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AHA Statement
07/02/2007

School nurses play key role in preventing heart disease in children

American Heart Association Scientific Statement



DALLAS, June 26 – Nurses, especially school nurses, are key players in community-wide and individual efforts to promote cardiovascular health and reduce the risk of cardiovascular disease (CVD) among children and youth, according to an American Heart Association scientific statement.

“Not all children receive regular physical examinations or well-child care outside of that provided by schools,” said Laura Hayman, Ph.D., R.N., head of the statement writing group and professor of nursing in the Department of Nutrition, Food Studies and Public Health at New York University. “Identifying risk factors for CVD is a key component of primary prevention; thus, schools, preschools and other community-based settings where childcare is provided are important places to begin educating children and families about CVD risk. Because they’re knowledgeable about resources in their communities, school nurses are well positioned to provide appropriate referrals for children and their families once a risk factor is identified.”

Authors of the statement, published in *Circulation: Journal of the American Heart Association*, pulled together information from previous American Heart Association guidelines in identifying the important role of nurses in implementing education and care in a two-pronged approach of community-wide and individual initiatives to reduce cardiovascular disease risk in children and youth.

The statement also emphasizes healthy lifestyle behaviors and therapeutic lifestyle change as the cornerstone of prevention in children and youth and as the basis for lifelong heart health.

Nurses are uniquely equipped to support these approaches, Hayman said. “Nurses know the science of prevention and they know health behavior. In addition, school nurses and pediatric nurses know child development.”

Since about 95 percent of U.S. children attend school, school nurses are an integral part of promoting cardiovascular health at the community and individual levels. Recommendations for the school nurse’s role are:

- advocating for and conducting evidence-based, comprehensive, age-appropriate heart-health education;
- implementing age-appropriate and culturally sensitive curricula on

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- students' changing patterns of dietary intake, physical activity and smoking behaviors;
- screening and referring children identified as being at-risk for CVD; and
- establishing links with community resources and infrastructures that support the school environment in promoting cardiovascular health of children and youth.

At the community level, the American Heart Association's *Guide for Improving Cardiovascular Health at the Community Level* (*Circulation*. 2003;107:645) and *Cardiovascular Health Promotion in the Schools* (*Circulation*. 2004;110:2266-2275) provide examples and evidence-based recommendations for cardiovascular health promotion. The goals and recommendations of this statement include heart-health education and behavioral skill training, advocacy for heart-healthy school policies and school-community partnerships for providing CVD risk screening, as well as shaping health behaviors such as dietary eating patterns, physical activity and smoke-free lifestyles.

The building of partnerships between universities and school districts is one approach to expand opportunities for CVD risk factor screening in schools.

"At the individual level, managing high cholesterol, high blood pressure and other CVD risk factors in children and adolescents is best accomplished with a multidisciplinary collaborative team approach," Hayman said. "Focus on individual care is geared toward children and youth at high risk for CVD, such as those with a family history of early heart disease."

Advanced practice nurses and nurse practitioners experienced in managing CVD risk factors in children and adolescents, including family-focused care, are essential for starting and maintaining long-term adherence to a treatment plan.

Starting efforts to reduce risk while children are young is part of what Hayman refers to as a "life-course" approach to preventing CVD. "Prevention needs to begin early in life, with the adoption and maintenance of healthy lifestyle behaviors," she said. "Research shows that the disease process is influenced over the course of life by genetic and potentially modifiable behavioral and environmental. Taken together, these data provide compelling evidence for the primary prevention of CVD beginning early in childhood."

Research over the past 30 years shows that markers of CVD (such as changes in the thickness of artery walls) can be present early in childhood. CVD risk factors such as high cholesterol, high blood pressure, physical inactivity and obesity are also present at young ages:

- Data (1988-1994 and 1999-2000) from the National Health and Nutrition Examination Surveys (NHANES) indicate that about 10 percent of adolescents (12 to 19 years old) in the United States had total cholesterol levels greater than 200 mg/dL.
- In the 1995 Bogalusa Heart Study, elevated blood pressure in childhood predicted hypertension in young adulthood; data from NHANES (1999-2000) indicate substantial increases in blood pressure in U.S. children since the 1988-1994 survey.
- Data from the most recent NHANES survey (2003-04) indicate that 17.4 percent of adolescents (12 to 19 years old) and 18.8 percent of children (6 to 11) are overweight.

- Nationwide, the Centers for Disease Control and Prevention (CDC) reported that 35.8 percent of students reported the recommended levels of moderate-to-vigorous physical activity of at least 60 minutes per day on at least five days per week.
- CDC 2003 data indicate that 30.3 percent of male high school students and 24.6 percent of female students use tobacco.

The statement advocates for additional research to inform, guide and evaluate optimal life course strategies for preventing CVD including multidisciplinary models and integrated systems of health care that incorporate individual/high risk approaches along with public health strategies.

Co-authors of the statement are Janet C. Meininger, Ph.D., R.N.; Stephen R. Daniels, M.D., Ph.D.; Brian W. McCrindle, M.D., M.P.H.; Liz Helden, M.Ed., B.S.N.; Joyce Ross, M.S.N., R.N.; Barbara A. Dennison, M.D.; Julie Steinberger, M.D., M.S. and Christine L. Williams, M.D., M.P.H.

Editor's Note: To combat the growing epidemic of childhood obesity, the American Heart Association and the William J. Clinton Foundation formed the **Alliance for a Healthier Generation** in 2005. The goal of the Alliance is to stop the nationwide increase in childhood obesity by 2010 and to take bold, innovative steps to help all children live longer and healthier lives. To ensure that future generations won't struggle with illnesses associated with poor food choices and lack of physical activity, the Alliance is taking preemptive measures against obesity focusing on four key initiatives: the Healthy Schools Program, Food and Beverage Industry Outreach, Healthcare Industry Outreach and Kids Movement. For more information about the Alliance, please visit healthiergeneration.org.

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