U.S. Consumer Product Safety Commission
LOG OF MEETING

SUBJECT: NOCSAE Standards Committee Meeting

DATE OF MEETING: January 31, 2020

LOG ENTRY SOURCE: Rick McCallion, EXHR

DATE OF LOG ENTRY: 3 February 2020

LOCATION: Litchfield, AZ

CPSC ATTENDEE(S):

Name	Office
Rick McCallion	EXHR

NON-CPSC ATTENDEE(S):

Name	Company
See NOCSAE Meeting Attendee List	

SUMMARY OF MEETING:

NOCSAE Winter Standards Meeting – Litchfield, AZ (1/31/2020)

a) **Call to Order – Dr. Stephens**

(1) Approval of Minutes from July 2019 NOCSAE Standards Committee Meeting

b) **Welcome and Introduction – Mike Oliver**

Provide update on ANSI and standards development process used by NOCSAE to adhere with ANSI requirements. ALL standards development activity will be conducted in open sessions in accordance with ANSI requirements.

c) **Scientific Advisory Committee Report- Robert Cantu, M.D., SAC Chair**

(1) What's New in CTE in 2019 Publications?

Boston University has studied 834 Brains as of 1/30/2020

Overwhelming number has been football players

No significant conclusions in other sports possible at this time. Other sports have not been evaluated as extensively as football due to a lower number of samples available for study at this time.

No CTE found that has been the result of a single TBI. All athlete brains studied and CTE identified have been associated with repetitive impacts/TBI's.

No CTE in youth players under HS, CTE has been found in HS player

No CTE in women yet, likely due to the limited number of available cases studied.

Research showing relationship with contact/impacts start under age 12.

Unsure about frequency/number of impacts is significant/no age sex race determinations/no women info (none studied yet)

Risk of CTE x2 for every 2.6 years/ x2 severity every 5.3 years

(2) History of NOCSAE Youth Football Standard

Provided update on the history of NOCSAE research/progress to develop youth std.

(3) Presentation on research findings by Blaine Hoshizaki

Frequency of head impacts

Magnitude of impacts

Goals:

Establish risk of youth

Identify high risk impact conditions

Relationship head/helmet mass and neck strength

5-9/9-14 age groups (60 players/420 play hours) CA and VA leagues

5-9 86% - head to head, head to ground, head to shoulder

Heed to ground high (29%) can't control head

9-14 85%

Shoulder to head impacts increase

CONCUSSION

Used visual signs and head impacts

Need help or sideline eval, missed remaining game

Youth layers experience neuro signs at lower linear and rot accel and strain

Majority of impacts considered low risk/Under 9 higher risk of head injury than older players

Effect of helmet size and mass on impact performance

Smaller circumference and lower mass helmet performed similar to existing helmet.
Need to know more about youth concussion values, neck strength, helmet mass, facemasks

(4) Presentation on research findings by Steve Rowson

Support youth helmet standard using directly from youth football players

Quantify head exposure

Determine head exposure injury rate

Quantify youth concussion rate

Linear and rotational accel, impact frequency, location
Verification using video analysis
Determine impact velocity vs. head acceleration in youth football players
Map youth head accel data to pneumatic ram and how relates to on-field data
Annals of Biomedical engineering January 2020 issue
15 concussions –

Avg

62g ± 30g

2609rad/s^2 ± 1591rad/s^2

Varsity concussion threshold avg –

102g ± 34g

3977rad/s^2 ± 2272rad/s^2

25% - 80g/4250 rad/s^2
50% risk (9-14) – 100g/5500 rad/s^2
IRCOBI publication
Lab vs on-field impacts – lab represents 98 percentile impacts

Head sits high on neck/too far forward

Ram too heavy

d) **Counterfeit Products-Mike Oliver**
continue to develop methods to identify imported products (lacrosse balls)
SEI increased manufacturer efforts in China
Anticipate baseball issue
Encourage competitor product testing
Suggested to SEI enhancing/activating market surveillance
NOCSAE uses informal surveillance currently
e) **Technical and Standards Report – Dave Halstead and Elizabeth McCalley**

(1) ND081-18am19a Standard Linear Impactor Test Method

(A)Modification-Added Section 9.3.4 which states random impact locations may not be closer than one inch from any other previous impact location, and clarified the α and β angle rotations in section 6.6
Wasn't clear it applied to pneumatic ram as well as drop test

(2) ND002-17m19a Standard Performance Specification for Newly Manufactured Football Helmets (A)Modification-Corrected a typo in section 7.2

(3) ND001-17m19 Standard Test Method and Equipment Used in Evaluating the Performance Characteristics of Headgear/Equipment

(A)Modification-Changed the NOCSAE/SEI logo artwork for Polo Helmets
(4) ND050-11m19 Standard Performance Specification for Newly Manufactured Polo Helmets (A)Modification-Changed the NOCSAE/SEI logo artwork
(5) ND055-11m19 Standard Performance Specification for Helmet Mounted Polo Eye Protection (A)Modification-Changed section 4.3 from face to eye protector
(6) ND022-20 Standard Performance Specification for Newly Manufactured Baseball/Softball Batter's Helmets
Reduced possible impact angles to vertical (upright) or tilted forward to 40 degrees from vertical
Constraining reduces possible random impact locations but allows full and realistic evaluation
Vote: Passed
(A) Proposed Revision-Added language to impact in vertical position or 40 degree +/-1 degree tilt reducing possible random impact vectors
(7) ND006-20 Standard Performance Specification for Newly Manufactured Youth Football Helmets
(A) Proposed New-Submitted for discussion and vote as "Proposed New Standard"
New terminology – any player not reached high school
Test req: weight limit 3.5 lb
Peak rot – 2000
Impact vel – 5.0
5^{th} percentile hybrid III neck
Needs more rotational impact test methodogy
No changes to drop test
Proposed logo
*Proposed status for next 12 months
Board/Committee Discussion - Concerns about not having enough info/test method complete (concern manufacture may try to claim compliance to but unfinished proposed std not possible)
Performance requirement development first, test method to be included (as revision in ND0081). Hope to develop test method revision to include youth by Summer stds meeting (July 2020).
Vote:Pass
(8) Update on headform revision
Medium headform near complete
Will accept NAP or 6 Alpha 3 omega
Transfer design files to Biocore for modeling (comparison modeling with existing headforms) – evel of MOI change
Small/large design update next
(9) Update on Chest Protectors for Commotio Cordis – ND200
Baseball 29 models certified
LAX 11 models certified
Collaborate with ICS on repeatability across labs
Reproducibility remains an issue (baseball somewhat easier than LAX) positioning, projectile impact location variance
(10) Flag Football Helmet discussion

“non contact football helmet”
Summary of previous discussions from past meetings
- Soft headgear not provide adequate protection
- Traditional football helmets not likely to be adopted
- Significant diff between flag football and 7v7
- More youth playing flag than tackle
- Single impact vs traditional multi-impact helmets?

Xenith peer reviewed research (suggests traditional helmets not good enough)
* Board to discuss forming committee
f) **New Business**
Asked by NFL to develop shoulder pad std
25% of concussive injuries occur due to head/shoulder impact
Other shoulder injuries?
*still trying to get data/info to decide if std development possible/warranted
-Shoulder injuries not increasing but shoulder pads may be able to better address head injuries from shoulder to head impacts.
g) **Adjourn**