2019 NFHS INJURY EPIDEMIOLOGY SUMMIT EXECUTIVE SUMMARY

Summit Overview

The National Federation of State High School Associations (NFHS) has taken significant actions over the last decade to establish and expand the knowledge base of the epidemiology, nature, and pattern of sports injuries in high school athletic population across boys' and girls' sports. The outcomes of these efforts have helped guide the NFHS and its member State High School Associations in playing rules discussion, sport safety best practices, and injury prevention education. The purpose of 2019 NFHS Injury Epidemiology Summit is to bring together a group of national leaders in the areas of sports epidemiology and research to review current programmatic strategies and discuss opportunities for collaboration and growth.

The Objectives of the Summit Included:

1. To develop some common approaches (essentially best practices) to injury data collection to help guide State High School Associations when they are directed to do so by state legislatures.
2. To look at ways that the NFHS can integrate the findings of current data collection systems that are actively collecting data across the country.
3. To establish a process of identifying individuals or groups interested in collaborating on specific sports injury surveillance and research projects.

Current Sports Injury Surveillance Review

The NFHS Sports Medicine Advisory Committee (SMAC) analyzes and interprets the scientific injury data that is obtained from the National High School Sports-Related Injury Surveillance Study (High School RIO™). This information allows that SMAC to initiate and support recommendations to the NFHS community intended to reduce risk through possible changes in rules, guidelines, best practice and/or equipment.

The NFHS has helped sponsor the High School RIO™ national surveillance program since 2006. High School RIO™ is the internet-based data collection tool used in the National High School Sports-Related Injury Surveillance Study. This study, currently the only decade long surveillance study of all time-loss injuries in a large national sample of US high school athletes, was first implemented during the 2005/06 academic year and has been maintained annually. High School RIO™ captures athletic exposure (number of athlete practices and number of athlete competitions per week), injury (body site, diagnosis, severity, etc) and injury event (mechanism, activity, position/event, field/court location, etc) data weekly throughout the academic year using certified athletic trainers (ATs) as data reporters. Experts analyze this data to describe the rates, patterns and trends of high school sports-related injuries. To date this study has captured more than 95,000 sports injuries during over 48 million athletic exposures.

The Missouri State High School Activities Association collects and reports on student athlete concussions and head injuries as part of a mandate from their Department of Health and Senior Services, in accordance with state law. This activity has been ongoing annually since 2011.

The Texas University Interscholastic League (UIL) has previously collected sports injury data in the sport of football and starting in 2019 will require member schools assigned to the largest conference (6A) to report all concussions across all athletic activities through a joint effort with UT Southwestern Medical Center. All member schools are encouraged to voluntarily participate in the concussion reporting program, but only the conference 6A schools are required to participate.

The National Athletic Trainers Association (NATA) sponsors the High School NATION (National Athletic Treatment, Injury and Outcomes Network) research project that just finished its 8th year. This study collects all sports injury types, treatments associated with the injuries, and the outcomes of the student athlete returning to play.

The Wisconsin Sports Injury Research Network has collected sports injury data on high school student athletes as well as club athletes to better understand the incidence, risk factors, prevention and health outcomes for injuries sustained by youth and adolescent athletes. The research group has sports injury results from more than 22,000 participants to date.

The Athletic-Training Practice-Based Research Network (AT-PBRN) use an electronic medical record system to document routine patient care in an effort to improve the quality of care and patient outcomes for patients under the care of athletic trainers. The AT-PBRN includes more than 80 athletic trainers at clinical practice sites across 37 states and Washington, DC. They have collected more than 30,000 injuries, 315,000 athletic training services, and 11,000 patient-report outcome measures in high school athletes.

The NFHS also helps sponsor the National Center for Catastrophic Sport Injury Research (NCCSIR). The mission of the NCCSIR is to conduct surveillance of catastrophic injuries and illnesses related to participation in organized sports in the United States at the collegiate, high school, and youth levels of play. In working through a Consortium for Catastrophic Injury Monitoring in Sport, the NCCSIR aims to track cases through a systematic data reporting system that allows for longitudinal investigation of athletes suffering from catastrophic injuries and illnesses. The goal of the Center is to improve the prevention, evaluation, management, and rehabilitation of catastrophic sports-related injuries. The NFHS SMAC receives reports annually on the outcomes of this research activity.

The Texas University Interscholastic League (UIL) has become the first State High School Association to require their member schools to report catastrophic injuries and illnesses to the UIL. They require that UIL member schools file reports of catastrophic injuries, as defined by the National Center for Catastrophic Sports Injury Research (NCCSIR), that occur during UIL athletic practices and/or competitions utilizing the online reporting form available on the UIL Portal web site. Schools are also required to submit reports any time an Automated External Defibrillator (AED) is utilized in conjunction with any UIL event, practice and competition, utilizing the online reporting form available on the UIL Portal web site.

Initial Summit Outcomes

1. The Summit participants agreed that publishing a scientific paper on the Summit proceedings would lay the groundwork for the future of sports injury surveillance in the high school population. This paper would include best practices for State High School Associations interested or required to collect sports injury data.
2. There was significant interest among the Summit participants to expand the knowledge of sports injuries to include the burden of all injuries in the age population accounting for the impacts of club, travel, and AAU type activities.
3. There was significant interest among the researcher groups to continue to collaborate on sharing data outcomes with the NFHS and State High School Associations as well as work toward common data collection practices and terminology.
4. Summit participants agreed that State High School Associations could encourage member schools to report catastrophic sport injuries especially now that each respective State High School Association has a Sports Medicine Advisory Committee. The national online reporting is available at https://www.sportinjuryreport.org/.

Final as of January 1, 2020

APPENDIX A

2019 NFHS INJURY EPIDEMIOLOGY SUMMIT AGENDA

AGENDA
NFHS INJURY EPIDEMIOLOGY SUMMIT

NCAA Conference Center | Indianapolis, IN | July 19-21, 2019

1. Welcome, Introductions, General Information
   - Official Welcome from the NFHS — **Dr. Niehoff**
   - Overview of Summit — **Dr. Klossner**
2. The Role of the NFHS Sports Medicine Advisory Committee (SMAC) — **Dr. Koester**
3. Overview of the NFHS Membership and Rules Committees — **Bob Colgate**
   - Member State Associations
   - Member State Association SMACs
   - NFHS Rules Committees
4. The Role of Injury Epidemiology in the NFHS SMAC History — **Dr. Koester**
5. Review Current Safety Equipment Across Sports — **Bob Colgate**
   - List of Current Questions from NFHS Rules Committees Looking for Injury Data
   - Question and Answer
6. Overview of NFHS Sponsored Epidemiology Projects (Methods, Outcomes)
   - High School Rio — **Dr. Comstock**
   - National Center for Catastrophic Sport Injury Research (NCCSIR) — **Dr. Kucera**
7. Update on Current State High School Associations Injury Epidemiology Data Collection
   - Missouri State High School Activities Association — **Dr. Urhahn**
   - Texas University Interscholastic League — **Dr. Cousins**
8. Overview of Sponsored Epidemiology Projects (Methods, Outcomes)
   - NCAA Injury Surveillance (Datalys) — **LaGwyn Durden and Dr. Collins**
   - NATA Injury Surveillance — **Jennifer Rheeling and Dr. Collins**

- NFL Injury Surveillance **Dr. Sills**
- Review the Role of US Lacrosse as an NGB Example for High School Expansion **Dr. Lincoln**

9. Open Forum
   - Wisconsin Sports Injury Research Network **Dr. McGuine**
   - Major League Baseball Injury Analytics **Dr. Curriero**
   - AMSSM Research Updates **Dr. Kliethermes**
   - Potential Enhancements to Injury Surveillance **Dr. Lincoln**
   - Athletic Training Practice-Based Research Network **Dr. McLeod**
   - Mental Health and the High School Student Athlete **Dr. Carr**
   - The Future of Athlete Care – The AI/Machine Learning Advantage **Dr. Bergeron**
   - Sports Injury Research and Surveillance in the Middle School Setting: Challenges and Successes **Dr. Kerr**

10. Best Practices in Injury Epidemiology for State High School Associations
    - Methods (what is a recorded injury/illness; who is a participant; what is an exposure, etc)
    - Role of the Coach, Athletic Trainer, Self-reporting
    - Onboarding for High School RIO
    - Reporting for Catastrophic Injuries and Fatalities
    - Costs

11. Optimizing Injury Data Collection in the Secondary School Athlete- RIO and Beyond
    - Lessons Learned from Collecting Data at this Level **Dr. McGuine**
    - What are potential barriers for success
    - Identify opportunities for improvement
    - Ideas for research studies based upon epidemiology outcomes
    - The role of the dual-club athlete: school-based and Club/AAU/Travel
    - What is the Future of Injury Epidemiology at All Levels

12. Potential Collaborations
    - Share Publications with NFHS
    - Injury Prevention Education and Awareness
    - Potential for Video Studies

13. NFHS Business
    - For the Good of the Order
    - Review NFHS Summit – Feedback
    - Adjourn

APPENDIX B

2019 NFHS INJURY EPIDEMIOLOGY SUMMIT PARTICIPANTS

Mike Bergeron, SIVOTEC Analytics

John Black, NFHS General Counsel

Javier Cardenas, NFHS SMAC

Chris Carr, Sport Performance Psychologist and Coordinator for Sport and Performance Psychology for St. Vincent Sports Performance

Bob Colgate, NFHS Director of Sports and Sports Medicine

Christy Collins, President, Datalys Center

Dawn Comstock, High School RIO

Mark Cousins, UIL Director of Eligibility and Education

Frank Curriero, Associate Professor in the Department of Epidemiology at John Hopkins Bloomberg School of Public Health

LaGwyn Durden, Director of Sport Science Institute, Sports Medicine

Zach Kerr, UNC Assistant Professor – Exercise and Sport Science

Stephanie Kliethermes, AMSSM Representative

Michael Koester, NFHS SMAC Chair

Kristen Kucera, Director, NCCSIR

David Klossner, Associate Athletic Director, Sports Performance at the University of Maryland **(Chair)**

Cynthia LaBella, Medical Director, Institute of Sports Medicine

Andy Lincoln, Director, MedStar Sports Medicine Research Center

Tim McGuine, NFHS SMAC Researcher

Tamara McLeod, Athletic Training Program Director, Professor of Athletic Training and Chair for Sports Medicine at A.T. Still University

Karissa Niehoff, NFHS Executive Director

Jennifer Rheeling, NATA Representative

Allen Sills, NFL Chief Medical Officer

Kerwin Urhahn, NFHS Board Member – MSHSAA Executive Director

Davis Whitfield, NFHS Chief Operating Officer