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Avoiding the Technical Knockout: Tackling the Inadequacies of Youth Concussion Legislation

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*Avoiding the Technical Knockout:
Tackling the Inadequacies of Youth
Concussion Legislation*

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I. INTRODUCTION

In September 2010, seventeen-year-old Austin Trenum sustained a concussion during a high school football game—at least the fourth concussion of his high school football career.¹ His coach removed him from the game, following Virginia law,² and sent him to the hospital for medical clearance.³ While at the hospital, Austin refused Tylenol, claiming he did not have a “real headache”—only his “normal football headache,” which he felt after every game.⁴ He was released from the hospital that same night.⁵ Two days later, Austin exhibited strange behavior: He had trouble sleeping, failed to submit two school papers (unusual for a student who was in the top 6% of his class), and forgot what month it was.⁶ He also got lost on the routine drive to his brother’s lacrosse game—a route that consisted of a single right turn.⁷ That same day, Austin retreated to his room, unprovoked and undetected, and quietly committed suicide.⁸ After his death, Austin’s parents donated his brain to the Boston Center for the Study of Traumatic Encephalopathy, where scientists concluded that

1. See Patrick Hruby, *Did Football Kill Austin Trenum?*, WASHINGTONIAN (July 23, 2012), <http://www.washingtonian.com/articles/people/did-football-kill-austin-trenum/>.

2. See VA. CODE ANN. § 21.1–271.5(B)(2) (West 2013) (“A student-athlete suspected . . . of sustaining a concussion or brain injury in a practice or game shall be removed from the activity at that time.”).

3. See Hruby, *supra* note 1.

4. *Id.*

5. See *id.* The medical staff gave the Trenums instructions: “Watch for vomiting and clear fluid coming out of Austin’s nose, signs of a more severe brain injury. Limit [Austin] to ‘quiet activities’ for the next 24 hours. Wake him from sleep every few hours to check for . . . confusion and extreme drowsiness.” *Id.* However, Gerard Gioia, head of Pediatric Neuropsychology at Children’s National Medical Center and an expert on youth and adolescent sports concussions, explains that waking patients is *not* a good idea:

Waking a sleeping concussion patient every few hours to check for brain bleeding has long been conventional medical wisdom . . . but actually is not a good idea: You should check on them, but not disrupt their sleep. The essential aspect is allowing the cells to rebalance themselves. Overworking the brain interferes with that recovery. And it’s not just avoiding additional blows to the head. You can’t be out running. You need good sleep. You have to manage school, any activity that involves a lot of thinking.

Id. (internal quotation marks omitted).

6. See *id.*

7. See *id.* This was not the first time Austin had exhibited strange behavior after a concussion. After a previous football concussion, Austin was unable to figure out how to work the chinstrap of his helmet, causing him to start crying inconsolably. See *id.*

8. See *id.* Austin’s former lacrosse coach best articulated why Austin’s suicide was utterly confounding:

If someone came to me and asked me to rank, 1 to 25, the kids on the team most likely to have problems and the kids who were the most stable, Austin was number one on the stable end of the list . . . His maturity level was extremely high. Never experimenting with drugs and alcohol. Almost fatherly to his brothers. Had a wonderful sense of humor. He was a great teammate, very attentive and aware, very patient and kind. A big-time leader on the team and in school—he could hang out with the kids who were partyers [sic] and be in an honor-society meeting the next day. Everyone loved him.

Id.

Austin's brain showed signs of degeneration.⁹ For lack of any other identifiable cause, the cumulative effect of football concussions on his brain may have played a role in why Austin killed himself.¹⁰

Questions over whether Austin's repeatedly concussed brain caused him to take his own life highlight an intrinsic problem in contact sports: concussions.¹¹ In the last several years, "[t]here has been increased attention given to the recognition, diagnosis, and management of sports-related concussion."¹² An estimated "1.6–3.8 million sports- and recreation-related concussions occur in the United States each year."¹³ The Centers for Disease Control and Prevention (CDC) estimates that more than 96,000 children ages five to eighteen experience sports-related concussions annually,¹⁴ and adolescents ages fifteen to nineteen are most likely to sustain

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9. *See id.* "Austin's [brain axons] were twisted, bulbous, broken. In scientific language, it was a multifocal axonal injury; in layman's terms, the equivalent of frayed automobile wiring." *Id.* Brain axons are "the long, slender fibers that connect nerve cells and conduct electricity in the brain. In a healthy person, axons run together like fiber-optic cable, straight and smooth." *Id.*
 10. *See id.* (theorizing that the effect of Austin's football concussions may have ultimately caused him to kill himself, based on emerging concussion science and the lack of any alternative explanation). "No angst. No suicide note. No sign that anything was wrong. Nothing." *Id.*
 11. Austin's story, though tragic and extreme, is not an anomaly. Examples of other youth football players who have died or suffered serious injury after sustaining a concussion include Zachary Frith, Zackery Lystedt, and Ryne Dougherty. In October 2005, high school freshman Zachary Frith suffered permanent brain damage after sustaining a concussion during a freshman football game and then staying in the game. *See HS Football Concussion Injury—\$3 Million Settlement (01-27-09)*, SHAMBERG, JOHNSON & BERMAN, <http://www.sjblaw.com/CM/Verdicts-Settlements/HS-Football-Concussion-Injury.asp> (last visited Dec. 26, 2013). A year later, middle school student Zackery Lystedt also suffered permanent brain damage after sustaining a concussion and an additional hit in the same game. *See Sarah Larimer, Advocacy Group Calls for Concussion Laws*, BOSTON.COM (Feb. 3, 2010), http://www.boston.com/sports/football/articles/2010/02/03/advocacy_group_calls_for_concussion_laws/. After Zackery collapsed on the field, doctors removed both sides of his cranium in an emergency surgery. Although he eventually came out of a three-month coma, Zackery's brain was permanently damaged. *See Lesley Lueke, High School Athletes and Concussions: More than a Game at Stake*, 32 J. LEGAL. MED. 483, 483 (2011). In October 2008, junior linebacker Ryne Dougherty was tackled during football practice three and a half weeks after sustaining a concussion. *See David Epstein & Kevin Armstrong, N.J. Parents File Lawsuit for Son Being Cleared After Concussion*, SI.COM (Oct. 10, 2009, 3:52 PM), <http://sportsillustrated.cnn.com/2009/highschool/10/09/ryne.dougherty/index.html>. The tackle caused a brain hemorrhage, which subsequently killed him. *See Erika A. Diehl, What's All the Headache?: Reform Needed to Cope with the Effects of Concussions in Football*, 23 J.L. & HEALTH 83, 86 (2010). These tragedies occurred prior to the enactment of the first law regulating youth athletic concussions; Austin Tremain's story shows that such tragedies continue to occur *despite* recent state legislation.
 12. Robert A. Stern et al., *Long-Term Consequence of Repetitive Brain Trauma: Chronic Traumatic Encephalopathy*, 3 AM. ACAD. OF PHYSICAL MED. & REHAB. S460, S460 (2011); accord CTRS. FOR DISEASE CONTROL & PREVENTION, U.S. DEP'T OF HEALTH & HUMAN SERVS., HEADS UP: FACTS FOR PHYSICIANS ABOUT MILD TRAUMATIC BRAIN INJURY (MTBI) 2, *available at* http://www.cdc.gov/concussion/headsup/pdf/facts_for_Physicians_booklet-a.pdf.
 13. Stern et al., *supra* note 12, at S460. This figure is an estimate because so many concussions go undiagnosed. *See discussion infra* Part II.A.
 14. Diehl, *supra* note 11, at 86.

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concussions or traumatic brain injury.¹⁵ Of all youth contact sports, football accounts for the highest rate of concussion.¹⁶

The medical effects of football-related concussions have gained national attention over the last decade, during which several active and former National Football League (NFL) players died, and researchers discovered that these players suffered from chronic traumatic encephalopathy (CTE)—a degenerative brain disease linked to concussions.¹⁷ Following these deaths, former players filed lawsuits against the NFL for withholding information about the potentially harmful effects of concussions on the brain,¹⁸ even though the causal link between concussion and CTE was (and remains) unclear. These events and cases like Austin Trenum’s led forty-nine states to enact legislation regulating youth sports-related concussion care and management (commonly known as “concussion laws”).¹⁹ Specifically, between 2009 and 2013, these states enacted variations of the first concussion law, drafted by Washington State in 2009 in honor of Zackery Lystedt and known as the “Lystedt Law.”²⁰ The Lystedt Law requires concussion education, removal from play after sustaining a concussion, and medical clearance in order to return to play.²¹

15. *Injury Prevention & Control: Traumatic Brain Injury*, CTRS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/TraumaticBrainInjury/statistics.html> (last updated Mar. 27, 2013).

16. See Andrew E. Lincoln et al., *Trends in Concussion Incidence in High School Sports: A Prospective 11-Year Study*, 39 AM. J. SPORTS MED. 958, 958 (2011).

17. For example, the brain of Cincinnati Bengal Chris Henry was donated to research after he passed away during a domestic dispute in December 2009. See Alan Schwarz, *Former Bengal Henry Found to Have Had Brain Damage*, N.Y. TIMES, June 29, 2010, at B10, available at http://www.nytimes.com/2010/06/29/sports/football/29henry.html?_r=0. After examination, the Brain Injury Research Institute at West Virginia University announced that Henry, at age twenty-six, already had CTE. See *id.* He was the twenty-second professional football player to be given a CTE diagnosis. See *id.* Additionally, on February 17, 2011, former Chicago Bear Doug Duerson committed suicide. See Alan Schwarz, *Duerson’s Brain Trauma Diagnosed*, N.Y. TIMES, May 2, 2011, at B11, available at <http://www.nytimes.com/2011/05/03/sports/football/03duerson.html>. Duerson, age fifty, had complained of a deteriorating mental state prior to his death. See *id.* On the day of his suicide, Duerson shot himself in the chest, presumably to preserve his brain for medical research. See *id.* The Boston University Center for the Study of Traumatic Encephalopathy confirmed that Duerson also suffered from CTE. See *id.*

18. See *In re Nat’l Football League Players’ Concussion Injury Litig.*, 842 F. Supp. 2d 1378, 1379 (J.P.M.L. 2012); see also Jacquelyn Martin, *Concussion Lawsuits Are Next Big U.S. Litigation*, USA TODAY (June 30, 2012, 8:08 PM), <http://usatoday30.usatoday.com/sports/football/nfl/story/2012-06-30/concussion-lawsuits-are-next-big-US-litigation/55948928/1>.

19. See *Traumatic Brain Injury Legislation*, NAT’L CONF. OF ST. LEGISLATURES, <http://www.ncsl.org/research/military-and-veterans-affairs/traumatic-brain-injury-legislation.aspx> (last updated July 2013) (tracking brain injury legislation); Joe Frollo, *See Where Your State Stands on Concussion Law*, USA FOOTBALL (Apr. 21, 2013, 2:19 PM), <http://usafootball.com/news/featured-articles/see-where-your-state-stands-concussion-law> (listing states that have enacted concussion laws).

20. See Larimer, *supra*, note 11; see also *infra* Part III.A.

21. See WASH. REV. CODE ANN. § 28A.600.190 (West 2013).

Though this activity is encouraging, this note contends that the current laws are inadequate to stem the national “concussion epidemic”²² among youth football players because the laws are inconsistent in their legal requirements for youth concussion care; reach an arguably narrow or ambiguously defined population of “youth athletes,” which may not include young people playing in recreational leagues and at private schools; and lack important additional care and management strategies. As a solution, this note argues that a Uniform Concussion Management Code (UCMC), establishing a “floor” for concussion care and reaching the broadest youth demographic, would effectively address the concussion epidemic plaguing youth athletes and, particularly, youth football players. To properly develop this uniform concussion law, the NFL, as ambassador for the youth sport with the highest rate of concussion, should partner with the Uniform Law Commission (ULC) and the American Medical Association (AMA) to rigorously study the concussion problem and draft an efficacious and attractive code. The UCMC would then serve as a uniform base law (or floor) upon which states could expand to better tackle the youth concussion epidemic.

Part II of this note will present an overview of concussions, outlining concussion symptoms and diagnosis, the long-term effects of CTE, and the prevalence of concussions in youth football. Part III will survey the inadequacies of current state concussion laws; specifically, Part III will analyze the problems resulting from ambiguities in these laws, as well as the differing approaches to concussion education, removal from play, and medical clearance, which, in turn, result in varying standards of care depending on jurisdiction. Part IV will compare the regulatory model for youth football with that of professional boxing, and will argue that professional boxing’s failed regulatory scheme serves as notice to state legislatures that uniform minimum health and safety standards are needed to protect youth athletes and avoid attrition in the sport. Part V will argue for the creation of a model code—the Uniform Concussion Management Code—and will explain how a uniform code would be a more effective regulatory framework than current state laws or federal legislation. Part V will also isolate best practices from the Lystedt Law and its variations, as well as argue for the incorporation of five additional regulatory components into the UCMC that are largely absent from current state concussion laws, including return-to-classroom guidelines,²³ baseline or comparative testing,²⁴

22. See CTRS. FOR DISEASE CONTROL & PREVENTION, REPORT TO CONGRESS ON MILD TRAUMATIC BRAIN INJURY IN THE UNITED STATES: STEPS TO PREVENT A SERIOUS PUBLIC HEALTH PROBLEM (Sept. 2003), available at <http://www.cdc.gov/traumaticbraininjury/pdf/mtbireport-a.pdf>. In a letter prefacing the report, Julie Louise Gerberding, the CDC Director, and Sue Binder, the Director of the National Center for Injury Prevention and Control, state that “[t]raumatic brain injury is frequently referred to as the silent epidemic because the problems that result from it (e.g., impaired memory) often are not visible.” *Id.*

23. Return-to-classroom guidelines are guidelines for academic accommodations for students recovering from concussions. See *infra* Part V.B.3.

24. Baseline or comparative tests compare neurological functions (e.g., verbal or visual memory, reaction time, processing speed) at the start of the season with neurological functions at the end of the season. See *infra* Part V.B.3.

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statewide reporting registries,²⁵ state review protocols,²⁶ and enforcement mechanisms.²⁷ Although this note uses youth football as a vehicle for its argument, the remedy explored in Part V would govern all youth contact sports.

II. MEDICAL ASSESSMENT OF FOOTBALL-RELATED CONCUSSION

An overview of the causes, symptoms, long-term consequences, and prevalence of football-related concussion is essential to understand why the concussion epidemic warrants additional and immediate legislative attention. The word “concussion” comes from the Latin *concutere*, which means “to shake violently.”²⁸ “Concussion is a sudden-onset, transient alteration of consciousness due to a combination of functional and structural brain disturbances following a physical impact transmitted to the brain.”²⁹ In other words, a concussion is a brain injury that results when physical impact is transmitted to the brain, in turn causing the brain to rapidly move back and forth inside the skull.³⁰ A concussion may result from direct impact to the head or from an impact to another part of the body, when the impulsive force is then transmitted to the head.³¹

A. Concussion Symptoms, Signs, and Diagnosis in Youth Athletes

A concussion typically results in the rapid onset of short-term impairment of neurological function that may—but does not necessarily—lead to loss of consciousness.³² Symptoms include headache, nausea, vomiting, wooziness, vertigo, imbalance, changes in hearing or vision, tinnitus (ringing in the ears), photophobia (light sensitivity), phonophobia (sound sensitivity), and fatigue.³³ Difficulty concentrating or remembering, disorientation, unclear thinking, and hallucination mark the various cognitive symptoms.³⁴ Emotional symptoms include sadness, irritability, and depression.³⁵ During or immediately after a football game, signs of

25. Statewide reporting registries would gather data on the frequency of concussions. *See infra* Part V.B.3.

26. Review protocols would evaluate reported data and confirm the efficacy of a state’s concussion law. *See infra* Part V.B.3.

27. Enforcement mechanisms, such as liability (a “stick” approach), civil immunity for noncompliance (a “carrot” approach), or competition-related penalties (a “performance” approach) would bolster the strength of concussion laws. *See infra* Part V.B.3.

28. Vini G. Khurana & Andrew H. Kaye, *An Overview of Concussion in Sport*, 19 J. CLINICAL NEUROSCIENCE 1, 1 (2012).

29. *Id.*

30. Lueke, *supra* note 11, at 487.

31. *See* Daniel H. Daneshvar et al., *The Epidemiology of Sport-Related Concussion*, 30 J. CLINICAL SPORTS MED. 1, 3 (2011).

32. *See* Diehl, *supra* note 11, at 88.

33. *See* Khurana & Kaye, *supra* note 28, at 4.

34. *See id.*

35. *See id.*

concussion may include an inability to recall the score, opponent, game rules, or play assignments, as well as slowed reaction time and verbal responses, impaired coordination and balance, and altered gait.³⁶

Compared to adults, a greater impact is required before a young person will show signs of concussion because a youth's brain tolerates biomechanical forces differently:

[T]wo to three fold greater impact force is required to produce clinical symptoms in children compared to adults. This is due to a combination of factors, including an age dependent physiological response to mechanical stress, the differing geometry of the skull and brain, and the constitutive structural properties of the head.³⁷

Thus, it takes far *greater* impact to concuss a youth's brain. Yet, the effect of a concussion may actually be far more devastating for a youth's brain than an adult's brain, particularly in terms of cognitive development.³⁸

The diagnosis of concussions is complex and imperfect. There are "over forty-one methods employed to measure the severity or grade of [concussion] and no general consensus among the [medical] profession on which approach is the best."³⁹ A young athlete's inability or hesitancy to self-report concussions, often out of a desire to continue playing or a fear of being perceived as weak or lazy,⁴⁰ further frustrates the diagnosis of concussion because the symptoms may not be obvious to others. As a result, concussions are often undiagnosed.⁴¹ Improper diagnosis or failing to report a concussion can be devastating or deadly. In addition, the medical community continues to debate the possibility of "second impact syndrome," which may increase the severity of brain injury from subsequent concussions.⁴² Both adults and youths are at increased risk of *additional* concussions in the seven to ten days following an initial concussion,⁴³ and, without proper rest, academic stress and overexertion can aggravate

36. *See id.*

37. P. McCrory et al., *Can We Manage Sport Related Concussion in Children the Same as in Adults?*, 38 BRIT. J. SPORTS MED. 516, 516 (2004).

38. *See* Diehl, *supra* note 11, at 122.

39. *Id.* at 89 (citing Tim Anderson et al., *Concussion and Mild Head Injury*, 6 PRAC. NEUROLOGY 342, 343 (2006)).

40. *See id.* at 90.

41. *See Athletes and Concussions: Knowing the ImPACT*, MASS. GEN. HOSP. (Jan. 8, 2010), www.massgeneral.org/digestive/news/newsarticle.aspx?id=2031 ("Concussions are common injuries in young athletes. Despite the inherent dangers, however, they often go undiagnosed.")

42. Compare Robert C. Cantu & Alisa D. Gean, *Second-Impact Syndrome and a Small Subdural Hematoma: An Uncommon Catastrophic Result of Repetitive Head Injury with a Characteristic Imaging Appearance*, 27 J. NEUROTRAUMA 1557, 1557, 1563 (2010) (concluding that second-impact syndrome can occur even after a grade one concussion), with P. McCrory, *Does Second-Impact Syndrome Exist?*, 11 CLIN. J. SPORT MED. 144 (2001) (arguing that second-impact syndrome is likely not the result of repeated concussions but rather is a recognized complication of traumatic brain injury common in children and adolescents).

43. *See* Khurana & Kaye, *supra* note 28, at 7.

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concussion symptoms and extend the recovery period.⁴⁴ Brain development, furthermore, simply does not always align squarely with scholastic advancement: concussions may affect cognitive development in teenagers and young adults beyond high school.⁴⁵

B. Chronic Traumatic Encephalopathy

That an individual can develop CTE as a consequence of repeated, minor-impact head injury has only recently been posited.⁴⁶ CTE is a progressive neurodegenerative disease that typically presents symptoms in midlife.⁴⁷ A CTE-afflicted brain is atrophied and characterized by microscopic deposits of tau protein that tangle with nerve cells and ultimately kill the cell.⁴⁸ The disease “produces clinical symptoms of disordered cognition, memory loss and executive dysfunction, depression, apathy, disinhibition, and irritability, as well as parkinsonian signs.”⁴⁹ Additionally, “increased suicidality seems to be a particularly salient symptom of CTE.”⁵⁰

Currently, CTE can only be diagnosed postmortem,⁵¹ which complicates the study of CTE because many athletes and their survivors are not educated about the

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44. See Neal McGrath, *Supporting the Student-Athlete's Return to the Classroom After a Sport-Related Concussion*, 45 J. ATHLETIC TRAINING 492, 494 (2010).
45. The brain continues to develop beyond high school. See Catherine Lebel & Christian Beaulieu, *Longitudinal Development of Human Brain Wiring Continues from Childhood into Adulthood*, 31 J. NEUROSCIENCE 10937, 10943 (2011) (finding that the brain demonstrated maturation, including in the areas of the brain that control complex cognitive processing, through young adulthood); see also Craig M. Bennet & Abigail A. Baird, *Anatomical Changes in the Emerging Adult Brain: A Voxel-Based Morphometry Study*, 27 HUM. BRAIN MAPPING 766, 766 (2006) (finding that “significant age-related changes in brain structure continue after the age of 18 and may represent dynamic changes related to new environmental challenges”). Young college players are therefore at the tail end of development and may still be prone to developmental vulnerability after sustaining a concussion.
46. See Brandon E. Gavett et al., *Chronic Traumatic Encephalopathy: A Potential Late Effect of Sports-Related Concussive and Subconcussive Head Trauma*, 30 J. CLINICAL SPORTS MED. 179 (2011) (stating that the neuropathology of CTE was first described in 1973 and suggesting that CTE research in football players has developed only in the last several decades).
47. See *id.* at 180. “The course [of CTE] seems to be considerably protracted[,] . . . especially in boxers,” lasting approximately twenty years. *Id.* at 183. In football players, though, the average course of the disease is a mere six years. See *id.*
48. See *id.* at 181. For a video demonstrating how tau protein deposits kill nerve cells, see *What Is CTE?*, SPORTS LEGACY INST., <http://sportslegacy.org/research/what-is-cte/> (last visited Dec. 26, 2013). For a photograph comparing a CTE-afflicted brain and a normal brain, see Luna Shyr, *The Big Idea: Brain Trauma*, NAT'L GEOGRAPHIC (Feb. 2011), <http://ngm.nationalgeographic.com/2011/02/big-idea/concussions-text>.
49. Gavett et al., *supra* note 46, at 185.
50. *Id.* at 180 (citing Bennet I. Omalu et al., *Chronic Traumatic Encephalopathy (CTE) in a National Football League Player: Case Report and Emerging Medicolegal Practice Questions*, 6 J. FORENSIC NURSING 40 (2010)).
51. See *id.* at 183.

opportunity or simply do not care to confirm a CTE diagnosis with an autopsy.⁵² To be fair, the relationship between concussion and CTE is not entirely clear. But, over the last several decades, clinical and neuropathological evidence of CTE has emerged in association with football, as well as other contact sports, including boxing, hockey, wrestling, and soccer.⁵³ The Boston University Center for the Study of Traumatic Encephalopathy has neuropathologically examined the donated brains of NFL athletes, college football players, and high school football players,⁵⁴ including Austin Trenum's brain.⁵⁵ Between 2008 and 2010, twelve football players' brains were donated to the Center and all showed evidence of CTE.⁵⁶

C. Prevalence of Concussion in Youth Football

Millions of young athletes play football in the United States. Approximately three million youth football players ages six to fourteen play tackle football each year.⁵⁷ In addition, the National Federation of State High School Associations (NFHS) estimates that there are one million high school football players, and the National Collegiate Athletic Association (NCAA) estimates that there are 75,000 college football players in the United States.⁵⁸

The tracking and study of youth football-related brain injury is a recent endeavor. Brain injury that results in incomplete neurological recovery (i.e., catastrophic head injury) is the easiest brain injury to track: since 1982, 133 nonprofessional football players have experienced catastrophic head injury, a number that includes 120 high school athletes, 11 college athletes, and 2 recreational players.⁵⁹ Although the data on concussions (i.e., noncatastrophic head injury) are imperfect and incomplete,⁶⁰ several recent studies have concluded that, in any given year, 3.6% to 5.6% of high school

52. Between February 2008 and June 2010, 321 professional football players died, but only twelve underwent posthumous examination for CTE. *See id.* at 180. In fact, there have been no "randomized" studies of CTE in deceased athletes; rather, there is "selection bias in those cases that come to autopsy." *Id.*

53. *See id.*

54. *See DETECT Study*, BOS. U. CTR. FOR THE STUDY OF TRAUMATIC ENCEPHALOPATHY, <http://www.bu.edu/cste/our-research/clinical-studies-detect/> (last visited Dec. 26, 2013).

55. *See* Hruby, *supra* note 1.

56. *See* Gavett et al., *supra* note 46, at 180. As of December 2011, the Center had also diagnosed four cases of CTE in the brains of professional hockey players who had suffered from concussions. *See NHL Governors Discuss Player Safety*, ESPN (Dec. 6, 2011, 10:16 PM), http://espn.go.com/nhl/story/_/id/7324522/gary-bettman-not-enough-data-clear-link-concussion-cte-nhl-players. One donation was from Derek Boogaard, who acted as an enforcer for the New York Rangers and was only twenty-eight years old when he died. *See id.*

57. *Legal Issues Relating to Football Head Injuries (Part I & II): Hearings Before the H. Comm. on the Judiciary*, 111th Cong. 82 (2009–10) (statement of Merrill Hoge, retired NFL player).

58. Daneshvar et al., *supra* note 31, at 3–4.

59. *Id.* at 4.

60. First, the data underestimate the average annual concussion numbers because so many concussions are undiagnosed. *See supra* Part II.A. Second, certain youth populations have yet to be studied. For example, the head impact exposure and annual concussion rates of pre-high school football players has not been

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football players sustain concussions, corresponding to an estimated 43,200 to 67,200 concussions annually.⁶¹ Moreover, some studies suggest that the number of concussions sustained annually in high school football is on the rise.⁶² One study broke down the annual number of head impacts sustained by high school players in practices and in games during the 2007, 2008, 2009, and 2010 seasons:

Table 1. Annual Number of Head Impacts Sustained by High School Football Players During Practice⁶³

Position	Mean # of Impacts	Standard Deviation	Median	Minimum	Maximum
Linemen	509.4	239.6	494	64	1463
Quarterbacks	146.0	69.6	165	43	227
Receivers, Cornerbacks, Safeties	204.0	105.9	189	32	463
Tight Ends, Running Backs, Linebackers	335.25	179.3	340	22	742

comprehensively investigated. See Ray W. Daniel et al., *Head Impact Exposure in Youth Football*, 40 ANNALS BIOMED. ENGINEERING 976, 976 (2012).

61. Steven P. Broglio et al., *Head Impacts During High School Football: A Biomechanical Assessment*, 44 J. ATHLETIC TRAINING 342, 342 (2009) (citing K.M. Guskiewicz et al., *Epidemiology of Concussion in Collegiate and High School Football Players*, 28 AM. J. SPORTS MED. 643-50 (2000); J.W. Powell & K.D. Barber-Foss, *Traumatic Brain Injury in High School Athletes*, 282 JAMA 958 (1999)).
62. See, e.g., Lincoln et al., *supra* note 16, at 958. To be fair, however, any recent data suggesting that concussions are becoming more frequent may simply be attributable to more people reporting concussions or better recordkeeping. It is also difficult to compare statistics over time because recordkeeping efforts were historically scant and are only now more reliable and widespread.
63. Steven P. Broglio et al., *Cumulative Head Impact Burden in High School Football*, 28 J. NEUROTRAUMA 2069, 2071 tbl.1 (2011) (tracking ninety-five players over the course of the 2007, 2008, 2009, and 2010 football seasons using the Head Impact Telemetry System (HITS)). Dr. Broglio is the Director of the Neurosport Research Laboratory at the University of Michigan School of Kinesiology. See *Steven Broglio Ph.D., A.T.C., U. MICH.*, <http://kines.umich.edu/profile/steve-broglio-phd-atc> (last visited Dec. 26, 2013). He is well respected in sports medicine and has written extensively about the prevention of concussions. See *id.* Although this particular study focuses on high school players, is one of his more comprehensive and recent articles tracking the number of head impacts that youth football players sustain, and it was published in the prestigious *Journal of Neurotrauma*.

Table 2. Annual Number of Head Impacts Sustained by High School Football Players During Games⁶⁴

Position	Mean # of Impacts	Standard Deviation	Median	Minimum	Maximum
Linemen	364.6	265.9	336	15	1164
Quarterbacks	320.6	203.5	315	6	545
Receivers, Cornerbacks, Safeties	189.8	160.7	149.5	11	651
Tight Ends, Running Backs, Linebackers	290.8	186.9	249	11	703

Though head impacts do not automatically result in concussion, each impact nevertheless could result in a concussion.⁶⁵ These findings “indicate that high school football players sustain an astonishingly high number of head impacts each season”⁶⁶ and are exposed to heightened risk of concussion. Logically, then, increased exposure to situations where concussion could result means a greater risk of concussion and of serious short- and long-term health effects as a result of concussion.⁶⁷

Corresponding statistical information is difficult to find for college players.⁶⁸ The NCAA has no mandated requirements for reporting concussions.⁶⁹ Moreover, the NCAA is fiercely protective of injury surveillance information: although the NCAA has been collecting injury data since 1982, only legitimate scientific researchers may apply for de-identified aggregate data, and the NCAA reserves the right to deny such requests for information without explanation.⁷⁰ Though the NCAA is protective of the actual numbers, it did publicly report that concussions accounted for 6% of all

64. Broglio et al., *supra* note 63, at 2071 tbl.1.

65. *See supra* Part II.A. Even though a child requires greater force to sustain a concussion, heightened exposure to head impact collisions increases the risk of a young person experiencing an impact great enough to inflict a concussion. *See supra* Part II.A.

66. Broglio et al., *supra* note 63, at 2076.

67. *See supra* Part II.A.

68. In 2011, however, a concussion watchdog blog reported an estimated 179 concussions sustained in Division I football in just the first ten weeks of the college football season, including scrimmages and practices. John Gonoude, *2011 NCAA Football Reported-Concussion Study: Week 10*, THE CONCUSSION BLOG (Nov. 10, 2011), <http://theconcussionblog.com/2011/11/10/2011-ncaa-football-reported-concussion-study-week-10/>.

69. *See generally Health and Safety: Concussions*, NCAA, <http://www.ncaa.org/wps/wcm/connect/public/NCAA/Health+and+Safety/Concussion+homepage/> (last visited Dec. 26, 2013).

70. *See NCAA Injury Surveillance Program*, DATALYS CTR. 1 (June 2012), http://www.disc.datalyscenter.org/Content/downloads/DISC_NCAA_Data_Request_Information_Packet_Form.pdf.

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college football-related injuries in 2006, which increased to 7.4% in 2009.⁷¹ But these figures, without additional context, are not very enlightening.

Even without comprehensive data, it is clear that concussions continue to plague youth athletes as researchers struggle to garner more exact figures. While the nation anticipates further developments in concussion science, youth athletes and their families cannot afford to wait for more conclusive evidence regarding the effect of concussions. An effective regulatory framework is needed to protect these young athletes.

III. CURRENT STATE YOUTH CONCUSSION LAWS ARE INADEQUATE

Football is a dangerous sport with heightened risk for brain injury, and concussions are particularly devastating in youth players because these injuries may interfere with their neurodevelopmental processes.⁷² Unfortunately, youth football lacks a central governing body to promulgate health and safety standards that would mitigate the risks associated with concussions and ensure compliance. Nor is there a federal law that regulates youth athletic concussions.⁷³ As a result, this responsibility is left to the individual states.

71. Compare Daneshvar et al., *supra* note 31, at 1 (reporting concussion rates for NCAA athletes), with *Football Injuries*, NCAA, http://www.ncaa.org/wps/wcm/connect/78b8b5004c2dac569312d7e36db4ed03/NCAA_Football_Injury_WEB.pdf?MOD=AJPERES&CACHEID=78b8b5004c2dac569312d7e36db4ed03 (last visited Dec. 26, 2013) (reporting data from the 2004–05 through 2008–09 NCAA seasons). ESPN reported that the NCAA claims that the “rate of football-related concussions has remained steady over the past eight years,” but the “rate of concussions” study has not been released. *NCAA: Rate of Concussions Study*, ESPN (Sept. 22, 2012, 2:49 PM), http://espn.go.com/college-football/story/_/id/8410529/ncaa-reports-rate-football-related-concussions-remained-steady-last-eight-years.

72. See Diehl, *supra* note 11, at 85–87.

73. The federal government has failed to pass three concussion bills since 2010, when the first concussion bill was introduced, making the likelihood of future federal legislation slim. In 2010, two federal bills were introduced but failed to pass. The Concussion Treatment and Care Tools Act of 2010 (“ConTACT”) passed in the House but never reached the Senate floor. See Lueke, *supra* note 11, at 491. ConTACT’s substance was a version of Washington’s 2009 Lystedt Law, in that it focused primarily on concussion education, but it also attempted to establish a method of collecting data at the national level “on the incidence and prevalence of concussions among school-aged children.” Concussion Treatment and Care Tools Act of 2010, H.R. 1347, 111th Cong. § 317U(a), (b)(1)(A) (2010).

The second bill, the Protecting Student Athletes from Concussions Act of 2010 (PSACA I), died in committee. See Lueke, *supra* note 11, at 491. It was reintroduced in 2011 (PSACA II), but again failed to move beyond committee. See *id.* The substance of the bill largely tracked the Lystedt Law requirements but also included provisions requiring academic accommodations for students suffering from recent concussion. Protecting Student Athletes from Concussion Act of 2011, H.R. 469, 112th Cong. § 3(1)(B)(i) (2011) (“Each local educational agency in the State . . . shall develop and implement a standard plan . . . that includes . . . supports for students recovering from a concussion, such as . . . guiding such student in resuming participation in athletic activity and academic activities with the help of a multi-disciplinary team . . .”). This component has been largely absent from state legislation.

There were several signs indicating that the 2011 PSACA II bill was unlikely to pass. First, the 2011 bill was a reintroduction of the 2010 PSACA I bill that had already died once in committee. Second, the bill sat in committee for two years without much activity. Third, its sponsor, Representative Timothy Bishop (D-NY), was a member of the minority party in the House. *H.R. 469 (112th): Protecting Student Athletes from Concussions Act of 2011*, GOVTRACK.US, <http://www.govtrack.us/congress/bills/112/hr469#> (last visited Dec. 26, 2013). There was also a possibility that states would flatly oppose federal intervention in concussion regulation.

Following the 2009 enactment of the nation's first concussion law in Washington, other states quickly followed suit by enacting similar laws.⁷⁴ Expediency, however, may have sacrificed effectiveness. The state laws are ambiguous in scope, and the state-by-state approach has created a patchwork of standards among the states. Moreover, Mississippi has no concussion law whatsoever.⁷⁵

A. The First Youth Concussion Law

Washington State pioneered the regulation of youth athletic concussions. Its 2009 Lystedt Law was named after Zackery Lystedt, who, in 2006, suffered a brain injury following his return to play in a middle school football game after sustaining a concussion.⁷⁶ The Lystedt Law has three major components: education, removal from play, and medical clearance for return to play.⁷⁷ The education component requires school districts and the state interscholastic athletic associations to “work together to educate coaches, young athletes, and parents about the risk of sports-related concussions.”⁷⁸ The removal and clearance components work together: a youth player who has sustained a concussion or is exhibiting concussion-like symptoms must be removed from play until he or she receives medical clearance to return to the field.⁷⁹

The Lystedt Law became a model for the forty-eight additional states that, between 2009 and 2013, enacted concussion legislation.⁸⁰ The Lystedt Law is a step in the right direction and its adoption as a model nationwide is proof that states are willing to take youth sports-related concussions seriously. But the Lystedt Law is unclear in its scope, reaching a class of beneficiaries that is not well defined, thereby

74. See *infra* Part III.C.

75. See *infra* Part III.D.

76. See *The Zackery Lystedt Law*, NFLEvolution.com (Aug. 9, 2012), <http://www.nflevolution.com/article/The-Zackery-Lystedt-Law?ref=270>; see also *supra*, note 11.

77. See WASH. REV. CODE ANN. § 28A.600.190(c)(2)–(4) (West 2013). The pertinent text of these provisions is as follows:

(2) [Education:] Each school district's board of directors shall . . . develop the guidelines and other pertinent information and forms to inform and educate coaches, youth athletes, and their parents and/or guardians of the nature and risk of concussion and head injury including continuing to play after concussion or head injury. . . .

(3) [Removal from Play:] A youth athlete who is suspected of sustaining a concussion or head injury in a practice or game shall be removed from competition at that time.

(4) [Medical Clearance for Return to Play:] A youth athlete who has been removed from play may not return to play until the athlete is evaluated by a licensed health care provider trained in the evaluation and management of concussion and receives written clearance to return to play

Id.

78. Marie-France Wilson, *Young Athletes at Risk: Preventing and Managing Consequences of Sports Concussions in Young Athletes and the Related Legal Issues*, 21 MARQ. SPORTS L. REV. 241, 284 (2010); accord WASH. REV. CODE ANN. § 28A.600.190(c)(2).

79. See WASH. REV. CODE ANN. § 28A.600.190(c)(3)–(4); see also Wilson, *supra* note 78, at 284.

80. See *Traumatic Brain Injury Legislation*, *supra* note 19.

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reducing its effectiveness. In addition, the patchwork of state laws has resulted in inconsistencies in implementing the Lystedt Law's three components, which, in turn, have created variations in baseline care standards across jurisdictions.

B. The Lystedt Law's Ambiguous Scope Weakens Its Effectiveness

The Lystedt Law's education, removal, and return-to-play components apply to "youth athletes," but the law does not define "youth athlete."⁸¹ This has created ambiguity regarding who is covered under the law. For instance, it is unclear whether eighteen-year-olds are covered. If eighteen-year-olds are indeed covered, the law may extend to athletes in college programs—at least the youngest players. If eighteen-year-olds are not covered, then the law covers some high school seniors (who have not yet turned eighteen), but not others (who are eighteen). Additionally, the Lystedt Law arguably does not reach recreational leagues at all and reaches a limited number of private schools because it applies to "school districts" (public school entities)⁸² and the "Washington Interscholastic Activity Association" (WIAA) (an optional membership organization).⁸³ If the law does not reach recreational leagues and reaches limited private schools, its influence is restricted because it does not apply to, and thus does not protect, a significant number of youth athletes.⁸⁴

C. State Concussion Laws: Variations on the Lystedt Law Have Led to Differing Legal Standards for the Education, Removal, and Return-to-Play Components

State lawmakers nationwide have adopted, in varying forms, the Lystedt Law's three components—education, removal, and medical clearance for return to play—as

81. See WASH. REV. CODE ANN. § 28A.600.190.

82. See *id.* § 28A.600.200. The dictionary definition of "school district" is "a unit for administration of a public-school system often comprising several towns within a state." *School District Definition*, MERRIAM-WEBSTER DICTIONARY, <http://www.merriam-webster.com/dictionary/school%20district> (last visited Dec. 26, 2013). For a list of Washington's school districts, see *Washington State School Districts: Maps and Websites*, ST. OF WASH. OFF. OF SUPERINTENDENT OF PUB. INSTRUCTION, <http://www.k12.wa.us/maps/SDmainmap.aspx> (last visited Jan. 4, 2014).

83. The Washington Interscholastic Activities Association consists of approximately 800 member schools. See *Mission and Purpose*, WIAA, <http://www.wiaa.com/subcontent.aspx?SecID=299> (last visited Dec. 26, 2013). Of these 800 schools, approximately 100 are private schools. See *Directory*, WIAA, <http://www.wiaa.com/directory.aspx?SecID=654> (last visited Dec. 26, 2013) (select "Private" from the "School District" drop-down menu). But in Washington State there are 2,381 public schools, SENATE WAYS & MEANS COMMITTEE, A CITIZEN'S GUIDE TO WASHINGTON STATE K-12 FINANCE 3 (2012), available at <http://www.leg.wa.gov/Senate/Committees/WM/Documents/K12%20Guide%202012%20FINAL5.pdf>, and approximately 490 private schools, *Private Schools for Approval*, ST. OF WASH. OFF. OF SUPERINTENDENT OF PUB. INSTRUCTION (2013-14), <http://www.k12.wa.us/PrivateEd/PrivateSchools/pubdocs/ApprovedPrivateSchoolsDirectory.pdf>. To be fair, it is unclear exactly what athletic programs are offered in each school and, thus, difficult to know how many schools in Washington State or schools associated with WIAA have football teams. Football, however, is not the only sport that is suffering from a concussion epidemic. See *supra* Part IV.

84. In Washington State, there are at least fourteen separate youth recreational leagues, each with up to sixteen teams per league. See *Washington Youth Football Leagues*, YOUTH-FOOTBALL-LEAGUES.COM, <http://youth-football-leagues.com/leagues-by-state/washington-youth-football-leagues/> (last visited Dec. 26, 2013).

part of their own concussion legislation. For the most part, no state has enacted legislation that goes far beyond these components.⁸⁵ And a couple of states have chosen not to incorporate all three Lystedt components into their own legislation. While every state has incorporated an education requirement into its legislation,⁸⁶ Illinois does not mandate removal (acknowledging only its “advisability”),⁸⁷ and Wyoming does not specifically require medical evaluation or clearance before a youth athlete is permitted to return to play.⁸⁸ These partial adoptions of the Lystedt Law create obvious problems: a youth athlete in Washington and a youth athlete in Illinois have the same concussion vulnerabilities, but the youth athlete in Illinois is less protected because his coach is not required to remove him from play when he suffers a concussion. Such partial adoption, however, is not common. The vast majority of states have incorporated all three Lystedt Law components into their own laws, but, though derived from the same model, the states have adopted different legal standards for each component, which, in turn, creates problematic variations in baseline standards of care.

1. *Variations in the Education Component*

As explained above, every state has included an education component in its concussion law, but the state laws vary with respect to who is responsible for developing the education initiatives and who is required to receive training. First, many states do not require the participation of a medical or public health entity in the development of their education initiatives.⁸⁹ The CDC has classified the problem of mild traumatic brain injury (i.e., concussion) as a silent public health epidemic.⁹⁰ Many other public health education initiatives, such as initiatives for youth asthma education, rightfully

85. Some states have incorporated additional regulatory elements beyond the Lystedt Law’s requirements. For example, New York requires return-to-classroom guidelines. *See* N.Y. EDUC. LAW § 305(42)(a)(iii) (McKinney 2013).

86. *See Traumatic Brain Injury Legislation*, *supra* note 19.

87. *See* 70 ILL. COMP. STAT. ANN. 1205/8-24 (West 2013) (“[A]ny park district is authorized and encouraged to make available to residents and users of park district facilities, including youth athletic programs, electronically or in written form, educational materials that describe the nature and risk of concussion and head injuries, including the *advisability of removal* of youth athletes that exhibit signs, symptoms, or behaviors consistent with a concussion, such as a loss of consciousness, headache, dizziness, confusion, or balance problems, from a practice or game.”) (emphasis added); *see also* 105 ILL. COMP. STAT. ANN. 5/10-20.54 (West 2013).

88. *See* WYO. STAT. ANN. § 21-3-110(a)(xxxii)(A)–(C) (West 2013).

89. *E.g.*, Act of Jan. 20, 2012, 2012 Haw. Sess. Laws 2 (West 2012) (requiring only the Hawaii Department of Education to work with the Hawaii High School State Athletic Association to develop policies and implement concussion awareness programs). Conversely, Rhode Island takes a holistic approach, requiring its departments of education and health to work with the Rhode Island Interscholastic League to develop statewide educational guidelines, forms, and other materials. R.I. GEN. LAWS ANN. § 16-91-3(a) (West 2013).

90. *See* CTRS. FOR DISEASE CONTROL & PREVENTION, *supra* note 22.

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involve a medical or public health entity.⁹¹ But for concussion education, the majority of states have simply delegated education initiatives to the state's school districts with no further instruction.⁹² Other states delegate the responsibility to a single entity such as the state's department of health or the department of education.⁹³ Austin Trenum's home state of Virginia delegated the responsibility to its department of education and, a year after the Virginia law went into effect, his county still had no official education policy.⁹⁴ In Loudoun County, Virginia (a county close to Austin's), education consisted of parents and student athletes merely signing a two-page document covering concussion facts, symptoms, and post-concussive care, prior to the beginning of preseason.⁹⁵

Austin's story showcases another troublesome discrepancy among states' education requirements: the nature of the concussion education. State laws vary on whether to address the education to coaches, parents, or students, and whether and how often to require training. For example, some states, such as Wisconsin, require only the signature of a parent prior to preseason and do not require any formal training.⁹⁶ Other states require only that coaches, referees, or athletic trainers participate in training programs and vary on whether training should take place annually,⁹⁷ once

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91. In New York City, for example, the Office of School Health, a joint program involving the New York City Department of Education and the New York City Department of Health and Mental Hygiene offers education about asthma in an effort to "improve health and reduce school absences." *Office of School Health*, N.Y.C. DEP'T OF EDUC., <http://schools.nyc.gov/Offices/Health/default.htm> (last visited Dec. 26, 2013).
92. *E.g.*, ARIZ. REV. STAT. ANN. § 15-341(24)(b) (2013). Some states also suggest that school districts work with or emulate the policies of state interscholastic associations. *E.g.*, NEV. REV. STAT. ANN. § 392.452(1) (West 2013) ("For those competitive sports not governed by the Nevada Interscholastic Activities Association pursuant to NRS 386.420 to 386.470, inclusive, the board of trustees of each school district shall adopt a policy concerning the prevention and treatment of injuries to the head which may occur during a pupil's participation in competitive sports within the school district, including, without limitation, a concussion of the brain. *To the extent practicable, the policy must be consistent with the policy adopted by the Nevada Interscholastic Activities Association pursuant to NRS 386.435.*") (emphasis added); *see also id.* § 386.435.
93. *E.g.*, MASS. GEN. LAWS ANN. ch. 111, § 222 (West 2013); MD. CODE ANN., EDUC. § 7-433 (West 2013).
94. *See* Hrubby, *supra* note 1.
95. *See id.* Loudoun County Public School Division of Athletes, *Concussions in High School Sports—LCPS Guide for Parents, Athletes, & Staff*, LOUDOUN CNTY. PUB. SChs. (Apr. 21, 2013), <http://www.loudoun.k12.va.us/cms/lib4/VA01000195/Centricity/Domain/5093/2013-14%20LCPS%20Athlete%20Concussion%20Guidelines%20%20ImPACT%20consent.pdf>.
96. *See* WIS. STAT. ANN. § 118.293 (West 2013) ("At the beginning of a season for a youth athletic activity, the person operating the youth athletic activity shall distribute a concussion and head injury information sheet to each person who will be coaching that youth athletic activity and to each person who wishes to participate in that youth athletic activity. No person may participate in a youth athletic activity unless the person returns the information sheet signed by the person and, if he or she is under the age of 19, by his or her parent or guardian.").
97. *E.g.*, 24 PA. CONS. STAT. ANN. § 5323(e) (West 2013) ("Once each school year, a coach shall complete the concussion management certification training course offered by the Centers for Disease Control and Prevention, the National Federation of State High School Associations or another provider approved by the Department of Health. A coach shall not coach an athletic activity until the coach completes the training course required under this subsection.").

every two years,⁹⁸ or once every five years.⁹⁹ A number of states do not require *students* to complete training. Massachusetts, for example, requires a number of different individuals to complete training—such as coaches, trainers, parent volunteers, school athletic directors, and school nurses—but does not require students to complete the training.¹⁰⁰ Yet, the very nature of a concussion injury and its diagnosis requires both that the player recognize internal symptoms, and that those around him or her recognize external symptoms.¹⁰¹ This logically suggests that the more holistic and inclusive education programs—those including students, parents, coaches, athletic trainers, etc.—would be the most effective.

2. *Variations in the Removal-from-Play Component*

Some states delegate the removal decision to specific individuals. For example, Wisconsin delegates the removal decision to a coach, official, or health care provider.¹⁰² Other states, however, have ambiguous removal-from-play requirements. In particular, many state laws fail to designate a specific individual to make the removal decision. Washington's law, for example, does not designate any one particular person.¹⁰³ To assume that the law delegates this authority to a coach—which may seem like the obvious choice—presents a potential conflict of interest, especially when a player is vital to an important game and a decision to remove or bench a player may cost a coach his or her job.¹⁰⁴

98. *E.g.*, IDAHO CODE ANN. § 33-1625(3) (West 2013) (“Coaches, referees, game officials, game judges and athletic trainers shall review such guidelines and information upon employment and biannually thereafter.”).

99. *E.g.*, CONN. GEN. STAT. ANN. § 10-149b(a)(3) (West 2013) (“[A] coach shall complete a refresher course . . . not later than five years after completion of the initial training course, as a condition of the reissuance of a coaching permit to such coach. Such coach shall thereafter retake such refresher course at least once every five years as a condition of the reissuance of a coaching permit to such coach.”).

100. *See* MASS. GEN. LAWS ANN. ch. 111, § 222(a) (West 2013). Section 222(a) requires participation in the safety training program by:

coaches, trainers and parent volunteers for any extracurricular athletic activity; physicians and nurses who are employed by a school or school district or who volunteer to assist with an extracurricular athletic activity; school athletic directors; directors responsible for a school marching band; and a parent or legal guardian of a child who participates in an extracurricular athletic activity.

Id.

101. *See supra* Part II.

102. *See* WIS. STAT. ANN. § 118.293(4)(a) (West 2013) (“An athletic coach, or official involved in a youth athletic activity, or health care provider shall remove a person from the youth athletic activity if the coach, official, or health care provider determines that the person exhibits signs, symptoms, or behavior consistent with a concussion . . .”).

103. WASH. REV. CODE ANN. § 28A.600.190(c)(3) (West 2013) (“A youth athlete who is suspected of sustaining a concussion or head injury in a practice or game shall be removed from competition at that time.”).

104. Football coaches are not always neutral decisionmakers. An extreme example of conflicted coaching is a recent scandal in Florida, in which police arrested eight youth football coaches for felony gambling on youth football games. *See* Paula Lavigne, *Youth Coaches Face Gambling Charges*, ESPN (Oct. 30, 2012,

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But delegating the removal decision to a medical professional is also complicated. For example, Massachusetts's law explicitly provides for removal of a student who becomes unconscious during play or practice, or when "a student suffers a concussion *as diagnosed by a medical professional*, or is suspected to have suffered a concussion while participating in an extracurricular athletic activity."¹⁰⁵ Massachusetts's removal requirement is confusing and potentially unrealistic because it is unclear whether, apart from the obvious loss of consciousness, a medical professional needs to diagnose a concussion or recognize concussion-like symptoms in order to remove a student from play.¹⁰⁶ Most youth football programs simply do not have the resources to have a licensed physician available on the sidelines to diagnose concussions.¹⁰⁷

3. *Variations in the Medical Clearance Component*

Some states have also developed variations of the medical clearance component that appears in the Lystedt Law. Where some states allow medical clearance by any health care provider,¹⁰⁸ other states require that the attending physician be licensed specifically in the care and management of concussions.¹⁰⁹ Although states are divided on this Lystedt Law component, many physicians believe that unrestricted definitions of who exactly may provide medical clearance are unwise and dangerous.¹¹⁰

7:20 PM), http://espn.go.com/espn/otl/story/_/id/8568724/nine-south-florida-youth-football-coaches-face-gambling-charges. If any one of these Florida coaches bet on the outcome of their games, a decision to remove a player because of a concussion would have clearly presented a conflict of interest. To be fair, gambling on the outcome of youth games is probably rare. But a coach's job security rests on performance and, in order to perform, you need your best players to play. See Paul Holmes, *Win or Go Home: Why College Football Coaches Get Fired*, 12 J. SPORTS ECON. 157 (2011) (concluding that recent win percentage (i.e., performance in the last three years), while mitigated by expectation, allegiance, and tenure, is a determinant of dismissal). Thus, if a coach's job security is connected to performance and performance requires playing the best players, a conflict arises when a coach must make the decision to remove his players from the game.

105. MASS. GEN. LAWS ANN. ch. 111, § 222(c) (emphasis added).

106. *See id.*

107. See Andrew B. Carrabis, *Head Hunters: The Rise of Neurological Concussions in American Football and Its Legal Implications*, 2 HARV. J. SPORTS & ENT. L. 371, 385 (2011) ("Few junior varsity and varsity football teams on the high school level have physicians on standby.").

108. *E.g.*, MASS. GEN. LAWS ANN. ch. 111, § 222(c) ("If a student suffers a concussion . . . the student shall not . . . participate in any extracurricular athletic activity until the student provides written authorization for such participation, from a licensed physician, licensed neuropsychologist, certified athletic trainer or other appropriately trained or licensed health care professional as determined by the department of public health, to the school's athletic director.").

109. *E.g.*, MD. CODE ANN., EDUC. § 7-433(c)(2) (West 2013) ("A student who has been removed from play may not return to play until the student has obtained written clearance from a *licensed health care provider trained in the evaluation and management of concussions.*") (emphasis added).

110. *E.g.*, Andrew W. Breck, *Keeping Your Head on Straight: Protecting Indiana Youth Athletes from Traumatic Brain Injuries Through "Return-to-Play" Legislation*, 9 IND. HEALTH L. REV. 215, 242 (2012) (quoting Dr. Mike Cordas, former football team physician at Penn State, as stating "[y]ou have to have more than a surface knowledge of concussions . . . otherwise you're going to hurt somebody") (alteration in original).

D. Mississippi Has Not Enacted Any Concussion Legislation

Between April and June of 2013, five states enacted concussion laws, bringing the total count of state concussion laws to forty-nine. However, the “big football state” of Mississippi—which is home to prestigious college football programs¹¹¹—still lacks legislation. Although the trend supports an inference that this remaining state will eventually enact concussion legislation, youth athletes in Mississippi cannot afford to wait and risk playing more football seasons without any regulation.

IV. A LACK OF UNIFORMITY AMONG STATE SAFETY REGULATIONS AND A SPORT'S DECLINE: LESSONS FROM PROFESSIONAL BOXING

The regulatory problem in youth football is not an issue of first impression in sports. Professional boxing's health and safety regulatory model is similar to the developing model for the regulation of safety standards for youth football in several respects. First, boxing undeniably includes heightened risk of head injury. Second and most importantly, during the twentieth century, professional boxing, like youth football, lacked (and still lacks) a central governing body that regulated health and safety standards to protect its athletes. Instead, regulation was left to individual states through state athletic commissions.

But boxing also serves as a cautionary tale for youth football. Specifically, state athletic commissions developed vastly different regulations that weakened over time and failed to effectively protect boxers' health and safety. As a result, boxing was more dangerous than necessary, which, in turn, contributed to the decline in the popularity of the sport. Because of boxing's similarities with youth football, the development of boxing's regulatory model is an important and cautionary tale for state legislators as they tackle the concussion problem in youth football. Specifically, professional boxing imparts the lesson that states need to implement uniform minimum health and safety standards to adequately protect youth athletes nationwide and maintain football's popularity and primacy.

A. The Physical Dangers of Boxing Are Similar to Football

Boxing involves a level of violent contact that is arguably rivaled only by football. In a modern boxing match involving two individuals of comparable weight,¹¹² a boxer

111. The big football programs include Mississippi State University, the University of Southern Mississippi, and the University of Mississippi (“Ole Miss”). Mississippi State University and Ole Miss are part of the NCAA Southeastern Conference (SEC), which competes in the top level of the Division I Football Bowl Subdivision (FBS). See SECSports: Official Site of the Southeastern Conference, <http://www.secdigitalnetwork.com/> (last visited Dec. 26, 2013) (listing member schools). The University of Southern Mississippi belongs to the Conference USA (C-USA), which is also Division I FBS. See *About Conference USA, C-USA*, <http://www.conferenceusa.com/ot/about-c-usa.html> (last updated June 19, 2013).

112. The World Boxing Organization (WBO) and the International Boxing Federation (IBF), for example, recognize nine weight classes: fly (up to 112 pounds), bantam (up to 118 pounds), feather (up to 126 pounds), light (up to 135 pounds), welter (up to 147 pounds), middle (up to 160 pounds), light heavy (up to 175 pounds), cruiserweight (up to 200 pounds), and heavyweight (200 pounds and over). INT'L BOXING

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wins the match by inflicting a knockout (“KO”) (which occurs when one boxer delivers a punch that renders the recipient unconscious or down and unable to get up by the appropriate count) or when his opponent suffers a technical knockout (“TKO”) (which occurs when a boxer is deemed unable to defend himself and therefore unable to continue).¹¹³

Roughly one-fifth of boxers eventually suffer some type of neurodegenerative condition, such as Alzheimer’s or Parkinson’s.¹¹⁴ Boxers are also susceptible to the short- and long-term effects associated with CTE (known prior to the 1970s as dementia pugilistica or “punch drunk” syndrome),¹¹⁵ including “slurred speech, memory and motor loss, tremors and lack of balance, and possible personality change.”¹¹⁶ While data on boxers afflicted with CTE is incomplete because the heyday of boxing ended before CTE research evolved,¹¹⁷ as of 2009, medical literature indicates that approximately thirty-nine boxers have been diagnosed with CTE.¹¹⁸

FED’N/U.S. BOXING ASS’N, IBF/USB RULES GOVERNING CHAMPIONSHIP CONTESTS 1 (Apr. 22, 2013), available at <http://www.ibf-usba-boxing.com/rules/contrules>; WORLD BOXING ORG. REGULATIONS § 3, available at <http://www.wboboxing.com/regulations> (last visited Dec. 26, 2013).

113. See JACK ANDERSON, *THE LEGALITY OF BOXING: A PUNCH DRUNK LOVE?* 141 (2007); N.Y. TIMES, *THE NEW YORK TIMES GUIDE TO ESSENTIAL KNOWLEDGE* 938 (2d. ed. 2007) (“The idea in professional boxing is to knock the opponent out. This is accomplished by a knockout, beating the opponent so he cannot stand up within a count of 10, or a technical knockout, beating the opponent to the point where a referee or the ringside doctor decides it would be unsafe for him to continue.”); see also, e.g., ASS’N OF BOXING COMM’RS, UNIFIED RULES OF BOXING (July 24, 2012), available at http://www.abcboxing.com/unified_boxing_rules.html. The potential in boxing for serious injury to the head is obviously great. “The peak force of a heavyweight’s punch has been likened scientifically to being hit by a 13 lb (6 kg) wooden mallet travelling at 20 miles per hour (32km/h).” ANDERSON, *supra*, at 117. Boxing punches to the head or body cause the brain to violently bounce back and forth inside the skull. See Mayur Jayarao et al., *Boxing-Related Head Injuries*, 38 *PHYSICIAN & SPORTS MED.* 18 (2010) (describing the clinical manifestations and pathophysiology of boxing-related head injuries). This may result in concussion or worse. Like football, concussion and other head injuries occur frequently in boxing; this is no surprise, of course, for a sport in which the ultimate purpose is to render the opponent unconscious or unable to functionally defend himself or herself. See FRIEDRICH UNTERHARNSCHEIDT & JULIA TAYLOR-UNTERHARNSCHEIDT, *BOXING: MEDICAL ASPECTS* 16–44 (2010).

114. See ANDERSON, *supra* note 113, at 126. The most famous example is Muhammad Ali’s Parkinson’s diagnosis. See *Doctor Says Ali’s Brain Injuries Due to Boxing*, L.A. TIMES (July 16, 1987), http://articles.latimes.com/1987-07-16/sports/sp-4337_1_muhammad-ali (“Muhammad Ali suffers from Parkinson’s syndrome because of injuries to the brain he sustained during his 22-year boxing career . . .”).

115. See Antoinette Vacca, *Boxing: Why It Should Be Down for the Count*, 13 *SPORTS LAW J.* 207, 218–20 (2006).

116. ANDERSON, *supra* note 113, at 126.

117. See *What Is CTE?*, SPORTS LEGACY INST., <http://sportslegacy.org/research/what-is-cte/> (last visited Dec. 26, 2013).

118. See *id.*

B. The Failed Regulation of the Boxing Industry

Since the early twentieth century, states have been regulating boxers' health and safety through state athletic commissions.¹¹⁹ At the turn of the twentieth century, just as these commissions began assuming regulatory roles in the sport,¹²⁰ boxing was flourishing in the United States, particularly in New York.¹²¹ During the 1920s and 1930s, approximately eight thousand to ten thousand professional boxers were licensed annually.¹²² Since then, the popularity of boxing has undeniably declined. Today, there are fewer than three thousand active boxers in the United States.¹²³ Similarly, New York State licensed over two thousand boxers and premiered nine hundred bouts in 1927.¹²⁴ By 2006, New York—once the center of American boxing—“licensed a paltry 50 pro[fe]ssional] boxers and staged just 38 shows.”¹²⁵

Corruption and crime were partly to blame for boxing's decline.¹²⁶ But so was the deterioration of the health and safety regulatory scheme.¹²⁷ First, private organizations that competed against one another to sanction world championships deprioritized boxer health and safety.¹²⁸ Second, a lack of uniformity in state athletic commissions' health and safety regulations caused boxers to “venue shop” for states with lax

119. See J. Bradley Clair, *Why Federal Preemption Is Necessary to Create Uniform Professional Boxer Safety Standards*, 73 BROOK. L. REV. 1173, 1176 (2008).

120. See Peter E. Millspaugh, *The Federal Regulation of Professional Boxing: Will Congress Answer the Bell?*, 19 SETON HALL LEGIS. J. 33, 40 (1994). In 1911, New York passed the Frawley Laws, which established a New York State Athletic Commission (NYSAC). See ANDERSON, *supra* note 113, at 54. The law delegated to NYSAC the authority to require a boxer to be licensed to fight as a way to better regulate the health and safety standards of the sport and to protect boxers. See *id.* The Frawley Laws were repealed and replaced by the 1920 Walker Laws, which “reconstituted NYSAC with the power to implement a rigorous licensing code regulating all aspects of the sport.” *Id.* Other states soon adopted this statutory scheme, making the United States the world's premier boxing jurisdiction. See Millspaugh, *supra*, at 40–42.

121. See MIKE SILVER, *THE ARC OF BOXING: THE RISE AND DECLINE OF THE SWEET SCIENCE* 35 (2008).

122. See *id.*

123. See *id.*

124. See *id.*

125. *Id.*

126. See *id.* at 204 (“When a promoter wants to insure that a popular champion under his control is granted an easy title fight, the sanctioning organization cooperates by moving an inferior opponent into the ranks of top challengers. The phony rating lends a kind of ‘legitimacy’ to the match and also makes it easier to sell the event to television. A champion vs. a ‘rated’ challenger is a better advertisement than a champion vs. unrated tomato can. Of course the general public is not privy to the back room chicanery that grants an inferior fighter a top ten rating.”); See also JOHN SUGDEN, *BOXING AND SOCIETY: AN INTERNATIONAL ANALYSIS* 40–43 (1996) (discussing the influence of the mob on professional boxing); SILVER, *supra* note 121, at 40–41 (exploring the problem of gamblers and mobsters in professional boxing). Several other causes have been cited as contributors to boxing's decline, including post-World War II economic opportunity and the advent of televised boxing (which facilitated corruption and propagated greed). *Id.* at 36–38. Discussion of these events, however, is beyond the scope of this note.

127. See *infra* Part IV.B.

128. See *infra* Part IV.B.1.

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regulations so they could fight irrespective of their medical condition.¹²⁹ This, in turn, prompted grossly inadequate regulations in states that wanted to attract boxers, host fights, and generate revenue.¹³⁰ As a result, boxing developed a reputation for being unnecessarily dangerous, and the number of participants sharply declined.¹³¹ Although Congress took notice, years of sluggish debate produced only two weak laws that failed to change the status quo.¹³²

1. *Private International Organizations Sidelined Boxer Health and Safety*

Professional boxing has never operated on a standard seasonal schedule. Instead, private boxing organizations sanction boxing contests put together by a promoter when the opportunity arises.¹³³ These organizations rely on boxers to voluntarily opt into the competitions that the organizations sanction, and the organizations “set rules for boxing matches, recommend medical and safety standards, rank the boxers under their control and proclaim their own champions.”¹³⁴ However, they cannot impose their rules or safety standards upon state boxing commissions within the United States.¹³⁵ In fact, “[w]hatever authority and influence they do possess is limited by a lack of uniformity in their policies and their continuing internecine rivalry.”¹³⁶ Moreover, the primary motivations of these organizations are media exposure and profit maximization; a boxer’s physical welfare is only a secondary concern.¹³⁷

129. *See infra* Part IV.B.2.

130. *See infra* Part IV.B.2.

131. *See infra* Part IV.B.3.

132. *See infra* Part IV.B.4.

133. *See* Laurence Laufer, *Uniform Health and Safety Standards for Professional Boxing: A Problem in Search of a Federal Solution?*, 15 COLUM. HUM. RTS. L. REV. 259, 264 (1983–84). First-tier organizations include the World Boxing Association (WBA), the World Boxing Council (WBC), the International Boxing Federation (IBF), and the World Boxing Organization (WBO). Second-tier title organizations (i.e., less prestigious or subordinate championships) include the International Boxing Council (IBC), International Boxing Organization (IBO), World Boxing Union (WBU), International Boxing Union (IBU), International Boxing Association (IBA), World Professional Boxing Federation (WPBF), and World Boxing Foundation (WBF). *See International Boxing Federation*, WIKIPEDIA, http://en.wikipedia.org/wiki/International_Boxing_Federation (last visited Dec. 26, 2013).

134. Laufer, *supra* note 133, at 265 (footnotes omitted).

135. *See id.* (citing H.R. REP. NO. 98-188, pt. 2, at 8 (1983)).

136. *Id.* at 266.

137. *See* SILVER, *supra* note 121, at 203 (“The [private boxing] organizations wield far too much power. There is no effective oversight. They make up their own rules and then break them when it suits their purposes. They place the needs of a few powerful promoters ahead of the welfare of boxers and the sport. Exploitation, incompetence and conflict of interest are standard operating procedure.”). A tragic example of sidelining safety to maximize profits is the notorious bout in 1982 between Ray “Boom Boom” Mancini and Duk Koo Kim for the WBA’s title of lightweight champion of the world, which ended in Kim’s death. Ron Borges, *Twenty-Five Years Is a Long Time to Carry a Memory*, ESPN (Nov. 13, 2007), <http://sports.espn.go.com/sports/boxing/news/story?id=3107079>. Kim was “ill-suited for the No. 1 ranking he’d been given by the WBA. And while his record was 17-1-1, he had but one knockout and had never been tested on a big stage nor faced the kind of force Mancini was at the time.” *Id.*

2. *State Athletic Commissions Raced to the Bottom in Regulating Boxers' Health and Safety*

Historically, state athletic commissions have developed health and safety standards that must be met for a boxer to be eligible for a state boxing license.¹³⁸ A boxer is required to be licensed by the athletic commission to box in that state.¹³⁹ For example, a boxer must be licensed by the Nevada State Athletic Commission to box in Nevada; licensure in Pennsylvania will not allow a boxer to fight in Nevada. The health and safety requirements for licensure during the twentieth century, however, varied greatly between states.¹⁴⁰

Because professional boxing is mobile—that is, boxers are not tied to any specific venue for the duration of their careers—the lack of uniformity in state health and safety regulations allowed boxers to “venue shop” so that an existing injury would not preclude them from boxing.¹⁴¹ For example, if California denied a particular boxer a license to box in California because of an injury the boxer sustained in a previous fight, the boxer could become licensed in another state with lower health and safety regulations that would permit him to box. The absence of a national clearinghouse of information regarding boxer medical history also facilitated venue shopping.¹⁴² In fact, the twentieth century witnessed an exodus of boxers from east coast states (where regulations were more stringent) to western states (typically those that

138. See Laufer, *supra* note 133, at 268.

139. See ANDERSON, *supra* note 113, at 68.

140. See Clair, *supra* note 119, at 1180. Prior to the passage of the Professional Boxing Safety Act in 1996 (discussed *infra* Part IV.B.4), the variations in state athletic commissions' health and safety standards were greater than they may be today.

141. *Id.* A sports editor for the *New York Times* first underlined the problem associated with a non-uniform approach in 1930:

A fighter banned in New York can fight in National Boxing Association territory and that includes twenty-six states. A fighter banned in NBA territory can fight in New York or Pennsylvania. A fighter banned in Pennsylvania can fight in New York. Seldom do these different organisations get together on a verdict. They have different customs, opinions, and rules.

ANDERSON, *supra* note 113, at 64 (citing John Kieran, *Sport of the Times*, N.Y. TIMES, June 30, 1930, at 23). A prime example of modern venue-shopping is the 2002 heavyweight title bout between Mike Tyson and Lennox Lewis. The Nevada State Athletic Association refused to license Tyson to fight in Nevada after “Tyson’s aggressive and threatening demeanor at a pre-fight press conference in New York . . . ended in a fracas. . . . With the bout expected to generate \$200 million, many state commissions lined up to host the fight and it eventually took place in Tennessee.” *Id.* at 74; accord John McCain & Ken Nahigian, *A Fighting Chance for Professional Boxing*, 15 STAN. L. & POL’Y REV. 7, 27–28 (2004) (“[T]his [Tyson venue-shopping] situation demonstrates perfectly the limitations of state regulation in the interstate activity of the sport. Had a federal regulatory entity been in place at the time of Tyson’s tirade in New York City, that entity would have had the option of scheduling a hearing to determine whether Tyson should enjoy the privilege of fighting in this country. Regardless of legality, this situation is indicative of the damaging practices of participants of the professional boxing industry and the need for uniform standards.”).

142. See Laufer, *supra* note 133, at 280.

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embraced the casino industry).¹⁴³ Consequently, states with less onerous regulations received more publicity and more fights and then were able to build a robust market for boxing matches.¹⁴⁴ Conversely, states that enacted more demanding regulations failed to develop a strong market for fights and thus were not attracting boxers or, in turn, protecting many boxers.¹⁴⁵

3. *Boxing's Unsavory Reputation Caused an Acute Decline in Participation*

The failure to properly regulate boxing, which led to venue shopping and race-to-the-bottom regulations, had a profound effect on the popularity and participation rates of the sport. During the latter half of the twentieth century, a chorus of medical scholars called for the abolition of boxing,¹⁴⁶ calling the sport an “obscurity” with lax safety standards that “should not be sanctioned by any civilized society.”¹⁴⁷ The campaign to eliminate boxing, which did not distinguish between professional and amateur boxing, decimated the ranks of amateur boxers (including youths and adults).¹⁴⁸ Recreational boxing facilities—the sport’s farm system for developing new

143. See ANDERSON, *supra* note 113, at 68. “For example, the New York State Athletic Commission requires the maintenance of extensive medical records for each boxer. The boxer must present this information to the Commission before each bout.” Kevin M. Walsh, *Boxing: Regulating a Health Hazard*, 11 J. CONTEMP. HEALTH L. & POL’Y 63, 73 (1994). But in Nevada, in 1994, “a boxer need[ed] only [to] present a less detailed medical record to the Nevada Athletic Commission and only if specifically requested,” which required the Nevada Commission to “track down a boxer it suspect[ed] *might* be physically unfit to fight and request his medical records before stopping a match.” *Id.* (emphasis added).

144. See ANDERSON, *supra* note 113, at 68.

145. See *id.*

146. See Mark Johnson, *Blows Aimed at the Pros Have Amateur Boxing on Ropes, Too*, CHI. TRIBUNE, Nov. 22, 1987, at 18, available at http://articles.chicagotribune.com/1987-11-22/sports/8703280364_1_jerry-dusenberry-amateur-boxing-larry-holmes (noting that the American Medical Association, California Medical Association, American Academy of Pediatrics, World Medical Association, Canadian Medical Association, Canadian Psychiatric Association, American Academy of Neurology, and American Neurological Association all called for the abolition of boxing).

147. *Id.* (internal quotation marks omitted). The dangers of boxing have undeniably increased. For example, career knockout percentages have nearly tripled since 1925—indicative of poorly matched opponents. SILVER, *supra* note 121, at 62. “[Today’s fighters are] the worst crop of fighters in a hundred years and it’s mostly due to a lack of trainers. Fighters are built up on one round knockouts. You have so many knockouts in boxing today it’s horrendous. Mismatches! And the commissions permit it.” *Id.* at 86 (quoting Rollie Hackmer, who was a finalist in the 1952 Olympics and compiled a 168–13 amateur record).

148. See Johnson, *supra* note 146 (“[B]oxing critics rarely distinguish between the amateurs and the pros. They draw their ammunition from [Muhammad] Ali, [Duk Koo] Kim[,] and various medical studies that mostly involve longtime prizefighters [who suffered severe medical consequences or death from participation in the sport]. Yet stray bullets wind up strafing the amateurs, who are far more vulnerable than their professional peers. A 28-year-old fighter who is trying to support a family may not listen to warnings about the dangers of boxing. The mother of a 10-year-old boy, however, might react with far more alarm. ‘The damage has been done by the adversarial groups,’ said Jerry Dusenberry, secretary of the USA-[Amateur Boxing Federation]. ‘It has decimated our ranks We need a 10-year investment period to make an Olympic-style athlete. We get kids who are age 10; it takes a tremendous involvement. What we’re finding is that we’re just not getting junior kids into the program. The well’s drying up. It’s real serious.’”).

talent—began to close because of the bias against boxing as a brutal and unsafe sport.¹⁴⁹ The NCAA, moreover, dropped college boxing in 1961 when Chris Mohr, a University of Wisconsin student, died as a result of a blow sustained during the 1960 NCAA college boxing championship.¹⁵⁰ Boxing's unsavory reputation eventually took its toll on the professional level by drying up the well of future boxers, which facilitated the sharp decline in the number of licensed professional boxers.¹⁵¹

4. *Federal Boxing Legislation: Too Little, Too Late*

Congress proposed reform legislation in the 1970s and 1980s to address boxing's health and safety concerns.¹⁵² It was not until 1996, however, that Congress actually passed a reform bill.¹⁵³ The 1996 Professional Boxing Safety Act (PBSA) was an attempt to uniformly regulate boxer safety.¹⁵⁴ It proscribed boxing in any venue if any state boxing commission had suspended a boxer's license due to a recent knockout,

149. See SILVER, *supra* note 121, at 37 (“In the 1950s many boys’ clubs, neighborhood settlement houses and YMCAs dropped boxing from their amateur athletic programs.”); see also Matt Gagne, *Brooklyn Boxing Has Been on Decline in Recent Years After Several Gyms Close*, N.Y. DAILY NEWS (Jan. 29, 2010, 9:05 PM), <http://www.nydailynews.com/sports/more-sports/brooklyn-boxing-decline-years-gyms-close-article-1.462729> (“Brooklyn gyms [including] the Red Hook Boxing Club, the Sunset Park Boxing Club, the Howard Houses Boxing Club and the Schwartz Center Boxing Club . . . closed because of cost and because people are biased against boxing Some people have a preconceived notion that it’s a brutal sport, and that you shouldn’t be teaching kids to get in the ring and pound on each other.”) (internal quotation marks omitted).

150. SILVER, *supra* note 121, at 48. Chris Mohr was the star boxer at the University of Wisconsin—the “marquee boxing school” of college sports. See Ryan Swanson, *College Boxing Anyone? What’s to Become of College Football?*, CTR. FOR STUDY OF SPORT AND LEISURE IN SOC’Y (May 8, 2012, 3:05 PM), <http://csslsblog.org/2012/05/08/the-end-of-college-football/>. His death, “according to *Sports Illustrated*, [was] the ‘coup de grace’ that killed college boxing.” *Id.* Today, only twenty-five universities have boxing programs. See *id.*

151. See *supra* notes 121–26 and accompanying text. New England (also a hotbed of boxing activity) experienced similar attrition:

Prior to World War II there were nearly 500 professional boxers licensed in Massachusetts. In 1955 the number had dwindled to 238. One year later it was 195. In 2007 there were only 42 professional boxers licensed in Massachusetts. The number of boxing shows has correspondingly declined. In the 1920s between 600 and 900 shows were staged annually throughout New England. Over the past 25 years the average is 30 to 45 shows annually.

SILVER, *supra* note 121, at 37 (footnotes omitted). By 1952, “it was reported that ranks of professional boxers had been depleted by 50 percent.” *Id.* (citing JEFFREY T. SAMMONS, *BEYOND THE RING: THE ROLE OF BOXING IN AMERICAN SOCIETY* 149 (1988)).

152. See McCain & Nahigian, *supra* note 141, at 14 (referring to three boxing-related bills introduced in 1983 that were not adopted).

153. See Professional Boxing Safety Act of 1996, 15 U.S.C. §§ 6301–6313 (2011).

154. See *id.* The purpose of the PBSA was two-fold: “(1) to improve and expand the system of safety precautions that protects the welfare of professional boxers; and (2) to assist State boxing commissions to provide proper oversight for the professional boxing industry in the United States.” *Id.* § 6301.

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series of losses, or denial of medical clearance.¹⁵⁵ Unfortunately, loopholes rendered the reforms largely ineffective.¹⁵⁶

The simple nature of the PBSA, combined with lax enforcement, failed to effectively and uniformly regulate boxer health and safety on the federal level. Although amendments to the PBSA were introduced to bolster its efficacy, Congress was unable to pass them.¹⁵⁷ Thus, neither the states nor the federal government were able to prevent the continued decline of boxing. The same fate may await football if states do not enact uniform minimum concussion health and safety standards for youth football.

155. *See id.* § 6306(a)(2). The PBSA addressed venue shopping, among other issues, by requiring state athletic commissions to establish “[p]rocedures to ensure that . . . no boxer is permitted to box while under suspension from any boxing commission due to: (A) a recent knockout or series of consecutive losses; (B) an injury, requirement for a medical procedure, or physician denial of certification . . .” *Id.* The Act also required the commissions to evaluate both the medical and win-loss records of each boxer prior to a fight to prevent fights by suspending a boxer when necessary. *See Clair, supra* note 119, at 1181. The 2000 Muhammad Ali Boxing Reform Act, Pub. L. No. 106-210, 114 Stat. 321 (2000), amended the PBSA to provide financial protections for boxers, but left the PBSA safety standards largely intact. *See Clair, supra* note 119, at 1182.

156. *See Vacca, supra* note 115, at 214. First, state enforcement of the PBSA was weak. *See Clair, supra* note 119, at 1191. Various high-profile examples of lax licensing practices and medical supervision made a mockery of the PBSA safety provisions. For example, Bradley Rone died fighting Billy Zumbun in a 2003 fight. Rone, a “professional loser,” had twenty-five consecutive losses in three years. *See McCain & Nahigian, supra* note 141, at 29. Nevertheless, the Utah State Athletic Commission licensed Rone, who had been added to the fight card only to pad Zumbun’s win-loss record. *See id.* Based on his fighting record alone, with so many losses, Rone should not have been licensed to fight. *See id.* Other examples include the cases of Tommy Morrison and Leavander Johnson. In 1996, Nevada suspended Morrison for testing positive for HIV. *See Clair, supra* note 119, at 1192. In 2007, however, Morrison was licensed to box in West Virginia after the state athletic commission failed to conduct its own blood tests and accepted the results of a test conducted in Arizona that indicated Morrison was not HIV positive. *See id.* Morrison’s agent later claimed that the negative test results were fraudulent and that Morrison had fought with HIV (and thus endangered his opponent). *See id.* at 1193. Leavander Johnson died in a 2005 fight defending his IBF lightweight title. *See id.* at 1196. Rumors circulated that Johnson had been knocked unconscious while training for the fight, which, if true, should have resulted in an automatic suspension that would have prevented him from participating in the fatal fight. *See id.*

Second, a ruling from a federal judge in Nevada weakened the key safety provision of the PBSA. *See id.* at 1188. Recall that the PBSA forbade any state athletic commission to license a boxer who is suspended by any other state athletic commission. *See id.* In this case, the Nevada Athletic Commission suspended boxer Joe Mesi indefinitely after he suffered two subdural hematomas (cerebral hemorrhages). *See id.* at 1189; *see also Federal Judge Rules Mesi’s Medical Suspension Expired*, ESPN (Dec. 26, 2005, 7:45 PM), <http://sports.espn.go.com/sports/boxing/news/story?id=2265510>. When Mesi challenged his suspension in federal court, the judge held that a boxing license could not be suspended for longer than the boxer was licensed. *Federal Judge Rules Mesi’s Medical Suspension Expired, supra*. Boxing licenses are typically issued for short periods of time so that the commissions can regularly check on a boxer’s health. *See Clair, supra* note 119, at 1189–90. In effect, the ruling took power away from the state athletic commissions to enforce suspensions as they like, or as a boxer’s health would otherwise require, without “making severe concessions such as the extension of the licensing period.” *Id.* at 1189. Nevada could thus continue to protest a boxer’s eligibility only by withholding a license to fight in Nevada, instead of enforcing a suspension that other states would have to recognize. *See id.* at 1190. As a result, if refused a license in one state on medical grounds, a boxer would be free to venue-shop for a license in any of the other forty-nine states. *See id.*

157. The Professional Boxing Amendment Acts were never passed. *See* S. 2550, 107th Cong. (2002); S. 275, 108th Cong. (2004); S. 148, 109th Cong. (2005); S. 84, 110th Cong. (2007); S. 38, 111th Cong. (2009); S. 3306, 112th Cong. (2012); H.R. 5966, 112th Cong. (2012).

C. Boxing Is a Cautionary Tale for Youth Football

If professional boxing had developed uniform minimum health and safety standards, perhaps the state athletic commissions would not have “raced to the bottom” with their regulations, venue shopping by boxers would not have resulted, boxers would have been better protected, and less attrition from the sport would have occurred over the course of the twentieth century. Failure to address the safety issues in youth football could place it on the same trajectory as boxing, especially given the chorus of medical scholars that has begun chanting about the dangers of concussion.¹⁵⁸

To be clear, professional boxing is distinguished from youth football because professional boxers are mobile; that is, they are free to move between jurisdictions. But severe attrition occurred in boxing *despite* this mobility (i.e., despite the fact that boxers could choose to fight under the laws offering the best protection). The prognosis, then, for a *non*-mobile sport with severely restricted venue options is alarming. Youth football players’ *only options* will be to (1) continue to play under their home state concussion law, which poses potential risks to their health, or (2) simply not play at all, contributing to attrition in the sport. Weak and inconsistent concussion laws will not only harm youth football players, but will also foster attrition in the sport because of the players’ immobility. Thus, the boxing story makes a good argument—notwithstanding its differences—for instituting a uniform floor of acceptable health and safety standards in any sport that lacks a central governing body, like youth football.

V. A UNIFORM CODE TO PROTECT YOUTH ATHLETES FROM THE CONCUSSION EPIDEMIC*A. The Benefits of a Uniform Code*

Washington’s Lystedt Law has acted as a model for other states as they have enacted their own youth concussion legislation, but its components and the way other states have adapted and implemented them simply do not protect youth football players from the short- and long-term effects of concussions.

A uniform code would more effectively ensure a minimum standard of concussion prevention, care, and management for youth athletes nationwide. Specifically, elevating concussion legislation into what this note refers to as a Uniform Concussion Management Code (UCMC), drafted by the Uniform Law Commission (ULC), would establish a uniform set of minimum health and safety standards with which states could experiment to further strengthen their laws. The UCMC would also heighten public awareness about the need for a legal solution to the concussion epidemic and apply additional pressure on states to adopt and strengthen protections for youth athletes. Although this note uses football as a vehicle for its argument, this proposed uniform code would encompass *all* youth contact sports to appropriately tackle the concussion epidemic.

158. *See supra* Part II.

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1. *A Uniform Code Would Be More Effective than Federal Legislation*

There are several salient advantages to the UCMC that support its enactment over federal legislation. First, the UCMC would be far more flexible than federal legislation because it would encourage individual states to continue to experiment with legislation and to refine and improve their standards. An evolving understanding of concussion care and management is particularly important because our knowledge of the long-term effects of concussions on the brain is far from robust. While federal regulation would provide a uniform approach, its inflexibility might discourage ongoing innovation in concussion prevention and management at the local level, thus weakening the relationship between the laws and the evolving science.

Second, passing federal legislation typically requires significant compromise, which could lead to weak regulations that appease various state and private interests. A relevant example is the 1996 Professional Boxing Safety Act. There, Senator John McCain's (R-AZ) intent in introducing the bill was to "ensure that a basic but absolutely essential series of safety precautions for professional boxers [were] implemented nationwide."¹⁵⁹ The approach, in fact, was so basic that it did not achieve its purpose of protecting boxers; significant amendments were introduced just eight years later but never passed.¹⁶⁰

Third, the process of drafting employed by the ULC, which has experience in drafting and revising uniform and model codes,¹⁶¹ is also a good fit for this project. The ULC's uniform code drafting process provides flexibility: historically, the ULC has amended or revised its uniform laws as circumstances change and laws need to be updated.¹⁶² The ULC also has standby committees for promulgated uniform laws and commissioners who monitor uniform laws in their respective states.¹⁶³ Moreover, the ULC's drafting process, while still involving some compromise,¹⁶⁴ is open and easily accessible to all interest groups.¹⁶⁵ Because the ULC itself is apolitical, it focuses on formulating uniform laws that reflect a broad consensus and sound

159. 140 CONG. REC. S36 (daily ed. Mar. 25, 1994) (statement of Sen. McCain); *accord* McCain & Nahigian, *supra* note 141, at 19 & n.98.

160. *See supra* Part IV.B.4. A uniform code, in addition, would avoid possible states' rights opposition because it reserves the issue for state control. For a comprehensive discussion of how federalism factors into public health initiatives in the United States, see generally Lydia L. Ogden, *How Federalism Shapes Public Health Financing, Policy, & Program Options*, 18 J. PUB. HEALTH MGMT. & PRAC. 317 (2012) (discussing how federal and state agencies often work together on public health initiatives, but acknowledging that "[h]ome rule is a widely held value in public health . . . [and] [l]ocal agencies generally prefer to act at their discretion, rather than being directed from above").

161. Consider, for example, the Uniform Athlete Agents Act, the Uniform Mediation Act, the Revised Uniform Arbitration Act, and the Uniform Commercial Code. *Acts*, UNIF. L. COMM'N, <http://uniformlaws.org/Acts.aspx> (last visited Dec. 26, 2013).

162. Interview with Edwin E. Smith, Mass. Comm'r, Unif. Law Comm'n, in N.Y.C. (Dec. 1, 2012).

163. *Id.*

164. *Id.*

165. *Id.*

policy.¹⁶⁶ Most importantly, the process employed by the ULC—which includes a study committee, periodic drafting committee meetings, open drafting meetings, the use of an experienced reporter, at least two readings at the annual meeting, and vetting by a style committee—produces an attractive, comprehensive, and effective product.¹⁶⁷

2. *A Uniform Code Would Avoid a Race to the Bottom*

The UCMC would also properly heed the lesson imparted from professional boxing. State athletic commissions never came to a consensus on how to regulate the health and safety of professional boxers, and each state's desire to host fights created race-to-the-bottom regulations, under which boxers venue shopped and fought in disregard of their own welfare.¹⁶⁸ Inadequate regulations are also a problem in youth football. A uniform code would create uniform minimum concussion care standards, under which no youth athlete would be subject to inferior protection simply based on the state in which he plays football. Better protection, moreover, may influence youth players to keep playing football and persuade parents to let them do so.

3. *Uniform Codes Have Proven Successful*

Finally, uniform codes have enjoyed success in the American legal system. For example, the Uniform Commercial Code (UCC) is a comprehensive uniform code addressing aspects of commercial law that has been adopted by all fifty states, the District of Columbia, and the Virgin Islands.¹⁶⁹ The UCC has fundamentally influenced the practice of commercial law by making it uniform, predictable, and sensible.¹⁷⁰ Not all uniform codes, however, have the primary purpose of facilitating interstate transactions. A relevant illustration is the Athlete Agents Act, which is a comprehensive code that protects student athletes and academic institutions by regulating the activities of athlete agents to avoid forfeiting athletic participation eligibility or academic sanctions by, for example, giving athletes or their families prohibited payments or gifts.¹⁷¹

166. *Id.*

167. *Id.*

168. *See supra* Part IV.A.3.

169. *See Uniform Commercial Code (UCC)*, DUKE L. SCH. (May 2013), <http://law.duke.edu/lib/researchguides/ucc>.

170. *See generally* Benjamin Geva, *Uniformity in Commercial Law: Is the UCC Exportable?*, 29 LOY. L.A. L. REV. 1035 (1996).

171. *See Athlete Agents Act Summary*, UNIF. L. COMM'N, <http://www.uniformlaws.org/ActSummary.aspx?title=Athlete%20Agents%20Act> (last visited Dec. 26, 2013). Another example of a successful uniform code that does not focus on interstate transactions but pertains to public health is the Determination of Death Act, which provides a comprehensive and uniform basis for medical declaration of death across all fifty states. *Why States Should Adopt UDDA*, UNIF. L. COMM'N, <http://www.uniformlaws.org/Narrative.aspx?title=Why%20States%20Should%20Adopt%20UDDA> (last visited Dec. 26, 2013) (“All states do not recognize the same legal standards for medical determinations of death. It is possible that an individual could be declared dead in one state and not in another even though, by medical standards, he or she is just as dead in both places [The] status [of] ‘alive’ or ‘dead’ should not depend on the capricious question of immediate locale.”).

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The UCMC would, of course, have weaknesses. First, it would not eliminate concussions from the game of football. Any regulatory remedy, though, would obviously be hard-pressed to eliminate concussions. Second, the UCMC would not have legal effect in any state that refused to adopt it, and states are not obligated to adopt a uniform code. A uniform concussion code, however, would provide a platform to push for states to continue to improve health and safety in youth contact sports. Third, states may also adopt weaker versions of the UCMC and simply perpetuate the problem of states not enacting adequate legislation. But the UCMC would heighten awareness about acceptable minimum standards and apply considerable pressure on politically accountable state legislatures to adopt the code in full. Finally, the UCMC may be expensive for schools and leagues to implement.¹⁷² Yet, the potential price tag must be considered in light of the hidden liability, insurance, and health care costs associated with substandard concussion regulations—the combined total of which would likely surpass the cost of the code.¹⁷³ Some of the UCMC’s objectives, moreover, only require adjustments to already functioning state mandates

172. For instance, one component of reform that this note supports is a requirement that a neutral school or league official—such as an athletic trainer or school nurse—make the removal-from-play decision if a youth athlete is suspected of sustaining a concussion. *See infra* Part V.B.1. To hire and retain such individuals, however, requires finding considerable room in an organization’s budget: the U.S. Bureau of Labor Statistics (BLS) reports that the national median salary for an athletic trainer in 2010 was \$41,600. *Occupational Outlook Handbook: Athletic Trainers*, U.S. BUREAU OF LAB. STATS., <http://www.bls.gov/ooh/Healthcare/Athletic-trainers.htm#tab-1> (last visited Dec. 26, 2013). Full-time registered nurses, according to the BLS, earned a median salary of \$64,690 in 2010. *Occupational Outlook Handbook: Registered Nurses*, U.S. BUREAU OF LAB. STATS., <http://www.bls.gov/ooh/Healthcare/Registered-nurses.htm> (last visited Dec. 26, 2013). And the cost of an athletic trainer or school nurse would be only one part of the overall cost. Other UCMC regulatory reform components discussed in Part V.B will also cost an indeterminate amount of time and money.

173. On August 29, 2013, the NFL settled a major consolidated concussion lawsuit addressing thousands of ex-players’ complaints that the NFL actively concealed medical information about concussions. *See* Lester Munson, *In the End, Settlement Not Surprising*, ESPN (Aug. 29, 2013, 5:04 PM), http://espn.go.com/nfl/story/_/id/9612467/questions-answers-nfl-retired-players-lawsuit-settlement. This is not, however, the end of the concussion discussion for the NFL. *See* Bill Barnwell, *What You Need to Know About the NFL’s \$765 Million Concussion Settlement*, GRANTLAND (Aug. 29, 2013, 3:53 PM), http://www.grantland.com/blog/the-triangle/post/_/id/72867/what-you-need-to-know-about-the-nfls-765-million-concussion-settlement. There are other lawsuits pending (e.g., one filed by recently retired players, including Daunte Culpepper and Clinton Portis), and there will be more lawsuits from future players. *See id.* While the effect of the recent settlement is unclear, if current or future concussion lawsuits are tried and players are successful, state colleges and public high schools may then find themselves vulnerable to expensive litigation. “If ex-players start winning judgments, insurance companies might cease to insure colleges and high schools against football-related lawsuits. Coaches, team physicians, and referees would become increasingly nervous about their financial exposure in our litigious society.” Tyler Cowen & Kevin Grier, *What Would the End of Football Look Like?*, GRANTLAND (Feb. 9, 2012), http://www.grantland.com/story/_/id/7559458/cte-concussion-crisis-economic-look-end-football. “As our broader health care sector indicates . . . insurers don’t like to go where they know they will take a beating. That means just about everyone could be exposed to fear of legal action.” *Id.*; *see also* Ken Belson, *Concussion Liability Costs May Rise, and Not Just for N.F.L.*, N.Y. TIMES, Dec. 11, 2012, at B10, available at <http://www.nytimes.com/2012/12/11/sports/football/insurance-liability-in-nfl-concussion-suits-may-have-costly-consequences.html> (“Insurers will look at the dangers and might look at increasing premiums, and the insurers and the insured will ask whether the game is worth a candle.”) (statement of Marquette University law professor John Kircher).

(for example, requiring students to attend the same training required for coaches). Overall, the cost-benefit analysis should weigh in favor of better protection by way of adopting a uniform code.¹⁷⁴

B. Goals of the UCMC

The UCMC should have three goals: (1) distill and adopt best practices from existing state laws based on the Lystedt Law; (2) broaden the legislative reach of the Lystedt Law components by resolving the ambiguities in who the law covers; and (3) expand the existing Lystedt Law components to include additional components that will enhance states' abilities to protect youth athletes from the negative effects of concussions.

1. Distill and Adopt Best Practices

The UCMC should include all three components of the Lystedt Law. That is, the UCMC should require concussion education programs, removal from play, and medical clearance before a player is permitted to return to the field. The UCMC, however, should elaborate upon each component and address the concerns created by the variations that currently exist.

First, the UCMC should promote a holistic education program in the state. A medical or public health entity that has expertise in educational health programs, such as the state department of health, should be responsible for developing the concussion education program. Additionally, training programs for concussion care and prevention should be a necessary element of education. Each state should require that all appropriate individuals receive training annually, including (but not limited to) youth athletes, parents, coaches, athletic directors, school nurses and trainers, primary care physicians, and other football personnel and volunteers.

Second, in addition to requiring removal of a concussed or potentially concussed athlete from play, the UCMC should unambiguously designate one *neutral* school or league official to make removal decisions, such as an athletic trainer or school nurse. This would reduce potential conflicts of interest that can arise when coaches or parents, who may have an interest in the youth athlete continuing to play, are making removal decisions.

Third, the drafters of the UCMC should consider requiring that health care professionals who are eligible to grant medical clearance under the statute be specifically licensed in the care and management of concussions.¹⁷⁵

174. In addition to brain injury, states should consider the effects of attrition in sports due to fear of concussion because attrition may have some surprising hidden costs. If attrition significantly erodes the number of youth athletes, lack of fitness and obesity could be an additional social and economic concern.

175. Notably, the PSACA preferred medical clearance by individuals *experienced* (but not necessarily licensed) in the care and management of concussions. Protecting Student Athletes from Concussion Act of 2011, H.R. 469, 112th Cong. § 3(1)(B)(i) (2011) ("The term 'health care professional' means a physician, nurse, certified athletic trainer, physical therapist, neuropsychologist or other qualified individual who . . . is . . . licensed . . . by the State to provide medical treatment [and] is experienced in the diagnosis and management of traumatic brain injury among a pediatric population . . .").

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2. *Resolve the Lystedt Law's Ambiguities*

As mentioned above, Washington's Lystedt Law includes ambiguities that weaken its effectiveness and restrict its scope. Specifically, the law does not define "youth athlete" or explicitly include private school or recreational leagues.¹⁷⁶ The UCMC should clearly apply to all youth athletes regardless of where they play.

i. *Broadly Define "Youth Athlete"*

Currently, there is wide variation under state concussion laws as to the definition of "youth athlete" and what age demographic should be covered by that term. Nebraska arguably reaches the largest population.¹⁷⁷ Its legislation applies to anyone under the age of twenty, which seemingly does not preclude college athletes.¹⁷⁸ On the other hand, some states, such as Louisiana and Maryland, cap the age at eighteen, which excludes nineteen-year-old high school seniors and younger college athletes who have similar brain vulnerabilities as athletes who are eighteen or younger.¹⁷⁹ Other states, such as Utah and Nevada, cap the age at seventeen, which omits a good majority of high school seniors because many are eighteen.¹⁸⁰ Moreover, some states delineate an age range that actually excludes younger players. Colorado, for example, defines youth athletes as those ages eleven to eighteen.¹⁸¹ (Recall that youth recreational leagues can start as early as six.¹⁸²) Similarly, Indiana's legislation only applies to high school students, and North Carolina's applies only to high school and middle school students, excluding younger players.¹⁸³

The UCMC should recognize that brain development does not align with scholastic categorization, and that there is no good reason to exclude some youth athletes solely because they have advanced from middle school to high school or high school to college.¹⁸⁴ The UCMC should err on the side of caution and follow Nebraska's liberal definition of "youth athlete," which includes all players under the

176. *See id.*

177. *See* NEB. REV. STAT. ANN. § 71-9105(1) (West 2013).

178. *See id.* ("Any city, village, business, or nonprofit organization that organizes an athletic activity in which the athletes are nineteen years of age or younger and are required to pay a fee to participate in the athletic activity or whose cost to participate in the athletic activity is sponsored by a business or nonprofit organization shall . . .").

179. *See* WIS. STAT. ANN. § 118.293(1)(c) (West 2013); COLO. REV. STAT. ANN. § 25-43-102(3) (West 2013); MD. CODE ANN., EDUC. § 7-433(a)(3) (West 2013); LA. REV. STAT. ANN. § 40:1299.182(3) (2013).

180. *See* UTAH CODE ANN. § 26-53-102(3) (West 2013); NEV. REV. STAT. ANN. § 455A.200(4)(b) (West 2013).

181. *See* COLO. REV. STAT. ANN. § 25-43-102(3) (West 2013).

182. *See About Us*, POP WARNER FOOTBALL, http://www.popwarner.com/About_Us.htm (last visited Dec. 26, 2013).

183. *See* IND. CODE ANN. §§ 20-34-7-1, 20-26-14-1 (West 2013); N.C. GEN. STAT. ANN. § 115C-12(a)-(c) (West 2013).

184. *See* Lebel & Beaulieu, *supra* note 45, at 10937, 10943 (finding that brain maturation, including the areas of the brain that control complex cognitive processing, continued through young adulthood).

age of twenty, regardless of scholastic division, even though college players may be included. This approach would be consistent with the CDC data showing that youths between fourteen and nineteen experience the highest rate of concussion.¹⁸⁵

ii. Explicitly Include Private Schools and Recreational Leagues

Although forty-nine states have concussion laws, very few apply to recreational leagues and most only reach private schools through optional membership in state interscholastic athletic associations.¹⁸⁶ The majority of state concussion laws apply only to school-district-sponsored (i.e., public school) athletic programs. For example, in California, “[i]f a school district elects to offer an athletic program, the *school district* shall comply with [the requirements].”¹⁸⁷ While covering public schools reaches a significant number of student athletes, omitting recreational leagues completely and covering private schools at their option unreasonably restricts the scope of the laws. Therefore, the UCMC should explicitly mandate that public and private schools, as well as recreational leagues, comply with its requirements.

185. See *Injury Prevention & Control: Traumatic Brain Injury*, *supra* note 15. Broadening the youth demographic to capture eighteen- and nineteen-year-olds might also have the positive effect of some colleges complying wholesale with the law to the benefit of older players too.

186. Alabama’s law very clearly applies to recreational bodies:

The governing body of each sport *or recreational organization* shall develop guidelines and other pertinent information and forms to inform and educate youth athletes and their parents or guardians in their program of the nature and risk of concussion and brain injury.

ALA. CODE § 22-11E-2 (2013) (emphasis added). Other states acknowledge recreational programs but do not require compliance. For example, Idaho’s and Maine’s laws *permit* organized youth sport organizations and associations that sponsor, promote, or otherwise administer youth sport organizations to use the guidelines, information, and forms *required* for interscholastic programs. IDAHO CODE ANN. § 33-1625(7) (West 2013) (“Any youth sport organization or association in this state may comply with this section. If a youth sport organization or association is in full compliance with this section, then the youth sport organization or association shall be afforded the same protections from liability in a civil action pursuant to subsection (6) of this section.”); 2012 Me. Laws Ch. 688, § 6 (“The Commissioner of Education, school administrative units and private schools enrolling more than 60% of their students at public expense in this State may share with statewide and local organizations that sponsor sports and athletics the model policy, information, training, protocols and forms developed under section 4 regarding the management of concussive and other head injuries in school activities and athletics.”). Arizona’s law, on the other hand, excludes recreational leagues unless they compete on property owned by a school district. See ARIZ. REV. STAT. ANN. § 15-341(24)(b) (2013) (“A group or organization that uses property or facilities owned or operated by a school district for athletic activities shall comply with the requirements of this subdivision.”). In March 2013, the Virginia General Assembly failed to pass a bill that would have revised its laws to include recreational leagues. See *A Step Too Far or Needed Regulation?*, DAILY NEWS LEADER (Staunton, Va.), Mar. 10, 2013, at A (reporting [Virginia State Delegate] Steve Landes’s (R-Weyers Cave) sentiment that he “isn’t opposed to youth leagues having concussion policies, just government requiring those policies to be in place”). North Dakota is one of the few states with a law that explicitly applies to private schools. Its law requires “[e]ach school district *and nonpublic school* that sponsors or sanctions any athletic activity in [the] state and requires a participating student to regularly practice or train, and compete, is subject to the terms of a concussion management program.” N.D. CENT. CODE ANN. § 15.1-18.2-04 (West 2013) (emphasis added).

187. CAL. EDUC. CODE § 49475 (West 2013) (emphasis added).

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3. *Building upon the Lystedt Law's Components*

The UCMC should also expand on the Lystedt Law by adding components to enhance youth concussion safety and care. These new components should include (1) return-to-classroom guidelines, (2) baseline or comparative testing, (3) state concussion reporting and registries, (4) periodic review systems, and (5) enforcement mechanisms.

The first additional component should be return-to-classroom guidelines. While recovering from concussion, “student-athletes [are] faced with the challenge of keeping pace in the classroom [and] [p]ostconcussive symptoms often interfere with the student-athlete’s ability to do academic work, participate in a classroom setting, and function interpersonally with peers.”¹⁸⁸ Moreover, academic stress and overstimulation can seriously interfere with concussion recuperation, and lack of rest and cognitive stress can actually exacerbate concussion symptoms.¹⁸⁹ Consider that Austin Trenum spent the forty-eight hours prior to his suicide studying and staying up, draining his brain of energy as he was recuperating from a concussion.¹⁹⁰ Return-to-classroom guidelines would require that a concussed youth athlete receive necessary cognitive rest and would include provisions to ease them back into the rigor of academic study without causing additional harm during recovery.

A comprehensive approach to recovery necessitates academic accommodations,¹⁹¹ and currently only two states impose guidelines for return-to-classroom activity.¹⁹² School programs “can be designed to deal with both athletic *and* educational concerns while helping to ensure safety in competition and proper support for an injured student-athlete pursuing academic work during recovery.”¹⁹³ State education departments should also work with state health departments to couple information about returning to play with information about returning to the classroom. The UCMC should thus require schools to allow for excused absences from class, assignment extensions, postponed or extended test-taking, accommodations for oversensitivity to light or noise, use of a reader for assignments, and use of a scribe

188. McGrath, *supra* note 44, at 492, 494.

189. *See id.* at 494.

190. *See* Hruby, *supra* note 1.

191. *See* Paul McCrory et al., *Consensus Statement on Concussion in Sport: The 4th International Conference on Concussion in Sport Held in Zurich, November 2012*, 47 *BRIT. J. SPORTS MED.* 250, 254 (2013) (“[T]he concept of ‘cognitive rest’ [is] highlighted with special reference to a child’s need to limit exertion with activities of daily living that may exacerbate symptoms. School attendance and activities may also need to be modified to avoid provocation of symptoms. Children should not be returned to sport until clinically completely symptom-free, which may require a longer time frame than for adults.”); *see also* McGrath, *supra* note 44, at 494.

192. New York mandates that the New York State Commissioners of Health and Education “provide guidelines for limitations and restrictions on school attendance and activities for pupils who have sustained mild traumatic brain injuries, consistent with the directives of the pupil’s treating physician.” N.Y. EDUC. LAW § 305(42)(a) (McKinney 2013). Maryland also requires “[a]ppropriate academic accommodations for students diagnosed as having sustained a concussion or head injury.” MD. CODE ANN., EDUC. § 7-433(b)(1) (West 2013).

193. McGrath, *supra* note 44, at 493 (emphasis added).

for note-taking.¹⁹⁴ “Student-athletes should be reminded that achieving full recovery is crucial before returning to sport activity and that school personnel will work with them to accommodate their academic needs during recovery.”¹⁹⁵

The second new component should encourage baseline or comparative neurological testing at the beginning of each season. Currently, only Rhode Island encourages baseline testing, and it is not yet a requirement.¹⁹⁶ Baseline tests offer “an individualized [neurological] comparison of an athlete’s status with regard to verbal memory, visual memory, reaction time, and processing speed before the start of a sports season to his or her performance on these same measures after a suspected concussion.”¹⁹⁷ These paper- or computer-based tests allow concerned individuals (athletes, coaches, physicians, etc.) to make more informed decisions about immediate return to play, as well as an athlete’s long-term future in the sport.¹⁹⁸

The third new component under the UCMC should be the establishment of a statewide reporting registry, which would require officials to aggregate data on the frequency of concussions. The current lack of data about concussions makes it difficult to measure the extent of the issue, both at the state level and nationwide.¹⁹⁹ A reporting requirement would facilitate the evaluation of the effectiveness of concussion laws while recognizing the relationship between the law and concussion research.²⁰⁰

Fourth, under a related new component, states would establish a system to review and evaluate data on the frequency of concussions and confirm the efficacy of each state’s concussion laws. Only a handful of states have established an entity or system to review the effectiveness of their legislation. New Jersey, for example, requires school districts to review and update their concussion policies annually “to ensure that [the policy] reflects the most current information available on the prevention, risk, and treatment of sports-related concussions and other head injuries.”²⁰¹ Additionally, physicians have made remarkable advancements in understanding both the short- and long-term effects of concussion on the brain. Accordingly, legislation

194. *See id.* at 494–97.

195. *Id.* at 497.

196. *See* R.I. GEN. LAWS ANN. § 16-91-3(c) (West 2013) (“School districts are encouraged to have all student athletes perform baseline neuropsychological testing, computerized or otherwise.”).

197. Lueke, *supra* note 11, at 497.

198. *See What Is Baseline Assessment*, SPORT CONCUSSION, <http://sportsconcussion.com/pdf/misc/BaselineAssesment.pdf> (last visited Dec. 26, 2013).

199. *E.g.*, Jim Nolan, *New Va. Law Raises Awareness for Head Injuries in High Schools*, RICHMOND TIMES DISPATCH (Jan. 17, 2013, 11:29 AM), <http://www2.timesdispatch.com/news/virginia-politics/2012/sep/25/tdmain01-chesterfield-high-schoolers-suffered-180-ar-2231434/> (“The absence of statewide, quantifiable data makes it more difficult to measure the extent of the issue across the commonwealth and evaluate the effectiveness of local concussion policies to identify areas where education or monitoring could be improved.”).

200. *See id.* Naturally, reporting would be anonymous to protect individuals’ privacy.

201. N.J. STAT. ANN. § 18A:40-41.3 (West 2013).

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that does not provide for periodic review ignores the reality that concussion care is both imperfect and constantly evolving.

Finally, perhaps the most challenging new component is that the UCMC should contemplate enforcement mechanisms. Currently, the majority of state concussion laws do not provide for any type of civil liability or other penalty for noncompliance.²⁰² In fact, some state concussion laws explicitly state that their law does *not* create any liability for, or cause of action against, any person.²⁰³ Some states, however, attempt to reinforce their legislation by offering civil liability immunity for volunteers.²⁰⁴

Given that the imposition of civil liability is largely disfavored, the UCMC should model its enforcement provision on Pennsylvania's unique legislation, which couples immunity provisions with penalties related to coaching suspensions.²⁰⁵ Pennsylvania's legislation requires a school's governing body to establish the following minimum penalties for a coach's noncompliance with the concussion law's removal-from-play or medical-clearance requirements:

- (1) For a first violation, suspension from coaching any athletic activity for the remainder of the season.
- (2) For a second violation, suspension from coaching any athletic activity for the remainder of the season and for the next season.
- (3) For a third violation, permanent suspension from coaching any athletic activity.²⁰⁶

202. When it comes to regulating sports concussions, liability is certainly on state legislators' minds, especially as some states begin to review their laws. *See, e.g., A Step Too Far or Needed Regulation?*, *supra* note 186 (“[Virginia State] Delegate Steve Landes, R-Weyers Cave, opposed the bill [to expand coverage of the law to recreational leagues]. He said the liability issue did place an additional burden on youth leagues by raising the possibility that coaches or league officers could face unknown ramifications.”).

203. *E.g.*, Wis. STAT. ANN. § 118.293(6) (West 2013) (“This section does not create any liability for, or a cause of action against, any person.”); 24 PA. CONS. STAT. § 5323(i) (West 2013) (“(1) Except as provided under paragraph (2), nothing in this act shall be construed to create, establish, expand, reduce, contract or eliminate any civil liability on the part of any school entity or school employee. (2) Any coach acting in accordance with subsections (c) [removal] and (d) [return to play] shall be immune from any civil liability.”).

204. For example, Oklahoma's regulation reads: “A volunteer who authorizes a youth athlete to return to participation shall not be liable for civil damages resulting from any act or omission in the rendering of such care, other than acts or omissions constituting gross negligence or willful or wanton misconduct.” OKLA. STAT. ANN. tit. 70, § 24-155(C) (West 2013). However, this just reiterates the federal Volunteer Protection Act of 1997 (VPA), which provides that nonprofit and governmental volunteers (which includes public education institutions) are immune from liability if, *inter alia*, they are acting within the scope of the volunteer's responsibility and have not caused harm criminally, willfully, recklessly, or by gross negligence. 42 U.S.C. § 14503 (2011). The VPA also preempts any state law that imposes liability on nonprofit or government volunteers. *Id.* § 14501. Volunteers in school football programs and any volunteers for recreational leagues that operate as nonprofits fall under the statute's scope. *See id.*; *see also* Joe Frolo, *Becoming 501c3 Tax-Exempt Helps Leagues Find Financial Security*, USA FOOTBALL (Apr. 25, 2012), <http://usafootball.com/blogs/general-articles/post/5397>. Therefore, at least for recreational leagues and some school programs, an enforcement requirement that includes civil liability under the UCMC that permits liability for volunteers involved in youth sports must be reconciled with the VPA.

205. *See* 24 PA. CONS. STAT. § 5323.

206. *Id.*

Pennsylvania's law singles out coaches, but the UCMC drafters should consider whether other competition penalties, such as game forfeiture, would be successful as enforcement mechanisms for all requirements of the code. For example, it may be effective to impose game forfeitures if schools are not implementing return-to-classroom procedures. While defining these enforcement mechanisms will be a challenge, they are necessary: without broad enforcement mechanisms, the UCMC will have no teeth.

These five additional components—return-to-classroom guidelines, baseline or comparative testing, state concussion reporting and registries, periodic review systems, and enforcement mechanisms—will better protect athletes in youth contact sports, though they may also be controversial. Most states rejected these components (if they considered them at all) when drafting the legislation that led to their current laws.²⁰⁷ The UCMC proposed here, in contrast, would be forward-looking and promote a message of better care and management for concussions by strengthening existing concussion law components and adding the new components discussed above.

C. A Role for the National Football League in the Development of a Uniform Concussion Model Code

A partnership between the NFL and the ULC (together with medical expertise from, for example, the American Medical Association) would bring together each entity's expertise to create an efficacious uniform youth concussion law. The NFL would be the best organization to lobby for and head the initiative to create a uniform concussion code for the states. Not only is it well-versed in the concussion problem internally, it is also the most visible organization for the sport with the highest rate of youth concussions.²⁰⁸ The NFL has a nationwide presence, with teams located all over the country, its own television network, a dominating presence on other cable networks that have twenty-four hour sports coverage, and its own Sirius satellite radio station—not to mention the market presence of each individual NFL team in its home region. The NFL also works with the NFL Players Association (NFLPA) to promote youth programs.²⁰⁹

The NFL has a vested interest in evolving and advancing stronger concussion laws. If youth players start leaving football due to fear of concussion, the concussion epidemic may threaten the size and quality of future recruiting pools for the NFL. In

207. See *Traumatic Brain Injury Legislation*, *supra* note 19.

208. See *supra* Part II.

209. For example, “[i]n 1998, the NFL and [NFLPA] formed the NFL Youth Football Fund . . . which supports the game at the youth level, promotes positive youth development and ensures the health of football in future generations.” *NFL Youth Football Fund*, NFL (Aug. 9, 2013, 7:10 PM), <http://www.nfl.com/news/story/0ap1000000228351/article/nfl-youth-football-fund>. Today, this foundation is underfunded. In fact, although the foundation was originally endowed with \$175 million, the assets have dwindled and large recreational organizations such as Pop Warner have not received funds in over two years. See Tom Farrey, *NFL Youth Football Fund Faces Crisis*, ESPN (Aug. 28, 2012, 3:07 PM), http://espn.go.com/espn/otl/story/_/id/8294350/nfl-youth-football-fund-once-flush-millions-faces-safety-crisis-depleted-funds-options.

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fact, because the players are not mobile, youth football is particularly vulnerable to attrition from the game as a result of the growing awareness of short- and long-term concussion maladies. At the youth level, a child's athletic development, training, and competition in a sport occur almost entirely in one state, and a family will generally not pick up and move to another state to benefit from marginally more protective concussion laws. Thus, the real question is whether a youth will play football at all as a result of concerns about concussions.²¹⁰ And because sports at the youth level may be fungible—that is, a youth athlete can readily switch from playing one sport to another—a fear of concussion may result in attrition in football, in favor of sports that carry less risk of concussion, and lead to a decline in football's popularity.

Even seasoned and retired professional football players have gone on the record to question the safety of the sport. For example, Kurt Warner, a former quarterback for the St. Louis Rams and the Arizona Cardinals, has publicly stated that he does not want his children to play football.²¹¹ Accordingly, it is in the NFL's interest to make the game of football safer for youth athletes so that fear of brain injury does not keep the next generation from playing the game.

VI. CONCLUSION

The game of football is facing a technical knockout on the multibillion-dollar stage it now occupies. The relationship between concussions and brain damage has changed the discussion about football. And as players and their families, officials, and spectators have become better educated, concern and anxiety have begun replacing the competitive adrenaline and excitement brought on when witnessing head-to-head tackles.

In the heartbreaking weeks and months after Austin Trenum's death, his parents, Gil and Michelle, became more educated and active about concussion prevention and care. They recognized the harm in academic overexertion and sought grief counseling to deal with the blame they placed on themselves for pushing Austin to complete his homework on time during recovery.²¹² Michelle began maintaining a spreadsheet, tracking sports concussions and teen suicides, correlating victims and recent brain trauma, and finding patterns based on the players' positions.²¹³ Gil, a member of the Prince William County School Board, relentlessly pushed through updated concussion policies, including mandatory cognitive rest and an hour-long seminar that students must attend with parents.²¹⁴ Both Gil and Michelle also began acting as civilian

210. That is, if a youth player or parent in Texas dislikes the Texas concussion law, it would be unlikely that they would permanently move to another state with a marginally better law (for example, Rhode Island) just to play football. Rather, the decision is made to cease playing football altogether. *See supra* Part IV.C.

211. *See* Mike Freeman, *NFL Isn't in Danger of Dying Soon, But You Can Hear Whispers*, CBSSPORTS.COM (May 7, 2012, 6:10 AM), <http://www.cbssports.com/nfl/story/18982393> (reporting that Kurt Warner would not let his kids play football).

212. *See* Hruby, *supra* note 1.

213. *See id.*

214. *See id.*

enforcers of Virginia's concussion law, attending sporting events and pressing flippant or ignorant parents to remove their children from play and bring them to a doctor if they had suffered (or may have suffered) a concussion.²¹⁵ The Trenums believed that "more" concussion regulation would have saved Austin's life.²¹⁶

Nevertheless, the Trenums did not immediately recoil from the sport. Austin's youngest brother, Walker, continued to play football.²¹⁷ Not wanting to give in to their emotions, Gil and Michelle let him—but with better safeguards in place.²¹⁸ When Walker eventually did sustain a concussion, the Trenums were adequately prepared to pull him from the field, seek immediate help from a physician, look for warnings signs during recovery, and make sure that Walker received adequate rest. Ignorance would not fail them twice.²¹⁹ Walker recovered and stuck with football for a while, but after considering all of the relevant information, he and his parents eventually decided that he would quit football and play another sport.²²⁰

Attrition in football is a concern, and Walker's story shows that information is power. This note argues that youth athletes deserve to know that they are protected under the law to the greatest extent possible from the potential effects of concussion. To be sure, there is no silver bullet; concussions will never be completely eliminated from contact sports and, to the extent possible, we should not change the game. But states nevertheless must confront the difficult quandary of how to effectively regulate the health and safety of youth football players. The UCMC proposed in this note is the approach that would most effectively incorporate emerging science, which, in turn, would ensure that youth athletes and their families have the information necessary to make informed decisions about their health and future. In doing so, the concussion epidemic plaguing youth players may be curtailed.

The development of the UCMC and its adoption by the states would recognize the intrinsic problem of concussions in contact sports, while also signaling to youth athletes, parents, and fans that concussions will not unseat football from its primacy in American sports. Future generations would be more educated, better protected, and less hesitant to join a youth football team thanks to the numerous safeguards in state laws based on the UCMC. In the end, Austin Trenum's story, and others like his, will have contributed to improving the game of football, rather than provoking a corrosive trend of attrition in the sport. A uniform code will prevent the game of football—and its youth players—from being down for the count.

215. *See id.*

216. *Id.*

217. *See id.*

218. *See id.* For example, Walker wore a helmet with built-in software designed to light up the chinstrap whenever he suffered a hit forceful enough to cause a head injury. *See id.*

219. *See id.*

220. *See id.*