

## **Preventing Sudden Death of Athletes With Electrocardiographic Screening: What Is the Absolute Benefit and How Much Will it Cost?**

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### **Background:**

A single study from Italy suggests that mandatory electrocardiographic (ECG) screening of athletes reduces their risk of sudden cardiac death. Based on that study, ECG screening of athletes is endorsed by the European society of Cardiology, though not by the American Heart Association. The widespread application of ECG screening remains controversial because the absolute reduction of sudden cardiac death risk provided, and its economic ramifications, have not been studied in detail. This study sought to estimate the costs of a national ECG screening of athletes in the United States and the number of lives that would be saved by that program.

### **Methods:**

A cost-projection model was based on the Italian study, replicating its data in terms of athlete characteristics and physician performance. The size of the screening-eligible population was estimated from data provided by the National Collegiate Athletic Association and the National Federation of State High School Associations. The costs of diagnostic tests were obtained from Medicare reimbursement rates.

### **Results:**

A 20-year program of ECG screening of young competitive athletes in the United States would cost between \$51 and \$69 billion and could be expected to save 4,813 lives. Accordingly, the cost per life saved is likely to range between \$10.6 and \$14.4 million.

### **Conclusions:**

Our cost-projection model suggests that replicating the Italian strategy of ECG screening in the United States would result in enormous costs per life saved.

### **Disclosure:**

This work has been accepted for publication in the Journal of the American College of cardiology.