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Concutere – Latin Verb Meaning “to Shake Violently”;

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INTRODUCTION

In the fall of 2006, Eric Pelly was a seemingly healthy, 18 year old student-athlete described by his mother as “full of energy... he had a gleam in his eyes, a smile on his face and a loud contagious laugh.”¹ However, underneath that joyous exterior, lay a deadly health issue that was rapidly taking hold of his brain. In each of the previous three years, Eric had been diagnosed with a concussion.² The last concussion, suffered on September 30, 2006, happened during a rugby match and caused him to collapse on the sideline, groaning in pain.³ Eric was admitted to the hospital and released.⁴ Ten days later, as his family sat down to dinner, Eric suddenly collapsed.⁵ He was dead before he reached the hospital, as a result of a swollen and herniated brain that cut off his breathing and shut down his heart rate.⁶

Unbeknownst to his family at the time, Eric had suffered a head injury only two weeks prior in a different rugby game.⁷ The injury went largely unnoticed at the time. Eric was given an icepack for his head, and it was only after Eric’s death that teammates revealed to his family that after the game Eric seemed “out of it.”⁸ Eric remained quiet about the injury, as he did not want to miss the next game.⁹

1 Eric Pelly Sports Education Fund, ERICPELLY88.COM, <http://ericpelly88.com/abouteric.html> (last visited Oct. 11, 2016).

2 *Id.*

3 *Id.*

4 *Id.*

5 *Id.*

6 *Id.*

7 *Id.*

8 *Id.*

9 Kristina Marusic, *High School Athletes Keep Dying From Concussions – So Why Do We Keep Letting Them Play?*, WWW.MTV.COM (Nov. 6, 2015), <http://www.mtv.com/news/2355900/high-school-athletes-keep-dying-from-concussions-so-why-do-we-keep-letting-them-play/>

We now know that when Eric suffered his final concussion he was about to die from Second Impact Syndrome (SIS). As defined by the Mayo Clinic, SIS occurs when a person “[e]xperienc[es] a second concussion before signs and symptoms of a first concussion have resolved,” a phenomenon that “may result in rapid and usually fatal brain swelling.”¹⁰ Further, the Mayo Clinic warns, “After a concussion, the levels of brain chemicals are altered. It usually takes about a week for these levels to stabilize again. However, recovery time is variable, and it's important for athletes never to return to sports while they're still experiencing signs and symptoms of concussion.”¹¹ Tragically, this diagnosis was only made after Eric’s death.

In 2006, the year of Eric’s death, over 41 million American youths participated in sports.¹² In that same year, a study found that between 1.6 and 3.8 million mild traumatic brain injuries were diagnosed. That number is considered conservative considering that many injuries go unreported and undiagnosed.¹³ Nearly half of all emergency room visits made by youths between the ages of 8-13 are for sports-related concussions, and the odds of suffering repeated concussions increase in those youths who have already suffered one.¹⁴

Based on these facts and figures, there are a substantial number of youths who have already suffered head injuries and will suffer from one or more of the adverse effects. Further, there are

10 Mayo Clinic, *Concussion*, WWW.MAYOCLINIC.ORG (Apr. 2, 2015), <http://www.mayoclinic.org/diseases-conditions/concussion/basics/complications/con-2001927>

11 *Id.*

12 Laura Hilgers, *Youth Sports Drawing More Than Ever*, WWW.CNN.COM (Jul. 5, 2006), <http://www.cnn.com/2006/US/07/03/rise.kids.sports/>

13 Jean A. Langlois, Wesley Rutland-Brown & Marlina M. Wald, *The Epidemiology and Impact of Traumatic Brain Injury: A Brief Overview*, 21 J Head Trauma Rehabil 375, 376 (2006).

14 Jane E. Brody, *Concussions Can Occur in All Youth Sports*, WWW.NYTIMES.COM (Aug. 24, 2015), http://well.blogs.nytimes.com/2015/08/24/concussions-can-occur-in-all-youth-sports/?_r=0

generations of youth athletes who will be susceptible to them in the future. Therefore, there is a public duty to protect youth athletes from head injuries, namely concussions.

All 50 states have now adopted some form of concussion legislation, but these laws are ineffective as they are presently constructed.¹⁵ However, there is a proper role for legislation to play. An effective legislative approach to concussion injuries would include an appropriate balance of federal and state laws that create uniform standards and legal requirements with sufficient funding, increased education, and increased awareness.

This paper will seek to answer two fundamental questions. First, why do we owe a duty to protect young athletes from a concussion? This question can be answered from moral, scientific, and legal perspectives. Second, from a legislative perspective, how do we protect youths from concussion?

In attempting to answer these questions, this paper will detail the history of concussions. First, it will focus on the ongoing difficulties in defining and treating the issue with a highlight on their unique effects on youths. Second, it will analyze the duty of the government to protect youths from concussions. Third, it will analyze current legislation, highlighting the deficiencies in their structure and implementation. Finally, it will propose appropriate legislation as a remedy to the issue.

I. Difficulties Defining and Treating Concussions and their Unique Effects on Youths

¹⁵ National Conference of State Legislatures, *Traumatic Brain Injuries Among Youth Athletes*, WWW.NCSL.ORG (Nov. 18, 2015), <http://www.ncsl.org/research/health/traumatic-brain-injuries-among-youth-athletes.aspx>

A major issue in dealing with concussions is the lack of uniformity in their definition and treatment. In 1952, the New England Journal of Medicine recommended that a football player should not continue playing after suffering three concussions. Since then, researchers have continuously put forth conflicting ideas on both the definition and treatment of concussions.¹⁶

A. Defining Concussion

In 2013, a National Academy of Science (NAS) report found that the 2012 International Conference on Concussions' (ICC) definition of a concussion, which states that it is a “brain injury defined as a complex pathophysiological process affecting the brain, induced by biomechanical force,” is most widely used.¹⁷ However, there is still a research challenge since many published works include various different definitions and terminologies.

¹⁶ A rough timeline is as follows:

-1952: New England Journal of Medicine recommends that a football player should not continue playing after suffering from three concussions. Augustus Thorndike, *Serious Recurrent Injuries of Athletes – Contradictions to Further Competitive Participation*. 247 New Eng J Med. 554-6 (1952).

-Early 1980's: Researcher Jeffrey Barth begins to identify neuropsychological effects of head injuries. Jeffrey T. Barth, *Mild TBI: Sports Concussions to Combat Injuries*. Univ. of Virginia Brain Injury and Sports Concussion Institute, <http://www.nabis.org/media/files/None/Barth.pdf> (last visited Oct. 11, 2016)

- 1994: National Athletic Trainers' Association conducts Mild Brain Injury Summit to discuss definition and care and suggests further research. Scott M. Oliaro, Kevin M. Guskiewicz & William E. Prentice, *Establishment of Normative Data on Cognitive Tests for Comparison with Athletes Sustaining Mild Head Injury*, 33 J. Athl Train. 36,36 (1998)

-2001: Dr. Robert Cantu writes observes that “The lack of a universal definition or grading scheme for concussion renders the evaluation of epidemiologic data extremely difficult.” Robert C. Cantu, *Posttraumatic Retrograde and Anterograde Amnesia: Pathophysiology and Implications in Grading and Safe Return to Play*,. 36 J. Athl Train 244, 245-6 (2001).

-2005: A study by the Mild Traumatic Brain Injury Committee conclude that “[An athlete’s] [r]eturn to play does not involve a significant risk of a second injury either in the same game or during the season.” Elliot J. Pellman, David C. Viano, Ira R. Casson, Cynthia Arfken & Henry Feuer, *Concussion in Professional Football: Players Returning to the Same Game*, 56 Neurosurgery 79, 79 (2005).

¹⁷ Robert Graham, et al., *Sports-Related Concussions in Youth: Improving the Science, Changing the Culture* 5 (2013).

The existence of several different definitions naturally leads to diagnostic and treatment issues. In turn, these issues create a difficulty in crafting legislative remedies to the issue. For example, one state may regard an injury as not a concussion and another as a concussion based on their sources of information and standards. Similarly, one state might clear an athlete to return to play based on different standards of care than another.

The Centers for Disease Control and Prevention (CDC) website “Heads Up” offers a more elementary definition than the ICC that will better serve the public for use in potential legislation. The CDC defines a concussion as a “type of traumatic brain injury caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth.”¹⁸ “This sudden movement can cause the brain to bounce around or twist in the skull, stretching and damaging the brain cells and creating chemical changes in the brain.”¹⁹ The persons most often on the front lines of detection are parents, coaches, and officials, who are not trained medical professionals and thus not familiar with the vocabulary put forth by the ICC. For instance, a layperson would be able to tell you if they saw a “blow” to the head rather than a “pathophysiological process” and, as such, it would be better to have a less scientific definition in potential legislation.

Further, the CDC offers two sets of symptoms, one that can be observed both by others, and one that could be reported by the injured people themselves.²⁰ This is an excellent distinction because too often detection of a concussion depends solely upon the injured person themselves being the first to report the issue. Having guidelines specifically aimed at educating observers can

18 Centers for Disease Control, *Heads Up*, WWW.CDC.GOV (Feb. 16, 2015), http://www.cdc.gov/headsup/basics/concussion_whatism.html

19 *Id.*

20 Centers for Disease Control, *Heads Up*, WWW.CDC.GOV (Feb. 16, 2015), http://www.cdc.gov/headsup/basics/concussion_symptoms.html

add an extra layer of detection and this distinction should be preserved in potential legislation. However, the self-reported symptoms list offered by the CDC should be augmented by breaking them down into four major categories as described by Dr. Robert Cantu in his book Concussions and Our Kids.²¹ Dr. Cantu breaks down the symptoms into those that are somatic, emotional, cognitive, and those that cause sleep disturbance.²² Within these categories, several sub symptoms are introduced that would indicate a problem in that area.²³ While not overly complex, the Cantu list is at the same time more thorough and organized than the one offered by the CDC.

B. Treatment

Since there has been an issue defining concussion, there has naturally been discord on proper treatment. Since the rather simplistic 1952 New England Journal recommendation, many detailed advancements have been made. In 1986, Dr. Cantu first introduced his “Return to Play” guidelines,²⁴ which classify concussions into grades one, two, and three, with grade three being the most severe.²⁵ Each grade of concussion is given recommendations for proper care.²⁶ Once again, he has taken a complicated issue and broken it down into understandable guidelines.

The National Football League’s (NFL) concussion protocol should be used to supplement Dr. Cantu’s chart.²⁷ These are thorough guidelines for immediate recognition of, and on site care for, an athlete who has observable symptoms of a concussion. The NFL also has a “Return to

²¹ Robert Cantu, *Concussions and Our Kids* 8 (2012).

²² *Id.*

²³ *Id.*

²⁴ *Id.* at 13

²⁵ Lindsey Barton Strauss, *Concussion Expert Revises Return to Play Guidelines*, WWW.MOMSTEAM.COM (Oct. 9, 2011), <http://www.momsteam.com/health-safety/concussion-expert-revises-return-play-guidelines>

²⁶ Cantu, *supra* at 13.

²⁷ Adam Stites, *Explaining the NFL’s Concussion Protocol*, WWW.SBNATION.COM (Sep. 18, 2016), <http://www.sbnation.com/nfl/2016/9/18/12940926/nfl-concussion-protocol-explained>

Participation Protocol.”²⁸ The protocol is specifically centered on a return to playing football, but the prescribed rest and managed incremental return to physical activity therein should be incorporated into concussion legislation.

Dr. Cantu’s chart and the NFL’s recommendations can be very helpful for a medical provider and trainer to consult. However, more than legislation is needed in this area because there is no “normal” recovery time.²⁹ Each individual case has to be monitored and judged by a proper health care provider. This fact, coupled with current state legislation that varies as to what kind of provider can clear an athlete for return, are hindering treatment efforts. Therefore, any proposed legislation must specifically include that judgments on return to play must be made by medical doctors.

1. Culture

Even in instances where appropriate treatment guidelines are in place, there is an issue concerning the implementation of such protocols. One of the main reasons for that is the culture surrounding concussion injuries. There is often a prevailing “tough it out” culture when an athlete seems to have suffered an injury. The NAS study finds that, “youth profess that they may play through a concussion to avoid letting down their teammates, coaches, schools, and parents.”³⁰ There are several reasons for this.

First, a concussion cannot be visibly seen in the same way as other injuries. For instance, even though a concussion can be just as serious, if not more so, than a broken leg, you will not

²⁸ National Football League, *Protecting Players: NFL Return to Participation Protocol*, WWW.PLAYSMARTPLAYSAFE.COM, <https://www.playsmartplaysafe.com/focus-on-safety/protecting-players/nfl-return-to-participation-protocol/> (last visited Oct. 11, 2016).

²⁹Cantu, *supra* at 10.

³⁰ Graham, *supra* at 11.

hear a coach tell an athlete to “tough it out” if his leg is visibly broken. Dr. Cantu recounts the story of him giving a lecture on concussions to a high school football team.³¹ Afterwards, the team’s coach told Dr. Cantu that he thought the lecture was important, but he would never invite him back because he did not want to scare his players or make them “squeamish.”³² It is precisely this kind of attitude that must be removed from youth sports. The fact that a concussion diagnosis heavily relies on the athlete self-reporting their symptoms makes it crucial that they play in an environment in which they can feel comfortable relaying how they feel. They cannot be put in a situation where they have to wonder if a coach will somehow punish them for reporting their injury.

Secondly, concussions were not always seen as serious issues. This attitude may have trickled down from the way they were treated in professional sports. NFL Hall of Famer Troy Aikman cannot remember playing in the 1993 National Football Conference Championship because of a concussion he suffered midway through the game.³³ Despite obvious confusion on

³¹ Cantu, *supra* at 13.

³² *Id.*

³³ Mike Florio, *Aikman Opens Up About Why He Doesn't Talk About Concussions*, WWW.PROFOOTBALLTALK.NBCSPORTS.COM, (Jan. 9, 2011)

his part,³⁴ Aikman was given clearance to play in Super Bowl XVIII only seven days later.³⁵ At the time, this was probably feted as a heroic, tough guy move by Aikman. With all that we now know about SIS, Aikman, who retired prematurely from the NFL due to suffering multiple concussions³⁶, appears lucky to have survived without a catastrophic injury. Perhaps stories like this are why an ESPN survey of coaches, players, parents, and trainers found that the players themselves were the ones least concerned about concussions.³⁷ In fact, 54% of athletes said they would rather win a state championship while playing with a concussion than sit out the game and lose.³⁸

C. Concussions in Youths

³⁴ The quarterback (Aikman) then had this sideline conversation with J. R. Zamorano, the Cowboys team physician:

"OK, what day is it?"

"I don't know."

"Where are we?" "Where's the Super Bowl?"

"The what?"

"The Super Bowl," said the doctor, "where you were MVP last year."

"I was?" Aikman said, stunned.

"Where do you play the next game?" Zamorano asked.

"Henryetta," Aikman said, a confused reference to his home town in Oklahoma.

Despite this exchange, Zamorano said yesterday that Aikman had recovered sufficiently to ensure that he could play Sunday. "He'll be ready for the Super Bowl," the doctor said. "There is no contact in practices this week, so I don't foresee a problem." Ron Reid, *Aikman Will Play In Atlanta The Concussion He Suffered Sunday Won't Knock Him Out Of The Super Bowl, He Says*. Phila. Inquirer, Jan. 25, 1994, available at http://articles.philly.com/1994-01-25/sports/25825231_1_troy-aikman-super-bowl-xxviii-cowboys-quarterback.

³⁵ Floria, *supra*.

³⁶ *Id.*

³⁷ Cantu, *supra* at 125-126.

³⁸ *Id.* at 126.

For several reasons, it may take longer for a child to recover from a concussion than an adult.³⁹ First, a child's head is much bigger in proportion to the rest of his body (mainly the neck) and, as such, a child cannot absorb the impact of a blow in the same way as an adult.⁴⁰ Second, a child's brain has less myelin (a fat that protects fiber tracts in the brain) and, thus, is more at risk for damaging brain structure.⁴¹ Further, the earlier one starts accumulating brain injuries, the more time you have to accumulate further injuries throughout life.⁴² In 2004 researchers at the 2nd International Conference on Concussion in Sport concluded that the "severity and duration of acute concussion symptoms is thought to be greater in youths, compared to adolescents or adults."⁴³

The 2013 NAS study suggests that concussions can negatively impact the gray and white matter of the brain.⁴⁴ Gray and white matter are particularly important to a developing brain since they are responsible for processing skills, cognition skills, and coordinating communication between different parts of the brain.⁴⁵ The study also corroborates the theory on greater risk due to incomplete myelination, as it suggests that "children demonstrate more widespread and prolonged cerebral swelling and increased metabolic sensitivities following a head injury, and these physiological changes may result in more apparent (i.e. more severe and persistent) symptoms."⁴⁶ On the subject of multiple concussions, high school athletes who have had a prior concussion are 2 to 5.8 times more likely to suffer another one.⁴⁷

³⁹ *Id.* at 11.

⁴⁰ *Id.* at 12.

⁴¹ *Id.*

⁴² *Id.*

⁴³ Christine M. Baugh & Zachary E. Shaprio, *Concussions and Youth Football: Using a Public Health Law Framework to Head off a Potential Public Health Crisis*, 2 J. Law. Biosci. 449, 450-1 (2015).

⁴⁴ Graham, *supra* at 57.

⁴⁵ *Id.*

⁴⁶ *Id.* at 81.

⁴⁷ *Id.* at 82.

The effects of a concussion can lead to several serious issues in a youth's future. Michele Pelton was a high school athlete from Massachusetts, who suffered a concussion.⁴⁸ "While all my classmates were involved in senior activities, I was home depressed and in constant pain, and life had become a blur. Every day I endure memory loss, lack of concentration, depression, slow processing speed and cognitive effects that make my everyday life a battle."⁴⁹

Since almost all recovery protocols recommended both physical and cognitive rest, the simple act of attending class is not feasible for a person in recovery from a concussion. Things that seem as trivial as the loud noise in the hallways and the bright lights of a classroom are too stimulating and would not be a suitable environment for a young person in recovery. In fact, Dr. Cantu has a standard letter that he sends to a patient's teacher whenever they are in recovery explaining the temporary limitations of the student.⁵⁰ The NAS study notes that students in recovery may be unable to participate in a full day of school or work, will need a reduced workload, and will need additional time to complete tasks.⁵¹ "Academic work demands focus, memory, processing speeds, and concentration, which are the processes that are affected by a concussion. In addition, cognitive stress may elicit or exacerbate concussive symptoms."⁵²

The inability to return to normal schooling is a detriment to a young person's future in both an academic and social sense. A study of the Chicago school system found that only 63% of

⁴⁸ Cantu, *supra* at 70.

⁴⁹ *Id.*

⁵⁰ *Id.* at 72.

⁵¹ Graham, *supra* at 160.

⁵² *Id.* at 160-1.

students who missed 5 to 9 days of school graduate on time, while 87% of students who missed less than one week graduate on time.⁵³

Further there is a correlation between brain injuries and development of diseases such as depression, Alzheimer's, and amyotrophic lateral sclerosis (ALS). The NAS study concluded that "post-concussive symptoms often co-occur with depression and have a shared pathology"⁵⁴ and that there is an "increasing linear relationship between history of concussion and a diagnosis of lifetime depression."⁵⁵ Former players who had three or more concussions were three times as likely to be diagnosed with depression, while those with one or two were 1.5 times as likely.⁵⁶

Dr. Cantu tells the story of Matt Glass, a high school football player who suffered two concussions in one season and spent the next year struggling to keep a hold on life.⁵⁷ He suffered from headaches, insomnia, and fainting spells.⁵⁸ Matt admitted that he was dealing with stress, anxiety, and depression due to his post-concussion symptoms.⁵⁹ Matt even admitted to a psychologist that he was having suicidal thoughts.⁶⁰ Unfortunately, suicide is not uncommon when it comes to dealing with concussions. In recent years, the suicides of several former professional football players, all of whom had suffered from multiple concussions during their playing careers, have brought the issue to light.⁶¹

⁵³ *Id.* at 161.

⁵⁴ *Id.* at 184

⁵⁵ *Id.* at 212.

⁵⁶ *Id.*

⁵⁷ Cantu, *supra* at 74.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ Mary Brophy Marcus, *New Findings on Former NFL Players and Suicide Risk*, WWW.CBSNEWS.COM, (May 11, 2016) <http://www.cbsnews.com/news/new-findings-on-former-nfl-players-and-suicide-risk/>

Further, the NAS study details the work of Dr. Brenda Plassman who finds that severe head injuries suffered during early adulthood are associated with increased risk of developing Alzheimer's.⁶² The NAS study also highlights two case studies that show an association between ALS and military veterans and soccer players who had experienced head trauma within the previous 15 years.⁶³

Since millions of concussions are diagnosed each year, and it is a statistical certainty that many are sustained participating in youth sports, this issue is certainly a public health concern. If concussions can have such an impact on a fully formed adult brain, such as the former football players who committed suicide, it is logical to infer they could be as or even more damaging to a young undeveloped one.

II. The Government's Duty and Power to Protect Youth Athletes

Traditionally, public health law has been governed by the individual states. "States and localities have had a primary responsibility for protecting the public's health since the founding of the republic."⁶⁴ States have traditionally used their *parens patriae* power to regulate public health and ensure the welfare of their citizens.⁶⁵ Though health legislation is traditionally a state matter, the federal government also has a role. In certain situations, the federal government may use its

⁶²Graham, *supra* at 223.

⁶³ *Id.* at 224.

⁶⁴ Lawrence O. Gostin & Lindsay F. Wiley, *Public Health Law: Power, Duty Restraint* 87 (2016).

⁶⁵ *Id.* at 77

powers if the issue is one that demands national attention.⁶⁶ These situations may include when there exists a need for expertise, additional funding, or when the need simply overwhelms that which a single state can handle.⁶⁷ The power of the federal government in this area is typically found in its power to tax and spend and to regulate interstate commerce.⁶⁸ There are also situations when cooperative federalism is used and both the state and federal governments will have a hand in legislating a particular issue. “No particular political unit (federal, state, or local) should have primacy: each should play a unique role in a well-coordinated effort.”⁶⁹ Pursuant to the supremacy clause, any conflicts in law between the state and federal government are resolved in favor of the federal government.⁷⁰

A. State Parens Patriae Power

The state primarily uses parens patriae power, which is defined as “the open-ended power of the state to act as parent,” in two contexts.⁷¹ The first is to protect individuals who are unable to protect themselves because they are incapacitated.⁷² The second is to “assert general interest and standing in communal health, comfort, and welfare, safeguarding collective interests that no

⁶⁶ *Id.* at 75.

⁶⁷ *Id.*

⁶⁸ *Id.* at 77.

⁶⁹ *Id.* at 76.

⁷⁰ *Id.* at 77.

⁷¹ *Id.* at 91.

⁷² *Id.*

individual, acting alone, has the capacity to vindicate.”⁷³ Amongst others, this is a power that the state has to protect minors. The Supreme Court has upheld laws on the basis of *parens patriae* to broadly regulate against industries producing products deemed harmful to the public’s health.⁷⁴

The courts afford state governments broad authority via the *parens patriae* power. Thus, state legislation aimed at regulating concussions in youth sports will be appropriate. In this specific situation, since minors are the focus, the state’s *parens patriae* power would almost certainly be invoked.

B. Federal Power

In the 20th century, the presence of the federal government in governance of public health issues has expanded considerably.⁷⁵ “As the federal government has garnered more resources and the Supreme Court has permitted greater congressional authority, the federal presence in public health has grown. It is now nearly impossible to find a field of public health that is not heavily influenced by the federal government.”⁷⁶

A recent example would be the passage of the Family Smoking Prevention and Tobacco Act in which the Food and Drug Administration (FDA) is given the power to regulate the tobacco industry.⁷⁷ A key provision of the law is that labels warning of the harmful effects of tobacco be

⁷³ *Id.*

⁷⁴ *Id.* at 93.

⁷⁵ *Id.* at 158.

⁷⁶ *Id.* at 168.

⁷⁷ “To protect the public health by providing the Food and Drug Administration with certain authority to regulate tobacco products” FAMILY SMOKING PREVENTION AND TOBACCO CONTROL ACT, 155 Cong Rec H 4318, 4318

added to all tobacco products and advertising with the main goal of the labels being to discourage youths from using tobacco products.⁷⁸

III. Current Legislation

Currently, all 50 states and the District of Columbia have enacted concussion legislation.⁷⁹ These laws do not adequately address the primary prevention of concussions. While it is true that most state laws do mandate some sort of education, which is primary prevention, their actual education requirements vary significantly from state to state making them ineffective.⁸⁰

Studies show that the basic makeup of the state laws share three common components:

- 1. Provision of education or training on concussion recognition and appropriate responses.*
- 2. Removing a youth athlete from play or practice in the event of a suspected concussion.*
- 3. Returning a youth athlete to practice or competition after evaluation and clearance by a designated health care provider.*⁸¹

While the basic components are similar, it is in the execution of these laws where the detrimental variances come into play. As such, there are deficiencies in each component of the state legislations.

A. Education Requirement Deficiencies

⁷⁸ *Id.* at 4319

⁷⁹ National Conference of State Legislatures, *supra*.

⁸⁰ Graham, *supra* at 266.

⁸¹ National Conference of State Legislatures, *supra*.

The most effective primary prevention technique is uniform and mandatory concussion education. This education will provide not only the proper knowledge of the issue, but also create a heightened awareness that will serve as a way of breaking the negative culture surrounding concussions. The current Connecticut law is a good example. There, renewal or receipt of a coaching permit mandates that, “coaches of intramural and interscholastic athletics complete an initial training course on concussions and head injuries prior to coaching and every 5 years thereafter and . . . review relating information on concussions and head injuries each year that the course is not required.”⁸² In contrast, Illinois requires only that “educational materials describing the nature and risk of concussions and head injuries be made available to school districts to educate coaches as well as parents and student athletes.”⁸³

B. Removal from Play Inconsistencies

The circumstances dictating when removal from play is warranted also vary from state to state. Most states require that a player be removed from the field when a concussion is *suspected*. However, North Carolina law more specifically states that, “if a student participating in an interscholastic athletic activity *exhibits signs or symptoms consistent with concussion*, he or she should be removed from the activity at that time.”⁸⁴ Further, the laws vary on who may call for the removal of the athlete. A proper law should include a comprehensive list that includes parents, coaches, officials, trainers, and any medical professionals present. A motto that any law should embrace is, “when in doubt, sit them out.”⁸⁵ Proper removal from play should be

⁸² Graham, *supra* at 266.

⁸³ *Id.*

⁸⁴ *Id.* at 267.

⁸⁵ *Id.* at 101.

considered a hybrid primary/secondary prevention tool since it is well accepted that multiple head injuries can have severe impacts on youths.

C. Clearance to Return Inconsistencies

Finally, the state laws vary as to clearing an athlete to return. There are states in which the law requires that a health care provider specifically trained in concussions must clear an athlete's return.⁸⁶ Then, there are states that allow *any* licensed health care provider to clear a return.⁸⁷ Finally, there are those who allow trainers, psychologists, and therapists to clear returns.⁸⁸

Proposed legislation should have many similarities to the current Massachusetts law, which requires a "graduated reentry plan."⁸⁹ There, an athlete does not return to play until they are "cleared by a physician or a certified athletic trainer or nurse practitioner in consultation from a physician."⁹⁰ Further, "the key players in a child's recovery work together to set a schedule, including a student's teacher, guidance counselor, school nurse, certified athletic trainer, parents, and physician."⁹¹ Student-athletes and their coaches have no say in the matter.⁹²

Again, proper return to play should be considered a hybrid primary/secondary prevention tool because of the ramifications of sustaining another concussion before properly healing.

IV. Proposed Legislation

⁸⁶ *Id.* at 267.

⁸⁷ *Id.*

⁸⁸ *Id.* at 268.

⁸⁹ Cantu, *supra* at 87.

⁹⁰ *Id.*

⁹¹ *Id.*

⁹² *Id.*

Congress should pass an act that empowers the CDC to regulate the management and treatment of concussions in youth sports. The reason for using federal law, and its goal, should be to provide the uniformity in definition and symptoms that state-by-state legislation lacks. This should include a clarification of concussion definition, when removal from play is warranted, and what kind of medical professionals can make diagnoses and give clearances to return to play. Specifically, the current CDC definition⁹³ and Dr. Cantu's symptoms chart should be incorporated into the law.⁹⁴ Further, there should be incorporation of the specific North Carolina law⁹⁵ on when an athlete needs to be removed from the field.

To guide an athlete's return to play, Dr. Cantu's guidelines that dictate return corresponding to the grade of the concussion severity should be incorporated.⁹⁶ Further, a combination of Massachusetts' graduated reentry plan⁹⁷ and the NFL's return to participation guidelines⁹⁸ should be incorporated. One edit to make from the Massachusetts law is that only a medical doctor trained in concussions may make the return to play decision. Finally, as in the District of Columbia, the law needs to be as universally applied to all league and levels of play in which youths are participating.⁹⁹

The bill also needs to provide a mandatory minimum level of education to parents and coaches, as well as funding to reach that goal. Similar to CPR certification,¹⁰⁰ coaches, trainers,

⁹³ Centers for Disease Control, *supra*.

⁹⁴ Cantu, *supra* at 8.

⁹⁵ Graham, *supra* at 267.

⁹⁶ Cantu, *supra* at 9.

⁹⁷ *Id.* at 87.

⁹⁸ National Football League, *supra*.

⁹⁹ Graham, *supra* at 269.

¹⁰⁰ American Red Cross, *First Aid, Health and Safety for Coaches*, WWW.REDCROSS.ORG, <http://www.redcross.org/take-a-class/course-dowbt000000000010053> (last visited Oct. 11, 2016).

and officials should be certified in concussion training. The Athletic Concussion Training performed a study using an interactive video approach to educate youth coaches on concussions.¹⁰¹ The video provided instruction on prevention, recognition, and management of youth concussions.¹⁰² The results showed an increased knowledge in areas of “general concussion knowledge, knowledge of misperceptions about concussion, perceived self-confidence about taking appropriate action based on scenarios presented, and intent to take action based on the scenarios.”¹⁰³ The thorough and strict Connecticut model should serve as a model for the federal education standards.

It is absolutely crucial that any legislation involve implementation of strict minimum levels of education for coaches and trainers. The coach and trainer will often be making the initial decision as to whether or not a concussion is suspected and whether or not the athlete can continue to play. Specifically, they must be educated on the signs and symptoms of a concussion; and more importantly, on the dangers of continuing to let a concussed athlete play. Young people should be given an education as well. In fact, studies have shown that youth athletes who viewed a lecture on concussions had increased knowledge on the issue.¹⁰⁴ However, young people do not think about future consequences in the way that adults do. The ESPN survey reinforces that adults on the scene must be the ones to take charge of the situation. As mentioned *supra*, there is a culture issue surrounding concussions and a change can be created through tough legislative guidelines on mandatory education in this area.

¹⁰¹ Graham, *supra* at 263.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ Graham, *supra* at 261.

The CDC needs to be clear in how the education program is to be implemented. “Because state concussion laws do not always provide guidance on how they should be carried out, implementers are sometimes required to make decisions after the law has passed that can influence the success of the implementation.”¹⁰⁵ Proper implementation is vital since the goal and purpose of using federal law is to provide uniformity. Federal funding for the bill will provide the funding necessary to implement these educational programs.

The bill will also provide the funds for creation of appropriate recovery environments for students who must miss school due to their injury. Several states have created systems to help educators better understand the effects that concussions can have on their students in the classroom.¹⁰⁶ In Pennsylvania, The Brain Injury Association of Pennsylvania (BIAP) and the Pennsylvania Department of Education have partnered to create “BrainSTEPS.”¹⁰⁷ This is a program offering school districts “trained assistance in re-integrating concussed athletes into the school.”¹⁰⁸ This can be an effective tool in two capacities. First, it will work to mitigate the negative effects that missing school time can have on a student. Secondly, since cognitive stress can actually have negative effects on concussion recovery, it will be beneficial to the health of the student. A provision of the law will include funding for the states in this area.

While federal law will paint the broad strokes, there is also a proper place for a more narrowly focused state government effort. For reasons discussed *infra*, a concussion monitoring database should be implemented at the state level and would monitor athletes who have suffered a concussion. The overriding goal of this database would be to protect the athlete from further injury,

¹⁰⁵ *Id.* at 271.

¹⁰⁶ *Id.* at 162.

¹⁰⁷ *Id.*

¹⁰⁸ *Id.*

most notably SIS. “[I]t is widely accepted that concussion symptoms are aggravated by both physical and mental exertion...there is evidence of a period of vulnerability during which the brain is more susceptible to secondary injury and during which it is prudent to avoid activities that may lead to additional impacts.”¹⁰⁹ Research shows that the more time that is allowed between injury and return to play, the less chance there is to sustain a repeat concussion in the same season.¹¹⁰ Proper use of this database could significantly reduce injuries caused by returning to play too soon.

Roughly speaking, a medical provider will be required to enter the date of the athlete’s injury and his/her symptoms. Using the diagnostic and return to play guidelines issued by the CDC,, the entry must detail who made the diagnosis and when reevaluation will be appropriate. When the athlete is reevaluated, the medical professional must enter into the database reasons for clearance to return, or, in the alternative, why clearance has not been granted. This process must be repeated until the athlete is cleared to return.

V. Authority to Enact Proposed Legislation

A. Commerce Clause Analysis

The Commerce Clause states “the Congress shall have the power...to regulate Commerce with foreign Nations, and among the several states, and with the Indian Tribes.”¹¹¹ Over the years, Congress has used this clause broadly to enact legislation. From 1937-1995, the Supreme Court did not strike down any legislation for excessive use of power granted in the Commerce Clause.

¹⁰⁹ *Id.* at 157.

¹¹⁰ *Id.*

¹¹¹ USCS Const. Art. I, § 8, Cl 3.

The court uses a rational basis standard of review, which shows deference to the legislative body, as the law must only be rationally related to a legitimate government purpose. As such, laws in all areas, including public health, are justified on this basis.

In 1995, in United States v. Lopez, the Court finally struck down a law as overreaching use of the commerce clause, when they overturned federal legislation banning gun possession within a school zone.¹¹² The Court stated that there was no “substantial effect” on interstate commerce.¹¹³ Essentially, the Court was saying that the relationship between the law and interstate commerce was tangential. In 2000, the Court further clarified themselves in U.S. v. Morrison when they held that the activity being legislated must be economic in nature.¹¹⁴

However, in Gonzalez v. Raich, the court widened the scope of “economic activity.” There, it held that the transaction does not have to be commercial in nature, but can be part of a larger economic scheme that embraces economic activity.¹¹⁵

Therefore, concussion regulation will either have to be economic in nature, and if so, have a substantial effect on interstate commerce or be part of a larger economic scheme to be a valid use of commerce clause power. A concussion act is likely not economic in nature, and thus does not pass the threshold question put forth in Lopez. However, sports add billions of dollars to local economies and therefore, as articulated in Raich, the act will likely pass because it embraces economic activity as part of a larger economic scheme.

¹¹² *United States v. Lopez*, 514 U.S. 549, 551 (U.S. 1995).

¹¹³ *Id.* at 567.

¹¹⁴ *United States v. Morrison*, 529 U.S. 598, 613 (U.S. 2000).

¹¹⁵ *Gonzales v. Raich*, 545 U.S. 1, 5 (U.S. 2005).

Sports in general are much more than just a game on the field. They are some of the biggest businesses in this country. The NFL alone adds an estimated \$5 billion to the economies of cities that host teams.¹¹⁶ In these cities, the league supports an estimated 110,000 jobs.¹¹⁷ In 2011, the 32 NFL teams took in a combined \$1.07 billion in sponsorship revenue.¹¹⁸ NFL commissioner Roger Goodell estimates that by 2027, the league will have \$25 billion in annual revenue.¹¹⁹ Further, Sports Travel Magazine estimates that 27% of all trips taken in 2012 were for the sole purpose of attending a sporting event.¹²⁰

Youth sports generate billions of dollars as well. “Youth sports tourism” has become a \$7 billion dollar industry that sees youth athletes travelling across the country to compete.¹²¹ “Youth sports tourism...is the fastest-growing segment in travel.”¹²² “You’ve got millions of kids involved, parents spending thousands of dollars, and cities building facilities to host events and chase tourism dollars...it’s huge.”¹²³

In Raich, the federal government was allowed to regulate a local activity (cultivation and possession of marijuana) because it was part of a “class of activities” with a substantial effect on interstate commerce.¹²⁴ The court found that local use affected supply and demand in the national

¹¹⁶ Paul Wiseman, *Football’s Back: NFL is a Key Player in the Economy*, USA Today, Sep 9, 2014, available at <http://usatoday30.usatoday.com/money/economy/story/2011-09-11/nfl-economy/50339734/1>.

¹¹⁷ *Id.*

¹¹⁸ Ike Ejiochi, *How the NFL Makes the Most Money of any Pro Sport*, WWW.CNBC.COM, (Sep. 4, 2014) <http://www.cnbc.com/2014/09/04/how-the-nfl-makes-the-most-money-of-any-pro-sport.html>.

¹¹⁹ *Id.*

¹²⁰ Karla Jo Helms, *The Sports Facilities Advisory Deems Youth Sports and Sports-Related Travel “Recession Resistant”-Youth Sporting Events Create \$7 Billion in Economic Impact*, WWW.PRWEB.COM, (Nov. 25, 2013) <http://www.prweb.com/releases/2013/11/prweb11362596.html>.

¹²¹ Mark Koba, *Spending Big on Kids’ Sports? You’re Not Alone*, WWW.CNBC.COM, (Jan. 13, 2014) <http://www.cnbc.com/2014/01/13/youth-sports-is-a-7-billion-industryand-growing.html>

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Raich*, 545 U.S. 1 at 5.

marijuana market, making the regulation of intrastate use essential to regulating the drug's national market.¹²⁵ Likewise, youth athletes are essential to the economic scheme of the sports industry. For example, if the NFL wants to achieve its 2027 goal of \$25 billion dollars in revenue, they will need the athletes to fuel their business. The participation of healthy athletes in youth sports is essential to the overall economic scheme. Any marked decline in participation could have a severe impact.

In Lopez, the goal of the legislation was to ban guns in school zones.¹²⁶ Clearly, the aim of the law, as in proposed concussion legislation, was to protect children. However, that was in a broad sense. The goal was to protect young children generally and, as such, was not sufficiently connected to one particular economic scheme. Concussion litigation is closely connected to the specific economic scheme that is sports and youth sports in general.

Therefore, using federal power will likely be valid use of the commerce clause. It will also be the most effective use of legislation because it is a streamlined way to enact uniform national standards.

B. Federal Spending/Cooperative Federalism

The federal government also has the “power to lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States.”¹²⁷ Traditionally, the “general welfare” clause has given Congress broad power to tax and

¹²⁵ *Id.*

¹²⁶ *Lopez*, 514 U.S. 549 at 551.

¹²⁷ USCS Const. Art. I, § 8, Cl 1.

spend.¹²⁸ The power to spend “expressly authorizes expenditures for the public’s health, safety, and well-being.”¹²⁹

Further, the power to spend “effectively induces state and private party conformance with federal regulatory standards.”¹³⁰ The spending power can serve as a regulatory device as Congress can set conditions on the federal funds it allocates to states. Indirectly, this can be a way of advancing federal government interests. “The Supreme Court permits conditional appropriations, provided the conditions are clearly expressed in the statute, reasonably related to the program’s purposes, and not unduly coercive.”¹³¹ “Despite this theoretical limit, the Supreme Court grants Congress substantial leeway and appears to search for permissible relationships between the appropriation and the conditions.”¹³² This system is called “cooperative federalism.” Since states are hesitant to decline federal funds this can be an effective tool for the federal government to further their interests.¹³³

There are also ways in which the state and federal governments work together under a system of cooperative federalism when the federal government is using commerce clause power. In this instance, the federal government can give the states the choice of either self-regulating under the federal standards or having their own laws preempted by federal standards.¹³⁴ For example, in concussion legislation, the federal government could pass an act empowering the CDC to regulate the issue. From there, the CDC would likely be free to set a uniform definition,

¹²⁸ Gostin, *supra* at 99.

¹²⁹ *Id.* at 103.

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Id.* at 101-2.

¹³⁴ *Id.* at 101.

minimum treatment guidelines, and minimum education standards. The states could accept these standards and administer them on their own or they would have their own concussion laws preempted and the national standards implemented.¹³⁵

Rarely will a court invalidate a law if the government is acting under valid constitutional authority.¹³⁶ However, in 1992, in New York v. United States, the Court used the Reserved Powers Doctrine to invalidate a portion of a law requiring that New York state would have had to take possession of radioactive waste if they did not regulate the waste pursuant to the Low-Level Radioactive Waste Policy Amendments Act of 1985.¹³⁷ The court reasoned that this was giving Congress the ability to “commander the legislative process of the States by directly compelling them to enact and enforce a federal regulatory program.”¹³⁸ Further, the Court held in Printz v. United States, that the federal government cannot require the state to merely act in a way that assists in implementing federal law.¹³⁹ The Court is essentially stating that the federal government cannot be overly coercive. There can be conditions placed on receipt of money, but there must be a legitimate choice left up to the states as to how to act.

Proponents of cooperative federalism cite the influx of all of the resources that the federal government can provide.¹⁴⁰ However, detractors of cooperative federalism believe that there is a lack of uniformity from state to state because each state may not implement the federal standards equally.¹⁴¹

¹³⁵ *Id.*

¹³⁶ *Id.* at 105.

¹³⁷ *New York v. United States*, 505 U.S. 144, 169 (U.S. 1992).

¹³⁸ *Id.* at 149.

¹³⁹ *Printz v. United States*, 521 U.S. 898, 927 (U.S. 1997).

¹⁴⁰ Gostin, *supra* at 102.

¹⁴¹ *Id.*

Theoretically, as in the above example, the federal government could use cooperative federalism to authorize the CDC to issue guidelines to the states. However, lack of uniformity in definition and treatment of concussions is already an issue. As the critics of cooperative federalism suggest, this lack of uniformity is a detraction from its use in creating appropriate concussion litigation.

For the sake of uniformity, the bulk of this act should not be attached to spending clauses. The overriding goal of this litigation is to create uniformity to ensure that all youth athletes are receiving proper care. Critics contend that even with federal oversight, there is often a lack of uniformity amongst the states leading to varying results.¹⁴² “Even if they opt into a federal program, states may not be fully committed to the goals set forth in federal law...their enforcement may be lax and sluggish or downright obstructionist.”¹⁴³

However, there is a proper role for a spending clause directed to the states in one particular provision of the law. The federal act should provide funds to increase implementation of programs like “BrainSTEPS” that help integrate injured youths back into to school. Currently, Pennsylvania uses state funding for BrainSTEPS.¹⁴⁴ However, states are very hesitant to decline federal money, and therefore the spending clause could be a great motivator.¹⁴⁵ The federal government would provide the general principle and funds, with the states free to implement the procedure and operate the programs. This is another area that demands a more narrow focus, with states better equipped than the federal government to handle their own schools.

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ Graham, *supra* at 162.

¹⁴⁵ Gostin, *supra* at 101.

C. Federal Agency Analysis

The federal government has increasingly used agencies as a mechanism for implementing legislation in the public health sphere. “Administrative agencies at the local, state, and federal levels offer expertise and flexibility, which are integral to public health governance.”¹⁴⁶

Federal agencies are given considerable authority as lawmakers often defer to them to provide expertise in managing issues on the ground level.¹⁴⁷ “The lines between lawmaking, enforcement, and adjudication have become blurred with the rise of the administrative state...they are sometimes described as the ‘headless fourth branch’ of government.”¹⁴⁸ The Supreme Court has stated that for the legislature to properly delegate authority to an agency, it must provide an “intelligible principle” to guide it.¹⁴⁹ Intelligible principle can be construed to mean that the legislature must be clear as to the objective of the particular legislation. The agency may only act within the parameters of fulfilling that objective. Without the intelligible principle, the agency would be deemed autonomous to set their own policies.¹⁵⁰ Put simply, the agency can only make regulations that are designed to achieve the purpose of the legislation. Historically the court has been lenient as to how stringent the delegation standards in the legislation must be.¹⁵¹

A law that “empowers the CDC to regulate the management and treatment of concussions in youth sports” will likely pass as a thorough enough intelligible principle. Historically, the courts are not strict in this area.¹⁵² In Whitman v. American, the court held that a congressional directive

¹⁴⁶ *Id.* at 153.

¹⁴⁷ *Id.* at 168.

¹⁴⁸ *Id.* at 169.

¹⁴⁹ *Id.* at 170.

¹⁵⁰ *Id.*

¹⁵¹ *Id.*

¹⁵² *Id.* at 170.

to the Environmental Protection Agency to create standards for air quality designed to protect the public health” is not so standard-less as to create an unconstitutional delegation of power.¹⁵³ Therefore, this principle will likely withstand judicial scrutiny.

Proposed federal concussion legislation will heavily rely on the agency power of the CDC. “The CDC provides technical and financial support to states in monitoring, controlling, and preventing disease.”¹⁵⁴ Since concussions happen in thousands of different municipalities across the country, the specific expertise and “boots on the ground” approach of agencies will be vital. Agency power, coupled with the use of federal funds can have the greatest impact on the issue.

D. State Agency Analysis

State agencies are created, empowered, and given direction via the state’s legislative body.¹⁵⁵ “The state’s plenary power to safeguard citizens’ health, moreover, includes the authority to create administrative agencies devoted to that task.”¹⁵⁶ Examples of tasks delegated to state health agencies are running prevention programs, providing education, running public health programs, and various other public health interests.¹⁵⁷ A concussion database should be implemented at the state agency level and not as a part of the federal concussion act for several reasons.

First, state agencies already have experience and success implementing a database akin to the proposed concussion database. Currently, 49 states have created Prescription Drug Monitoring

¹⁵³ *Id.*

¹⁵⁴ *Id.* at 168.

¹⁵⁵ *Id.* at 157.

¹⁵⁶ *Id.* at 156.

¹⁵⁷ *Id.* at 157.

Programs (PDMP).¹⁵⁸ These programs “collect, monitor, and analyze electronically transmitted prescribing and dispensing data submitted by pharmacies and dispensing practitioners.”¹⁵⁹ The goals of the collection of such data include controlling abuse and supporting research and education.¹⁶⁰

Initial data has shown these databases have had positive impacts. In 2012, Florida saw a 50% decrease in overdose deaths from abuse of oxycodone.¹⁶¹ In 2013, New York had a 75% decrease in patients’ seeing multiple prescribers to obtain the same drug.¹⁶² Another positive feature of PDMP’s are that they are “more than just passive databases.”¹⁶³ They can be used as tools to understand behaviors such as diagnostic trends, effective treatment technique, and risk assessment.¹⁶⁴

A concussion database can be very similar to a PDMP. Qualified medical providers would collect data in a similar fashion and not only use the information to properly return athletes to good health, but also to study trends. As discussed supra, concussions are often invisible injuries. Figuratively speaking , a database would be to make these injuries visible to all.

¹⁵⁸ Prescription Drug Monitoring Program Training and Technical Assistance Center, *Prescription Drug Monitoring Frequently Asked Questions (FAQ)*, WWW.PDMPASSIST.ORG, <http://www.pdmpassist.org/content/prescription-drug-monitoring-frequently-asked-questions-faq> (last visited Oct. 11, 2016)

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ Centers for Disease Control, *Injury Prevention & Control: Opioid Overdose State Successes*, WWW.CDC.GOV (Mar. 23, 2016), <http://www.cdc.gov/drugoverdose/policy/successes.html>

¹⁶² *Id.*

¹⁶³ Centers for Disease Control, *Injury Prevention & Control: Opioid Overdose What States Need to Know about PDMP’s*, WWW.CDC.GOV (Mar. 23, 2016), <http://www.cdc.gov/drugoverdose/pdmp/states.html>

¹⁶⁴ *Id.*

Secondly, a provision of a federal bill requiring the states to create and operate a database which implements federal standards is likely illegal as per the holdings in New York and Printz. The distinction between proposing a provision that provides federal funding for state creation of programs like BrainSTEPS and not for a database is in the operation of each program. For BrainSTEPS-like programs, the states would be given federal funds, but have the autonomy to create and operate those programs as they see fit. In contrast, the states would be forced by the Supremacy Clause to operate and create their concussion databases as per the diagnostic and treatment guidelines of the federal concussion act. As such, a federal mandate for the states to create and operate a concussion database is overly coercive and commandeering.

Although state agencies are the most efficient way to implement this system, there may also be a role for the federal government. For instance, funding is available for PDMP's via certain federal grants and states have the option of participating in the program.¹⁶⁵

E. Preemption

Finally, federal legislation should expressly preempt all current state law. "If Congress has enacted legislation on a subject, that legislation is controlling over state or local laws. This rule of law, known as preemption, allows Congress to supplant state statutes, regulations, and common

¹⁶⁵U.S. Department of Justice, *State Prescription Drug Monitoring Programs*, WWW.DEADIVERSION.USDOJ.GOV, https://www.deadiversion.usdoj.gov/faq/rx_monitor.htm#9 (last visited Oct. 11, 2016).

law.”¹⁶⁶ “Express preemption exists when a federal statute explicitly declares that it supersedes state and local law.”¹⁶⁷

In that context, a bill should be drafted that directs the CDC to issue guidelines that expressly preempt all current state concussion law. Once again, the goal is uniformity and even though some states have adequate laws in place, using federal law will create uniformity across the country. Models from worthy state laws including North Carolina, Massachusetts, Connecticut, and District of Columbia will be incorporated into the federal law.

VI. Conclusions

From a medical perspective, it is a well-accepted principle that an athlete who is properly treated for concussions can make a full recovery. A study of high school and college athletes finds that 80-90% of those who suffer a concussion will recover within seven days.¹⁶⁸ Collegiate athlete Alyssa Blood suffered two concussions during her basketball career.¹⁶⁹ Despite being devastated when told that her career was over, she made a full recovery and turned her concussions into a positive.¹⁷⁰ Alyssa’s story was featured on the *Today Show* and she has become a mentor of sorts to other young people in her situation.¹⁷¹ She is now a pre-med student at Georgetown working towards a career as - not surprisingly - a neurologist, while also working part-time at a pediatric concussion clinic.¹⁷²

¹⁶⁶ *Gostin, supra* at 78.

¹⁶⁷ *Id.*

¹⁶⁸ *Graham, supra* at 154.

¹⁶⁹ *Cantu, supra* at 137.

¹⁷⁰ *Id.* at 138.

¹⁷¹ *Id.* at 139.

¹⁷² *Id.*

The greatest accomplishment of concussion litigation would be to change the culture issues surrounding concussions. Proper federal litigation has the capability of sending a clear and concise message about what a concussion is and more importantly, that it is an issue to be taken seriously. Youth coaches and players alike need to be taught that concussions are not a sign of weakness; but are a serious medical issue that requires prompt attention.

Legislation alone cannot change the culture. Fortunately, there have been recent developments in the private sector that could have a positive impact on the culture. Hardly a single NFL game goes by without hearing some mention of the league's new concussion protocol.¹⁷³ Further, the popular "Madden" videogame series now automatically removes a player from the game when they suffer a concussion.¹⁷⁴ Seemingly small tactics like this can have a big influence on youths.

Perhaps the greatest advertisement tool the cigarette companies possess is the famous actor or rock star seen smoking a cigarette. It is an image that can have profound effects on the minds of youths. However, perhaps due in part to legislative methods such as warnings on tobacco, it would be difficult to argue that there has not been an overall change in the smoking culture. What was once seen as "cool"; smoking is now viewed as a foul and deadly habit. Similarly, one of the greatest marketing tools the sneaker companies have is the athlete wearing their latest design.

¹⁷³ National Football League, *NFL Head, Neck and Spine Committee's Protocols Regarding Diagnosis and Management of Concussion*, WWW.NFLPLAYERS.COM, http://images.nflplayers.com/mediaResources/lyris/pdfs/NFL_Diagnosis_Mgmt_Concussion.pdf (last viewed Oct. 11, 2016)

¹⁷⁴ Jon Robinson, *Clarifying 'Madden's' Concussion Rule*, WWW.ESPN.COM (May 5, 2011), http://www.espn.com/espn/thelife/videogames/blog/_/name/thegamer/id/6486372.

Hopefully an impact of concussion legislation will be that in the near future; when a youth looks at an athlete they will begin to take a look at their heads, rather than their feet.