Research Protocol for Youth Sports Traumatic Brain Injury Laws

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Youth Sports Traumatic Brain Injury Laws

I.   **Date of Protocol:** April 1, 2012; October 2013; April 2014; November 2014; May 2015; July 2017

II.   **Scope:** Compile state laws designed to impact the incidence of traumatic brain injuries (TBIs) and/or concussions in youth sports; code their respective features. This is a longitudinal dataset, and captures laws in effect from January 1, 2009 through July 1, 2017. The jurisdictions selected for measurement are the 50 states and the District of Columbia.

III.   **Primary Data Collection**

a.   **Project timeline:** First published on April 1, 2012. Updated in October 2013, April 2014, November 2014, May 2015, and July 2017.

b.   **Dates Covered in the Dataset:** This is a longitudinal dataset covering relevant Youth Sports TBI Laws between January 1, 2009 and July 1, 2017.

c.   **Data Collection Methods:** The initial research team (the "team") building this dataset in April 2012 consisted of Professor Hosea Harvey, JD, the creator and curator of the dataset (the "subject matter expert"), and two law students (the "students").

The students compiled background information about laws that regulate youth sports searching "concussions and sports," "concussion state laws," "concussion sport guidelines," "concussion NFL guidelines," "traumatic brain injury and sports," "concussions sports depression" in both the ABI/Inform Complete and Academic Search Premiere library databases.

The students compiled an initial list of state laws and state-level activity that are identified in these background searches and prepared an initial list of expected state-law findings.

The subject matter expert evaluated the initial list by reviewing the list of "expected states," and identifying through Westlaw searches whether such states indeed have such laws, and noting any discrepancies.

The students were each assigned half of the states (randomized), with the aim of identifying statutes and regulations relevant to Youth Sports TBI in each state.

Each student compiled laws that regulate Youth Sports TBI by using the search terms listed in section III.d. below.

d.   **Search Terms:** keyword searches included "concussions and sports," "brain injury and sports," "brain injury and students," and "brain and athletes."

Keyword searches were supplemented by examination of the table of contents of each

relevant section of the state law identified for statues or regulations related to Youth Sports TBI Laws. Separately, the students searched in Westlaw using the same terms and retrieved statutes.

Students created an online news alert tracking system including combinations of the terms "concussion," "brain injury," "sports," "new law," "new legislation," "proposed law," "proposed legislation" to monitor active news articles about proposed laws.

    e. **Databases Used:** Research was conducted using Westlaw, Google alerts, and state legislative websites.

Full text versions of the collected laws were pulled from each respective state legislative website.

    f. **Inclusion and Exclusion Criteria:** Included laws related to state-level Youth Sports TBI. The final list of variables can be found in the dataset's codebook, which is accessible from the dataset's homepage at LawAtlas.org.

IV. Coding

    a. **Development of Coding Scheme:** The subject matter expert developed coding questions based on background research conducted by the students (see section III.c.). Once the coding questions were finalized, the subject matter expert entered them into the LawAtlas Workbench for coding. The LawAtlas Workbench is a web-based software coding platform.

    b. **Dataset Terminology:** Dataset terminology is a set of relevant terms recorded and defined by the team specifically for purposes of coding within this dataset. As the team developed the coding scheme, they recorded the dataset terminology below:
        i. "TBI" represents Traumatic Brain Injury
        ii. "Return-to-learn protocols" are protocols that can be implemented after an incidence of traumatic brain injury in students, where they are gradually reintegrated into the classroom after physical and mental rest, to avoid aggravating the health consequences of that injury.
        iii. "Return-to-play protocols" are protocols that can be implemented after an incidence of traumatic brain injury in students, where they are evaluated by a health care professional both after the injury and in the days following an injury, to ensure that the student has fully healed before returning to play the sport.

    c. **Coding Methods:** The legal text coded is limited to Youth Sports TBI statutes and regulations, as well as policies that are given the force of law from a statute or a regulation.

Below are coding rules that apply specifically to the coding questions throughout the dataset:

- o **Question: "Does the state law specifically address youth sports TBIs?"**
  - ▪ This question was only coded "yes" when the law explicitly addressed concussions or other traumatic brain injuries. Preventative measures that might help prevent TBIs (such as setting a maximum amount of time a student athlete can engage in full-contact physical activity) that did not specifically reference TBIs were not sufficient to code "yes."
- o **Question: "Does the health professional providing clearance need to be trained in TBI management?"**
  - ▪ This question was only coded "yes" when there was an explicit mention of training. It was not sufficient to code "yes" if the jurisdiction required the health professional providing clearance to be a medical doctor.
  - ▪ Training requirements are coded whenever an individual has to be educated or receive training on TBI policies, but was not coded when an individual was simply required to review or read documentation.
  - ▪ Policies or laws that required an online training course lead to coders choosing "yes" for this question.
- o **Question: "Does the health professional providing clearance need to be a medical doctor?"**
  - ▪ The term "medical doctor" in this question is intended to refer specifically to physicians. Therefore, this question is answered "Yes" only if the state law specifies that the person providing clearance must be a physician.
    - For example, in Delaware, the answer to this question is "Yes," due to Del. Code tit. 14, § 303(4), indicating "Written clearance for return to play after a concussion shall be from a qualified physician (Doctor of Medicine or Doctor of Osteopathic Medicine) only."
- o **Question: "Does the law require mandatory TBI-specific training for coaches?"**
  - ▪ Training requirements are coded whenever an individual has to be educated or receive training on TBI policies, but was not coded when an individual was simply required to review or read documentation.
  - ▪ Policies or laws that required an online training course lead to coders choosing "yes" for this question.
- o **Question: "Does the law explicitly require distribution of a TBI information sheet?"**
  - ▪ This question was coded "yes" for specific references to an "information sheet." It was also coded "yes" for other materials meant to educate about TBIs or head injuries, such as "information forms," "materials," "guidelines," "releases," "policies," or "statements."
- o **Question: "In order for a student athlete to participate in athletics, is the parent or guardian required to sign a TBI information sheet?"**
  - ▪ This question was answered "Yes" even if the state law indicates that only a parent with a child under 18 years old is required to sign a TBI information sheet.
    - For example, in Arkansas, the answer to this question is "Yes," where Ark. Code § 6-18-710(d)(3) states, "a person shall not

participate in a youth athletic activity unless the person returns the information sheet signed by the person and, if he or she is under eighteen (18) years of age, by his or her parent or guardian"

- o **Question: "Must the TBI information sheet be distributed at least annually to student athletes or their parents or guardians?"**
    - ▪ This question was coded "no" if the distribution was contingent on the distribution of a parental authorization form, and there was no accompanying law requiring parental authorization for participation in youth sports.
        - • For example, in New York, the answer to this question is no, where N.Y. Education Law § 305 (a)(ii) states, "schools shall be required to include such information in any permission form or parent or person in parental relation consent form or similar document that may be required for a pupil's participation in interscholastic sports and shall also include such information…"
- o **Question: "Does the law explicitly address liability?**
    - ▪ If state laws addressed liability for any type of volunteer or any type of health care professional, the child questions "Does the law directly address liability for volunteers?" and "Does the law address liability for health professionals?" were answered "Yes."
        - • For example, in Indiana, the answers to both liability child questions are "Yes," even though Indiana law addresses liability for volunteer health care providers specifically rather than volunteers and/or health care professionals generally. Ind. Code § 20-34-7-5A(b) indicates that a "licensed health care provider who evaluates a student athlete…may conduct the evaluation as a volunteer. A volunteer health care provider who in good faith and gratuitously authorizes a student athlete to return to play is not liable for civil damages resulting from an act or omission in the rendering of an evaluation…."
    - ▪ When state laws specified that "any individual" is protected from liability if they comply with TBI policies, all child questions except for school district were coded yes.
- o **Question: "What preventive measures are required to reduce the likelihood of TBIs?"**
    - ▪ The response, "Maximum amount of time an athlete can engage in full-contact physical activity," was coded when there was a limitation on the maximum number of quarters a player can play in a day, or a limitation on number of games a player can play in a season.
    - ▪ The response, "Limitations to the types of physical activities that can be engaged in during practice," was coded when there were rules creating periods of time where no live contact is permitted.

For additional information about questions, responses, variable names, and values please see the project's Codebook at LawAtlas.org.

V. Quality Control

a. Quality Control – Research: After searching across their assigned states, each student compared their results to publically available information on concussion or traumatic brain injury laws to see if their results were consistent. Students checked the National Conference of State Legislatures website (http://www.ncsl.org/), which has a table and map listing existing or proposed sports concussion laws. Instances in which there were discrepancies between student research and these sources were noted and subjected to further attention until the discrepancies were resolved.

    i. The subject matter expert consulted additional publically available information and compared it against the researcher's results.

b. Quality Control – Redundant Coding: All 51 jurisdictions were 100% redundantly coded[1] by the researcher to confirm that responses corresponded to the language of the relevant legal text. All errors were resolved.

VI. Update October 2013

a. Scope: The general scope of the dataset did not change in this update. However, the team compiled states laws that were newly enacted, and amendments to existing laws. The time period covered includes laws in effect from January 1, 2009 through October 1, 2013.

b. Data Collection Methods: Subject matter expert, Hosea Harvey, JD, used Westlaw to check whether any state had enacted a new law or amended a previously collected law. A legal intern performed the same steps. The subject matter expert reconciled any differences in the law collected. Data was collected to reflect laws effective as of October 1, 2013.

c. Coding Updated Findings: The subject matter expert used the newly collected law to answer the coding questions for the dataset in an Excel data sheet. New coding questions were also added to the existing dataset. The subject matter expert provided the correct answer for these questions as well.

Two researchers at the Policy Surveillance Program added the new legal text in Workbench and revised the new questions for the states that were part of the original cross-sectional dataset. The researchers also coded the law for any amendments or newly enacted law. The subject matter expert's Excel data sheet and meetings were used to resolve any discrepancies in coding between the researchers.

VII. Update April 2014

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[1] "Redundant coding" refers to a quality control process in which two researchers independently code identical records.

a. **Scope:** The general scope of the dataset did not change in this update. However, the team compiled states laws that were newly enacted, and amendments to existing laws. The time period covered includes laws in effect from January 1, 2009 through April 1, 2014.

b. **Data Collection Methods:** Two researchers at the Policy Surveillance Program used Westlaw and legislative tracking websites to check whether any state had enacted a new law or amended a previously collected law.

c. **Coding Updated Findings:** The Researchers used the newly collected law to answer the coding questions in Workbench. All new entries were redundantly coded. Divergences were reconciled by a Supervisor.

VIII. **Update November 2014**

a. **Scope:** The general scope of the dataset did not change in this update. However, the team compiled states laws that were newly enacted, and amendments to existing laws. The time period covered includes laws in effect from January 1, 2009 through November 1, 2014.

b. **Data Collection Methods:** One Supervisor and one Researcher checked each existing legal citation on Westlaw and legislative tracking websites for pending and proposed legislation since the last update. The Researcher determined that 10 states had amended their laws relevant to the dataset in some way. The Supervisor confirmed the findings.

c. **Coding Updated Findings:** A total of 10 states had amended laws relevant to the dataset and needed to be updated: (AR, AZ, CA, DE, ME, OH, OR, RI, VA, and WY). The researcher added a record[2] for each state in Workbench and answered the coding questions.

The supervisor communicated with the subject matter expert to clarify the meaning of "medical doctor" in the question "Does the health professional providing clearance need to be a medical doctor?" and the coding scheme for all liability-related child questions following the parent question, "Does the state's youth sports TBI law explicitly address liability by its own terms?" These clarifications were added to the Protocol in section VI. Coding; see above.

Following these clarifications, the supervisor and the researcher checked previously coded data to assure that coding questions were answered according to the clarified coding scheme for these questions.

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[2] A "record" refers to a jurisdiction's legal coding as it applies for a specific period of time. A new record is created in each jurisdiction whenever a relevant law is enacted or amended, to capture the evolution in that jurisdiction's laws over time.

d. **Quality Control:** The supervisor checked all of the newly added records coded by the researcher, and spoke with the researcher about any coding concerns.

Thirty percent, or three records, of the 10 entries added were redundantly coded by a second researcher and checked by the supervisor. The rate of divergence was 6%. Divergences were resolved in a meeting between the supervisor and the researchers, and necessary coding changes were implemented.

IX. **Update May 2015**
a. **Scope:** The general scope of the dataset did not change in this update. However, the team compiled states laws that were newly enacted, and amendments to existing laws. The time period covered includes laws in effect from January 1, 2009 through May 1, 2015.

b. **Data Collection Methods:** One Supervisor and one Researcher checked each existing legal citation on Westlaw and legislative tracking websites for pending and proposed legislation since the last update. The team determined that three states had relevant amendments.

c. **Coding Updated Findings:** Three states (FL, WA, and WY) had amended laws relevant to the dataset and needed to be updated. None of these amendments were substantive, meaning there was no impact on coding.

d. **Quality Control:** FL, WA, and WY entries were cloned in the Workbench. The new legal text collected from the respective state legislature's website was put into the latest entry and checked by the supervisor.

X. **Update July 2017**
a. **Scope:** To capture the new trends in laws and policies being implemented by states in response to Youth Sports TBIs, the following questions were added to the dataset in this update, with previous records being coded to respond to the added questions:
    o **Question: "Does the law specify requirements for a return-to-learn policy?"**
        ▪ Yes
        ▪ No
    o **Question: "What measures are mandated by law for student athletes who have suffered a TBI before they can return-to-learn?"**
        ▪ Reduced class time
        ▪ Modifications of curriculum
        ▪ Limitations on activities the athlete can engage in
        ▪ Monitoring by health professional staff
        ▪ Monitoring by academic staff
        ▪ Monitoring by athletic staff
        ▪ Other

o **Question: "What preventive measures are required to reduce the likelihood of TBIs?"**
   - Maximum amount of time an athlete can engage in full-contact physical activity
   - Limitations to the types of physical activities that can be engaged in during practice
   - No preventative measures are required by the law

The team initially made efforts to add a series of questions related to the delegation of authority to public and private youth sports organizations. However, these questions caused a high divergence rate in early batches[3] of coding, as they led to interpretation. The team consulted with the subject matter expert and ultimately decided to remove these delegation questions.

Researchers expanded the scope of the project in this update by capturing mandatory state-level policies (e.g. Florida Stat. § 1006.195, "(2)(a) The Florida High School Athletic Association (FHSAA) continues to retain jurisdiction over the following provisions in s. 1006.20, which may not be implemented in a manner contrary to this section: […] student concussions or head injuries […]") which had been given the force of law by a relevant statute or regulation. Policies were only included when they impacted the dataset's coding questions. These policies were collected in six states – FL, IL, ME, NC, NY, and WV.

The time period covered includes laws in effect from January 1, 2009 through July 1, 2017.

b. **Data Collection Methods:** One Supervisor and two researchers checked each existing legal citations on Westlaw and legislative tracking websites for pending and proposed legislation since the last update. The Researchers also used the search terms listed in section III.d. to capture any newly enacted laws. The Researchers created new records with updated legal text for states with new laws or changes to existing laws.

c. **Coded Updated Findings:** Twenty-six states (AL, AZ, AR, CT, DE, FL, HI, ID, IL, IN, IA, KY, ME, MD, MS, MI, NV, NM, NY, NC, OH, OK, OR, TN, VA, WV) had amended, or enacted new laws relevant to the dataset.

All records were coded to account for the new questions which were added to the dataset, as well as the new policies that were added in the six states listed in X.a. above.

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[3] A "batch" refers to a set of jurisdictions that are worked on at one time. Research for the July 2017 update was broken up into four batches of ten jurisdictions and one batch of eleven jurisdictions.

d. **Quality Control – Background Research:** The first batch of 10 jurisdictions was redundantly researched[4] at a rate of 100% by the researchers, revealing no divergences in updated laws. For subsequent batches, 20% of jurisdictions were redundantly researched by the researchers. The supervisor reviewed both researchers' results to ensure that all amendments were accurately captured.

e. **Quality Control – Redundant Coding:** Redundant coding was performed on each of five batches of research and coding. Each batch consisted of 10 jurisdictions, except for the final batch, which consisted of 11 jurisdictions. The first batch of coding occurred in November 2016, and was redundantly coded at a rate of 100%. The divergence rate was 15.7%. All divergences were discussed in a meeting between the Supervisor and the Researchers, and were resolved. This unusually high divergence rate was largely attributable to the addition of the delegation questions that were later removed from the dataset.

The second batch of coding occurred in December 2016, and was redundantly coded at a rate of 100%. The divergence rate was 9.9%. All divergences were discussed in a meeting between the Supervisor and the Researchers, and were resolved. Although the divergence rate was reduced in this batch due to clarifications in the coding scheme surrounding the additional delegation questions, these additional questions were removed following this batch to raise the accuracy of coding for subsequent batches.

The third batch of coding occurred in February 2017, and was redundantly coded at a rate of 100%. The divergence rate was 1.13%. All divergences were discussed in a meeting between the Supervisor and the Researchers, and were resolved. The reduction in the divergence rate in this batch can be attributed to the removal of the delegation questions which were causing a high divergence rate in previous batches of coding.

The fourth batch of coding occurred in April 2017, and was redundantly coded at a rate of 100%. The rate of divergence was 2.61%. All divergences were discussed in a meeting between the Supervisor and the Researchers, and were resolved. Although the rate of divergence in the previous batch was below 5%, justifying a reduced rate of redundant coding, resources were available to maintain a rate of 100% redundant coding.

The fifth and final batch of coding occurred in July 2017, and was redundantly coded at a rate of 100%. The rate of divergence was 4.12%. All divergences were discussed in a meeting between the Supervisor and the Researchers, and were resolved. Resources were again available to maintain a rate of 100% redundant coding in this final batch.

f. **Quality Control – Statistical Quality Control:** In order to assess the overall error rate of the dataset, Statistical Quality Control (SQC) was performed after all of the original and redundant coding was completed. Ten percent of the dataset's parent level questions were checked, across all records. With ten parent level questions, and 193 records, a total

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[4] "Redundant research" refers to a quality control process in which two researchers independently identify and record citations of relevant laws in the same jurisdiction.

of 1930 coding instances[5] could be potentially checked. The sample included 10% of these coding instances, or 193 coding instances (10% of 1930 coding instances).

This SQC yielded a divergence rate of 0.52%, with one divergence. The divergence was discussed and resolved by the team.

During SQC, the Researchers identified three missing policies discussed in section X.a. The addition of these new policies resulted in an additional three records being added to the dataset, increasing the record count from 193 to a total of 196 records. These three records were redundantly coded, and no divergences were found.

g. **Quality Control – Final Check:** Prior to publication, the Supervisor downloaded all coding data into Microsoft Excel to do a final review of coding answers, statutory and regulatory citations, citations and caution notes. All unnecessary caution notes were deleted and all necessary caution notes were edited for publication. Any responses which were inconsistent with the project's coding rules were updated. Any missing citations were added.

The Supervisor then performed an additional check, comparing the statutes used in the dataset to the ones listed on NCSL's "Traumatic Brain Injury Legislation" page, to identify any gaps in research. The check confirmed that all statutes identified on NCSL's website had been captured by the researchers.

The data went through a final check using Stata. All variables were checked to ensure they had 196 coding instances (i.e. no missing values), for a total of 6468 coding instances checked (196 records multiplied by 33 variables). All variables were tabbed to ensure that all values were consistent with the codebook options for the values of the variables. In addition, using excel, the effective dates and valid through dates for every record were checked to ensure that there were no gaps between them, such that every jurisdiction had records 1/1/2009 until 7/1/2017.

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[5] A "coding instance" refers to an individual response within a record specific to a question, period of time, and jurisdiction.