

# Committed to the Beat: Nurses Involvement in the Community to Prevent Athlete Sudden Cardiac Death

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## Problem

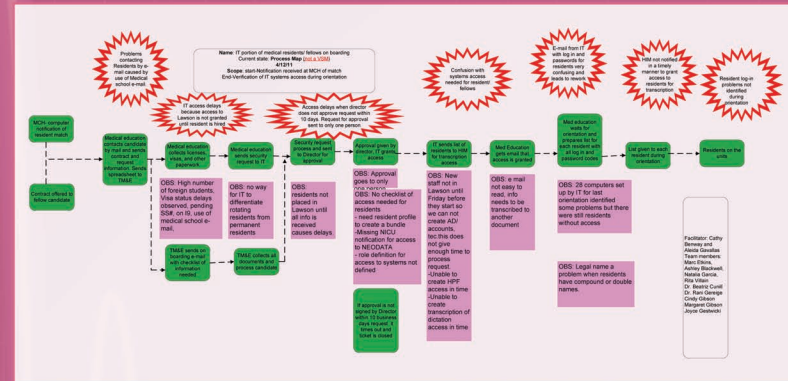
Sports-related sudden cardiac death (SCD) is widely reported in the media. Proper screening is necessary for the early detection of potentially lethal cardiovascular disease with the goal of SCD risk reduction through subsequent medical management. The goal of cardiovascular screening is to maximize athlete safety. This includes the detection of underlying cardiac disease associated with SCD. The National Football League, Major League Baseball, National Basketball Association, Major League Soccer, and National Hockey League endorse cardiovascular screening by ECG. (Asif et al, 2013).

## Population

For many years, cardiologists thought that SCD was a relatively rare occurrence among young people. Recent research indicates it is actually the leading cause of death among young athletes. Investigators from the University of Washington found that one in 43,770 National Collegiate Athletic Association (NCAA) athletes suffered a sudden cardiac death each year from 2004 to 2008. The study also found that black athletes had a higher rate of SCD than white athletes and the risk was higher in males than in females. The highest rates of SCD occurred in basketball, swimming, lacrosse, football and cross-country track. Their conclusion is that SCD is the leading medical cause of death and death during exercise in NCAA student-athletes. (Harmon, K, et al, 2011)

## Practice Change

### Process Map



### Screening Availability

To promote the well being of young student athletes, Miami Children's Hospital provides EKG screening free of charge to all students participating in athletics. The purpose of this screening is NOT to replace routine sports screening and clearance for these student athletes. The goal is to provide an additional layer of screening that is not typically included in a routine history and physical exam. The goal is to identify abnormalities that may result in sudden cardiac death.

Miami Children's Hospital's 7 Outpatient Centers are located in communities across 3 counties in Florida. The nurses at these centers facilitate 3 appointments daily within their hours of operation.

### Marketing

**Every 3 days**  
Sudden Cardiac Death takes the life of a young athlete.

Miami Children's Hospital is offering free EKG screenings for middle and high school sports participants. Consider a free screening for the young athletes in your life... because no child should die from a preventable cause.

Free EKG screenings are available in Broward, Miami-Dade and Palm Beach locations.

To schedule a free EKG screening, please call 1-800-422-0827, ext. 800, Option 1.

**THE HEART PROGRAM**

3100 SW 42nd Ave., Miami, FL 33155  
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### Documentation Establishment

## Outcomes

2,683 Screens Completed in 2013



## Results

- 6 pts have been identified through our screening as having WPW Syndrome
- 5 have undergone curative ablations in the cardiac catheterization lab

### What is Wolff-Parkinson-White Syndrome (WPW)?

WPW syndrome patients have an extra electrical pathway between the atria and the ventricles, known as an accessory pathway. The abnormal pathway directly connects the atria and ventricles and bypasses the AV node. As a result, the normal sinus impulse can travel down the normal pathway through the AV node, as well as the more rapidly conducting accessory pathway. This allows the impulse traveling through the accessory pathway to reach the ventricle earlier, causing what is termed "preexcitation." (Link, et al, 2012)

In WPW, the accessory pathway is typically present at birth. Some children with WPW begin having symptoms shortly after birth or in early childhood. Others may never have symptoms or develop them later in childhood or early adolescence.

### MCH Screenings Requiring Follow Up

LVH.....	23
Q Wave ABN.....	5
T wave ABN.....	12
QRS Axis ABN.....	21
Personal Hx.....	9
PAC.....	2
PVC.....	2
Sinus Brady.....	4
RBBB.....	2
1st Degree AVB.....	3
WPW.....	5
Ectopic Atrial Tach.....	1
7 Epsilon Wave.....	1
Short PR.....	1
<b>Total.....</b>	<b>89</b>

### % Children with Abnormal Screens



To date, thousands of screens have been performed with the potential of six lives saved; student athletes who were oblivious to their silent killer co-morbidity. No child should die from a preventable cause and Miami Children's Hospital Out-patient nurses are committed to this mission.

## Conclusion and Recommendation for Practice

If the ECG screening detects a possible problem, a cardiologist may recommend other diagnostic tests to get a better understanding of the athlete's heart. SCD is often related to congenital heart conditions, such as abnormal chambers or valves, or to an abnormal thickening of the heart muscle, a coronary artery problem or an inflammation of the heart muscle caused by a viral infection. All positive screens are recommended to have a cardiologist referral as coordinated by the athlete's primary care physician (medical home).

### References:

- Asif, L, Rao, A, Drezner, J. Sudden Cardiac Death in Young Athletes: What is the Role of Screening? Current Opinion in Cardiology. 2013; 28(1):55-62.
- Harmon, K, et al, Williams, D, Driscoll, J. Incidence of Sudden Cardiac Death in National Collegiate Athletic Association Athletes. Circulation. 2011; 123: 1594.
- Link, Mark S, Estes III, N, A, Mark. Sudden Cardiac Death in the Athlete: Bridging the Gaps between Epidemiology, Pathology, and Practice. Circulation. 2012; 126(21):2511-2516.

American Academy of Pediatrics. Pediatric Sudden Cardiac Arrest. Pediatrics. originally published online March 26, 2012; DOI: 10.1542/peds.2012.0144

## Community EKG in Action

