HARFORD COUNTY PUBLIC SCHOOLS
Office of Athletics and Physical Education

SUDDEN CARDIAC ARREST AWARENESS

1. What is Sudden Cardiac Arrest?
   - Occurs suddenly and often without warning.
   - An electrical malfunction (short-circuit) causes the bottom chambers of the heart (ventricles) to beat dangerously fast (ventricular tachycardia or fibrillation) and disrupts the pumping ability of the heart.
   - The heart cannot pump blood to the brain, lungs, and other organs of the body.
   - The person loses consciousness (passes out) and has no pulse.
   - Death occurs within minutes if not treated immediately.

2. What are the symptoms/warning signs of Sudden Cardiac Arrest?
   - Fainting/blackouts (especially during exercise)
   - Dizziness
   - Unusual fatigue/weakness
   - Chest pain
   - Shortness of breath
   - Nausea/vomiting
   - Palpitations (heart is beating unusually fast or skipping beats)
   - Family history of sudden cardiac arrest at age less than 50
   The presence of ANY of these symptoms/warning signs that occur while exercising may necessitate further evaluation from your physician before returning to practice or a game.

3. What is the treatment for Sudden Cardiac Arrest?
   - Time is critical and an immediate response is vital.
   - CALL 911
   - Begin CPR
   - Use an Automated External Defibrillator (AED)

4. What causes Sudden Cardiac Arrest
   - Conditions present at birth
     - Inherited (passed on from parents/relatives) condition of the heart muscle;
       - Hypertrophic Cardiomyopathy – hypertrophy (thickening) of the left ventricle; the most common cause of sudden cardiac arrest in athletes in the United States.
       - Arrhythmogenic Right Ventricular Cardiomyopathy (ARVC) – replacement of part of the right ventricle by fat and scar; the most common cause of sudden cardiac arrest in Italy.
       - Marfan Syndrome – a disorder of the structure of blood vessels that make them prone to rupture; often associated with very long arms and unusually flexible joints.
SUDDEN CARDIAC ARREST AWARENESS

- **Inherited conditions of the electrical system:**
  - **Long QT Syndrome** - abnormality in the ion channels (electrical system) of the heart.
  - **Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT) and Brugada Syndrome** – other types of electrical abnormalities that are rare but are inherited.

- **Non Inherited** (not passed on from the family, but still present at birth) conditions:
  - **Coronary Artery Abnormalities** – abnormality of the blood vessels that supply blood to the heart muscle. The second most common cause of sudden cardiac arrest in athletes in the United States.
  - **Aortic valve abnormalities** – failure of the aortic (the valve between the heart and the aorta) to develop properly; usually causes a loud heart murmur.
  - **Non-compaction Cardiomyopathy** – a condition where the heart muscle does not develop normally.
  - **Wolff-Parkinson-White Syndrome** – an extra conducting fiber is present in the heart’s electrical system and can increase the risk of arrhythmias.

- **Conditions not present at birth but acquired later in life:**
  - **Commotio Cordis** – concussion of the heart that can occur from being hit in the chest by a ball, puck, or fist.
  - **Myocarditis** - infection/inflammation of the heart, usually caused by a virus.
  - **Recreational/Performance-Enhancing drug use** – use of drugs such as cocaine, and or high doses of stimulants can be associated with Sudden Cardiac Arrest.

- **Idiopathic:** Sometimes the underlying cause of the Sudden Cardiac Arrest is unknown, even after autopsy.