvement include relocating one (1) certified athletic trainer (Associate Athletic Director- Student-Athlete Health and Welfare) to a location in the press box as a “Spotter” / “Eye-in-the-Sky”. This person’s primary responsibility will be to observe the live action on the field, utilize video replay, identify possible student-athletes that may need further evaluation by a member of the medical team on the field, and communicate immediately and directly with medical team members.

#### **IV. On-Field Communication:**

The on-field communications plan for Michigan Football was reviewed by Department certified athletic trainers and team physicians who are traditionally on the field during home football games. This review included how and when physicians and athletic trainers communicate with appropriate personnel concerning an injured student-athlete and/or anything that may put a student-athlete’s health or safety at risk, medical team communication to coaches, visiting team personnel, EMS personnel, and other pertinent individuals; and benchmarking from other programs.

While the Department believes that the medical team’s plan for the various on-field communications necessary to ensure student-athlete health and safety is strong, several key principles and opportunities for review and reinforcement were identified, including:

- Physicians and athletic trainers should immediately communicate with appropriate Athletic Medicine personnel if they observe something that may put a student-athlete’s health or safety at risk (“*See Something / Say Something*”);

- The Head Football Athletic Trainer is the case manager and primary communication link to the appropriate coaching staff. The correct sequencing of communication between Medical Team personnel on the field as it relates to an injured student-athlete and his injury status should be to communicate directly and immediately to this person. In the event that the Head Football Athletic Trainer is unavailable, the chain of command (Section VI, first paragraph) provides for another ATC on the field to step in as the primary communication link.
- Applicable hand signals should be utilized to communicate with sideline medical personnel from the field;
- Chain of Command should be followed with regards to evaluation and return-to-play decisions for orthopedic and medical conditions; and
- Standardized terminology regarding an injured student-athlete's participation status (e.g. cleared; out while we assess; out) should be used by all members of the medical team.

Recommendations were made to assist in removing any possible barriers to communications, as well as increase the effectiveness and efficiency of communication between medical team members by adding two-way radio communication. Going forward, those with radio access will include the offensive team ATC, the defensive team ATC, the Orthopedic Fellow (all games) and the Primary Care Sports Medicine Fellow (home games and other games s/he attends), and Team Neurologist. For education and supervision reasons, the fellows are usually positioned right next to the attending physician who is their supervisor and can communicate with the spotter and attending physician as needed. It is believed that this is a better process to avoid distractions from radio traffic for the attending physicians during an evaluation. Additionally, the certified athletic trainer designated as the "Spotter" / "Eye-in-the-Sky" will also utilize two-way radio communication, as well as hard-line phone and/or cell phone communication directly with medical team members on the field.

This level of radio saturation is believed to be sufficient to enhance necessary communications, but not so broad as to impede understanding of sideline responsibilities, cause distractions, or elevate confusion.

The Head ATC is the primary communication link to the coaching staff regarding the status of an injured student-athlete, under evaluation or otherwise. Neurology is a sub-specialty of medical issues and the neurologist's role is currently identified in the chain of command statement (Section VI, first paragraph) regarding medical decision-making.

Recent Big Ten plans for league-provided independent sideline medical personnel may radically change the requirements and expectations for sideline communication and Michigan Athletics will meet best practices as identified in developing conference regulations or protocols.

#### **V. On-Field Injury Management Process:**

Department medical team personnel reviewed the on-field injury management process and benchmarked against other schools. All team physicians and athletic trainers have the authority to enter the field of play if they feel as though a student-athlete is injured and/or at risk, as well as remove a student-athlete from the field of play. Personnel should immediately communicate with the appropriate Medical Team personnel if they see something that may put a student-athlete's health or safety at risk and the appropriate case manager and primary communication link should be immediately contacted so that the appropriate communication can be forwarded to all necessary parties, including the coaching staff.

In the event of an on-field student-athlete injury, the appropriate certified athletic trainers are the primary responders and are responsible for the initial triage of the injured student-athlete. Team physicians have the ability and authority to respond as needed and/or warranted based on their clinical expertise and/or judgment. Due to the multiple variables that could be involved in various injury situations (e.g. concurrent injuries, multiple student-athletes, limited resources, catastrophic injuries, etc.), precise flowcharts are not

practical. Contingency plans for various situations are reviewed and discussed on an ongoing basis. Hand signals will be utilized to communicate with sideline medical personnel from the field and injured student-athletes will be removed from the field in the safest and most practical way possible. Injured student-athletes will be initially evaluated on the sidelines by an athletic trainer and/or team physician. The chain of command with regard to evaluation and return-to-play decision making will be followed. Clear and concise follow-up communication will take place among medical team members with regard to the injured student-athlete's participation status using standardized terminology.

Upon review, the Department recommendation is to initiate two-way radio communication between medical team members in addition to the existing hand signals to enhance communication and remove possible barriers during the on-field injury management process. Benchmarking indicates that this process and recommendation is consistent with what other entities do in college football and professional football to allow for efficient and effective communication between medical team personnel.

Additionally, the process by which a student-athlete's helmet is secured once he has been evaluated by a member of the medical team and is declared **OUT** was reviewed, clarified, and documented.

- In cases where a student-athlete has sustained an injury in which neurocognitive changes are present and/or suspected, or in other injury situations based on the clinical experience and judgment of the medical team, the student-athlete's helmet will be secured to assist in preventing the student-athlete from re-entering the game without clearance from a member of the medical team.
- In orthopedic, general medical, and other cases where no neurocognitive changes are present and/or suspected, the medical team will use their clinical experience and judgment as to whether to secure the student-athlete's helmet.
- Equipment Operations Team members are responsible for storing helmets taken from student-athletes undergoing evaluation and the helmet(s) is to be stored out of view in a secure location. Any medical team member may request the helmet on behalf of the student-athlete.
- Upon reviewing terminology used by the sideline medical team to describe the status of a student-athlete undergoing evaluation or removed from play for the remainder of the game, it is concluded that current terminology used by the medical team is clear, does not cause confusion, and is uniformly understood by team members. Existing terminology will be reviewed with the new coaching staff to ensure uniform understanding across coaches and medical team members.

Department-initiated benchmarking completed before and after the incident indicates that these policies and recommended additions are consistent with those at other institutions.

## **VI. On-Field Chain of Command and Return to Play Decision Making:**

The on-field chain of command and return to play decision making process was evaluated by members of the medical team. The chain of command for return to play decision making for orthopedic injuries is defined as Dr. Bruce Miller, Orthopedic Surgeon, Dr. Asheesh Bedi, Orthopedic Surgeon, or Dr. Jim Carpenter, Head Team Orthopedic Surgeon / Chief of Surgical Services as the main decision makers in consultation as needed with Paul Schmidt, Phil Johnson, and/or Lenny Navitskis. The chain of command for return to play decision making for medical issues is defined as Dr. Dan Hendrickson, Head Team Physician, or Dr. Amy Miller, Team Physician as the main decision makers, in consultation with Dr. Jeff Kutcher for neurological issues, and in consultation as needed with Paul Schmidt, Phil Johnson, and/or Lenny Navitskis.

Final return-to-play decision-making authority has always and continues to reside with the physicians. This policy is reinforced in various communications with team members. Notation that the physicians will make these decisions "in consultation" with athletic trainers is only intended to reflect that the physicians may wish to receive that input, not that they are required to do so. The Michigan Athletics medical team believes that identifying all physicians who have authority to make a return to play decision, rather than a single sports

medicine physician and single orthopedic surgeon, gives all physicians clear authority to render a return-to-play decision (which may also be a “no” return-to-play decision) without regard to a specific physician being available and present when the decision needs to be rendered.

In the usual course of events, the primary sports medicine physician and primary orthopedic surgeon, respectively, are the recognized first physicians to respond to and attend a medical or orthopedic injury requiring physician involvement during a game. Other physicians with sideline access, all of whom are board-certified, are in a “back up” or “on deck” role and are not to enter the team space (between the 25 yard lines) unless called upon to do so.

After benchmarking other programs and processes, it is felt as though Michigan’s process is consistent with good medical practices and that of other universities, and that no changes beyond those discussed in other sections of this document need to be made to the on-field chain of command and return to play decision making process.

## **VII. Policy & Procedure Review Process:**

University of Michigan Student-Athlete Health & Welfare personnel have a robust process of reviewing established position statements, emergency action plans, and related policies and procedures (see appendix). These documents are generally not internal, but are, or derived from, national standards and best practices as evolving over time. Position statements, inter-association consensus documents and/or recommendations from the National Athletic Trainers’ Association (NATA), NCAA, and other professional organizations are reviewed and discussed in detail by physicians and certified athletic trainers will be reviewed at least annually.

The process of reviewing position statements and consensus documents was last completed by Student-Athlete Health and Welfare personnel on June 2, 2014. Medical team personnel undergo CPR and AED for the Professional Rescuer certification every two (2) years as mandated by the American Red Cross and American Heart Association, as well as participate annually in practical skill sessions for many management techniques. All of the aforementioned review and training sessions have most recently been completed between May 22, 2014 – August 12, 2014. In addition, general policies and procedures are reviewed by personnel annually and/or more frequently as needed or as changes are made.

Benchmarking before and after the incident indicates that the process undertaken by Michigan personnel meet or exceeds what is done by other schools. Recommendations by the Department would include yearly reviews for CPR & AED and increased practical skill sessions for management of issues not usually encountered.

Development of additional policies appropriate to the Michigan Athletics community is an ongoing consideration. As noted in the Policy & Procedures Development and Review Process document (attachment 3), the list of internal reviewers of new policy or procedure is not all-inclusive and University risk management is engaged in the review as appropriate. Recommendations for policy enhancements may be made at any time by any member of the Michigan Athletics medical team or other Michigan Athletics administrators and are discussed by the medical team and implemented as appropriate. The NCAA Sports Medicine Handbook is sent to all team physicians, athletic trainers, strength coaches, performance nutritionists, and athletics counseling personnel on an annual basis for review. It is specifically reviewed by Dr. Hendrickson, the Head Team Physician, and Darryl Conway, the Associate Athletic Director- Student-Athlete Health and Welfare at least annually and more frequently as needed and any modifications to existing policies, procedures, or practices are reviewed and discussed with the entire medical team prior to implementation.

### **VIII. On-Field Emergency Action Plan:**

The on-field emergency action plan for Michigan Stadium (see appendix) was reviewed by members of the medical team and HVA Ambulance, and had also been benchmarked against other school's on-field emergency action plan. The existing U-M plan was found to be an effective way of managing on-field emergencies and involves the certified athletic trainers for each respective team as the primary responders, evaluation, and triage group. Elements of the plan include:

- Team Physicians will respond as needed and/or warranted based on their clinical expertise and/or judgment.
- Hand signals and two-way radio communication will be utilized with sideline medical personnel from the field.
- During games at Michigan Stadium, there will be a U-M certified athletic trainer whose primary responsibility is to serve as the liaison to the HVA Ambulance on-field paramedics who are stationed in the southwest corner of Michigan Stadium with their advanced life support field transportation cart.
- These HVA Ambulance on-field paramedics have the sole responsibility for on-field personnel and do not respond to other incidents within the stadium.
- Injured student-athletes and/or on-field personnel will be removed from the field via the field cart and will be transported to the top of the tunnel to an awaiting ambulance.
- Injured student-athletes and/or on-field personnel will be transported to the U-M Health System and U-M medical team personnel will communicate directly with UMHS personnel.

The Director of Football Operations coordinates communications with the student-athlete's family in the event of an emergency, although the program staff member or coach who may actually communicate with the family may vary depending on the nature of the information and prior communications and relationship with the family.

The emergency action plan is communicated to the visiting teams' head athletic trainer by a letter sent prior to the team's arrival, face to face communication on the field, and in the form of a pocket card provided to the visiting team upon arrival. Venue-specific EAPS are located in all locker rooms. The ambulance checks in with the home locker room 45 minutes post-game and is released by the athletic trainer only after checking with the home and visiting ATCs and physicians. The EMS service also checks in with the visiting ATC to confirm no EMS services are required before departing the venue post-game.

During away games, the U-M medical team follows the on-field emergency plan of the home team. U-M medical team personnel are briefed by the home team medical personnel prior to the game and follow local notification and communication procedures in case of an emergency event. Injured personnel will be transported to the same hospital utilized by the home team.

U-M policies are consistent with other on-field emergency action plans. Going forward, the Department will continue to investigate and benchmark U-M policies against policies from various colleges, the NFL, and other professional and/or large-scale events to examine if there any areas for improvement.

## **IX. Catastrophic Incident Plan:**

The Athletic Department's Catastrophic Incident Plan (see appendix) was revised and reviewed by Student-Athlete Health & Welfare personnel and Leadership Team personnel in February 2014 and May 2014. The plan defines what is considered a catastrophic incident, calls for immediate notification of the Director of Athletics, direct supervisor, head team physician, sport-specific athletic trainer and university legal counsel, as well as the development of an Incident Management Team and Communication Plan. The Catastrophic Incident Plan was reviewed again in May 2014 by members of the Incident Management Team and has been reviewed by legal counsel. No substantial modifications were suggested after the May 2014 review; a semi-annual review of the plan and roles and responsibilities by all involved parties was recommended and has been implemented.

## **X. Concussion Position Statement and U-M Concussion Plan:**

The National Athletic Trainers' Association (NATA) Position Statement: Management of Sport Concussion (see appendix) was published in Spring 2014 and was co-authored by U-M's own Dr. Jeff Kutcher (Neurology) and Steven Broglio, PhD, ATC (Kinesiology). In the Summer of 2014, the NCAA in collaboration with the Collegiate Athletic Trainers Society (CATS) published the Consensus Statement: Best Practices for Diagnosis and Management of Sports Related Concussion (see appendix). Dr. Kutcher was also a member of the writing group for this document.

U-M's Concussion Plan (see appendix) was revised in the fall of 2012 by Drs. Kutcher and Hendrickson and is constantly reviewed and updated as needed and/or warranted. The plan calls for a level of baseline assessment to be done for student-athletes as part of their pre-participation physical evaluation, as well as detailed assessments to be completed at the time of injury and throughout the return-to-play process. All student-athletes who have suffered a diagnosed concussion will be withheld from participation for the remainder of the day of injury and will not be considered for return to participation until the student-athlete has been evaluated by a University of Michigan Team Physician and has successfully progressed through an individualized graded exercise and head injury return-to-play progression under the direction of Drs. Hendrickson, Amy Miller, and/or Kutcher.

In May 2014, U-M's Risk Management Office received and reviewed the materials developed and utilized by Michigan Athletics in its concussion management plan and in its concussion education program for coaches and student-athletes. These materials were included in the University's submission to its insurance underwriter, United Educators, in the insurance renewal process. Upon reviewing the materials, UE determined that the materials meet best practices within the industry. Risk Management has shared the education materials with the athletics programs at the U-M Flint and Dearborn campuses, as well as Recreational Sports at the Ann Arbor campus, and each program is utilizing those materials deemed appropriate for its particular program.

U-M's Concussion Plan was reviewed by Drs. Hendrickson and Kutcher again the week of September 29<sup>th</sup> and no modifications were recommended. As with previous practices, Drs. Hendrickson and Kutcher will continue the ongoing evaluation of concussion research and the U-M concussion plan and make revisions as needed and/or warranted.

## XI. Cervical Spine Injury Management Plan:

U-M Medical Team personnel review cervical spine injury management protocols frequently throughout the year and collaborate with HVA Ambulance personnel for practical sessions involving the equipment-laden and non-equipment-laden student-athlete. Medical team personnel also collaborate with U-M Equipment Operations personnel to secure the best-in-class protective equipment for student-athletes and make sure that the equipment is easily managed during an emergency.

Michigan Athletics will consider opportunities to implement mock, unannounced drills. Practice sessions have been increased from 1-2 times per year, to 3 practice sessions held during the 2014 football season. Michigan Athletics will continue to increase practice opportunities for its medical team. In June, 2015, a new national protocol for the management of cervical spine injury will become effective and several practice sessions to teach and drill the new protocol will be conducted. All aspects of cervical spine injury management are practiced, including practicing the removal of facemasks and supplying athletic trainers with the tools necessary to facilitate facemask removal from helmets. In an effort to reaffirm the principle to which we adhere, Michigan Athletics has implemented instruction to student-athletes, particularly football players, not to touch or roll over an injured teammate.

U-M personnel will continue to evaluate pertinent research and ongoing trends in the management of the cervical spine injured student-athlete and will make relevant modifications to its plan in collaboration with HVA Ambulance personnel. One immediate recommendation would be to increase practice opportunities, not because it is felt that the plan is inadequate, but because these occurrences are rare enough that these protocols are not utilized very often, with the entire medical team with regards to the evidenced-based and emerging practice of on-field equipment removal and lift and slide technique for immobilization.

## XII. Concussion Education Process for Coaches:

Since 2012, University of Michigan coaches undergo annual education on the topic of concussions (see appendix). In 2014, coach's education evolved to include an online component where coaches are asked to review an educational presentation and the NCAA Concussion Video ([https://s3.amazonaws.com/ncaa/web\\_video/health\\_and\\_safety/concussion/concussion.html](https://s3.amazonaws.com/ncaa/web_video/health_and_safety/concussion/concussion.html)). Following the online review, Drs. Hendrickson and Kutcher, and Darryl Conway present and answer questions on the topic of concussions at a regularly scheduled coaches meeting. Coaches are also provided with a handout, *NCAA Concussion Fact Sheet for Coaches (see appendix)*, for their reference. At this meeting, the Director of Athletics and/or Sport Administration will also emphasize with coaches the principle that the physicians and athletic trainers have the authority to remove a student-athlete from play and that the medical team is the decision-makers with regards to when a student-athlete returns to participation from a concussion or other injury. Instruction on the return-to-participation progression is, and has been, included in the concussion education material for coaches, and coaches are provided an opportunity to ask questions of and engage in a dialogue with medical team personnel regarding return-to-participation as part of the education process. All coaches are also asked to sign a ***Big Ten Coaches Concussion Acknowledgement Form*** (see appendix) acknowledging the responsibility for supporting the department's concussion management policy, the responsibility to report any signs, symptoms, or behaviors consistent with a concussive injury that they may witness, and acknowledging the education and return-to-play decision-making process.

When a student-athlete has suffered a concussion, in the course of communicating the evaluation, diagnosis, and return-to-play progression to the coaches, the physician and/or certified athletic trainer will as appropriate take the opportunity to provide coaches with additional education regarding the signs, symptoms, and behaviors, evaluation and diagnosis, return to play progression, etc.

Benchmarking of other NCAA schools before the incident indicates that the University's concussion education process for coaches is consistent with and/or exceeds what is done by other entities within the NCAA. Dr. Hendrickson, Dr. Kutcher, and Darryl Conway consistently evaluate the education process and make modifications as needed with regards to the content and delivery. One recommendation to be considered could be additional follow-up education throughout the year for coaches on a more frequent basis.

### **XIII. Concussion Education Process for Student-Athletes:**

University of Michigan student-athletes receive education on a number of topics during their yearly pre-participation physical examination process. This education session (see appendix) is traditionally held in August and covers a number of topics, including, but not limited to concussions, head & hydration, nutrition, sickle cell trait, supplements, substance abuse testing and alcohol policy, etc. One of the main talking points throughout the education session is that student-athletes should always immediately communicate any injuries or illnesses to their certified athletic trainer and/or team physician. Similar to the education session for coaches, the student-athlete's session emphasizes the signs and symptoms of concussions, U-M's baseline testing and individualized, step-wise management and return-to-play progression, "what to do" if the student-athlete feels as though he / she has a concussion or a teammate / friend is suspected of a concussion, and allows for a Q & A session for the student-athletes. Student-athletes are also provided with a packet of handouts that includes a NCAA Concussion Fact Sheet for Student-Athletes (see appendix). Attendance is verified at the education session for each student-athlete by a certified athletic trainer. In addition to the in-person education session for student-athletes during the pre-participation physical examination process, electronic copies of the presentation and handouts are made available to student-athletes online on an ongoing basis, so that they may access these materials and reinforce their understandings of how to spot concussion symptoms in themselves, and their teammates and friends.

Student-athletes are also asked to complete and sign a Medical Examination and Authorization Waiver on a yearly basis in which they consent that they have disclosed their prior medical history, have received concussion education, and agree to report any problems, ailments, injuries, and/or complaints. Student-athletes that participate in an activity that require the use of a mouth guard or in which a mouth guard is recommended (e.g. football, ice hockey, field hockey, lacrosse, wrestling, water polo) are also asked to sign a Mouth Guard Policy Statement (see appendix).

When a student-athlete has suffered a concussion, in the course of communicating the evaluation, diagnosis, and return-to-play progression to the student-athlete, the physician and/or certified athletic trainer will as appropriate take the opportunity to provide the student-athlete with additional education regarding the signs, symptoms, and behaviors, evaluation and diagnosis, return to play progression, etc.

The education, pre-participation physical examination, and forms / waiver process that is undertaken by student-athletes annually is under regular review led by Dr. Hendrickson and Darryl Conway, but also includes other members of the medical team. Recent recommendations for improvement include the development of a mechanism to further confirm and/or reinforce comprehension of the concussion education materials by student-athletes, mechanisms to further educate student-athletes regarding the pertinent information through written and online measures, multimedia, and/or other means, including the integration of video into the online processes.

Benchmarking of other programs before and after the incident indicates that U-M's system of educating student-athletes is consistent with or exceeds that which is done by others both in the scope and delivery of the education.

#### **XIV. On-Field Medication Management:**

Policies related to medication management are reviewed by Dr. Hendrickson, Rick Bancroft, Darryl Conway, and other U-M Medical Team personnel annually and/or more frequently as needed. Additionally, an audit has been conducted by U-M Health System pharmacy personnel annually for the past six (6) years for which medical team personnel were found to be in compliance with federal, state, University, and Drug Enforcement Agency (DEA) regulations, and NCAA guidelines with regards to the packaging, labeling, storage, education and counseling, dispensing, and accountability of medications. All prescription medications, of all types and classifications, are dispensed only by physicians based upon their professional determination that the medication is appropriate for the medical concern and patient. All prescription medications dispensed to U-M student-athletes are done so by a U-M Team Physician after an evaluation of the student-athlete.

The dispensation of OTC or prescription medication from the sideline is very uncommon. Typically, if a medication – OTC or prescription - is administered on the sideline it is in conjunction with an injury the physician is attending, and so dispensation occurs with the physician's knowledge and direction. Where an OTC medication is administered by an ATC at the sidelines, the ATC relays that information to the Head ATC as quickly as practicable. This will often be during the game or, at the latest, during a debrief with the Head ATC post-game regarding any sideline medical issues. The Head ATC, in turn, may advise the physicians of the OTC medication being administered during the game, or at the latest during his post-game debrief with the appropriate physician(s) (orthopedic or medical).

All medications distributed to student-athletes, at sideline or otherwise, are documented in the appropriate student-athlete medical records by the ATC or ordering physician, as appropriate. Michigan Athletics will develop a policy to notify the Head Medical or Orthopedic physicians *during the game* whenever an OTC medication is distributed on the sideline.

U-M Medical Team personnel will continue to review policies and practices on an annual basis and/or more frequently as needed and will continue to consult with pharmacy experts from the U-M Health Systems to ensure compliance with all regulations.

#### **XV. Other U-M Athletic Teams:**

Student-Athlete Health & Welfare personnel are currently evaluating in-game player safety procedures and communication plans for the remainder of the University's 31 athletic teams. A sport-specific communication plan will be developed for the other sports that encompass many of the same communication principles that have been developed and implemented for football based on each sport's staffing levels, facility, and the unique characteristics.

**IN-GAME PLAYER SAFETY PROCEDURES / COMMUNICATION PLAN  
BACKGROUND AND REVIEW  
Status Summary**

		<b>STATUS</b>
<b>I. Medical Team Model</b>	The medical team model of the Department will be evaluated and benchmarked against then-currently known best practices, to determine the best model for the University and implement any modifications to the current model as needed.	<b>Ongoing Evaluation</b>
<b>II. On-Field Medical Staffing</b>	One (1) certified athletic trainer (Associate Athletic Director-Student-Athlete Health and Welfare) who was traditionally stationed on the field, will be relocated to a position in the press box as a “Spotter” / “Eye-in-the-Sky” to observe the action on the field, utilize video replay, identify possible student-athletes that may need further evaluation by a member of the medical team on the field, and communicate immediately and directly with medical team members.	<b>Implemented 10/4/14; Ongoing evaluation of program</b>
<b>II. On-Field Medical Staffing</b>	Medical team staffing should not be increased without thoughtful consideration of the team member’s roles and responsibilities	<b>Ongoing Evaluation</b>
<b>III. On-Field Medical Team Roles &amp; Responsibilities</b>	One (1) certified athletic trainer (Associate Athletic Director-Student-Athlete Health and Welfare) who was traditionally stationed on the field, will be relocated to a position in the press box as a “Spotter” / “Eye-in-the-Sky” to observe the action on the field, utilize video replay, identify possible student-athletes that may need further evaluation by a member of the medical team on the field, and communicate immediately and directly with medical team members.	<b>Implemented 10/4/14; Ongoing evaluation of program</b>
<b>IV. On-Field Communication Plan</b>	Two-way radio communication will be added to assist in removing any possible barriers to communication, as well as help increase the effectiveness and efficiency of communication between medical team members. Two (2) certified athletic trainers on the field, one physician on the field, and other individuals as needed and/or warranted will utilize two-way radios during the game.	<b>Implemented 10/4/14; Ongoing evaluation of program</b>
<b>IV. On-Field Communication Plan</b>	One (1) certified athletic trainer (Associate Athletic Director-Student-Athlete Health and Welfare) who was traditionally stationed on the field, will be relocated to a position in the press box as a “Spotter” / “Eye-in-the-Sky” to observe the action on the field, utilize video replay, identify possible student-athletes that may need further evaluation by a member of the medical team on the field, and communicate immediately and directly with medical team members.	<b>Implemented 10/4/14; Ongoing evaluation of program</b>

	<b>V. On-Field Injury Management Process</b>	Two-way radio communication will be added to assist in removing any possible barriers to communication, as well as help increase the effectiveness and efficiency of communication between medical team members. Two (2) certified athletic trainers on the field, one physician on the field, and other individuals as needed and/or warranted will utilize two-way radios during the game.	<b>Implemented 10/4/14; Ongoing evaluation of program</b>
	<b>V. On-Field Injury Management Process</b>	<p>Michigan Athletics medical team personnel have the option to remove student-athletes from the field to be observed in the locker room or other private space, and exercise that authority as needed.</p> <p>Once a student-athlete has been evaluated by a member of the medical team and is declared <b>OUT</b>.</p> <ul style="list-style-type: none"> <li>• In cases where a student-athlete has sustained an injury in which neurocognitive changes are present and/or suspected, or in other injury situations based on the clinical experience and judgment of the medical team, the student-athletes helmet will be secured to assist in preventing the student-athlete from re-entering the game without clearance from a member of the medical team. In orthopedic, general medical, and other cases where no neurocognitive changes are present and/or suspected, the medical team will use their clinical experience and judgment as to whether to secure the student-athletes helmet.</li> <li>• Student-athlete diagnosed with concussion or suspected concussion shall not be permitted to speak with the media until medically cleared.</li> </ul>	<b>Implemented 10/4/14; Ongoing evaluation</b>
	<b>VII. Policy &amp; Procedure Review Process</b>	Yearly updates for CPR & AED, increased practical skill sessions for management of issues not usually encountered.	<b>Evaluating possible implementation plans for FY15</b>
	<b>VIII. On-Field Emergency Action Plan</b>	Further investigate and benchmark U-M policies against policies from other colleges, the NFL, and other professional and/or large-scale event at least annually or more frequently based upon emerging best practices and announced modifications to the policies of professional or other collegiate programs.	<b>Continued benchmarking &amp; evaluation in process &amp; ongoing</b>
	<b>IX. Catastrophic Incident Plan</b>	<ul style="list-style-type: none"> <li>• No substantial modifications were suggested after the May 2014 review</li> <li>• Semi-annual review of the plan and roles and responsibilities by all involved parties</li> </ul>	<b>Ongoing evaluation; Implementation of semi-annual review in August &amp; February</b>
	<b>X. Concussion Position Statement &amp; U-M Concussion Plan</b>	<ul style="list-style-type: none"> <li>• U-M's Concussion Plan was reviewed by Dr. Dan Hendrickson and Dr. Jeff Kutcher the week of September 29<sup>th</sup> and no modifications were recommended.</li> <li>• As with previous practices, Dr. Dan Hendrickson and Dr. Jeff Kutcher will continue the ongoing evaluation of concussion research and the U-M concussion plan and make revisions as needed and/or warranted.</li> </ul>	<b>Ongoing evaluation</b>

	<b>XI. Cervical Spine Injury Management Plan</b>	Increase practice opportunities with the entire medical team with regards to the evidenced-based and emerging practice of on-field equipment removal and lift and slide technique for immobilization.	<b>Ongoing evaluation &amp; discussion; Developing implementation plans for FY15</b>
	<b>XII. Concussion Education Process for Coaches</b>	Additional follow-up education throughout the year on a more frequent basis and to reinforce comprehension.	<b>Ongoing evaluation &amp; development</b>
	<b>XII. Concussion Education for Student-Athletes</b>	Ongoing evaluation & discussion surrounding the education, pre-participation physical examination, and forms / waiver process that is undertaken by student-athletes, led by Dan Hendrickson and Darryl Conway, but also including other members of the medical team.	<b>Ongoing evaluation &amp; discussion</b>
	<b>XII. Concussion Education for Student-Athletes</b>	The development of a mechanism to further confirm and/or reinforce comprehension by student-athletes, mechanisms to further educate student-athletes regarding the pertinent information through written and online measures, multimedia, and/or other means, including the integration of video into the online waivers.	<b>Ongoing evaluation &amp; development</b>
	<b>XV. Other U-M Athletic Teams</b>	Development of sport specific communication plans.	<b>In development</b>