

**Providing Leadership:  
New Jersey Student Athlete  
Cardiac Screening Task Force**

2016 ACSM Annual Meeting  
Boston, Massachusetts

**Stephen G. Rice, MD, PhD, MPH, FAAP, FACSM**  
Jersey Shore University Medical Center  
Neptune, New Jersey

**Sudden Cardiac Death**

- Always a topic of interest when a “healthy” young athlete dies suddenly
- Community is traumatized
- Reported in the media
- “Death ought to have been preventable”
- Call for action
- Approach your legislator to write a law

## Sudden Cardiac Death Pamphlet

- In 2007, New Jersey Legislature passes a law [P.L.2007, Chapter 125 modifying state regulation (C.18A:40-41)] requiring a parent information pamphlet on sudden cardiac death be prepared
- The New Jersey American Heart Association and New Jersey Chapter of the American Academy of Pediatrics asked to collaborate
- Dr. Rice takes assignment and hopes to get NJ pediatric cardiologists to form a writing group; like herding cats; they work in their own silos

## Sudden Cardiac Death Pamphlet

- Dr. Rice and sports medicine fellow, Dr. Sushma Raman Hebbar, write initial drafts in 2009
- Sent out to pediatric cardiologists (and others) for review; many drafts later, initially completed late in 2010, printed in 2011
- AAP/NJ created artistic layout design and printed the pamphlets
- 2<sup>nd</sup> edition produced in 2014 by NJ Department of Education



## Student Athletic Cardiac Screening Task Force

- In 2009, NJ Senator Fred H. Madden, Jr introduces legislation to form a cardiac screening task force
- **Purpose: To study, evaluate and develop recommendations relating to specific actionable measures to enhance screening of student athletes for hypertrophic cardiomyopathy (HCM) and other life-threatening cardiac conditions.....**
- Why? Where is this coming from?
- Is there a “hidden agenda” or a family seeking a law???



## Student Athletic Cardiac Screening Task Force

- Madden bill passes in 2010 (P.L. 2009, Chapter 260), naming membership from various state organizations:
  - American Academy of Pediatrics (NJ AAP)
  - American Heart Association (NJ AHA)
  - American College of Cardiology (ACC-NJ)
  - American Academy of Family Practice (NJ AAFP)
  - Interscholastic Activities Association (NJSIAA)
  - School Nurses Association (NJSSNA)
  - Department of Education (NJ DOE)
  - Department of Health and Senior Services (NJ DHSS)

## Student Athletic Cardiac Screening Task Force

- Representative members appointed April 2010
- 1st Meeting May 2010
- Final document due June 2011
- Dr. Rice selected as chairman
- Dr. Perry Weinstock (NJ AHA) named as vice-chairman
- Group met monthly
- Various experts & stakeholders invited to attend a meeting and share their views on subject
- Document officially finished in June, but minor edits made with final delivery in July 2011

### Task Force Members

- AAP/NJ – Stephen Rice, MD
- AHA/NJ – Perry Weinstock, MD
- ACC/NJ – Louis Teichholz, MD
- NJ/AAFP – Jeffrey Rosenberg, MD
- NJSSNA - Linda Morse, RN, CSN
- NJSIAA – Anthony Maselli
- NJ DOE – Susan Martz
- NJ DOE – Christene Dewitt Parker
- NJ DHSS – Lakota Kruse, MD
- NJ DHSS – Elaine Suehnholz (Task Force “Secretary” and Organizer)

## Student Athletic Cardiac Screening Task Force

- Senator Madden sends his legislative aide, Michael Wallace, to a Task Force meeting in spring 2011
- Senator Madden comes to the next meeting; explains that as a retired state trooper who was elected a state senator, he decided to take one health care issue each year and assemble a panel of experts to try to resolve a public health issue – chose sudden cardiac death this year
- No hidden agenda; no one seeking “a law”

## New Jersey Student Athlete Cardiac Screening Task Force Final Report

**June 15, 2011**

**Chairman: Stephen G. Rice, M.D., Ph.D., M.P.H., FAAP**

**Vice-Chairman: Perry J. Weinstock, M.D., FACC**

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## Task Force Recommendations: PPE Form

1. Adopt PPE history and physical examination form from the PPE monograph, 4<sup>th</sup> edition as the primary screening tool

Did not recommend ECG or echocardiogram as a primary screening tool for public and non-public student athletes







## **Task Force Recommendations: Payment for 2<sup>nd</sup> Exam**

4. There should be a separate insurance code for a sports PPE for providers to concentrate on cardiac screening and musculoskeletal screening above and beyond the usual annual physical examination

This second exam should be a covered benefit under health insurance plans

## **Task Force Recommendations: Pamphlet**

5. Student athletes, parents and guardians must certify in writing that they have reviewed the "Sudden Cardiac Death in Young Athletes" pamphlet

Distribution of the pamphlet should be part of the sports physical exam package distributed to student athletes

(Pamphlet updated and revised by Task Force in 2014 during the preparation of the professional development educational module)

# 2014 Pamphlet

### Website Resources

- Sudden Death in Athletes: [www.suddenathletes.com](http://www.suddenathletes.com)
- Hypertrophic Cardiomyopathy Association: [www.hfca.org](http://www.hfca.org)
- American Heart Association: [www.heart.org](http://www.heart.org)

### Collaborating Agencies:

**American Academy of Pediatrics New Jersey Chapter**  
6000 Southborough Road, Suite 108  
Haddonfield, NJ 08033  
Tel: 856-842-0014  
Fax: 856-842-0015  
www.aapnj.org

**American Heart Association**  
1 Union Street, Suite 303  
Haddonfield, NJ 08033  
Tel: 856-286-0033  
www.heart.org

**New Jersey Department of Education**  
PO Box 1887  
Trenton, NJ 08647-0188  
Tel: 609-232-3325  
www.state.nj.us/education

**New Jersey Department of Health**  
P.O. Box 360  
Trenton, NJ 08647-0360  
Tel: 609-232-3322  
www.state.nj.us/health

**Lead Author: American Academy of Pediatrics, New Jersey Chapter**  
**Written by: Sudden Death in Young Athletes Working Group**  
Dr. Stephen C. Wu, MD, PhD  
**Additional Reviewers:** NJ Department of Education, NJ Department of Health and Senior Services, American Heart Association, Jersey Chapter; NJ Academy of Family Practice, Pediatric Cardiology, Penn State Hershey Medical Center.  
**Revised 2014:** Christine Collins, Pediatric MD, CHS, St. Luke's Hope, MD, MPH, Sports Injury, HHS, Haddonfield, NJ; MD, Jeffrey Rosenfeld, MD, Lead, Haddonfield, MD, Perry Weisbach, MD.

### What are the most common causes?

Research suggests that the main cause is a less than proper heart rhythm, causing the heart to give instead of pumping blood to the brain and body. This is called ventricular fibrillation (VF). You can't see VF on an ECG. The problem is usually caused by one of several cardiovascular abnormalities and electrical diseases of the heart that go unnoticed in healthy appearing athletes.

The most common cause of sudden death in an athlete is hypertrophic cardiomyopathy (HCM). HCM is an enlargement of the heart muscle, which can cause serious heart rhythm problems and blockages to blood flow. This genetic disease runs in families and usually develops gradually over many years.

The second most likely cause is congenital coronary artery disease (CAD), caused from birth. The arteries of the coronary arteries. This means that these blood vessels are connected to the main blood vessel of the heart in an abnormal way. This often leads to blockages that may occur when people get older (commonly called "coronary artery disease"), which may lead to a heart attack.

# 2014 Pamphlet

**SUDDEN CARDIAC DEATH IN YOUNG ATHLETES**

Other diseases of the heart that can lead to sudden death in young people include:

- Myocarditis (my-oh-see-DEE-ah), an acute inflammation of the heart muscle (usually due to a virus).
- Dilated cardiomyopathy, an enlargement of the heart for unknown reasons.
- Long QT syndrome and other electrical abnormalities of the heart which cause abnormal fast heart rhythms that can also run in families.
- Brugada syndrome, an inherited disorder that affects heart valves, walls of major arteries, eyes and the skeleton. It is generally seen in unusually tall athletes, especially those tall is not common in other family members.

**Are there warning signs to watch for?**

In more than a third of these sudden cardiac deaths, there were warning signs that were not reported or taken seriously. Warning signs are:

- Fainting, a seizure or convulsions during physical activity.
- Fainting or a seizure from emotional excitement, unusual distress or being startled.
- Dizziness or lightheadedness, especially during exertion.
- Chest pain, at rest or during exertion.

- Palpitations - sensation of the heart beating unusually (skipping, irregular or extra beats) during athletic or during cool down periods after athletic participation.
- Fatigue or being more quickly than peers, or
- Being unable to keep up with friends due to shortness of breath.

**What are the current recommendations for screening young athletes?**

New Jersey requires all school athletes to be examined by their primary care physician (school nurse) or school physician at least once per year. The New Jersey Department of Education requires one of the specific Annual Athletic Pre-Participation Physical Examination forms.

This process begins with the parents and student/athlete answering questions about symptoms (fainting, exercise, chest pain, dizziness, fainting, palpitations) or awareness of health and questions about family health factors.

The primary healthcare provider needs to know if any family member died suddenly during physical activity or during a seizure. They also need to know if anyone in the family (under the age of 30) had an unexpected sudden death (such as drowning or car accident). This information must be provided annually for each year because it is essential to identify those at risk for sudden cardiac death.

The intended physical exam includes measurement of blood pressure and a careful listening examination of the heart, especially for murmurs and rhythm abnormalities. If there are no warning signs reported on the health history and no abnormalities discovered on exam, no further evaluation or testing is recommended.

**When should a student athlete see a heart specialist?**

If the primary healthcare provider or school physician has concerns, a referral to a child heart specialist, a pediatric cardiologist, is recommended. This specialist will perform a more thorough evaluation, including an electrocardiogram (ECG), which is a graph of the electrical activity of the heart. An echocardiogram, which is an ultrasound test to allow for direct visualization of the heart structure, will likely also be done. The specialist may also order a treadmill exercise test and a monitor to enable a longer recording of the heart rhythm. None of the testing is invasive or uncomfortable.

**Can sudden cardiac death be prevented just through proper screening?**

A proper evaluation should find most, but not all, conditions that would cause sudden death in the athlete. This is because some diseases are difficult to uncover and may only develop later in life. Others can develop following a normal screening evaluation, such as an infection of the heart muscle from a virus.

This is why screening evaluations and a review of the family health history need to be performed on a yearly basis by the athlete's primary healthcare provider. With proper screening and evaluation, most cases can be identified and prevented.

**Why have an AED on site during sporting events?**

The only effective treatment for ventricular fibrillation is immediate use of an automated external defibrillator (AED). An AED can restore the heart back into a normal rhythm. An AED is also effective for ventricular fibrillation caused by a blow to the chest over the heart (commotio cordis).

Effective September 1, 2014, the New Jersey Department of Education requires that all public and separate schools grades K through 12 shall:

- Have an AED available at every sports event (three minutes total time to reach and return with the AED).
- Have someone personnel who are trained in AED use present at practices and games.
- Have coaches and athletic trainers trained in basic life support techniques (BLS) and
- Call 911 immediately while someone is retrieving the AED.

## Pamphlet Sign-Off Sheet

State of New Jersey  
DEPARTMENT OF EDUCATION  
Sudden Cardiac Death Pamphlet  
Sign-Off Sheet

Name of School District: \_\_\_\_\_

Name of Local School: \_\_\_\_\_

I/We acknowledge that we received and reviewed the Sudden Cardiac Death in Young Athletes pamphlet.

Student Signature: \_\_\_\_\_

Parent or Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_

New Jersey Department of Education 2014: pursuant to the Scholastic Student-Athlete Safety Act, P.L. 2013, c.71

### **Task Force Recommendations: CPR, AED training for students**

6. All school children in grades 7-12 be educated on sudden cardiac death, basic CPR and AED use as part of the health curriculum.

Currently required by NJ Core Curriculum  
Content Standards by State Board of Education  
in 2009

## **Task Force Recommendations: Staff CPR, AEDs and School CEP**

7. All coaches, licensed athletic trainers, athletic directors, building administrators and school nurses be trained in CPR and use of an AED

Every school must have one or more AEDs

Each Board of Education must develop a structured policy to address cardiac emergencies [cardiac emergency plan – CEP]; plan to include an individual responsible for AED maintenance

Goal is to ensure that there is always a trained adult present whenever athletes are participating

## **Task Force Recommendations: AED Locations**

8. Support the AHA guideline to have a lay-rescuer AED program that recommends that AEDs be placed within a brisk 1 to 1.5 minute walk from any site in the school

Given the size of school buildings and multiple campus playing fields, it may be necessary to purchase and place several AEDs on school property

## **Task Force Recommendations: Statewide Registry**

9. New Jersey should establish a state system for analyzing data relating to incidence of sudden cardiac deaths [SCD] or near deaths in youths aged 12 to 19 years of age, in part by measuring and collecting all AED rescues and attempted rescues

Recommend formation of a SCD subcommittee within the Child Fatality and Near Fatality Review Board

Required to report findings to the National Sudden Cardiac Death Registry

## **Report: Administrative Channels**

- Report presented to the Commissioner of Health and Senior Services (who was out on medical leave) – accepted and forwarded to Governor’s office in December 2011 for approval or acceptance
- Governor Christie quietly releases the Task Force Report in April 2012 with no publicity of any kind

## Recommendations into Law

- Senator Madden takes the released Task Force Report and quickly submits several bills to the legislature to enact the nine recommendations
- P.L. 2013, Chapter 71 – Scholastic Student Athlete Safety Act; P.L. 2013, Chapter 209 – Sudden Cardiac Arrest Prevention Act and P.L. 2013, Chapter 143 – Children’s Sudden Cardiac Death Reporting Act lay out many provisions of the recommendations
- NJ State Regulations 18A:40-41 specifies in detail what actions must be taken to comply

## Recommendations into Law

- 1) PPE Form - *PL 2013, Chapter 71*
- 2) Providers: MD, DO, APN, PA - *PL 2013, Chapter 71*
- 3) Module - *PL 2013, Chapter 71*
- 4) Payment 2<sup>nd</sup> PPE/year – *2016 S148 introduced/no action*
- 5) Pamphlet - *PL 2013, Chapters 71 & 209*
- 6) Student training in CPR, AED – *already in law*
- 7) Coaches, administrators, ATC, RN, School MD – CPR/AED training; AED presence, location, maintenance; Emergency Action Plan; *PL 2012, Chapter 51, PL 2013, Chapter 209 and Janet’s Law 2012*
- 8) Closeness of AED – “reasonable proximity”  
*Janet’s Law – 2012 (A1608/S157)*
- 9) Registry – *PL 2013, Chapter 143 [C26:2H-141]*

## **Task Force Recommendations: Designated Providers and Professional Development Module**

- 2. All healthcare professionals responsible for conducting PPEs be appropriately licensed as an MD, DO, APN or PA.
- 3. Healthcare professionals performing or reviewing PPEs be required to complete specific training on cardiac assessment in adolescents.

“The Professional Development Module”

**ATTENTION PARENT/GUARDIAN:** The preparticipation physical examination (page 3) must be completed by a health care provider who has completed the Student-Athlete Cardiac Assessment Professional Development Module.

## **Creating the Module**

- Once the bill is passed to create the cardiac education module, who is going to accomplish the task?
- Christene Dewitt Parker, School Health Services Coordinator [chief school nurse] at the NJ Department of Education, convinces her superiors to allow the Task Force members to reconvene to create the module (minus the NJSIAA member [a high school athletic director] plus members from state nurse practitioner and physician assistant organizations)

## Creating the Module

- Task Force met bimonthly in 2013-2014 to develop the visual content and text, incorporate visual aids [charts, photos, drawings, graphs, videos] and write a narrative script
- Contractual arrangements were made with a professional educational module design company to narrate and improve the visual appearance of the content
- Final release was in February 2015
- A grant from the NJ ACC paid for the professional design company's work – about \$10,000

## Creating the Module

- Module is available on-line and is free
- Healthcare providers can print a certificate of completion using their NPI number
- Rather than having NJ keep a registry of all who completed the module or require that a copy of the certificate be sent to each school, a line was added to the PPE form where the provider attests to having viewed the module along with the date of completion

## Module Completion Attestation

I have examined the above-named student and completed the pre-participation physical evaluation. The athlete does not present apparent clinical contraindications to practice and participate in the sport(s) as outlined above. A copy of the physical exam is on record in my office and can be made available to the school at the request of the parents. If conditions arise after the athlete has been cleared for participation, the physician may rescind the clearance until the problem is resolved and the potential consequences are completely explained to the athlete (and parents/guardians).

Name of physician, advanced practice nurse (APN), physician assistant (PA) \_\_\_\_\_

Date \_\_\_\_\_ Address \_\_\_\_\_

Phone \_\_\_\_\_

Signature of physician, APN, PA \_\_\_\_\_

**Completed Cardiac Assessment Professional Development Module**

Date \_\_\_\_\_

Signature \_\_\_\_\_

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New Jersey Department of Education 2014; Pursuant to P.L. 2013, c. 71

## The Module

- While no one likes a MANDATE to take yet another professional development educational module, there have been no complaints about the content or its educational value
- Initial learning tool for medical students
- Refresher for providers who completed training many years ago
- Required to complete module only once
- Viewed over 30,000 times from Mar-Dec 2015

## Why the Module?

- Quality of screening for sudden cardiac death among adolescent athletes is not ideal
  - Gloss over the cardiac exam
  - Can't remember details of a thorough quality exam
- Can the History and Physical Exam as part of the current PPE process be done better than it has been done in the past – or must we concede that only an EKG can give us appropriate specificity and sensitivity in uncovering risk for SCD?

## Why the Module?

- Our country is not ready for universal ECG for all high school and middle school student athletes
- Can better screening – via special attention and an educational module on sudden cardiac death – help to improve identifying those who need further evaluation?
- If providers can receive payment for a second annual physical exam focused on preventing sudden cardiac death, would they be better able to focus attention to those who need referral?

## Link to Professional Development Educational Module

Official NJ State Department of Education introductory statement:

As a follow-up to an April 29, 2014 broadcast memo, the New Jersey Department of Education (NJDOE) is pleased to announce the availability of the Student-Athlete Cardiac Assessment professional development module (PD module) required by the *Scholastic Student-Athlete Safety Act (SS-ASA)* (N.J.S.A. 18A:40-41.7). The PD module can be found at:

[www.state.nj.gov/education](http://www.state.nj.gov/education); click on letter P at alphabet listing at top of page; last item under P's is the Professional Development Module

<http://www.nj.gov/education/students/safety/health/services/athlete/PDModule.shtml>

## Thank You!

**Stephen G. Rice, MD, PhD, MPH, FACSM, FAAP**

[Stephen.Rice@HackensackMeridian.org](mailto:Stephen.Rice@HackensackMeridian.org)

732-776-2384 Backline

732-776-2433 Front Desk

732-776-4403 Fax