MEMORANDUM

April 29, 2010

TO: NCAA Head Athletic Trainers.

FROM: Debra Runkle, chair

NCAA Committee on Competitive Safeguards and Medical Aspects of Sports (CSMAS).

SUBJECT: Concussion Management Plan.

The NCAA is committed to the prevention, identification, evaluation and management of concussions. The NCAA's latest step in the process to develop a consistent association-wide approach to concussion management has come from the NCAA Executive Committee. The Executive Committee adopted the following policy for institutions across all three divisions.

"Institutions shall have a concussion management **plan on file** such that a student-athlete who exhibits signs, symptoms or behaviors consistent with a concussion **shall be removed** from practice or competition and **evaluated** by an athletics healthcare provider with experience in the evaluation and management of concussion. Student-athletes diagnosed with a concussion **shall not return** to activity for the remainder of that day. Medical clearance shall be determined by the team physician or their designee according to the concussion management plan.

> In addition, student-athletes must sign a statement in which they accept the responsibility for reporting their injuries and illnesses to the institutional medical staff, including signs and symptoms of concussions. During the review and signing process student-athletes should be presented with educational material on concussions."

The policy came from ongoing review of research data and discussions with the medical community. Determination of appropriate care and treatment of student-athletes injuries and illness are best handled through a local institutional medical model that has team physician oversight and direction. This model should focus on appropriate access to healthcare providers with the unchallengeable authority to determine management and return-to-play.

Institutions should be prepared to respond to immediate emergency situations (e.g., intracranial hemorrhage, cardiac arrest, heat illness, exertional sickling, respiratory distress, spinal injury, fractures) as part of their emergency care plans for each venue but also the continued evaluation and care for non-emergency yet serious conditions (e.g., concussion, sprains, strains, bleeding, fractures). With this in mind, institutions should have both a written emergency action plan as well as a written concussion management plan on file.

The committee reaffirms its recommendation from December 2009 that an athlete exhibiting an injury that involves significant symptoms, long duration of symptoms or difficulty with memory function should not be allowed to return to play during the same day of competition and expands upon it by stating a student-athlete diagnosed with a concussion should not return to activity for the remainder of that day. Student-athletes that sustain a concussion outside of their sport should be managed in the same manner as those sustained during sport activity. The student-athlete should be monitored for recurrence of symptoms both from physical exertion and also mental exertion, such as reading, phone texting, computer games, working on a computer, classroom work, or taking a test.

Also in December, the committee's recommendations reinforced medical policies that already are in place at many NCAA institutions while encouraging institutions to develop protocols under the direction of a physician for responding to possible concussions. To provide more guidance on protocol development, the CSMAS has approved a set of recommended best practices appropriate for the NCAA collegiate environment. The basic principles are based on the 2008 Consensus Statement on Concussion in Sport 3rd International Conference held in Zurich and the NCAA Sports Medicine Handbook with expanded language that reinforces the Executive Committee's adopted policy.

As noted in the handbook guideline on concussions, neuropsychological testing has proven to be an effective tool in assessing neurocognitive changes following concussion and can serve as an important component of an institution's concussion management plan. However, neuropsychological tests should not be used as a standalone measure to diagnose the presence or absence of a concussion and should not be used in lieu of a comprehensive assessment by qualified healthcare providers.

Healthcare professionals should assume a concussion when unsure and waiting for final diagnosis. When in doubt, sit the athlete out. Institutions should ensure healthcare professionals attain continuing education on concussion evaluation and management annually. Structured and documented education of student-athletes and coaches is also recommended to improve the success of the recognition and referral components of a consistent concussion management program.

Educational materials on concussions can be found at www.ncaa.org/health-safety. A webinar is planned for medical staff this summer. The following recommended best practices should be considered by each institution for developing a plan to address concussion in sport.

Recommended Best Practices for a Concussion Management Plan for all NCAA Institutions

1. Institutions shall require student-athletes to sign a statement in which student-athletes accept the responsibility for reporting their injuries and illnesses to the institutional medical staff, including signs and symptoms of concussions. During the review and signing process student-athletes should be presented with educational material[1] on concussions.

2. Institutions should have on file and annually update an emergency action plan[2,3,4] for each athletics venue to respond to student-athlete catastrophic injuries and illnesses, including but not limited to concussions, heat illness, spine injury, cardiac arrest, respiratory distress (e.g. asthma), and sickle cell trait collapses. All athletics healthcare providers and coaches should review and practice the plan at least annually.

3. Institutions should have on file an appropriate healthcare plan[5] that includes equitable access to athletics healthcare providers for each NCAA sport.

4. Athletics healthcare providers should be empowered to have the unchallengeable authority to determine management and return-to-play of any ill or injured student-athlete, as he or she deems appropriate. For example, a countable coach should not serve as the primary supervisor for an athletics healthcare provider nor should they have sole hiring or firing authority over that provider.

5. Institutions should have on file a written team physician–directed concussion management plan[2,6] that specifically outlines the roles of athletics healthcare staff (e.g., physician, certified athletic trainer, nurse practitioner, physician assistant, neuropsychologist). In addition, the following components have been specifically identified for the collegiate environment:

   a. Institutions should ensure coaches have acknowledged they understand the concussion management plan, their role within the plan and that they received education[1] about concussions.

   b. Athletics healthcare providers should practice within the standards as established for their professional practice (e.g., physician[7], certified athletic trainer[8], nurse practitioner, physician assistant, neurologist[9], neuropsychologist[10]).

   c. Institutions should record a baseline assessment[6,10,11,12] for each student-athlete prior to the first practice in the sports of baseball, basketball, diving, equestrian, field hockey, football, gymnastics, ice hockey, lacrosse, pole vaulting, rugby, soccer, softball, water polo, and wrestling, at a minimum. The same baseline assessment tools should be used post-injury at appropriate time

intervals. The baseline assessment should consider one or more of the following areas of assessment.

1) At a minimum, the baseline assessment should consist of the use of a symptoms checklist and standardized cognitive and balance assessments (e.g., SAC; SCAT; SCAT II[6]; Balance Error Scoring System (BESS); Neurocom; Wii Fit Concussion Balance testing). ***And now Biodex Balance Testing***

2) Additionally, neuropsychological testing (e.g., computerized, standard paper and pencil) has been shown to be effective in the evaluation and management of concussion. The development and implementation of a neuropsychological testing program should be performed in consultation with a neuropsychologist. Ideally, post injury neuropsychological test data should be interpreted by a neuropsychologist.

d. When a student-athlete shows any signs, symptoms or behaviors consistent with a concussion, the athlete shall be removed from practice or competition and evaluated by an athletics healthcare provider with experience in the evaluation and management of concussion.

e. A student-athlete diagnosed with a concussion shall be withheld from the competition or practice and not return to activity for the remainder of that day.

f. The student-athlete should receive serial monitoring for deterioration. Athletes should be provided with written instructions upon discharge; preferably with a roommate, guardian, or someone that can follow the instructions.

g. The student-athlete should be evaluated by a team physician as outlined within the concussion management plan. Once asymptomatic and post-exertion assessments are within normal baseline limits, return to play shall follow a medically supervised stepwise process.

h. Final authority for Return-to-Play[13] shall reside with the team physician or the physician's designee.

6. Institutions should document the incident, evaluation, continued management, and clearance of the student-athlete with a concussion.

7. Although sports currently have rules in place; athletics staff, student-athletes and officials should continue to emphasize that purposeful or flagrant head or neck contact in any sport should not be permitted and current rules of play should be strictly enforced.

Reference Documents.

1. NCAA and CDC Educational Material on Concussion in Sport. Available online at www.ncaa.org/health-safety

2. *NCAA Sports Medicine Handbook*. 2009-2010.

3. National Athletic Trainers' Association Position Statement: Emergency Planning in Athletics. *Journal of Athletic Training,* 2002; 37(1):99–104.

4. *Sideline Preparedness for the Team Physician*: A Consensus Statement. 2000. Publication by six sports medicine organizations: AAFP, AAOS, ACSM, AMSSM, AOSSM, and AOASM.

5. *Recommendations and Guidelines for Appropriate Medical Coverage of Intercollegiate Athletics*. National Athletic Trainer's Association. 2000. Revised 2003, 2007, 2010.

6. Consensus Statement on Concussion in Sport 3rd International Conference on Concussion in Sport Held in Zurich, 2008. *Clinical Journal of Sport Medicine,* 2009; 19(3):185-200.

7. Concussion (Mild Traumatic Brain Injury) and the Team Physician: A Consensus Statement. 2006. Publication by six sports medicine organizations: AAFP, AAOS, ACSM, AMSSM, AOSSM, and AOASM.

8. National Athletic Trainers' Association Position Statement: Management of Sport-Related Concussion. *Journal of Athletic Training*, 2004; 39:280-297.

9. Practice parameter: the management of concussion in sports (summary statement). Report of the Quality Standards Subcommittee. *Neurology*, 1997; 48:581-5.

10. Neuropsychological evaluation in the diagnosis and management of sports-related concussion. National Academy of Neuropsychology position paper. Moser, Iverson, Echemendia, Lovell, Schatz Webbe, Ruff , Barth. *Archives of Clinical Neuropsychology*, 2007; 22:909–916.

11. Who should conduct and interpret the neuropsychological assessment in sports-related concussion? Echemendia RJ, Herring S, Bailes J. *British Journal of Sports Medicine*, 2009; 43:i32-i35.

12. Test-retest reliability of computerized concussion assessment programs. Broglio SP, Ferrara MS, Macciocchi SN, Baumgartner TA, Elliott R *Journal of Athletic Training*, 2007; 42(4):509-514.

13. The Team Physician and Return-To-Play Issues: A Consensus Statement. 2002. Publication by six sports medicine organizations: AAFP, AAOS, ACSM, AMSSM, AOSSM, and AOASM.

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