



## ***Sudden Cardiac Arrest Screening Program***

## **INTRODUCTION**

The shock of Sudden Cardiac Death (SCD) of an adolescent is mind-numbing and devastating to both the family and the community involved. We tend to associate participation in physical activities and athletics as part of a healthy lifestyle, but it may not always be the case. In fact, many times physical activity uncovers a hidden cardiac anomaly putting strain on a flawed heart which can lead to sudden death. Undetected heart abnormalities do not discriminate between gender, age groups, athletes or non-athletes. In the United States it is the number cause of death across all age groups. On average, 24 school aged children (12-18 yrs) die every day from sudden cardiac arrest.

Current guidelines recommend that pediatricians and primary care physicians perform pre-participation evaluations that include a review of personal and family history and a basic cardiovascular examination. Non-athletes merely have to produce proof that their vaccinations are current. Unfortunately, neither group is routinely given an electrocardiogram as part of their assessment. Current research shows that an ECG screening performed with updated criteria significantly increases the likelihood of identifying an underlying cardiovascular condition that puts an athlete at risk for sudden cardiac arrest.

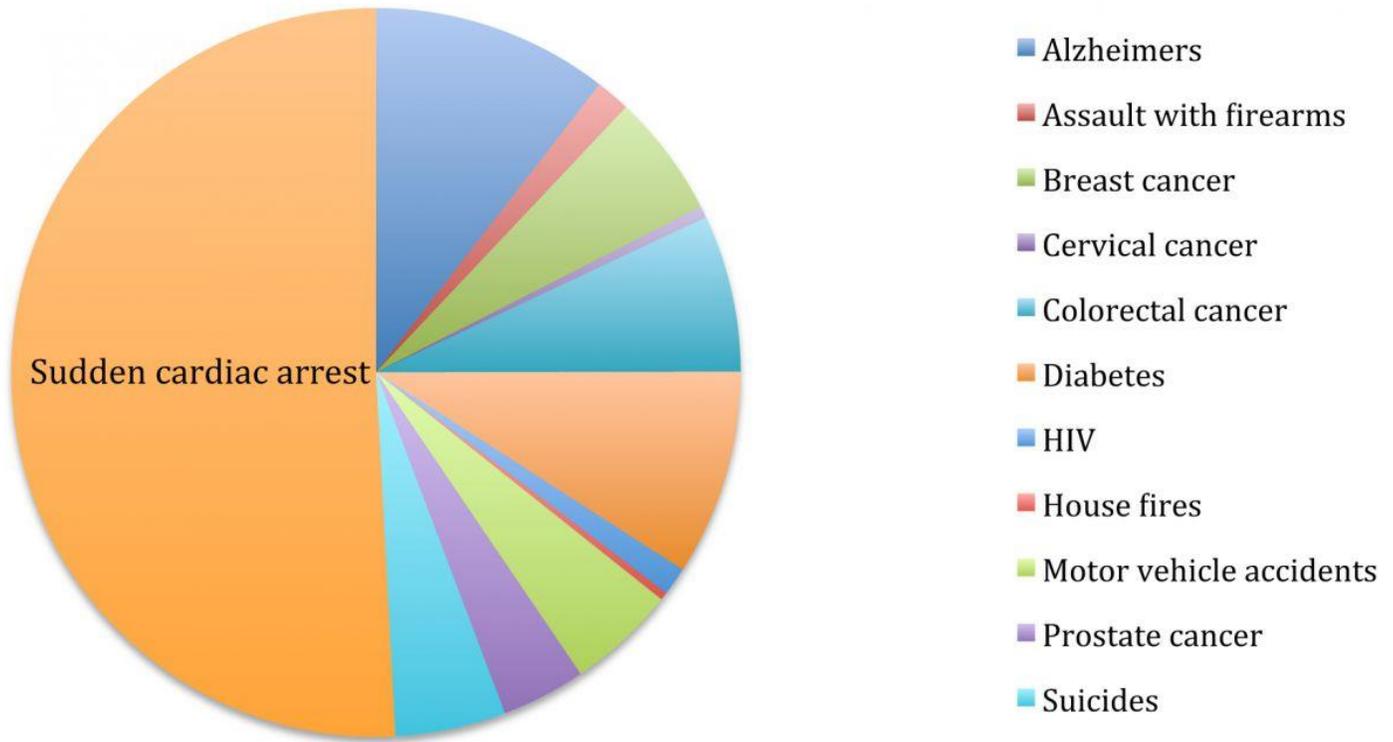
The NJ State Legislature is very supportive and committed to passing legislation mandating such a mandatory cardiac screening program for middle school through high school aged children.

***“N.J. Steps Up to Prevent Cardiac Illness in Children:”** Legislation sponsored by Assembly Democrats Patrick J. Diegnan, Jr., Gabriela Mosquera, Jason O’Donnell and Valerie Vainieri-Huttle to help recognize and prevent cardiac illnesses in children, received final legislative approval in March of 2015 and now heads to the governor’s desk to be approved as law (Bill A-1473).*

***“Bill A-1473”** would require that an annual medical examination of any person 19 years of age and under include questions contained in the “Pre-Participation Physical Evaluation Form” developed to screen students seeking to participate in school-sponsored athletics. The bill will require the Commissioner of Health, in consultation with various experts, to develop a cardiac screening professional development module, which advanced practice nurses, physicians, and physician assistants performing medical examinations would be required to periodically complete. These individuals would be required to attest to their completion of the module upon renewal of certification, registration, or licensure, as applicable.*

Deborah Heart and Lung Center specializes in the diagnosis, treatment and follow-up care of congenital heart conditions. Thanks to some funds donated to the Deborah Foundation and in consultation with Simon’s Fund, a not-for-profit organization established in 2005 in memory of Simon, son of Phyllis and Darren Sudman, who died tragically of sudden cardiac arrest – Deborah is able to offer cardiac screenings at no-charge to all students within the School District, between the ages of 12 and 19 years old so previously concealed heart abnormalities can be uncovered and treatment options offered so that a potential tragedy may be averted.

## Sudden Cardiac Arrest: #1 Cause of Death in the USA!



Causes of death (SOURCE: American Heart Association, Sudden Cardiac Arrest Foundation)

*In fact, the number of people who die each year from SCA is roughly equivalent to the numbers who die from; Alzheimer's disease, assault with firearms, breast cancer, cervical cancer, colorectal cancer, diabetes, HIV, house fires, motor vehicle accidents, prostate cancer and suicides **COMBINED!***

*Sudden cardiac arrest (SCA) is a leading cause of death in the United States and other countries. In the U.S. alone, approximately 424,000 people of all ages experience EMS-assessed out-of-hospital non-traumatic SCA each year and 401,000 or (9 out of 10) victims die. The 2014 update suggests that more than 1,000 people, including 26 children suffer SCA per DAY!*

*SCA is a life-threatening condition--but it can be treated successfully through early intervention with cardiopulmonary resuscitation (CPR), defibrillation, advanced cardiac life support, and mild therapeutic hypothermia. When bystanders intervene by giving CPR and using automated external defibrillators (AEDs) before EMS arrives, four out of ten victims survive.*

### **ABOUT DEBORAH**

For more than 93 years, Deborah Heart and Lung Center has been a tertiary care referral center specializing in the management of cardiac, vascular and pulmonary disease. Deborah offers a broad spectrum of diagnostic and therapeutic services to include the latest surgical techniques and non-surgical alternatives for diagnosing and treating all forms of cardiac, vascular and pulmonary diseases in adults. Deborah also provides outpatient evaluation and management services to pediatric patients with congenital heart disease.

Deborah has consistently demonstrated expert clinical performance and has routinely been the recipient of numerous quality and patient satisfaction awards at the local, state and national level.

### **DEBORAH'S SUDDEN CARDIAC ARREST PREVENTION PROGRAM**

Sudden cardiac arrest in young athletes is most often secondary to structural and electrical causes. The Children's Heart Center at Deborah, Deborah's Department of Pediatric Cardiology and other qualified members of our clinical staff will conduct screenings and evaluations to detect potential cardiac conditions that could lead to (SCD) in adolescents. The primary goal of this screening is to evaluate approximately 300 children and identify unsuspected and undetected cardiovascular abnormalities in an attempt to prevent the likelihood of sudden cardiac death by offering appropriate clinical interventions.

This Deborah Community Outreach initiative is open to all students and community members between the ages of 12-19 years old, for screening and evaluation.

### **HOW THE PROGRAM WORKS**

In advance of the screening event, each student is to register for the event on-line by visiting [www.demanddeborah.org](http://www.demanddeborah.org) The student, along with their parent, or legal guardian, must complete an on-line medical/health history form that will be reviewed by members of Deborah's clinical staff prior to the event. Parents/legal guardian of student will be required to sign a waiver permitting their child to participate in the screening. Students will then attend the event at the scheduled time of their appointment at the proposed school. Once checked-in, they will be escorted through a number of stations completing their evaluation. Evaluations will be conducted by Board Certified Cardiologists, Advanced Practice Nurses (APN's), Certified Physician Assistants (PA's) Registered Nurses (RN's), EKG and Echocardiography Technicians. The screening consists of the following: Height, Weight, Blood Pressure, BMI (Body Mass Index), Heart Auscultation (listening for heart murmurs), ECG (Electrocardiogram), and, if clinically indicated, an Echocardiogram (ultrasound of the heart). Deborah clinicians will review and evaluate all information, including screening results and the individual medical/health history and make the necessary recommendations. If abnormalities are detected, a recommendation will be made for the student to present for full evaluation with their pediatrician, or a pediatric cardiologist at Deborah Heart

and Lung Center. This recommendation is dictated by the type of abnormality present. Each student is then given a copy of their ECG strip and screening report for their own personal files.

### **SCHOOL/DISTRICT RESPONSIBILITY**

As a participating partner, we request that the School District be responsible for: providing the facility (the gymnasium) and two adjacent rooms for private patient/physician consultations for Deborah to conduct the screenings; provide bleacher seating for 200; provide approximately 10 tables and 20 chairs for clinical staff; and provide custodial staff to open, help set up, and close the building. We also ask the school and / or community to help in promoting and advertising the event perhaps through a letter given to each student, e-mails to the parents, cable TV ads, or a “robo-call” to student households.

The planning, implementing and follow-up with students and their families would be the responsibility of Deborah’s Community Outreach Team not the School District. Any medical liability issues for evaluation, diagnosis follow-up care and recommendations would be covered under Deborah Heart and Lung Center’s existing medical liability insurance coverage. All members of Deborah Heart and Lung Center’s clinical staff meet all licensure requirements.

### **PREVIOUS DEBORAH SCREENINGS**

In 2014 and 2015, Deborah partnered with Simons’ Fund to conduct a (2) school screening at the Lenape School District in Burlington County and Central Regional High School in Ocean County. More than 340 students were screened of which 25 referrals had been made for formal cardiology consultation regarding the following issues: Palpitations, Patent Foramen Ovale, Bicuspid Aortic Valve, Atrial Septal Defect, Mitral Valve Prolapse, delta wave and borderline QT interval on ECG. There were also numerous recommendations made for follow-up with the student’s pediatrician for risk factor management such as Hypertension and Obesity.

### **CONCLUSION**

Millions of active adolescents undergo annual pre-participation medical evaluations without ECG screening. Some researchers quote the incidence of sudden cardiac arrest in student athletes as “rare”. Newer data shows the incidence to be up to four times as often as previously suspected. Regardless of the exact number, the fact is that it is preventable and the magnitude of these tragedies demands an effective plan to minimize their occurrence. If this program identifies just one serious condition and saves just one child, then the program can be deemed a success. Awareness and prevention is the key to ensuring that all students, are heart-healthy. By gathering support for these types of cardiac evaluations, Deborah hopes to help students not only safely prepare for their next activity but for a lifetime of healthy living. We hope that you are willing to support this worthwhile endeavor.