**COMMUNITY CARDIOVASCULAR SCREENING TO IDENTIFY MIDDLE SCHOOL CHILDREN AT RISK OF SUDDEN CARDIAC DEATH: THE HOUSTON EARLY AGE RISK TESTING AND SCREENING (HEARTS) STUDY**

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Background: Sudden cardiac arrest in school children is often associated with an underlying cardiac abnormality and can be triggered by athletic activity. Preparticipation cardiac screening has been proposed but not standardized, so many such children remain undiagnosed. We tested the feasibility and efficacy of an onsite four-point 15-minute screening of school children, to improve detection of cardiac abnormalities associated with sudden cardiac arrest.

Methods: 254 sixth-grade students were screened at their schools for cardiac abnormalities by onsite focused history, focal cardiovascular physical exam, 12-lead electrocardiogram, and limited echocardiogram in 2010 with follow-up through 2011. Results The screened subjects were primarily African American and Hispanic; 54.7% were girls. We identified 103 (40.6%) subjects with abnormalities on history and physical exam, 50 (19.7%) with hypertension, 80 (31.5%) with electrocardiographic abnormalities, and 32 (13.0%) with echocardiographic abnormalities. There was a trend for more abnormal findings in the non-athletes. Based on these findings, 25 subjects (9.8%) were advised not to participate in rigorous exercise pending further evaluation. The ability to detect abnormalities increased 36.0% with addition of electrocardiograms and 40.0% with addition of echocardiograms. Our system also identified as false-positive by history, physical, and EKG the results in 86.3% of cases, thus minimizing further workup.

Conclusions: Our onsite four-point screening system is feasible and effective in detecting undiagnosed cardiac abnormalities and identifying false-positive results. Both athletic and non-athletic children had undiagnosed cardiac abnormalities, suggesting the utility of screening all schoolchildren.