

WARNING! CHILDREN'S BRAINS IN DANGER: LEGISLATIVE APPROACHES TO CREATING UNIFORM RETURN-TO-PLAY STANDARDS FOR CONCUSSIONS IN YOUTH ATHLETICS

Ryan McLaughlin*

I. INTRODUCTION

Zack Lystedt was a rising football star in Maple Valley, Washington, when, in October 2006, he suffered a concussion while making a tackle during a game, changing his life forever.¹ Despite seeing the young athlete grab his head in pain, Zack's coaches put the thirteen-year-old back in the game just several plays later.² The game ended with Zack collapsing into his father's arms and being quickly airlifted to a hospital for emergency, life-saving surgery on both sides of his brain.³ As a result of his injuries, Zack spent three months in a coma and twenty months on a feeding tube, had to relearn how to talk, and likely still struggles to stand up out of his wheel chair.⁴ Zack's young life was completely turned around because the proper precautions were not taken when he showed symptoms of a possible concussion.⁵

Thankfully, Zack Lystedt's tragic story has a silver lining. In 2009 Zack's struggle led to the enactment of the Zackery Lystedt Law in Washington State.⁶

* J.D. Candidate, 2012, Indiana University Robert H. McKinney School of Law; B.S., 2009, Indiana University - Bloomington. The author would like to thank the staff of the Indiana International & Comparative Law Review for their help in publishing this Note.

1. Matt Markovich, *Teen, Family Reach Settlement for Brain Injury*, KOMONEWS.COM (Sept. 16, 2009), <http://www.komonews.com/news/59563802.html?>; Tim Booth, *5 Years After Injury, Zack Lystedt to Graduate*, WASH. TIMES (June 8, 2011), <http://p.washingtontimes.com/news/2011/jun/8/5-years-after-injury-zack-lystedt-to-graduate/>.

2. *Id.*

3. Ctr. for Disease Control & Prev. [CDC], *The Lystedt Law: A Concussion Survivor's Journey*, CDC, <http://www.cdc.gov/media/subtopic/matte/pdf/031210-Zack-story.pdf> (last visited Dec. 19, 2011); Richard H. Adler, Esq. & Stanley A. Herring, MD, *Changing the Culture of Concussion: Education Meets Legislation*, 3 PM&R S468, S468 (2011).

4. CDC, *supra* note 3; *see also* Booth, *supra* note 1.

5. *See* CDC, *supra* note 3.

6. *Id.*; WASH. REV. CODE § 28A.600.190 (2009). Zack Lystedt's injury also inspired one of the first sports concussion centers in the United States, the Seattle Sports Concussion Program at Harborview Medical Center. *See* Luke Duecy, *Boy's Story Inspires New Concussion Program*, KOMONEWS.COM (July 14, 2009), <http://www.komonews.com/news/50813637.html>. As a partnership between the University of Washington School of Medicine, Seattle Children's Hospital, and Harborview Medical Center, the Program is composed of health care professionals in neuropsychology, rehabilitation medicine, and sports medicine, and it aims to provide education and awareness on sports-related concussion prevention as well as proper treatment and rehabilitation for concussion injuries. *See* Press Release, Gov. Comm'n Office, Gov.

As one of the most stringent return-to-play laws of its kind,⁷ the legislation aims to protect young athletes by requiring that any individual who has or is suspected of having a concussion be removed from the game or practice until he or she is officially cleared by a licensed healthcare professional trained in evaluating concussions.⁸ The law also provides funding for educational programs to help young athletes, parents, and coaches better recognize the signs and symptoms of concussions.⁹ Other states have followed suit and enacted similar laws,¹⁰ and the U.S. Congress has considered two bills¹¹ that would create an enforceable national standard similar to Washington's Lystedt Law.¹²

Zack Lystedt's story and others have generated a growing wave of concern surrounding concussions and traumatic brain injuries in sports at all levels in the United States.¹³ After decades of operating with an unspoken "shake it off" and "play through the pain" mentality, the National Football League (NFL) has begun to properly address traumatic brain injury precautions with its players and is leading the charge in injury policy reform.¹⁴ But the dangers remain for youth athletes, who not only are exposed to greater risks because of their developing brains but also are unable to accurately and consistently recognize the signs and symptoms of concussions.¹⁵ As a result, many of the concussions suffered by young athletes go unreported and, therefore, untreated.¹⁶ The enacted state and proposed federal return-to-play and concussion management legislation in the United States represents promising

Gregoire Attends Opening of Concussion Program at Harborview, (July 14, 2009), *available at* <http://www.governor.wa.gov/news/news-view.asp?pressRelease=1288&newsType=1>.

7. Matt Rybaltowski, *Young Player Helps Turn Trauma into Action on Concussions*, CBS SPORTS (Feb. 14, 2010), <http://www.cbssports.com/nfl/story/12928497/young-player-helps-turn-trauma-into-action-on-concussions>.

8. CDC, *supra* note 3; WASH. REV. CODE § 28A.600.190(3)-(4) (2009).

9. CDC, *supra* note 3; WASH. REV. CODE § 28A.600.190(2) (2009).

10. *Goodell Sends Letter to 44 Governors*, ESPN (May 24, 2010), <http://sports.espn.go.com/nfl/news/story?id=5212326> [hereinafter *Goodell Sends Letter*] (listing Oregon, Connecticut, Virginia, New Mexico, and Oklahoma).

11. Protecting Student Athletes from Concussions Act of 2011, H.R. 469, 112th Cong. (2011); Concussion Treatment and Care Tools Act of 2010, H.R. 1347, 111th Cong. (2010).

12. *Zackery Lystedt Law: FAQs*, NFL HEALTH & SAFETY, <http://nflhealthandsafety.com/zackery-lystedt-law/faqs/> (last visited Dec. 31, 2011); 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, 287 (2010).

13. COMM. ON EDU. & LABOR, *Protecting Student Athletes from Concussions Act*, IMPACT (Sept. 22, 2010) <http://impacttest.com/news/detail/422> (listing supporters of the congressional bill).

14. Howard Fendrich, *NFL Changes Return-to-Play Rules*, ESPN (Dec. 3, 2009), <http://sports.espn.go.com/nfl/news/story?id=4707604>; *accord Goodell Issues Memo Enforcing Player Safety Rules*, NFL (Oct. 20, 2010), <http://www.nfl.com/news/story/09000d5d81b7b9ef/article/goodell-issues-memo-enforcing-player-safety-rules> (NFL Commissioner Goodell stating, "One of our most important priorities is protecting our players from needless injury. In recent years, we have emphasized minimizing contact to the head and neck.").

15. *See infra* Part II.D.

16. *See infra* Part IV.

efforts to curb prolonged brain injuries,¹⁷ but internationally, youth athletes continue to face heightened risks—a problem that requires worldwide attention.¹⁸

Part II of this Note provides a medical overview of concussions, addressing their definition, diagnosis, and prevention.¹⁹ This Part also discusses second-impact syndrome, long-term effects of concussions, and the added dangers of concussions in children.²⁰ Part III examines the frequency of concussions in competitive, contact sports in the United States, as compared to those in Canada, Australia, and New Zealand.²¹ Part IV then discusses factors that limit the number of reported concussions in youth sports.²² These include the “gladiator” mentality and a lack of knowledge among youth athletes regarding concussion signs and symptoms.²³

Part V of this Note highlights how various sports organizations in the United States have attempted to address the concussion problem.²⁴ Because policies instituted at the professional level often “trickle-down” to the youth level,²⁵ this Part analyzes the efforts made in professional, amateur, and youth sports.²⁶ Part VI explores U.S. legislative solutions to the concussion problem in youth sports. This Part reviews state and federal concussion law that existed prior to the enactment of Washington’s Lystedt Law²⁷ and then discusses state laws that have been subsequently enacted, using the Lystedt Law as a model.²⁸ This Part also discusses the Protecting Student Athletes from Concussion Act and the Concussion Treatment and Care Tools Act currently under congressional consideration, and it addresses some of the criticism surrounding these legislative solutions.²⁹

Part VII examines several international concussion standards³⁰ as well as those employed nationally by sport organizations in Canada, Australia, and New Zealand.³¹ This Part further discusses legislative efforts made by these countries and their inadequacy at addressing the problem of concussions in

17. *See infra* Part VII.

18. *See infra* Part III.

19. *See infra* Part II.A.

20. *See infra* Part II.B-D.

21. *See infra* Part III.

22. *See infra* Part IV.

23. *See infra* Part IV.A-B.

24. *See infra* Part V.

25. Alan Schwarz, *N.F.L.’s Influence on Safety at Youth Levels Is Cited*, N.Y. TIMES (Oct. 29, 2009), <http://www.nytimes.com/2009/10/30/sports/football/30concussion.html>.

26. *See infra* Part V.A-C.

27. *See infra* Part VI.

28. *See infra* Part VI.A.

29. *See infra* Part VI.B.

30. *See infra* Part VII.

31. *See infra* Part VII.A-C

sports.³² To date, only British Columbia in Canada has proposed legislation that would create such standards.³³ In Part VIII, this Note recommends that these countries and others follow the United States' lead and enact binding legislation that establishes minimum return-to-play standards and concussion education programs.³⁴ Proper concussion management is a global issue, and all countries need to be proactive in protecting their youth athletes, who are not always able to protect themselves.

II. BACKGROUND INFORMATION ON SPORTS-RELATED CONCUSSIONS

There is no universally accepted definition for "concussion" or "mild traumatic brain injury" (MTBI), but several have been offered.³⁵ In 2008 a group of physicians, therapists, certified trainers, health professionals, coaches, and others involved in the care of injured athletes at all levels of sport met in Zurich, Switzerland, to discuss sports-related concussions at the Third International Conference on Concussion in Sport.³⁶ There, the group of qualified sports concussion experts unanimously defined "concussion" as "a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces."³⁷ According to this definition, a concussion can result from a direct blow to the head, face, or neck, or from an "impulsive" force transmitted to the head from elsewhere on the body.³⁸ The group recognized that "the acute clinical symptoms [of a concussion] largely reflect a functional disturbance rather than a structural injury."³⁹ Many sports leagues have accepted this definition,⁴⁰ and this Note will proceed from it.

A. Concussion Prevention and Diagnosis

There are two steps to addressing the dangers concussions pose to athletes of all ages: initial prevention and proper management.⁴¹ The most cited

32. *See id.*

33. *Youth Concussion Law Proposed in B.C.*, THE CANADIAN PRESS (Nov. 17, 2011), <http://www.cbc.ca/news/canada/british-columbia/story/2011/11/17/bc-youth-sports-concussion-legislation.html?cmp=rss> [hereinafter *Youth Concussion Law, B.C.*].

34. *See infra* Part VIII.

35. Paul Satz et al., *Mild Head Injury in Children and Adolescents: A Review of Studies (1970-1995)*, 122 PSYCHOLOGICAL BULL. 107, 125-29 (1997).

36. *See* P. McCrory et al., *Consensus Statement on Concussion in Sport: The 3rd International Conference on Concussion in Sport, Held in Zurich, November 2008*, 43 BRIT. J. SPORTS MED. (supp I) i76-84 (2009). The Second International Conference was held in Prague, Czech Republic, in November 2004, and the First was held in Vienna, Austria, in November 2001. *Id.*

37. *Id.* at i76.

38. *Id.*

39. *Id.*

40. *Id.*

41. Wilson, *supra* note 12, at 248, 256.

approaches to concussion prevention focus on improved equipment, rule changes, and changes in player attitude and behavior.⁴² While all of these methods help to reduce the occurrence of concussions in competitive sports, the complete elimination of all sports-related concussions is unrealistic.⁴³ Because all concussions cannot be prevented, the solution must, and perhaps more importantly should, be focused on the assessment and management of concussions once they occur.⁴⁴

The ability to recognize the signs and symptoms of concussion is the first step in diagnosing an athlete suspected of suffering the injury.⁴⁵ According to the *Consensus Statement on Concussion in Sport*,⁴⁶ a concussion should be suspected when an athlete presents with one or more of the following symptoms: headaches, fogginess, emotional symptoms, loss of consciousness, amnesia, behavioral changes (e.g., irritability), cognitive impairment (e.g., slowed reaction times), and sleep disturbance (e.g., drowsiness).⁴⁷ Headaches are the most common and easily recognizable MTBI symptom,⁴⁸ but despite all known symptoms, concussions remain difficult to properly diagnosis.⁴⁹

In recent years concussion diagnosis has improved through the increasing use of a computer-based test called "ImPACT" (Immediate Postconcussion Assessment and Cognitive Testing).⁵⁰ The ImPACT test evaluates and monitors multiple aspects of an athlete's brain function and compares the results with a baseline level determined at the start of the season, before the athlete entered competition.⁵¹ As of 2009, over 1,800 high schools, 700 colleges, and 500 sports medicine centers, as well as professional sports teams throughout the world used the ImPACT software to diagnosis and manage the head injuries suffered by their athletes.⁵²

42. *Id.* at 249-56.

43. *Id.* at 256-57.

44. *Id.* at 256.

45. McCrory et al., *supra* note 36.

46. The Third International Conference on Concussion in Sport culminated with the drafting of a consensus statement, which sought to revise and update the recommendations that had been developed during the First and Second International Symposia on Concussion in Sport. *Id.*

47. *Id.* at i77.

48. See David Kushner, M.D., *Mild Traumatic Brain Injury: Toward Understanding Manifestations and Treatment*, 158 ARCHIVES INTERNAL MED. 1617, 1617-18 (1998).

49. J.S. Delaney et al., *Recognition and Characteristics of Concussions in the Emergency Department Population*, 29 J. EMERGENCY MED. 189, 189-97 (2005).

50. IMPACT APPLICATIONS, INC., EXECUTIVE SUMMARY 3 (2009), available at http://www.impacttest.com/pdf/Executive_Summary.pdf.

51. Erika A. Diehl, Note, *What's All the Headache?: Reform Needed to Cope with the Effects of Concussions in Football*, 23 J.L. & HEALTH 83, 95 (2010); see IMPACT APPLICATIONS, INC., *supra* note 50.

52. IMPACT APPLICATIONS, INC., *supra* note 50, at 5.

B. *Second-Impact Syndrome*

Failure to properly diagnose a concussion can have devastating consequences for an athlete that returns to play too soon. "Second-impact syndrome" is a condition that occurs when individuals, predominately children and teenagers, who have not fully recovered from an initial concussion suffer another impact.⁵³ This can cause the brain to swell dangerously, resulting in loss of blood flow and often death.⁵⁴ Because no specific treatment for concussions exists, most concussed individuals are prescribed rest in order for the brain to heal itself;⁵⁵ this approach, however, has "limited effectiveness."⁵⁶ Second-impact syndrome is, therefore, a significant threat to youth athletes.

Frighteningly, a simple tap on the head can cause the onset of second-impact syndrome, lead to collapse, and result in death within minutes.⁵⁷ The mortality rate for second-impact syndrome is estimated to be around 50% and the rate of disability associated with the syndrome is almost 100%.⁵⁸ As a testament to the threat of these tragic consequences, the Colorado legislature enacted a bill in 2011 specifically aimed at protecting youth athletes from the dangers of second-impact syndrome.⁵⁹

53. Robert C. Cantu, *Second-Impact Syndrome*, 17 CLINICS SPORTS MED. 37, 38 (1998).

54. Anne P. Bowen, *Second Impact Syndrome: A Rare, Catastrophic, Preventable Complication of Concussion in Young Athletes*, 29 J. EMERGENCY NURSING 287, 288 (2003); see generally Tom Wyrwich, *Special Report: The Dangers of Adolescents Playing Football with Concussions*, SEATTLE TIMES (Nov. 4, 2008), http://seattletimes.nwsources.com/html/highschoolsports/2008347382_concussions04.html (discussing the death of ninth-grader David Bosse, who lost his life to second impact syndrome while playing football in 1995).

55. Barry Willer, PhD & John J. Leddy, MD, *Management of Concussion and Post-Concussion Syndrome*, 8 CURRENT TREATMENT OPTIONS NEUROLOGY 415, Opinion Statement, at 415 (2006).

56. *Id.*

57. David Cifu et al., *Repetitive Head Injury Syndrome*, MEDSCAPE REFERENCE (Nov. 16, 2010), <http://emedicine.medscape.com/article/92189-overview>.

58. John Whisler, *Fighting for safety; Boxing officials learning about deadly syndrome; Sport struggles to educate participants about dangers*, SAN ANTONIO EXPRESS-NEWS, Feb. 27, 2004, at C1.

59. COLO. REV. STAT. § 25-43-101 (2011). The law is named the *Jake Snakenberg Youth Concussion Act* after a high school football player who died on the playing field after suffering a sudden case of second-impact syndrome. Jeffrey Wolf & Bazi Kanani, *Legislators Proposing Law to Protect Young Athletes from Concussions*, 9NEWS.COM (Feb. 10, 2011), <http://www.9news.com/news/story.aspx?storyid=180724&catid=222>. The sponsors of the bill stated that its explicit goal is to "protect athletes ages 11 to 19 from Second Impact Syndrome." *Id.* A top NFL official and former Broncos wide receiver Ed McCaffrey spoke in support of the bill to the Colorado House of Representative. Stuart Zaas, *Broncos Support Jake Snakenberg Youth Concussion Act*, DENV. BRONCOS (Feb. 11, 2011), <http://www.denverbroncos.com/news-and-blogs/article-1/Broncos-Support-Jake-Snakenberg-Youth-Concussion-Act/9df70285-2163-4d73-b536-aa9b8d826ee9>.

C. Long Term Effects of Concussions

According to the Center for Disease Control and Prevention (CDC), those who suffer from a traumatic brain injury (TBI) can experience “a wide range of functional short- or long-term changes affecting thinking, sensation, language, or emotions.”⁶⁰ These changes can include a variety of effects, such as a reduction in memory and reasoning; loss of touch, taste, and smell; difficulty communicating; and experiences with depression, anxiety, personality changes, aggression, acting out, and social inappropriateness.⁶¹ TBI is also associated with epilepsy and an increased risk of “Alzheimer’s disease, Parkinson’s disease, and other brain disorders that become more prevalent with age.”⁶² An NFL-commissioned study reports that Alzheimer’s and similar memory-related diseases appear to have been diagnosed in the league’s former players in numbers dramatically higher than in the national population.⁶³

In 2005 veteran sports agent Leigh Steinberg and Hall of Fame quarterback Warren Moon held a concussion summit in Marina Del Ray, California.⁶⁴ Their mission was to educate players and others about the severity of concussions and their potential lasting effects on former players.⁶⁵ Steinberg represented concussion-laden athletes throughout his career, including two future Hall of Fame quarterbacks, Steve Young and Troy Aikman, who were forced to retire because of concussions.⁶⁶ At the summit, Steinberg asked, “What are the stakes? It’s one thing to go out and play football and understand that when you turn [forty], you can bend over to pick up your child and have aches and pains. It’s another thing to bend down and not be able to identify that child.”⁶⁷

D. Added Dangers of Concussions in Children

It is well recognized that head injuries must be managed differently

60. CDC, *What Are the Potential Long-Term Outcomes of TBI?*, CDC (Mar. 8, 2010), <http://www.cdc.gov/traumaticbraininjury/outcomes.html>.

61. *Id.*

62. *Id.*

63. Alan Schwarz, *Dementia Risk Seen in Players in N.F.L. Study*, N.Y. Times (Sept. 29, 2009), <http://www.nytimes.com/2009/09/30/sports/football/30dementia.html?adxnml=1&adxnmlx=1257577339-z1TRJhMcxbzX7lvIp3cSYw&pagewanted=all>. The rate for these former players is nineteen times the normal rate for men ages thirty through forty-nine. *Id.*; see Peter N. Nemetz et al., *Traumatic Brain Injury and Time to Onset of Alzheimer’s Disease: A Population-Based Study*, 149 AM. J. EPIDEMIOLOGY 32 (1999).

64. Dave Scheiber, *Concussions on their Minds*, TAMPA BAY TIMES (Aug. 5, 2007), http://www.sptimes.com/2007/08/05/Sports/Concussions_on_their_shtml.

65. *Id.*

66. *Id.*

67. *Id.*

depending on the age of the athlete.⁶⁸ In general, the symptoms of concussions “are intensified and recovery is prolonged” for youth athletes in comparison to their older counterparts.⁶⁹ The fact that a youth’s brain is still cognitively maturing creates two major implications for concussion management in youth athletes.⁷⁰ “Firstly, the child’s brain [may] be more vulnerable to the impact of head injury than the more mature adult brain due to the disturbances of neuronal maturation caused by brain trauma.”⁷¹ Second, “unlike adults[, whose] cognitive function is relatively stable over time,” a child’s cognition is in continual development.⁷² Therefore, whether assessing cognitive function as a baseline tool or for a post-injury evaluation, the normal maturation of a child’s cognition must be taken into account.⁷³ But because the developing brain can alter the outcome of the assessment and lead to inaccurate diagnosis, evaluating concussions in youth athletes based on a baseline number is difficult.⁷⁴

III. CURRENT STATISTICS ON PREVALENCE OF SPORTS-RELATED HEAD INJURIES BY COUNTRY

When evaluating the severity of sports-related concussions as a social concern, current statistics regarding their prevalence on a global scale are essential. It is necessary to examine and compare countries that have similar rates of participation in organized, competitive sports at the professional, amateur, and youth levels. These countries should also have similar rates of participation in the same or comparable sports and operate under comparable legislative systems. Based on these criteria, the problem of concussions has been frequently analyzed according to data from the United States, Canada, Australia, and New Zealand.

A. *United States*

A recent study estimates that approximately 1.6 to 3.8 million cases of sports and recreation related traumatic brain injury occur in the United States each year.⁷⁵ The majority of these “are observed in American football

68. Paul McCrory, *Can We Manage Sport Related Concussion in Children the Same as in Adults?*, 38 BRIT. J. SPORTS MED. 516, 517 (2004).

69. Press Release, Congressman George Miller, Lawmakers Reintroduce Legislation to Protect Student Athletes from Concussions (Jan. 26, 2011), available at <http://georgemiller.house.gov/2011/01/lawmakers-reintroduce-legislation-to-protect-student-athletes-from-concussions.shtml> [hereinafter *Lawmakers Reintroduce Legislation*].

70. McCrory, *supra* note 68.

71. *Id.*

72. *Id.*

73. *Id.*

74. *Id.*

75. Jean A. Langlois, ScD, MPH et al., *The Epidemiology and Impact of Traumatic Brain Injury: A Brief Overview*, 21 J. HEAD TRAUMA REHABILITATION 375, 376 (2006); Michael

(incidence: 0.7 – 9.4 concussions per 1,000 player hours), ice hockey (incidence: 1.5 – 6.0 per 1,000 player hours), and soccer (incidence: 0.4 – 0.7 per 1,000 player hours).⁷⁶ Concussions suffered by professional athletes may be well known, but “[f]or every concussion . . . at the professional sports level, there are tens of thousands of injuries at the high school level and below.”⁷⁷ It is estimated that high school athletes suffered 400,000 concussions between the 2005 and 2008 school years alone,⁷⁸ and a comparison of catastrophic head injuries reported in high school and college football between 1989 and 2002 shows a dramatic imbalance towards high school football.⁷⁹ Sports-related concussions in the United States, however, are not limited to contact sports such as football and ice hockey; they also occur with relative frequency in wrestling, lacrosse, and basketball.⁸⁰

B. Canada

Ice Hockey is Canada’s most popular sport,⁸¹ and with this national pastime, a startling number of concussions occur among its players of all ages. A survey of youth hockey players ages eleven to twelve in the Canadian province of Alberta estimated that 700 of the 9,000 players participating each year suffer a concussion during the season.⁸² This equates to 7.8% of all participants suffering a concussive head injury in one season.

The Canadian Football League (CFL) also experiences a substantial number of concussions among its players. During the 1997 CFL season,

Makdissi, *Sports Related Concussion: Management in General Practice*, 39 AUSTRALIAN JOURNAL OF PHYSICIAN 12, 12 (2010).

76. Makdissi, *supra* note 75, at 12.

77. Press Release, U. of Pitt. Med. Ctr., UPMC Conference to Discuss Newest Scientific Knowledge Forcing Doctors to Re-Think How to Safely Manage Concussions in Athletes of All Levels (July 23, 2008), available at <http://www.medicalnewstoday.com/releases/115817.php>.

78. Betsy Miller Kittredge, *Protecting Student Athletes from Concussions Act*, COMMITTEE ON EDUCATION & LABOR JOURNAL, Sept. 22, 2010; see Gerald Tramontano, Op-Ed, *Head Games*, N.Y. TIMES, Sept. 13, 2008, at A19 (citing a study by the Center for Disease Control which estimates that a minimum of 96,000 children between the ages of 5 and 18 suffer a sports-related concussion each year in the United States. The varying number of estimated concussions only supports the fact that many concussions are either misdiagnosed or not reported at all).

79. BP Boden et al., *Catastrophic Head Injuries in High School and College Football Players*, 35 AM. J. SPORTS MED. 1075, 1077 (2007) (showing an average of 7.08 catastrophic head injuries per year reported in high school football, compared with an average of .15 for college football during the same period).

80. DAVID KLOSSNER, 2009-10 NCAA SPORTS MEDICINE HANDBOOK 52 (20th ed. 2009), available at <http://www.ncaapublications.com/productdownloads/MD10.pdf>; William P. Meehan III & Richard G. Bachur, *Sports-Related Concussion*, 123 PEDIATRICS 114, 118 (2009) (discussing high rates of concussion in soccer).

81. CITIZENSHIP & IMMIGR. CAN., DISCOVER CANADA: THE RIGHTS AND RESPONSIBILITIES OF CITIZENSHIP 39, CIC (2011), available at <http://www.cic.gc.ca/english/pdf/pub/discover.pdf>.

82. Jeff Z. Klein, *With Focus on Youth Safety, a Sport Considers Changes*, N.Y. TIMES, Oct. 18, 2010, at D6.

“44.8% of players experienced at least one concussion.”⁸³ The number of concussions suffered by Canadian athletes at the college and university level is equally as frightening. A 1999 McGill University study of over 500 university football and soccer players found that 62.7% of the soccer players and 70.4% of the football players reported signs or symptoms of having suffered at least one concussion.⁸⁴

C. Australia

Australia has some of the highest sports-related concussion rates of any country in the world, and the country's most participated sports—Australian Football League, rugby league, and rugby union—have among the highest rates of head injury of all the world's team sports.⁸⁵ The combined number of concussion in these sports is 5.9 to 9.8 concussive injuries per 1,000 player hours.⁸⁶ This equates to an average of approximately five injuries per team, per season.⁸⁷ This number is staggeringly high compared to U.S. football and hockey.⁸⁸

D. New Zealand

A recent study estimated the number of concussion-related visits to New Zealand hospitals to be 437 per 100,000 per year for individuals ages 15 and over and 252 per 100,000 per year for individuals under 15.⁸⁹ Additionally, the New Zealand Guidelines Group has estimated a yearly incident rate of 24,000 concussions and noted that the New Zealand Accident Compensation

83. J. Scott Delaney, MDCM et al., *Concussions During the 1997 Canadian Football League Season*, 10 CLINICAL J. SPORT MED. 9, 11 (2000).

84. J. Scott Delaney, MDCM et al., *Concussions Among University Football and Soccer Players*, 12 CLINICAL J. SPORT MED. 331, 333 (2002) (the signs and symptoms examined included: “brief loss of consciousness, light-headedness, vertigo, cognitive and memory dysfunction, tinnitus, blurred vision, difficulty concentrating, amnesia, headache, nausea, vomiting, photophobia, [and] balance disorder”).

85. Makdissi, *supra* note 75, at 12.

86. *Id.* (citing AD Hinton-Bayre et al., *Presentation and Mechanisms of Concussions in Professional Rugby League Football*, 7 J. SCI. MED. SPORT 400 (2004)); see Michael Makdissi et al., *A Prospective Study of Postconcussive Outcomes After Return to Play in Australian Football*, 37 AM. J. SPORTS MED. 877, 880 (2009) (reporting 5.6 concussions per 1,000 player hours); see also Simon P.T. Kemp et al., *The Epidemiology of Head Injuries in English Professional Rugby Union*, 18 CLINICAL J. SPORT MED. 227, 229 (2008) (reporting 6.6 head injuries per 1,000 player hours).

87. Makdissi, *supra* note 75, at 12.

88. See *supra* Part III.A.

89. Fathimath Rifshana, *Outcome Evaluation of the Massey University Concussion Clinic: A Pilot Study 6* (2009) (unpublished M.S. thesis, Massey University) (on file with the Massey University Library system).

Corporation (ACC) recorded 17,514 new cases of concussions in 2003.⁹⁰ The ACC's report found the 15 to 24 age group had the highest frequency of concussions, "mostly due to road accidents and sports."⁹¹

IV. INHERENT PROBLEMS IN SPORT THAT LIMIT THE NUMBER OF REPORTED CONCUSSIONS

Despite the prevalence of head injuries in competitive sports and the tragic consequences associated with them, athletes seldom self-report their concussions.⁹² A 2005 survey found that more than 88% of all concussions go unrecognized,⁹³ making diagnosis a daunting task, particularly in young athletes.⁹⁴ Similar studies show that many sports-related concussions may be recognized but are simply never reported.⁹⁵

A. The "Gladiator" Mentality in Sport

One aspect of contact sports that limits the number of reported concussions reported by athletes is the "gladiator" mentality.⁹⁶ Studies show that many athletes suffering from head injuries often refuse to take themselves out of games for fear of appearing weak to their teammates.⁹⁷ Pressure on young athletes to prematurely return to play can be great and often comes from the most unlikely sources.⁹⁸ Moreover, the culture of many contact sports applauds players for their tenacity and toughness.⁹⁹ Former All-Pro defensive back and past president of the NFL Players' Association (NFLPA) Troy Vincent recalled many instances when he was virtually "out of it" during games: "I'm in the huddle but don't know where I'm at, don't know the call and I have a teammate just holding me up," but "[b]ecause of that gladiator

90. *Id.*

91. *Id.*

92. Meehan & Bachur, *supra* note 80; *see* Schwarz, *supra* note 63. Diagnosis of concussions is also made difficult by athletes who hide symptoms because of the "gladiator mentality." *See infra* Part IV.A.

93. Delaney, *supra* note 49.

94. Meehan & Bachur, *supra* note 80, at 116; Schwarz, *supra* note 63.

95. Meehan & Bachur, *supra* note 80, at 115.

96. Scheiber, *supra* note 64.

97. Alan Schwarz, *Silence on Concussions Raises Risks of Injury*, N.Y. TIMES, Sept. 15, 2007, at A1.

98. *See* Schwarz, *supra* note 25. Merrill Hoge, the famed Pittsburgh Steelers running back turned youth football coach, described being approached by a young player's twenty-five-year-old brother when Hoge removed the concussed young boy from a game. The older brother "could very easily be a head coach in a youth program and he was willing to put his own brother back on the football field . . . [p]urely out of ignorance," Hoge said. "That's why I think standards and education would help." *Id.*

99. *See id.* "The gladiator mentality prevails in sports. Given a choice, athletes - if they can stay on their feet - will usually insist on staying in a game." Scheiber, *supra* note 64.

mentality, we just keep going, get some smelling salts and go back in.”¹⁰⁰ Vincent suffered “six or seven” diagnosed concussions during his fifteen-year NFL career.¹⁰¹ He also recognized that he had been “‘dinged’ to some degree” fifty or sixty times while playing football throughout his life.¹⁰²

The gladiator mentality is found not only in American football but also in contact sports across the globe. Canadian hockey has seen a frightening rise in the number of concussions suffered by players and a corresponding desire in many of them to prematurely return to competition.¹⁰³ Adding to this concern, a recent study found that four out of every five concussions suffered in the CFL go unreported by players.¹⁰⁴ “It’s almost a badge of courage [for Canadian hockey players] to come back before they’ve healed . . . they equate playing injured as a sign of toughness.”¹⁰⁵ It is apparent that players alone cannot be relied upon to report and manage their concussions. In fact, the gladiator mentality is a driving force behind the movement to implement baseline testing “as a tool for assessing concussions because players can’t be trusted to assess themselves.”¹⁰⁶

B. Lack of Knowledge Regarding Concussion Signs, Symptoms, and Risks

Ignorance is another factor that leads to the underreporting of concussions, especially by youth athletes. Studies show that many youth athletes are unable to identify common concussion symptoms¹⁰⁷ and, surprisingly, that they are unaware of “the potential seriousness of continued participation in contact or collision sports after an initial concussion.”¹⁰⁸ As a result, the number of concussions suffered by young athletes is dramatically

100. Scheiber, *supra* note 64.

101. *Id.*

102. *Id.*

103. See *Hockey Canada Holds Concussion Summit*, CTV NEWS (Nov. 13, 2010), <http://toronto.ctv.ca/servlet/an/local/CTVNews/20101113/hockey-canada-montreal-concussion-seminar-101113/20101113/?hub=TorontoNewHome> [hereinafter *Summit*].

104. Delaney, *supra* note 83, at 12.

105. *Summit*, *supra* note 103. (quoting Canadian sport psychologist Paul Dennis, referring to Canadian hockey players’ tendency to underreport their concussions).

106. Scheiber, *supra* note 64.

107. Press Release, St. Michaels Hosp., Minor League Hockey Players Unable to Identify Concussion Symptoms, Study Says (May 27, 2009), available at http://www.eurekalert.org/pub_releases/2009-05/smh-mlh052709.php.

108. Michael McCrea, PhD et al., *Unreported Concussion in High School Football Players: Implications for Prevention*, 14 CLINICAL J. SPORT MED. 13, 16 (2004) (explaining that “the most common reasons for concussion not being reported included a player not thinking the injury was serious enough to warrant medical attention (66.4% of unreported injuries), motivation not to be withheld from competition (41.0%), and lack of awareness of probable concussion (36.1%)”).

underreported.¹⁰⁹ Even more surprising, a recent survey of parents with children ages twelve to seventeen engaged in youth sports found a startling lack of knowledge among parents regarding the risks of sports-related concussions.¹¹⁰ Only 8% of parents surveyed had heard a substantial amount of information regarding the risks of repeated concussions, and 36% had not heard anything about these risks.¹¹¹

V. CURRENT CONCUSSION STANDARDS IN PROFESSIONAL AND AMATEUR SPORTS LEAGUES

Awareness regarding the prevalence and danger of concussions is growing among professional and amateur sports leagues. Various upper-level sports organizations now have rules and policies addressing proper concussion management and return-to-play standards in their respective sport, and these practices often “trickle-down” to the youth level.¹¹² Because of this relationship, professional and amateur sports leagues can play a major role in shaping the future of concussion prevention and management in youth sports.¹¹³

A. Professional Sports

The NFL has taken several steps in recent years to curb the problems associated with traumatic brain injuries and has conducted studies to determine the severity and long-term effects associated with concussions.¹¹⁴ In December 2009 NFL Commissioner Rodger Goodell announced a new return-to-play standard, which states that “a player who gets a concussion should not return to action on the same day if he shows certain signs or symptoms.”¹¹⁵ The old rule, in effect since 1997, only prohibited a player from returning to the same game if there was a loss of consciousness.¹¹⁶ The new standard also states that “[o]nce removed for the duration of a practice or game, the player should not be

109. I. J. S. Williamson & D. Goodman, *Converging Evidence for the Under-Reporting of Concussions in Youth Ice Hockey*, 40 BRIT. J. SPORTS MED. 128, 131 (2006) (discussing underreporting in youth ice hockey).

110. Lindsay Barton, *Parents' Concussion Knowledge Limited but Support for Mandatory School Policies Strong*, MOMSTEAM (Dec. 2, 2010), <http://www.momsteam.com/health-safety/parents-concussion-knowledge-limited-but-support-for-mandatory-school-policies-strong>.

111. *Id.*

112. Schwarz, *supra* note 25 (quoting Representative Hank Johnson). “Walking off the pain in an N.F.L. game turns into walking it off in a Little League game—the trickle-down effects on high school and college players are very real and can be fatal . . .” *Id.*

113. *Id.*

114. See Elliot J. Pellman, M.D. & David C. Viano, Dr. Med., PhD, *Concussion in Professional Football: Summary of the Research Conducted by the National Football League's Committee on Mild Traumatic Brain Injury*, 21 NEUROSURGICAL FOCUS E12 (2006).

115. Fendrich, *supra* note 14.

116. *Id.*

considered for return-to-football activities until he is fully asymptomatic”¹¹⁷ Commissioner Goodell’s announcement came shortly after a November 2009 congressional hearing on head injuries in the NFL, which was conducted in response to building momentum and growing public sentiment for changes in NFL player safety policy.¹¹⁸ Since then, the NFLPA has voiced the players’ approval of the new return-to-play standard and the steps taken by the NFL to increase player protection.¹¹⁹

The National Hockey League (NHL) has seen a large number of reported concussions in recent years,¹²⁰ most notably a recent high profile concussion injury to the Pittsburgh Penguins’ captain Sidney Crosby.¹²¹ In the 2010-2011 NHL season alone, there was “a threefold increase in games lost due to concussions suffered through accidental collisions,” a startling trend that has garnered the attention of NHL Commissioner Gary Bettman.¹²² Late in the 2009-2010 season, the league addressed the problem of injurious hits on players by adding “Rule 48,” which bans lateral blindside hits to the head.¹²³ Reports further suggest that the league is considering additional guidelines to address growing concerns regarding concussions.¹²⁴

Professional basketball has also seen a startling number of concussions in recent years.¹²⁵ According to league data, the NBA experienced a 30% rise in the number of reported concussions in the 2010-2011 season over that in 2008.¹²⁶ League officials claim that the rise in the number of reported concussions can be attributed to teams and players taking head injuries more

117. *Id.*

118. *Id.*

119. *Id.*

120. See Jeff Z. Klein, *Hockey Urged to Ban All Blows to Head by Concussions Panel*, N.Y. TIMES, Oct. 21, 2010, at B19.

121. See Rich Chere, *Around the NHL: Sidney Crosby Could Face Tough Decisions on His Career*, NJ.COM (Dec. 18, 2011), http://www.nj.com/devils/index.ssf/2011/12/around_the_nhl_sidney_crosby_c.html; Scott Burnside, *Crosby’s Setback a Stark Reality for NHL*, ESPN.COM (Dec. 29, 2011), http://espn.go.com/nhl/story/_id/7398140/pittsburgh-penguins-captain-sidney-crosby-return-shifts-anticipation-resignation.

122. A.J. Perez, *Accidental Collisions Cause Major Rise in NHL Concussions*, AOL NEWS (Jan. 29, 2011), <http://www.aolnews.com/2011/01/29/accidental-collisions-cause-major-rise-in-nhl-concussions/>.

123. *Id.*; Dan Rosen, *Teams, Players Receive Rule Changes Video Explanation*, NHL (Sept. 19, 2011), <http://www.nhl.com/ice/news.htm?id=588987>.

124. Perez, *supra* note 122.

125. Colin Fly, *NBA Player Wants League to Establish Concussion Policy*, TSN (Feb. 8, 2011), <http://www.tsn.ca/nba/story/?id=352935> [hereinafter *Concussion Policy*]; see also Scott Howard-Cooper, *NBA Sees Sudden, Scary Increase in Concussions*, SACRAMENTO BEE (Feb. 25, 2009), available at <http://neurosurgery.ucla.edu/workfiles/In%20the%20news/Hovda%5B1%5D.Sac.Bee.pdf>. (listing several incidents of concussions in the NBA over a two week span in January 2009. The article also tells the story of Charlotte Bobcat’s Gerald Wallace who wears a special mouthguard on doctor’s orders after suffering 4 concussions over a five year span).

126. *Concussion Policy*, *supra* note 125.

seriously.¹²⁷ Yet, players continue to petition officials to establish a league-wide standard, indicating that there remains opportunity for the league to improve its concussion management.¹²⁸

B. Amateur Sports

The National Collegiate Athletic Association (NCAA) has recognized the need for greater concussion awareness and concussion management procedures. In April 2010 the NCAA Executive Committee adopted its current concussion management policy for collegiate athletes in the United States.¹²⁹ The new policy, which became effective at the start of the 2010-2011 academic year, requires all institutions across the NCAA's three athletic divisions to create and maintain a current "concussion management plan."¹³⁰ This plan must mandate the removal of a student-athlete from practice or competition if she or he "exhibits signs, symptoms or behaviors consistent with a concussion."¹³¹ Once removed from the playing field, the student-athlete "must be evaluated by an athletics healthcare provider with experience in the evaluation and management of concussion."¹³² If the athlete is diagnosed with a concussion, she or he is prohibited from activity for the remainder of that day.¹³³ The NCAA policy also requires student-athletes to sign a statement acknowledging their responsibility to report injuries and provides for the promotion of educational materials on concussions, especially their signs and symptoms.¹³⁴

C. Youth Sports

High school athletic programs also have begun to designate procedures for addressing concussion injuries. The National Federation of High School Associations (NFHS)¹³⁵ established its first concussion management procedures in 2006 and now includes them in all NFHS rules books.¹³⁶ When a young

127. *Id.*

128. *Id.*

129. Gary Brown, *Executive Committee OKs Concussion Management Policy*, NCCA NEWS (Apr. 29, 2010), http://fs.ncaa.org/Docs/NCAANewsArchive/2010/aWide/executive_committee_oks_concussion_management_policy.html.

130. *Id.*

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.*

135. The NFHS is the governing body that establishes policies and procedures for high school sports in the United States. Nat'l Fed'n of State High Sch. Ass'ns, *About Us*, NFHS, http://www.nfhs.org/activity3.aspx?id=3260&linkidentifier=_id&itemid=3260 (last visited Dec. 18, 2011).

136. News Release, Nat'l Fed'n of State High Sch. Ass'ns, *Changes Made in Sparring Rule, Uniforms in High School Football* (Jan. 31, 2006), available at <http://www.sgma.com/press/view.php?id=44>.

athlete is suspected of having a concussion, the procedure is as follows:

- (1) remove athlete from play;
- (2) ensure that the athlete is evaluated by an appropriate health-care professional and don't try to judge the seriousness of the injury yourself;
- (3) inform the athlete's parents or guardians about the known or possible concussion and give them the fact sheet on concussion; and
- (4) allow the athlete to return to play only with permission from an appropriate health-care professional.¹³⁷

Participating state athletic associations are required to follow these NFHS mandates, but they are authorized to strengthen them if desired.¹³⁸

While the NCAA and NFHS concussion management efforts are steps in the right direction, they do not offer a comprehensive solution for minimizing the dangers of concussions. Their guidelines only apply to college and high school student-athletes, leaving a gap for youth athletes playing in school sanctioned sports at the junior high level and younger. They also do not cover recreational leagues organized outside of the educational setting. Further, beyond prohibiting a same-day return, the NCAA guidelines provide no return-to-play standards for athletes that have been diagnosed with concussions.¹³⁹

VI. CONCUSSION LEGISLATION IN THE UNITED STATES

Prior to the enactment of Washington's Lystedt Law, there existed no legislation in the United States that directly addressed the issue of concussion management or established strict return-to-play standards for youth athletes.¹⁴⁰ The most recently enacted federal law, the Children's Health Act of 2000,¹⁴¹ sought only a "better understand[ing of] the full impact and the long-term consequences of MTBI."¹⁴² The Act required the CDC to determine the proportion of the U.S. population experiencing the effects of MTBI and to report its findings to Congress, but this report said nothing about how to

137. *Id.*

138. Nat'l Fed'n of State High Sch. Ass'ns, *NFHS Rules Writing Activity*, NFHS, <http://www.nfhs.org/content.aspx?id=3298> (last visited Jan. 4, 2011).

139. Brown, *supra* note 129.

140. See NAT'L CTR. FOR INJURY PREV. & CONTROL ET AL., *TRAUMATIC BRAIN INJURY IN THE UNITED STATES: A REPORT TO CONGRESS* (1999) (discussing the Traumatic Brain Injury Act of 1996), available at http://www.cdc.gov/ncipc/pub-res/tbi_congress/01_executive_summary.htm.

141. Children's Health Act of 2000, Pub. L. No. 106-310, § 1, 114 STAT. 1101.

142. NAT'L CTR. FOR INJURY PREV. & CONTROL, *REPORT TO CONGRESS ON MILD TRAUMATIC BRAIN INJURY IN THE UNITED STATES* (2003), available at <http://www.cdc.gov/ncipc/pub-res/mtbi/mtbireport.pdf>.

properly diagnose or manage concussions in youth athletes.¹⁴³ Moreover, it did not establish any guidelines regarding sports-related concussions.¹⁴⁴

The only state law in place prior to the Lystedt Law was a Texas statute known as “Will’s Bill.”¹⁴⁵ This law was named after Will Benson, who died as a result of a second concussion he suffered after prematurely returning to play in a Texas high school football game.¹⁴⁶ It requires the state education commissioner to develop and implement an extracurricular activity safety program, under which coaches, trainers, or sponsors for an extracurricular activity must undergo and complete a certified safety training program.¹⁴⁷ This program must include current training in “recognizing symptoms of potentially catastrophic injuries, including head and neck injuries, concussions, injuries related to second impact syndrome,” and others.¹⁴⁸ Although Will’s Bill features an educational component, it does not create substantive criteria for managing students suspected of having a concussion nor establish a minimum return-to-play standard.¹⁴⁹

A. *The Zack Lystedt Law and Other State Laws*

On May 19, 2009, Washington Governor Chris Gregoire signed the Zack Lystedt Bill into law.¹⁵⁰ At the time of its enactment, the law was considered to be the “strongest return-to-play statute” in the country, requiring athletes under the age of eighteen who show concussion symptoms to be taken off the playing field and kept off until a licensed health care provider submits written approval of their return.¹⁵¹ As of July 30, 2011, nearly thirty states had adopted youth concussion laws similar to the Lystedt Law.¹⁵² Each state law is unique, but most share a common theme: a three-part approach, incorporating both educational programs and strict return-to-play standards.¹⁵³ As framed by the

143. *Id.*

144. *Id.*

145. Schwarz, *supra* note 25.

146. *Id.*; Alan Schwarz, *Silence on Concussions Raises Risks of Injury*, N.Y. TIMES (Sept. 15, 2007), <http://www.nytimes.com/2007/09/15/sports/football/15concussions.html?pagewanted=all>.

147. TEX. EDUC. CODE ANN. § 33.202(a)-(b) (West 2007).

148. *Id.* § 33.202(c)(2)(D).

149. *See id.*

150. WASH. REV. CODE § 28A.600.190 (2009); *States Consider Youth Concussion Laws*, ESPN (Jan. 28, 2010), <http://sports.espn.go.com/espn/news/story?id=4865622>.

151. *States Consider Youth Concussion Laws*, *supra* note 150.

152. *Concussion Legislation by State*, NFL HEALTH & SAFETY, <http://nflhealthandsafety.com/zackery-lystedt-law/states/> (last updated Oct. 17, 2011). These states include Alabama, Alaska, Arizona, Colorado, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, South Dakota, Texas, Utah, Vermont, Virginia, and Wyoming. *See id.*

153. *See id.*

Washington statute, this approach looks to: (1) establish a set of concussion management guidelines in order to educate coaches, parents, and young athletes about the risks associated with concussions; (2) remove young athletes from competition if they exhibit any sign or symptom of a concussion; and (3) require a youth athlete to be cleared by a licensed health care professional before returning play.¹⁵⁴ However, not all state concussion laws follow this approach. Idaho's statute, for example, simply sets up concussion guidelines for informing coaches, parents, and youth athletes of the risks and symptoms of concussion; it does not establish any mandatory removal or return-to-play standards.¹⁵⁵

B. Proposed Federal Legislation

Consistent with the state legislative movement lead by Washington's Zack Lystedt Law, Congress is considering two bills that provide for baseline testing, funding of educational programs, and nationwide minimum standards for youth athletes who have suffered a concussion.¹⁵⁶ One, the Concussion Treatment and Care Tools Act (ConTACT Act),¹⁵⁷ was passed by the U.S. House of Representatives on September 30, 2010,¹⁵⁸ and would apply to children between the ages of five and eighteen.¹⁵⁹ The Act would require baseline testing for every student-athlete at the start of each playing season.¹⁶⁰ "[This] testing would serve as a guide in determining when an athlete who has suffered a concussion could safely return to play."¹⁶¹ The other bill, the Protecting Student Athletes from Concussions Act,¹⁶² would adopt the three-part approach used by many state concussion laws¹⁶³ and would require school districts to implement a concussion management plan that reflects the Lystedt Law's "when in doubt, sit out" principle.¹⁶⁴

154. *Id.*

155. IDAHO CODE ANN. § 33-1625 (2011).

156. Madison Park, *Players, Grieving Mom Back Youth Head Injury Protection Bill*, CNN (Sept. 23, 2010), <http://www.cnn.com/2010/HEALTH/09/23/football.concussions.brain/index.html>; Kittredge, *supra* note 78.

157. Concussion Treatment and Care Tools Act of 2010, H.R. 1347, 111th Cong. (2010).

158. Zak Koeske, *Laws Aim to Protect Student Athletes with Concussions, but Money Is Lagging*, POLITICS DAILY (Nov. 9, 2010), <http://www.politicsdaily.com/2010/11/08/laws-aim-to-protect-school-athletes-with-concussions-but-money/>. The bill then moved to consideration by the Senate. *Id.*

159. Office of Bill Pascrell, Jr., *About the ConTACT Act of 2009-HR 1347*, KIDS CONCUSSION (Jan. 13, 2010), <http://www.kidsconcussion.com/about.htm>.

160. Koeske, *supra* note 158.

161. *Id.*

162. Protecting Student Athletes from Concussions Act, H.R. 469, 112th Cong. (2011).

163. Park, *supra* note 156; see H.R. 6172, *Protecting Student Athletes from Concussions Act: Hearing Before the H. Comm. on Educ. & Labor*, 111th Cong. 2-3 (2010) [hereinafter *Hearing*].

164. *Hearing, supra* note 163, at 4.

In September 2010 Congress held a hearing to discuss issues surrounding the proposed Protecting Student Athletes from Concussions Act.¹⁶⁵ Several concussion victims and doctors spoke at the hearing to stress the severity of the problem.¹⁶⁶ In addition, U.S. Representative George Miller expressed his hope that by providing “the tools to properly manage concussions and implement safety precautions, parents, coaches and students can change the culture of school sports for the better and keep . . . students safe on the field and thriving in the classroom.”¹⁶⁷ Addressing the dangerous “gladiator” mentality in sports, the congressman added that the legislation aims to “ensure that pressure to play won’t supersede students’ health.”¹⁶⁸

The NFL and other professional sports organizations have shown support for the proposed federal legislation and its currently enacted state law counterparts, encouraging other states to follow Washington’s lead. In March 2010 NFL Commissioner Roger Goodell sent a letter to the governor of every state that had not yet adopted a return-to-play law, specifically urging state officials to take measures to protect youth athletes.¹⁶⁹ More recently Commissioner Goodell spoke with high regard for the proposed federal legislation and pledged the NFL’s support, saying, “The Protecting Student Athletes from Concussion Act represents a strong step forward in our shared goal of protecting young male and female athletes in all sports from the risks of concussion and other brain injuries.”¹⁷⁰ The American College of Sports Medicine also endorsed the bill, stating that the proposed legislation will hopefully provide “for best practices such as educating students, parents and school personnel about concussion; removal from play or practice of any youngster suspected of having suffered a concussion, and return to play only after medical clearance.”¹⁷¹

Not all the reaction to the federal legislation, however, has been supportive. Skeptics have concerns regarding its funding in inner city and rural areas.¹⁷² Some fear that without federal money for implementation, a new

165. *Id.*

166. *Id.* One of the concussion victims was a member of her high school soccer team when she suffered a concussion that continues to give her problems, including headaches, fatigue, and decreased attentiveness in completing school work. *Id.* at 6, 12-14.

167. *Lawmakers Reinroduce Legislation, supra* note 69.

168. *Id.*

169. *Goodell Sends Letter, supra* note 10. “Given our experience at the professional level, we believe a similar approach is appropriate when dealing with concussions in all youth sports. That is why the NFL and its clubs urge you [state governor] to support legislation that would better protect your state’s young athletes by mandating a more formal and aggressive approach to treatment of concussions.” *Id.* “We would urge that similar legislation be adopted in your state”; “We believe that sports and political leaders can help raise awareness of these dangerous injuries and better ensure that they are treated in the proper and most effective way.” *Id.*

170. *Lawmakers Reinroduce Legislation, supra* note 69.

171. *Id.*

172. Koeske, *supra* note 158.

nationwide mandate would leave indigent schools unprotected and unable to comply.¹⁷³ This would create an inequity in concussion safety between school districts with better funding and those that struggle to survive financially.¹⁷⁴ In contrast, some supporters of the bill believe that the potential for monetary challenges should not deter lawmakers from enacting legislation. They stress the importance of raising concussion awareness and education first, arguing that the funding will need to come later.¹⁷⁵

Other proponents of the federal legislation hold that its implementation may not be as expensive as many people think and that any expenses that exist can be offset in a myriad of ways.¹⁷⁶ One suggestion is that coaches or teachers be certified to evaluate concussions and allowed to act as athletic trainers.¹⁷⁷ This would cut the costs of having a licensed health care provider staff every game.¹⁷⁸ Another method is for parents to pay the small cost to have the baseline pre-season testing done.¹⁷⁹ Moreover, because caring for a youth athlete suffering from a concussion can be incredibly costly, if “one traumatic brain injury can be prevented,” a “cost-benefit exists.”¹⁸⁰ Still, detractors are not convinced that the income gap will be so easily addressed.¹⁸¹

VII. INTERNATIONAL CONCUSSION STANDARDS AND LEGISLATION

The prevalence of head injuries in rugby seems to have garnered serious attention on an international level.¹⁸² In 2009 the International Rugby Board (IRB), the sport’s governing body, established that “[t]he *Zurich Consensus Statement in Concussion in Sport* should underpin all decisions relating to Regulation 10[, the Board’s concussion management regulation,] and provide

173. *Id.*

174. *Id.* At the congressional hearing, Democratic Representative Donald Payne stated: “I doubt seriously if the inner city schools can afford it . . . I don’t know what the answer is, but we have to come up with some thought or some discussion because I am concerned that a number of these kids will not be diagnosed properly.” *Id.*

175. *Id.* In support of the Lystedt Law, Dr. Staley Herring, the current team physician for the NFL’s Seattle Seahawks, stated: “If you want to see this penetrate the rural communities there has to be education and legislation, and then there has to be capacity to put resources in place.” *Id.*

176. *Id.*

177. *Id.*

178. *Id.*

179. *Id.* “[T]here are several school districts that do baseline testing pre-season. It costs \$2 an athlete. I can’t imagine, except in cases of the most hardship, that parents wouldn’t be willing to come up with that \$2.” *Id.*

180. *Id.*

181. *Id.*

182. B.C. Injury Research & Prev. Unit, *Rugby Injuries*, BCIRPU, <http://www.injuryresearch.bc.ca/Publications/Fact%20Sheets/rugby%20fact%20sheet.pdf> (last visited Dec. 18, 2011). “Between 5-25% of rugby injuries are head injuries, including concussions.” *Id.*

the basis of any recommendations for [its] alteration.”¹⁸³ In adopting this standard, the IRB recommended that a player diagnosed with a concussion “not be allowed to return to the field of play that day.”¹⁸⁴ For junior players, the international rules require concussed athletes to take a three-week break.¹⁸⁵ These are responsible approaches and illustrate the IRB’s acceptance that concussion management reduces the number of concussion claims.¹⁸⁶

As the IRB did with rugby, the International Federation of Association Football (FIFA) has begun to seriously examine concussion safety and management.¹⁸⁷ In 2008 FIFA, along with the International Ice Hockey Federation (IIHF), International Olympic Committee (IOC), and the IRB, hosted the Third International Concussion in Sport Conference in Zurich.¹⁸⁸ In order to evaluate concussions among its players FIFA, as well as the IRB, IIHF, and IOC, has also adopted the Sports Concussion Assessment Tool 2 (SCAT2) as its diagnostic tool.¹⁸⁹ Similar to the ImpACT system,¹⁹⁰ SCAT2 is a widely used method for evaluating athletes post-head injury.¹⁹¹ Compared to the computer-based software of ImpACT, however, SCAT2 is much more primitive; it simply uses a detailed, standardized questionnaire administered to an athlete after suffering a suspected concussion.¹⁹² Importantly, these international efforts have been matched by many of the sport’s organizations in

183. *IRB Medical Conference Puts Players First*, INT’L RUGBY BD. (Nov. 13, 2009), <http://www.irb.com/newsmedia/mediazone/pressrelease/newsid=2034326.html> (emphasis added). Regulation 10 mandates a “graduated return to play protocol.” *Regulation 10: Medical*, INT’L RUGBY BD., <http://www.irb.com/mm/document/lawsregs/regulations/04/23/26/100518gfirbhandbook2010freg10english.pdf> (last visited Jan. 5, 2012).

184. *IRB Medical Conference Puts Players First*, *supra* note 183.

185. *How the Codes Deal with Concussion*, THEAGE.COM.AU, (Oct. 23, 2009), <http://www.theage.com.au/news/sport/how-the-codes-deal-with-concussion/2009/10/22/1256147843091.html>.

186. See generally Simon Gianotti & Patria A. Hume, *Concussion Sideline Management Intervention for Rugby Union Leads to Reduced Concussion Claims*, 22 NEUROREHABILITATION 181 (2007).

187. *FIFA Hosts Concussion Conference*, FIFA.COM (Oct. 27, 2008), <http://www.fifa.com/aboutfifa/footballdevelopment/medical/news/newsid=926923/index.html>; see *supra* Part II.

188. *Id.* By hosting such a huge event in sports concussion management, FIFA has responded to events such as the severe head injury suffered by Chelsea goalkeeper Peter Cech in 2006. Maureen Cavanaugh & Hank Cook, *Should Soccer Players Wear Head Protection?*, KPBS (Feb. 24, 2010), <http://www.kpbs.org/news/2010/feb/24/should-soccer-players-wear-head-protection/>. Events like Cech’s life-threatening injury have brought concussion awareness into the minds of soccer players, coaches, and fans across the globe. *Id.*; see also *Concussion in Sport*, FIFA.COM (Nov. 6, 2008), <http://www.fifa.com/aboutfifa/footballdevelopment/medical/news/newsid=938876/index.html>.

189. McCrory et al., *supra* note 36.

190. See Part II.A.

191. Tom Billups, C.S.C.S., *Concussion Management*, RUGBYRUGBY.COM (Mar. 14, 2011), http://www.rugbyrugby.com/news/features/tom_billups/6993484/concussion_management.

192. *Id.*

Canada, Australia, and New Zealand.

A. Canada

The number of concussions suffered by youth hockey players in Canada has led to recent potential reforms in the way the game is played.¹⁹³ Hockey Canada has developed a new initiative that emphasizes “injury prevention and safety through risk management and education.”¹⁹⁴ The Hockey Canada Safety program is now a mandatory program, which Hockey Canada hopes will improve game safety “by providing an organized, easy-to-access education program for hockey safety and injury-prevention volunteers.”¹⁹⁵ The program also includes educational materials directed solely at concussion awareness,¹⁹⁶ however, it does not have enforceable return-to-play standards that would require a symptomatic athlete to be removed from play and cleared by a licensed health provider before returning to play.

The CFL has also improved its concussion education efforts in an effort to curb the number of concussions suffered by players.¹⁹⁷ The concussion educational campaign is spreading the word about the dangers of these injuries by distributing simple “concussion flyers” and posters to hundreds of thousands of athletes and coaches across Canada.¹⁹⁸ Football Canada, the national governing body of Canadian amateur football, supports the CFL’s educational movement and even instituted a rule in January 2011 which requires officials to report players exhibiting concussion symptoms to coaches or medical staff during play.¹⁹⁹ While these are all steps in the right direction, none of these initiatives create an enforceable, strict return-to-play standard to ensure that symptomatic players do not return to activity too soon.

In 2008 the Province of Ontario, Canada, recognized the *Ontario Physical Education Safety Guidelines (Ontario Guidelines)*,²⁰⁰ which address

193. Klein, *supra* note 82.

194. Hockey Canada Safety Program, HOCKEY CANADA, http://www.hockeycanada.ca/index.php/ci_id/7697/la_id/1.htm (last visited Jan. 11, 2011).

195. *Id.*

196. *Id.*

197. *Working to Promote Concussion Awareness*, CFL.CA (May 3, 2011), <http://www.cfl.ca/article/working-to-promote-concussion-awareness> (last visited Jan. 11, 2011).

198. *Id.*

199. Football Canada, *Promoting Concussion Awareness: A Media Backgrounder*, CFL.CA, http://www.cfl.ca/uploads/assets/CFL/PDF_Docs/Concussion_Awareness_%20Media_Backgrounder.pdf.

200. “The Safety Guidelines were developed by Ophea in partnership with the Ontario School Board’s Insurance Exchange (OSBIE), the Canadian Intramural Recreation Association – Ontario (CIRA-ON), the Ontario Federation of School Athletic Associations (OFSAA), and the Ontario Association for Supervisors of Physical and Health Education (OASPHE).” OPHEA, THE ONTARIO PHYSICAL EDUCATION SAFETY GUIDELINES (SAFETY GUIDELINES), *available at* OPHEA, <http://www.ophea.net/programs-services/safety-guidelines> (last visited Jan. 5, 2011).

concussion assessment and management in the province's elementary and secondary schools.²⁰¹ "Most School Boards in Ontario have subscribed to the . . . *Guidelines* and their related services."²⁰² They include initial response procedures, recovery timelines, and information on second-impact syndrome, and one of their key components is a post-concussion program that participating schools must follow before any student-athlete suffering from a head injury is allowed to return to play.²⁰³ Like the enacted state and proposed federal legislation in the United States, this program requires evaluation and physician approval in order to prevent premature return to play.²⁰⁴

Appendix C of the *Ontario Guidelines* specifically addresses concussions.²⁰⁵ It stresses the importance of recognizing the symptoms and signs of concussions with or without a loss of consciousness²⁰⁶ and provides website addresses where parents, athletes, and coaches can obtain more information regarding concussion symptoms, diagnosis, and treatment.²⁰⁷ Although the *Ontario Guidelines* are a step in the right direction, they are not enforceable law.

British Columbia, however, has followed the United State's lead with its proposed Concussions in Youth Sport Safety Act, which would create enforceable law.²⁰⁸ British Columbia Liberal Member of the Legislative Assembly Moira Stilwell has proposed the bill, which she hopes will help prevent the number of concussions in Canadian youth athletes.²⁰⁹ The bill would require the removal of a symptomatic youth athlete from play and would also prohibit the athlete's return to play until a physician signs off on their recovery.²¹⁰ According to Stilwell, "the majority of sport-related head injuries occur in athletes younger than the age of 20 and that the frequency of these injuries is increasing."²¹¹ Stilwell hopes that British Columbia will be the national leader in Canada with such a bill.²¹²

201. OPHEA, ONTARIO SAFETY GUIDELINES FOR PHYSICAL EDUCATION: ELEMENTARY CURRICULAR GUIDELINES (2009) [hereinafter ELEMENTARY CURRICULAR GUIDELINES]; see also OPHEA, ONTARIO SAFETY GUIDELINES FOR PHYSICAL EDUCATION: SECONDARY CURRICULAR GUIDELINES (2009) [hereinafter SECONDARY CURRICULAR GUIDELINES].

202. *Safety Guidelines*, *supra* note 200.

203. SECONDARY CURRICULAR GUIDELINES, *supra* note 201.

204. *Id.*

205. *Id.* at Appendix C.

206. *Id.*

207. *Id.*

208. *Youth Concussion Law, B.C.*, *supra* note 33.

209. *Id.*

210. *Id.*

211. *Id.*

212. *Id.*

B. Australia

To date, there are no federally mandated return-to-play standards for sports related concussion or government sponsored concussion management programs in Australia. The country has relied on independent sporting bodies, such as Australian Rugby, to address these issues. For example, Australian Rugby, the governing body for the rugby union in Australia,²¹³ has helped address concussion management through its SmartRugby program.²¹⁴ SmartRugby is a mandatory safety program which requires every rugby coach and referee in Australia to receive a safety qualification each year.²¹⁵ The safety qualification can be received by obtaining various safety training courses in which the participant learns about proper playing technique and injury prevention.²¹⁶ Australian Rugby puts on these courses for free and holds courses throughout the country.²¹⁷ The program provides some injury prevention education for coaches and reference, but it does not focus on concussion management and provides no return-to-play requirements.²¹⁸ The lack of enforceable return-to-play standards in Australia could be addressed through concussion-related legislation that would apply to all sports in Australia, not just rugby.

C. New Zealand

In 2001, the New Zealand legislature passed the Accident Compensation Act in 2001, which provides for “comprehensive, no-fault personal injury cover for all New Zealand residents and visitors to New Zealand.”²¹⁹ The Act provides compensation no matter how the injury occurred or who caused the injury.²²⁰ Compensation ranges from payments for medical treatment and rehabilitation costs at home to income assistance for time away from work.²²¹ Injuries that happen during sport or recreation are covered.²²² Because the Act provides for a wide-range of services for injuries on a no-fault basis, personal injury lawsuits are not actionable in New Zealand, with an exception for

213. Int'l Rugby Board, *Australia*, IRB.COM, <http://www.irb.com/unions/union=11000007/index.html> (last visited Jan. 16, 2011).

214. Australian Rugby, SmartRugby, www.rugby.com.au, <http://www.rugby.com.au/tryrugby/Coaching/Courses/SmartRugby.aspx> (last visited Jan. 16, 2011).

215. *Id.*

216. *Id.*

217. *Id.*

218. *Id.*

219. Accident Compensation Corp., *Introduction to ACC*, ACC.CO.NZ, <http://www.acc.co.nz/about-acc/overview-of-acc/introduction-to-acc/index.htm> (last visited Jan. 16, 2011).

220. *Id.*

221. *Id.*

222. *Id.*

exemplary, or punitive, damages.²²³ The Act is funded by placing levies on New Zealander's earnings, businesses' payrolls, fuel purchases and vehicle licensing fees as well as through general government funding.²²⁴

The Act also created the Accident Compensation Corporation (ACC) which administers the Act by preventing injury, making sure injured individuals receive treatment and helping these individuals return to their everyday life.²²⁵ To address the number and severity of sports-related injuries, the ACC created the SportSmart program.²²⁶ The ACC's SportSmart program was created to minimize the risk of injury for all participants in organized sport in New Zealand.²²⁷ The main thrust of the program is its *10-Point Action Plan for Sports Injury Prevention*, which outlines key areas for sports injury prevention.²²⁸ SportSmart also recommends return-to-play guidance for injuries in general, but neither focuses on concussion nor creates an enforceable standard.²²⁹

In 2003, the ACC launched its Sports Concussion Programme, which focuses on concussion prevention and management. The main initiative of the program is the use of "a credit-card-sized Sideline Concussion Checklist for coaches and players" to better evaluate concussion symptoms for players.²³⁰ While the ACC considers the program a success,²³¹ the Programme does not mandate any return-to-play standards, and simply provides education for players and coaches to better recognize concussions.²³² The ACC could better address concussion management issues by creating strict return-to-play standards, coupled with their program's educational component. This would place New Zealand at the forefront of concussion management because the well-funded ACC would help the country cope with some of the funding issues that will no doubt face the United State's proposed Protecting Student Athletes from Concussions Act and British Columbia's proposed Concussions in Youth Sport Safety Act. The ACC has already set up and funded several concussion clinics throughout New Zealand to assess and treat individuals who suffer mild traumatic brain injuries.²³³

223. *Id.*

224. *Id.*

225. Accident Compensation Act 2001 (N.Z.).

226. ACC SportSmart, *ACC SportSmart: Educational Resource*, ACC.CO.NZ, http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_ip/documents/publications_promotion/wcmz002230.pdf (last visited Jan. 16, 2011).

227. *Id.*

228. *Id.*

229. *Id.*

230. ACCIDENT COMPENSATION CORP., ANNUAL REPORT 2005 34 (2005).

231. *Id.*

232. *Id.*

233. Rifshana, *supra* note 89, at 23.

VIII. RECOMMENDATIONS

Notwithstanding the proposed legislation in British Columbia, there appears to be no legislation specifically addressing concussion management and return-to-play standards for youth athletes in any of the countries analyzed in this Note. Canada, Australia, and New Zealand seem to rely on the governing bodies of their independent sports organizations to ensure the safety of their youth athletes. But even organizations that have sufficient return-to-play standards in place may find it difficult to adequately enforce them across their country's large geographical area. As it has in the United States, this will likely create a lack of uniformity among sports and age groups, and it calls for legislative responses.

Given the lack of binding concussion legislation in Canada, Australia, and New Zealand, this Note suggests two primary methods of protecting international youth athletes from serious, long-term brain injuries. First, state or provincial governments in these countries should adopt legislation similar to the Lystedt Law and its state and federal counterparts. Such legislation would make concussion management and return-to-play standards binding for all types and at all levels of sports. Second, countries should enact such legislation on a national level, if possible, so that the standards and funding are uniform across the entire country and across all sports, not just the more obvious contact sports.²³⁴ Much of the early concussion-related legislation in the United States was enacted as a direct response to a tragic event where a youth athlete suffered a catastrophic injury.²³⁵ Other countries should be proactive and not wait until a tragic incident involving the death or serious injury of a young athlete spurs a legislative response.

The three-part-approach used by concussion legislation in the United States addresses many of the inherent problems with sports-related concussions and offers a comprehensive model for other countries to follow when developing their own concussion standards. The educational component addresses the lack of knowledge among youth athletes, parents, and coaches regarding concussion symptoms and long-term effects. The removal and strict return-to-play guidelines take the decision-making out of the hands of young athletes, who do not always properly report their concussions because of the "gladiator" mentality. Basing return-to-play decisions on physician approval also provides several advantages.²³⁶ First, physicians are obviously more knowledgeable about the symptoms and short- and long-term effects of

234. Meir Rinde, *Experts Say Cheerleaders Suffering More Concussions*, NJ.COM (Jan. 10, 2010), <http://www.nj.com/news/times/regional/index.ssf?/base/news-18/126310593543530.xml&coll=5>. "The sport that has had the greatest increase in catastrophic injury is cheerleading." *Id.*

235. See Schwarz, *supra* note 25.

236. Wilson, *supra* note 12, at 267-68.

concussions than coaches, parents, or children.²³⁷ Second, physicians act as an “objective and dispassionate participant in the process,” with “no ‘stake’ in the timing of the return to play of young athletes, other than their safety and health.”²³⁸

Another key component of the legislative approaches in the United States is the allocation of funding so that public schools can staff physicians at athletic events and provide educational materials. Other countries looking to protect youth athletes should similarly incorporate funding into their local and/or federal laws. Although other countries will certainly face the funding issues currently under debate in the United States, the problem of concussion is substantial enough for a solution to be found, and there are many options available to address the funding issue. New Zealand, in particular, could utilize its ACC to fund an enforceable, country-wide return-to-play standard.

IX. CONCLUSION

There is no question that concussion safety and management in youth sports is a problem that is prevalent worldwide. More importantly, the dangers associated with premature return-to-play are present in any contact sport and are particularly frightening when it pertains to youth athletes. Fortunately, it is evident that sports organizations at all levels of sport worldwide are beginning to take the dangers of concussions seriously and the efforts taken by these organizations are commendable and a step in the right direction. The need for uniformity in return-to-play standards, however, still exists. State, provincial, and, ideally, national return-to-play standards provide this uniformity and leave little in doubt with regard to how an athlete participating in any sport and at any age should be handled when suspected of suffering a concussion. Further, the pairing of these standards with educational programs for parents, coaches, and youth athletes regarding concussion management will help ensure that youth athletes are not the only ones making the call on their personal safety.

Currently, the United States is on the forefront in creating plausible, legislative solutions to the concussion problem. The Zackery Lystedt Law, other enacted state laws like it, and the proposed Protecting Student Athletes from Concussions Act and Concussion Treatment and Care Tools Act should serve as models to other countries that are currently not protecting their youth athletes as they should. Much of the early concussion-related legislation in the United States was enacted as a direct response to tragic events where a youth athlete either died or became paralyzed after suffering a catastrophic head injury. The concussion risks facing youth athletes in today's sporting climate are too great for other countries to be similarly reactive.

237. *Id.* at 268.

238. *Id.*

