



Things You Need to Know About PA 14-66: An Act Concerning Youth Athletics and Concussions

By Thomas Trojian, MD and David Wang, MD

Public Act No. 14-66 is the updated version of the Connecticut concussion law PA 10-62. It has some significant changes that you should be aware of:

1. There are slight changes to the coach's education module previously seen in PA 10-62.
2. Parents will be required to have education on concussions, and a signed informed consent form to the parents and legal guardians of student athletes involved in intramural or interscholastic athletic activities regarding concussions will need to be prior to participation.
3. When a student is removed from play due to signs and symptoms of concussion a qualified school employee shall notify the student athlete's parent or legal guardian. They shall provide such notification not later than twenty-four hours after such removal and shall make a reasonable effort to provide such notification immediately after such removal.
4. All local and regional school districts are required to collect and report all occurrences of concussions (not just sport-related) to the Board of Education.
5. There is established a task force to study occurrences of concussions in youth athletics and to make recommendations for possible legislative initiatives to address such concussions.

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Where's the AED?

By Jonathan Greenwald, MD

CREDO: *During competition, an AED deployed to the home bench or sideline, accompanied by a rescuer certified in the administration of a called for counter shock, should aim for the administration of the shock in two minutes or less after the victim collapses.*

Similarly, an AED, situated as close as possible to a certified rescuer at a training venue, should deliver a shock within the same time frame.

This year, Connecticut and Pennsylvania joined New Jersey in signing into law – in their respective state legislatures – regulations that address sudden cardiac arrest (SCA) in young competitive athletes. They went into effect in September for Connecticut and New Jersey, and in October for Pennsylvania. Although the laws are well intentioned, what they have in common is a failure to address the necessity of having in place an appropriate protocol for rescuing a victim of SCA.

In contrast to the articles devoted to pre-participation screening of aspiring, young, competitive athletes as a means

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Editor's Column

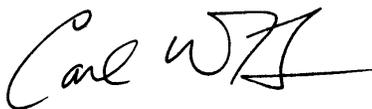
Dear *SportsMed* Reader:

As our fall seasons draw to a close, there have been many victories on the fields and courts about the state. These results have occurred in conjunction with many positive steps forward off the fields in continuing to improve the health and safety of the student-athletes across the state. In particular, the passing of Connecticut's newest bill regarding concussions has established a Task Force to look for ways to extend the education, care, and management of concussions to all athletes in the state. The Task Force will look into issues surrounding concussion care specifically in youth sports and other athletic organizations not occurring within our schools. Their findings will be shared with the legislature in early 2015, and hopefully will lead to further improvements in this important issue soon thereafter.

Drs. Trojian and Wang have written a review in this issue of the newest concussion legislation and its anticipated effect on the health and safety of the student-athletes across the state. Additionally, Dr. Greenwald in his continued tireless efforts to improve the protection possible for athletes who may suffer a sudden cardiac event has written an update regarding the use and effectiveness of Automated Electronic Defibrillators (AEDs).

As always, we welcome your comments both about the contents of this newsletter as well as other issues facing athletes in the state that you are seeing and dealing with.

Sincerely,



Carl W. Nissen, MD
Chairman, Committee on the Medical Aspects of Sports

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There are features of the new law that warrant further description. PA 14-66 now mandates that parents be given information on concussions and sign an informed consent form prior to play.

This is not a new requirement, since it was already part of the Connecticut Interscholastic Athletic Conference (CIAC) requirement for athletics mandated in November 2013, as well as a recommended activity to schools in previous years. It is now the law, however.

The informed consent must contain:

- (1) the recognition of signs or symptoms of concussion;
- (2) the means of obtaining proper medical treatment for a person suspected of sustaining a concussion;
- (3) the nature and risks of concussions, including the danger of continuing to engage in athletic activity after sustaining a concussion;
- (4) the proper procedures for allowing a student athlete who has sustained a concussion to return to athletic activity, and
- (5) current best practices in the prevention and treatment of a concussion.

The consent form will be developed by the State Board of Education, in consultation with the Commissioner of Public Health and other organizations like the CSMS, CIAC and Connecticut Athletic Trainers Association (CATA). There is no requirement for Spanish or other language version for parents in the law. Neither is the appropriate reading level of the consent form addressed in the law.

Prior to PA 14-66, coaches were not required to contact parents or guardians after a concussion. It seems odd that if a player is injured (leg broken, concussion, asthma attack, sprained ankle) and removed from play or practice that a coach (the adult supervisor) would not contact the parent or guardian concerning an injury. It is nice to see this will be mandatory, for concussions and perhaps later all injuries.

Concussions need to be treated with respect, the safety of our children in collisions sports is very important.



The requirement to collect concussion data is for all concussions in school children, not just sport-related concussions. The numbers will be reported to the State Board of Education, who will report to the

Commissioner of Public Health, who will report to the State Legislature. The law does not identify who is responsible for collecting and reporting the concussions at each school. This will be left to each school to identify the best person. Most likely the school nurse will be responsible for this duty. In many cases, the school nurse has numerous other responsibilities and the added responsibility of collecting all concussions in the student population may be difficult to accomplish. Since there is no penalty listed for not complying, and no monitoring system is mandated to determine if these reported numbers of concussions are accurate, it is unlikely that the data will identify the breadth of the problem of concussive injuries. There is concern that the numbers will be grossly underreported and hurt further work to limit concussions in our Connecticut youth.

For sport-related concussive injuries, the denominator of exposures is not being collected. This is a problem. This form of “Numerator Medicine” is dangerous for health care policy formation.¹ For example, if we have five concussions in girls’ soccer and five in girls’ basketball, we are not aware if that is a lot or little, but if we know there were only five girls’ soccer games and practices but five concussions, and 50 practices and 10 games in girls’ basketball, then we would know soccer has an issue that needs further investigation. This is an opportunity for CSMS to work with CAS/CIAC to survey selected school populations to verify the number of concussions in the schools reporting data. As well, CSMS could enhance the small injury surveillance project that has recently been initiated in CIAC schools to get a better representative sampling of sport-related concussions.

The bill did not address youth sports, which is very much needed. The appointment of a task force will be responsible for developing a plan to implement a youth sports concussion policy. This task force may be underrepresented physician-wise, since only five to six of the 22 members will be physicians of various specialties, with only two to three Sports Medicine physicians. The Brain Injury Alliance of Connecticut has been an important resource over the years in Connecticut for concussions education. Unfortunately, they were not identified for inclusion on the task force, but it is fortunate that they will have representation through the Connecticut Concussion Task Force group. Part of the legislative-appointed task force’s duties is to submit their findings for use as the framework for future legislation that will include concussion guidelines for youth sports. One solution that would be to simple to implement is to require all youth sports organizations to have a concussion education plan that includes parents’ and coaches’ education, with removal from play if suspected injury occurs using best practice

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models identified by the Connecticut Public Health department. This would allow the local organizations to work in their community to utilize free resources available.

PA 14-66 was bound to become law with the many supporters and the logical need for continued safety of Connecticut youth. Unfortunately, youth sports were not included in the law, beyond the task force. There were different features of the law discussed during the legislative process such as mandating contact practice times, referee education, and other features found in other state laws, but these are not always in the best interest of our athletes. Despite the growing popularity of decreasing full contact practice time, we are unaware if the concussion problem is too much contact practice, improper instruction, or decreased skills. Kontos et al² showed that 90% of youth football and Marar et al³ that 60% of high school football concussions occur in games. Kontos² found that 40% of all concussions in youth football are improper helmet-to-helmet contact in games. Perhaps our focus on reducing full contact practices where tackling is directly supervised is not the right answer, but improved teaching of proper tackling will reduce concussions.

Legislating areas where scientific consensus does not exist limits further adjustments by leagues, such as the CIAC, when best practices are identified. Of course, concussions need to be treated with respect, the safety of our children in collisions sports is very important. Thankfully, PA 14-66 helps the children of the state of Connecticut in some areas, but its inadequate reporting requirement may cause harm due to “Numerator Medicine.”

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Where's the AED?

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of preventing sudden cardiac arrest, and therefore, sudden cardiac death (SCD), the appropriate use of automated external defibrillators is devoid of controversy. That defibrillators saves lives is a given. However, a major problem remains: access to the nearest AED (automated external defibrillator) remains inadequate. Any measure devoted to educating the professionals and the parents who are responsible for the welfare of these young athletes should address (1) the marked need for more AEDs and (2) their proper deployment.

There is ample evidence to show that the only tactic that significantly improves a victim's chances of avoiding sudden cardiac death is immediate hands on access to an AED. This is interpreted as the AED being situated at arm's length from a properly trained first responder, and – if the AED indicates ventricular fibrillation – activated within two minutes of a witnessed cardiac arrest.

There are many examples demonstrating both the need for and the effectiveness of AEDs. Some of those include:

In the November 5, 2007 issue of the *Connecticut Post*, the front-page headline drew attention to a case of SCD caused by a slap shot at point blank range that struck a 22-year-old defenseman. As the shot was being taken, the defenseman moved in front of the puck in an attempt to block the shot. There was no defibrillator at the hockey rink. He died of *Commotio Cordis* (commotion to the heart). At his autopsy, his heart was found to be normal, demonstrating that SCD can strike anyone given the

wrong set of predisposing circumstances, such as was the case in this pick up hockey game in Shelton, Connecticut.

In 2006, a 16-year-old New Hampshire boy collapsed immediately after football practice. He was saved from SCD by an AED, which was immediately available. The AED once positioned appropriately on his chest called for counter shock, which

There are many examples demonstrating both the need for and the effectiveness of automated external defibrillators (AEDs).



was delivered within two minutes. He recovered completely and has since devoted his life – via the Matthew Keene Foundation – to spread the message of the importance of having AEDs available along with appropriately trained users. In this case, the athlete was predisposed to having a cardiac event; it was found out subsequently, has hypertrophic cardiomyopathy for which he now has an implanted defibrillator.

In another example, in 2012 a 315-lb. defensive lineman, who at that time was a senior in a South Carolina high school, collapsed on the sidelines. The event was witnessed by a cardiologist, who rushed onto the field with a defibrillator, delivered the called-for shock within two minutes, and a regular cardiac rhythm was restored. The athlete became alert and was able to respond to his father. Unfortunately, he died on the ambulance on the way to the nearest hospital due to his underlying hypertrophic cardiomyopathy. We can never expect to win the battle every time, no matter how rapidly defibrillation occurs.

These events are not limited to young or amateur athletes. In 2005, Anthony Colucci, DO was one of two team physicians for the Detroit Redwings. He was far ahead of his time, sitting on the bench at every game he covered, armed with an AED. One night, a 25-year-old player, who had just come off the ice, collapsed on the bench. Dr. Colucci administered a called for shock within 90 seconds of collapse. The player made a full recovery. His underlying diagnosis was later determined to be hypertrophic cardiomyopathy.

Here in Connecticut, a specific case of SCD occurred in 2011 led to the formation of the Andy Pena Smiles Forever Foundation. It is in great part due to Andy's parents' time and led to effort that Senate Bill 229 was considered and Andy Smiles Forever Foundation passed by the Connecticut State Legislature. Andy Pena's parents founded the Foundation shortly after he suffered SCD in 2011. As a part of the deliberations regarding the bill, Mr. Pena has said, and many have agreed, that if an AED had been available Andy might be alive today. The legislation and efforts of the Foundation have helped to raise the level of the general population's awareness of SCA among young athletes. Unfortunately, the statute scarcely mentions AEDs.

Similar efforts are occurring across the nation with many organizations and individuals fighting hard to improve awareness of SCD and to making AEDs more universally available. In Broomfield, Colorado an EMT and paramedic, Richard Perse, established and is the co-director of Play With Heart. That organization is dedicated to the proposition that an AED must be immediately available at every team competition. His fundraising efforts are tremendous and many schools through that foundation now have AEDs and individuals trained in their use available. Given the estimates from Larsen et al, individuals saved via defibrillation compared to how many lives are saved via pre-participation screening is at least 5 to 1. Mr. Perse and others have advocated for funds to be spent for AEDs at the schools before being used for other events and activities. This position

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is further strengthened by the estimates that one's chances for meaningful life go down 7-10% for every minute that passes without an AED shock being delivered.^{1,2}

At the Korey Stringer Institute (KSI) at the University of Connecticut, athletic trainers with PhDs are immersed in research which covers SCA in the United States. Approximately three-fifths of the states have laws which concern screening, but none has resulted in a meaningful increase in lives saved. However, in September 2007, the Texas legislature passed a law related primarily to AED deployment. The impetus: in greater Houston, during August 2006, four student SCAs resulted in three SCDs.

Since Texas passed the law in 2007, unlike the other legislation reviewed by the KSI, there has been a drop in competition and training venue SCDs.

Efforts have continued since 2011 calling for legislation that would mandate AEDs being on the home sidelines/bench at all scholastic and collegiate sporting events. Unfortunately this has not come to pass. However, in surveys done by CIAC, more than two-thirds of high schools have at least one AED and many have more. Still more are needed to help those suffering from SCAs.

It may be possible with organizations within the state including the KSI, the Connecticut Athletic Trainers Association, and others to improve the number and availability of AEDs across the state. Perhaps it might start with AEDs at every football and (boys') basketball games, because together they account for about 60% of all scholastic athletic related SCDs. This could lead to AEDs being recognized as key to achieving the greatest possible salvage rate among ALL competitive athletes who sustain SCA.

One day, the question "Where's the AED??" will be rendered obsolete. How soon that occurs is (1) up to the professionals who care for and/or spread the word about these young athletes, and (2) the families and friends of SCA victims - survivors or otherwise.

Note: An AED purchase price always not only depends on the number ordered, but also on the target of the purchase. For scholastic use a number of U.S. manufacturers sell units for \$895. Lower prices can be obtained by contacting this article's author. The warranty period ranges from 8 to 10 years.

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