HOT TOPICS IN SPORTS MEDICINE

Jill Stobber and Bob Colgate

2018 National Athletic Directors Conference
Sunday – December 16, 2018 – 10:00 a.m.
San Antonio, Texas
DISCLAIMER

The information provided during this workshop is NOT SPORTS MEDICINE ADVICE. The discussions here are intended to be educational in a general sense. State medical laws and regulations vary, as do specific circumstances on a state-by-state basis. Before taking any action in your respective states that may impact anyone’s medical and legal rights, be sure to check with your own lawyer and/or appropriate health-care professional.
OVERVIEW OF SESSION
NFHS SPORTS MEDICINE ADVISORY COMMITTEE (SMAC)

- 18 Member Committee
- Made up of Physicians, Certified Athletic Trainers, Researchers, Coaches, Officials, Administrators and State Association Directors
- The NFHS SMAC advises the NFHS and member associations on medical and safety issues and conditions as they relate to interscholastic sports and activities rules writing and guidelines, as well as other programs and services the NFHS administers
- Meets twice a year (October and April)
- NIAAA has representation on the NFHS SMAC
NFHS SMAC IMPACT

- 51 Member State High School Associations-
- 19,000 High Schools-
- 12 Million Participants in High School Activity Programs-
- 7.9 Million Participants in High School Sports-
- 14 NFHS Rules Committees-
- Other National Sports Governing Bodies-
- Other Medical Organizations and Associations-
2018 NATIONAL HIGH SCHOOL SPORTS MEDICINE SUMMIT

April 20-21, 2018
Indianapolis, Indiana
2018 NATIONAL HIGH SCHOOL SPORTS MEDICINE SUMMIT

- NATA & AMSSM partnered with NFHS
  - AOSSM next Summit?? (Ortho surgeon group)
- Overview of a variety of topics
- Well attended and very positive feedback

Moving forward........
- Annual or every other year?
- Need continued involvement from state associations on content, engagement, and assessment
- Need increased involvement from state SMAC physicians!!!
2018 NATIONAL HIGH SCHOOL SPORTS MEDICINE SUMMIT - TOPICS

- Injury Surveillance-
- Legal Perspective on Consent to Treat Minors-
- Concussion Management-
- Emergency Action Plans (EAP)-
- CPR/AED Certification vs Instruction for all Coaches-
- Communicable Skin Disease Issues-
- Overuse / Sport Specialization-
- NFHS Essentials Initiatives-
- Mental Health Issues in High School Sports-
- Wrestling Weight Management and Body Fat Measurement Tools-
- Breakout Sessions-

www.nfhs.org
HIGH SCHOOL SPORTS INJURY DATA

- Many state legislatures are wanting state associations to collect “injury data”
- Ideally data are being collected with same methodology and definitions.
- High School RIO and Datalys currently collecting injury data
- NFHS Epidemiology Summit - Summer 2019
2019 NFHS SPORTS MEDICINE SUMMIT
**INJURY EPIDEMIOLOGY**
Director: Kristen Kucera, Ph.D., ATC, LAT
Interim Director: Rebecca Yau, Ph.D., MPH
Medical Director: Robert Cantu, MD

The University of North Carolina at Chapel Hill

The **mission** of the National Center for Catastrophic Sport Injury Research (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, 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.
CONSORTIUM RESEARCH DIVISIONS

Traumatic Injuries
• Head
• Spine
• Lightning
• Other trauma

Exertional Events
• Heat stroke
• Sickling
• Asthma
• Diabetes

Cardiac Events
• Sudden cardiac arrest
• Sudden cardiac death
IMPARTS

- Sports Medicine Handbook Guidelines
- Coaching Education
- Protective Equipment
- Preseason Guidelines
- Emergency Planning
  - Sudden Cardiac Arrest
  - Exertional Heat Illness
    - Fluid Replacement
  - Sickle Cell Trait
  - Asthma Management
  - Lightning Guidelines
- Spearing and Head-Down Contact
- TBI and Concussion Management

www.nfhs.org
R. Dawn Comstock, PhD
Associate Professor
Colorado School of Public Health, Epidemiology
University of Colorado School of Medicine, Pediatrics (Emergency Medicine)
Pediatric Injury Prevention, Education, and Research (PIPER) Program
dawn.comstock@ucdenver.edu
(303) 724-7881
High School RIO Data

• 2 concurrent samples
  – Original: 100 ”representative” schools reporting 9 sports
  – Expanded: all willing schools (over 200) reporting any sports

• ATs asked to log on weekly throughout each academic year to provide data
  – Exposure data
    • Number of athletes practicing
    • Number of athletes competing
  – Injury data
    • Athlete: height, weight, year in school, position/event, etc
    • Injury: body site, diagnosis, severity, etc
    • Injury event: mechanism, specific activity, etc
High School RIO (05/06-current)

• National High School Sports-Related Injury Surveillance System (High School RIO)
  – Athletic Trainers from US high schools report injuries
  – Internet-based data collection tool (RIO): 24/7 and updatable

• Definitions
  – Injury: 1) occurred as result of organized high school practice or competition, AND 2) required medical attention by a team physician, certified athletic trainer, personal physician, or emergency department/urgent care facility, AND 3) resulted in restriction of the high school athlete’s participation for ≥1 days beyond the day of injury OR any concussion, fracture, dental injury, or heat event

  – Athletic exposure (AE): one athlete participating in one competition or practice
# Sports Included in High School RIO: 2005/06 through 2017/18

<table>
<thead>
<tr>
<th>Boys’ Sports</th>
<th>Years Studied</th>
<th>Girls’ Sports</th>
<th>Years Studied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>13</td>
<td>Basketball</td>
<td>13</td>
</tr>
<tr>
<td>Basketball</td>
<td>13</td>
<td>Cross Country</td>
<td>6</td>
</tr>
<tr>
<td>Cross Country</td>
<td>6</td>
<td>Field Hockey</td>
<td>10</td>
</tr>
<tr>
<td>Football</td>
<td>13</td>
<td>Gymnastics</td>
<td>4</td>
</tr>
<tr>
<td>Ice Hockey</td>
<td>10</td>
<td>Lacrosse</td>
<td>10</td>
</tr>
<tr>
<td>Lacrosse</td>
<td>10</td>
<td>Softball</td>
<td>13</td>
</tr>
<tr>
<td>Soccer</td>
<td>13</td>
<td>Soccer</td>
<td>13</td>
</tr>
<tr>
<td>Swimming</td>
<td>10</td>
<td>Swimming</td>
<td>10</td>
</tr>
<tr>
<td>Tennis</td>
<td>4</td>
<td>Tennis</td>
<td>4</td>
</tr>
<tr>
<td>Track</td>
<td>10</td>
<td>Track</td>
<td>10</td>
</tr>
<tr>
<td>Volleyball</td>
<td>3</td>
<td>Volleyball</td>
<td>13</td>
</tr>
<tr>
<td>Wrestling</td>
<td>13</td>
<td>Cheerleading*</td>
<td>9</td>
</tr>
</tbody>
</table>

*Sports no longer under surveillance

* Co-Ed sport although predominantly female participants
Uses of HS RIO Data

- Describe patterns of injury
- Monitor trends over time
- Provide evidence to drive injury prevention efforts
- Evaluate interventions

- Provide limited sentinel surveillance capability
- Help inform clinical practice

- Drive additional research
High School RIO Dataset: All Sports

- Injury data captured 2005/06 through 2017/18
  - 95,420 injuries
  - 48,645,517 AE
  - 1.95 injuries per 1,000 AE

- Injury by type of exposure
  - 52.2% competition related
  - Competition rate 4.06 per 1,000 AE
  - Practice rate 1.26 per 1,000 AE
  - $RR = 3.22$ (95% CI = 3.18 – 3.26)
Injury Rate by Sport and Type of Activity: All Sports, 2017/18

Practice

Competition

Boys' swimming
Girls' swimming
Boys' tennis
Girls' tennis
Boys' cross country
Girls' cross country
Boys' basketball
Boys' track
Boys' baseball
girls' track
Boys' softball
Girls' softball
Girls' volleyball
Girls' field hockey
Boys' basketball
Boys' track
Girls' basketball
Boys' soccer
Boys' ice hockey
Boys' lacrosse
Boys' wrestling
Girls' soccer
Boys' football

Cheerleading
Boys' cross country
Girls' tennis
Boys' tennis
Girls' swimming
Boys' swimming
Girls' volleyball
Boys' ice hockey
Boys' lacrosse
Boys' wrestling
Girls' soccer
Boys' football

Colorado School of Public Health
Gender Differences

- In gender comparable sports injury rates are significantly higher among girls than boys overall but this varies by specific injury.
  - Girls have higher concussion rates
  - Boys have higher fracture rates
  - Girls have higher ACL rates
  - Boys have higher MCL rates
Injury Rates Over Time: 9 Original Sports

- **p-value**
  - Competition = 0.45
  - Practice = 0.09
  - Overall = 0.59
## Changing Injury Patterns: % of All Injuries

<table>
<thead>
<tr>
<th>Most Common High School Sports Injuries in 9 Original Sports Under Surveillance*</th>
<th>2005/06</th>
<th>2017/18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body Sites</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ankle</td>
<td>22.7%</td>
<td>17.8%</td>
</tr>
<tr>
<td>Head/Face</td>
<td>12.3%</td>
<td>21.4%</td>
</tr>
<tr>
<td>Knee</td>
<td>14.2%</td>
<td>14.1%</td>
</tr>
<tr>
<td><strong>Diagnoses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strain/Sprain</td>
<td>52.0%</td>
<td>45.3%</td>
</tr>
<tr>
<td>Concussion</td>
<td>9.1%</td>
<td>18.7%</td>
</tr>
<tr>
<td>Fracture</td>
<td>9.8%</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

*football, boys’ and girls’ soccer, girls’ volleyball, boys’ and girls’ basketball, wrestling, baseball, and softball
Football Concussion, Knee and Ankle Injury Rates, Original Study, 2005/06-2017/18

- Concussion: p-value <0.01
- Knee: p-value = 0.16
- Ankle: p-value = 0.12
Concussion Surveillance: All Sports

- Concussion data captured 2005/06 through 2017/18
  - 17,336 concussions
    - 18.1% of all injuries captured by HS RIO
  - 48,645,517 AE
  - 3.56 concussions per 10,000 AE

- Injury by type of exposure
  - 63.8% competition related
  - Competition rate 9.02 per 10,000 AE
  - Practice rate 1.73 per 10,000 AE
    - $RR = 5.22$ (95% CI = 5.06-5.38)
Concussion Rates per 10,000 AE: 9 Original Sports

- Competition: $p$-value <0.0001
- Practice: $p$-value =0.0002
- Overall: $p$-value <.0001

## Concussion Rates per 10,000 AEs: 2017/18

<table>
<thead>
<tr>
<th>Sport</th>
<th>Competition</th>
<th>Rank</th>
<th>Practice</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>39.1</td>
<td>1</td>
<td>4.4</td>
<td>1</td>
</tr>
<tr>
<td>Boys’ Ice Hockey</td>
<td>25.0</td>
<td>2</td>
<td>0.4</td>
<td>13</td>
</tr>
<tr>
<td>Girls’ Soccer</td>
<td>20.4</td>
<td>3</td>
<td>1.9</td>
<td>5</td>
</tr>
<tr>
<td>Boys’ Lacrosse</td>
<td>13.7</td>
<td>4</td>
<td>1.8</td>
<td>7</td>
</tr>
<tr>
<td>Girls’ Basketball</td>
<td>11.1</td>
<td>5</td>
<td>1.3</td>
<td>8</td>
</tr>
<tr>
<td>Girls’ Lacrosse</td>
<td>9.4</td>
<td>6</td>
<td>1.2</td>
<td>10</td>
</tr>
<tr>
<td>Boys’ Soccer</td>
<td>8.7</td>
<td>7</td>
<td>1.9</td>
<td>6</td>
</tr>
<tr>
<td>Boys’ Wrestling</td>
<td>7.6</td>
<td>8</td>
<td>3.4</td>
<td>3</td>
</tr>
<tr>
<td>Girls’ Volleyball</td>
<td>5.7</td>
<td>9</td>
<td>2.4</td>
<td>4</td>
</tr>
<tr>
<td>Field Hockey</td>
<td>5.2</td>
<td>10</td>
<td>0.2</td>
<td>14</td>
</tr>
<tr>
<td>Softball</td>
<td>5.2</td>
<td>11</td>
<td>1.3</td>
<td>9</td>
</tr>
<tr>
<td>Boys’ Basketball</td>
<td>4.0</td>
<td>12</td>
<td>1.0</td>
<td>11</td>
</tr>
<tr>
<td>Cheerleading*</td>
<td>2.8</td>
<td>13</td>
<td>3.7</td>
<td>2</td>
</tr>
<tr>
<td>Baseball</td>
<td>2.0</td>
<td>14</td>
<td>0.5</td>
<td>12</td>
</tr>
</tbody>
</table>

*Competition includes competition and performance
Mechanisms of Concussion by Sport

<table>
<thead>
<tr>
<th>Sport</th>
<th>Player-Player</th>
<th>Player-Surface</th>
<th>Player-Apparatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>87.1%</td>
<td>9.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Boys’ Soccer</td>
<td>61.6%</td>
<td>13.1%</td>
<td>24.0%</td>
</tr>
<tr>
<td>Girls’ Soccer</td>
<td>43.7%</td>
<td>16.7%</td>
<td>37.4%</td>
</tr>
<tr>
<td>Boys’ Baseball</td>
<td>36.4%</td>
<td>5.5%</td>
<td>57.7%</td>
</tr>
<tr>
<td>Girls’ Softball</td>
<td>25.9%</td>
<td>7.0%</td>
<td>65.3%</td>
</tr>
<tr>
<td>Boys’ Lacrosse</td>
<td>68.4%</td>
<td>8.1%</td>
<td>21.4%</td>
</tr>
<tr>
<td>Girls’ Lacrosse</td>
<td>20.5%</td>
<td>8.4%</td>
<td>69.5%</td>
</tr>
</tbody>
</table>
# Trends in Return to Play Time Following Concussion: 9 Original Sports

## % of HS Athletes in Each Category of RTP

<table>
<thead>
<tr>
<th></th>
<th>07/08</th>
<th>09/10</th>
<th>11/12</th>
<th>13/14</th>
<th>15/16</th>
<th>16/17</th>
<th>17/18</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 day</td>
<td>7.9</td>
<td>1.6</td>
<td>2.7</td>
<td>1.1</td>
<td>0.1</td>
<td>0.3</td>
<td>1.2</td>
</tr>
<tr>
<td>1-2 days</td>
<td>6.7</td>
<td>5.2</td>
<td>1.9</td>
<td>1.1</td>
<td>1.1</td>
<td>0.6</td>
<td>1.0</td>
</tr>
<tr>
<td>3-6 days</td>
<td>21.4</td>
<td>19.7</td>
<td>7.2</td>
<td>8.1</td>
<td>5.5</td>
<td>6.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Season DQ</td>
<td>2.8</td>
<td>4.7</td>
<td>4.7</td>
<td>3.3</td>
<td>2.0</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Career DQ</td>
<td>0.2</td>
<td>0.4</td>
<td>0.4</td>
<td>0.9</td>
<td>0.8</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Season ended</td>
<td>0.8</td>
<td>9.4</td>
<td>12.4</td>
<td>13.7</td>
<td>16.2</td>
<td>14.6</td>
<td>15.5</td>
</tr>
<tr>
<td>Athlete quit sports despite no DQ</td>
<td>0.4</td>
<td>1.5</td>
<td>1.5</td>
<td>2.9</td>
<td>3.4</td>
<td>3.5</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Heat Illness

Example heat illness report from 2017/18

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Midwest</th>
<th>Northeast</th>
<th>South</th>
<th>West</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7/24/17-7/30/17)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Week 2</td>
<td>(7/31/17-8/6/17)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Week 3</td>
<td>(8/7/17-8/15/17)</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Week 4</td>
<td>(8/16/17-8/22/17)</td>
<td>3</td>
<td>2</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Week 5</td>
<td>(8/23/17-8/29/17)</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 2</th>
<th>Midwest</th>
<th>Northeast</th>
<th>South</th>
<th>West</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(8/30/17-9/5/17)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Week 7</td>
<td>(9/4/17-9/10/17)</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Week 8</td>
<td>(9/11/17-9/17/17)</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Week 9</td>
<td>(9/18/17-9/24/17)</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Week 10</td>
<td>(9/25/17-10/1/17)</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Week 11</td>
<td>(10/2/17-10/8/17)</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Week 12</td>
<td>(10/9/17-10/15/17)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Week 13</td>
<td>(10/16/17-10/22/17)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Week 14</td>
<td>(10/23/17-10/29/17)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Week 15</td>
<td>(10/30/17-11/5/17)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

In 2016/17 68.3% of heat illnesses occur in Boys’ Football:
- Most Football heat illnesses occur during practice (75.0%) and are evaluated by the AT (98.2%).

Differing Treatment Methods*:
- Removed from play (92.7%)
- Given fluids via mouth (76.8%)
- Equipment Removed (58.5%)
- Moved to shade (57.3%)
- Cooled by ice/wet towels (61.0%)
- Air conditioning (31.7%)
- Clothing removed (14.6%)
- Cooled by bath immersion (6.1%)
- Given IV fluids (6.1%)

* Can be treated with multiple methods, includes all sports
Heat Illness/Injury Rates Over Time for Boys’ Football vs Other Sports, High School RIOTM, Original and Convenience Samples, 2005/06-2017/18*

- Includes time loss and non-time loss injuries.

- p-value level of significance = 0.05, bolded p-value indicates statistical significance.

- p-value**
  All Sports Excluding Boys’ Football= <0.01
  Boys’ Football Only= **0.02**
## Skin infection rates per 100,000 AE

<table>
<thead>
<tr>
<th>Sport</th>
<th>Frequency</th>
<th>%</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys' wrestling</td>
<td>602</td>
<td>73.80%</td>
<td>20.89</td>
</tr>
<tr>
<td>Boys' football</td>
<td>158</td>
<td>19.40%</td>
<td>1.74</td>
</tr>
<tr>
<td>Girls' volleyball</td>
<td>12</td>
<td>1.50%</td>
<td>0.40</td>
</tr>
<tr>
<td>Boys' basketball</td>
<td>12</td>
<td>1.50%</td>
<td>0.30</td>
</tr>
<tr>
<td>Boys' soccer</td>
<td>6</td>
<td>0.70%</td>
<td>0.18</td>
</tr>
<tr>
<td>Boys' baseball</td>
<td>6</td>
<td>0.70%</td>
<td>0.20</td>
</tr>
<tr>
<td>Boys' lacrosse</td>
<td>4</td>
<td>0.50%</td>
<td>0.34</td>
</tr>
<tr>
<td>Girls' basketball</td>
<td>3</td>
<td>0.40%</td>
<td>0.09</td>
</tr>
<tr>
<td>Girls' field hockey</td>
<td>3</td>
<td>0.40%</td>
<td>0.35</td>
</tr>
<tr>
<td>Girls' soccer</td>
<td>2</td>
<td>0.20%</td>
<td>0.07</td>
</tr>
<tr>
<td>Boys' ice hockey</td>
<td>2</td>
<td>0.20%</td>
<td>0.34</td>
</tr>
<tr>
<td>Girls' swimming and diving</td>
<td>2</td>
<td>0.20%</td>
<td>0.19</td>
</tr>
<tr>
<td>Girls' cross country</td>
<td>2</td>
<td>0.20%</td>
<td>0.28</td>
</tr>
<tr>
<td>Girls' softball</td>
<td>1</td>
<td>0.10%</td>
<td>0.04</td>
</tr>
<tr>
<td>Boys' swimming and diving</td>
<td>1</td>
<td>0.10%</td>
<td>0.11</td>
</tr>
</tbody>
</table>
Type of Skin Infections

A physician was involved in management of >70% of cases

- Bacterial infection
- Tinea lesions
- Herpetic lesions
- Other

Other includes scabies, head lice, molluscum contagiosum, etc.
Effectiveness of Football Contact Practice Recommendations

• 90.7% of concussions: player-player contact

• 4 states with contact practice limits (2013/14)
  – Practice rates lower (RR=0.56, 95% CI 0.40-0.77)
  – Competition rates (RR=0.96, 95% CI 0.74-1.26)

• NFHS recommendations (fall 2015) limit number of full contact practice days
  – 2015/16 practice rate decreased below 5.0 per 10,000 (first time since 2010/11)
  – Significant difference in practice rates 3 years pre vs. 3 years post intervention
% Schools not Following Contact Recommendations

% of schools having more than 3 contact practices

Exposure week during football season

2014/15
2015/16
2016/17

Colorado School of Public Health
MENTAL HEALTH AWARENESS ACTION PLAN

- Leadership within the school
- Student, coach and parent education
- Emergent and Non-emergent intervention options
- Collaborate with the health care team
  - Connect immediately with the needed resources
- Mobilize the student’s support system
- Follow-up with the referrals

Mental Health First Aid ACTION PLAN

Approach, assess and assist with any crisis
Listen non-judgmentally
Give support and information
Encourage appropriate professional help
Encourage other supports
NATA- MENTAL HEALTH EAP

NATA Releases Consensus Statement Guidelines For Developing a Plan to Recognize and Refer Student Athletes with Psychological Concerns at the Secondary School Level

- Know when emergency mental health referrals are necessary: If a student athlete demonstrates violence or imminent threat to himself or herself, to others or to property; or reports feeling out of control, unable to make sound decisions or incoherent or confused, an emergency mental health referral is recommended.
FORM ALLIANCES

- Seek out partnerships with agencies with same mission and goals

**MUST FORM PARTNERSHIPS!! NOT JUST AN ATHLETICS ISSUE**
- State/City/County Departments of Health
- School Districts
- State Coaches’ Associations
- State Athletic Trainer Associations

Suicide is our #1 fear, but we must also focus on depression, anxiety, and the overall mental health of the student
SPORT SPECIALIZATION
SPORT SPECIALIZATION AND LOWER EXTREMITY INJURIES IN HIGH SCHOOL ATHLETES

- 1,544 Subjects (Female = 50%, Age = 16.0 ± 1.1)
- 2,843 Athletic Seasons
- 167,349 Athletic Exposures
- Specialization does not equal single sport participation
- Funded in part by NFHS Foundation

20% of high school athletes participated in a single sport

Females were more likely to specialize

Soccer: highest level of specialization

50% played in a league outside of school (60% Basketball, 66% Soccer)

15% competed in a club sport and high school sport simultaneously

17% took part in 60 or more primary sport competitions (school and club) per year
DISCUSSION

The first study to prospectively document risks with sport specialization

MOD specialized > 50% incidence of lower extremity injury than LOW

HIGH specialized > 85% incidence of lower extremity injury than LOW

Risks increased after controlling for sex, grade in school, sport, competition volume, and previous history.
BEST PRACTICES FOR WRESTLING HYGIENE

- Educate coaches, athletes, referees and parents about communicable skin conditions and how they are spread.
  - NWCA Online Course
  - NFHS Online Course in Development!!

- Emphasize to the athletes the importance of showering immediately after each practice and competition.
  - If shower facilities are unavailable, athletes should clean all exposed skin with “baby wipes” immediately after practices and competitions.
BEST PRACTICES FOR WRESTLING HYGIENE

- Coaches or athletic trainers should perform daily skin checks to ensure early recognition of potential communicable skin conditions.
  - Athletes must not be allowed to practice or compete if an active infection is suspected, even if the infection is covered.
  - Any suspicious lesions must be evaluated by an appropriate health-care provider prior to an athlete practicing or competing.
BEST PRACTICES FOR WRESTLING HYGIENE

- Athletes must not share practice gear, towels or personal hygiene products (razors) with others.
  - Avoid cosmetic body shaving

- Athletes should clean hands with an alcohol-based gel prior to every wrestling match to decrease bacterial load on the hands.

- Make certain that athletes and coaching staff are current on all required vaccinations (MMR, Hepatitis B, Chickenpox, etc) and strongly encourage yearly influenza vaccination.
BEST PRACTICES FOR WRESTLING HYGIENE

- Are we missing Herpes infections?
  - HS RIO data suggests 10% of Herpes infections are missed
  - Studies show primary care physicians very poor at initial diagnosis

- Concern for “Super Tournaments”
  - Many Herpes infections do not show up for at least 8 days (90-93%)
  - Exponentially increases exposure risk
In 2015, The NFHS distributed the “Anyone Can Save a Life” emergency action plan and training program originally developed by the Minnesota State High School League and Medtronic Foundation to member state associations and their schools to assist them in the development of emergency action plans and policies.
BEST PRACTICES FOR AEDs

- The more, the better - one is better than none, but.....
- MUST BE ACCESSIBLE!!!
- A goal of less than 3–5 minutes from the time of collapse to delivery of the first shock is strongly recommended.
- Regular maintenance, which involves tracking expiration dates on supplies, including electrode pads and batteries.
- Post-event service, which includes cardiac event data download and replenishment of consumables such as gloves and electrode pads.
LIGHTNING
GUIDELINES ON HANDLING PRACTICES AND CONTESTS DURING LIGHTNING OR THUNDER DISTURBANCES

These guidelines provide a default policy to those responsible or sharing duties for making decisions concerning the suspension and restarting of practices and contests based on the presence of lightning or thunder. The preferred sources from which to request such a policy for your facility would include your state high school activities association and the nearest office of the National Weather Service.

PROACTIVE PLANNING

1. Assign staff to monitor local weather conditions before and during practices and contests.
2. Develop an evacuation plan, including identification of appropriate nearby safer areas and determine the amount of time needed to get everyone to a designated safer area:
   a. A designated safer place is a substantial building with plumbing and wiring where people live or work, such as a school, gymnasium or library. An alternate safer place from the threat of lightning is a fully enclosed (not convertible or soft top) metal car or school bus.
3. Develop criteria for suspension and resumption of play:
   a. When thunder is heard or lightning is seen*, the leading edge of the thunderstorm is close enough to strike your location with lightning. Suspend play for at least 30 minutes and vacate the outdoor activity to the previously designated safer location immediately.
   
   b. 30-minute rule. Once play has been suspended, wait at least 30 minutes after the last thunder is heard or lightning is witnessed* prior to resuming play.
   
   c. Any subsequent thunder or lightning* after the beginning of the 30-minute count will reset the clock and another 30-minute count should begin.
GUIDELINES ON HANDLING PRACTICES AND CONTESTS
DURING LIGHTNING OR THUNDER DISTURBANCES

3d. When lightning-detection devices or mobile phone apps are available, this technology could be used to assist in making a decision to suspend play if a lightning strike is noted to be within 10 miles of the event location. However, you should never depend on the reliability of these devices and, thus, hearing thunder or seeing lightning* should always take precedence over information from a mobile app or lightning-detection device.

* – At night, under certain atmospheric conditions, lightning flashes may be seen from distant storms. In these cases, it may be safe to continue an event. If no thunder can be heard and the flashes are low on the horizon, the storm may not pose a threat. Independently verified lightning detection information would help eliminate any uncertainty.

4. Review the lightning safety policy annually with all administrators, coaches and game personnel and train all personnel.

5. Inform student-athletes and their parents of the lightning policy at start of the season.
NFHS ESSENTIALS INITIATIVE
2016 NFHS ESSENTIALS INITIATIVE

- July 2016 NFHS Summit in Indianapolis.
- Focus on parents, athletes, coaches, athletic administrators and state associations.
- The charge for the two-day summit was to develop a practical and definitive plan and accompanying consensus document for all member state associations emphasizing evidence-informed best practices to:
  - Measurably expand opportunities for widespread sport participation (initiation and continuation) for all students;
  - Minimize injury risk.
  - Maximize performance – at all levels of athletic development and achievement.
OPEN DISCUSSION
1. Each state has different challenges from a sports medicine perspective in caring for high school athletes and/or teams.

2. The NFHS and the NFHS Sports Medicine Advisory Committee (SMAC) has a great working relationship with the NIAAA and will continue to work together on different initiatives in the areas of risk minimization.