Improving Dyslipidemia Screening and Treatment in Children  
Kourtney K. Yoder, BSN, RN, DNP/PNP Student

Introduction
Dyslipidemia in children has very significant risks. Though cardiovascular disease (CVD) is rare in children, evidence shows that early identification and control of dyslipidemia substantially reduces CVD risk in adulthood. CVD is the number one cause of death in the United States, claiming 597,689 lives in 2010; therefore early intervention is needed to prevent CVD. The purpose of this project was to improve identification and treatment of dyslipidemia in children at Des Moines Pediatric and Adolescent Clinic. The objectives were to implement National Heart, Lung, and Blood Institute (NHLBI) guidelines for dyslipidemia screening and treatment in children; increase staff and provider knowledge of dyslipidemia screening and treatment in children; and determine staff and provider adherence with NHLBI guidelines. The short-term impacts of this project are early identification and treatment of children with dyslipidemia. The long-term impacts are lowering children’s lifetime risk of CVD.

Literature Review
In 2011-2012, 20.2% of children 8-17 years of age had dyslipidemia. With childhood obesity on the rise and almost half of children who are obese having at least one abnormal lipid level, this percentage will likely escalate. This puts a large amount of children at risk for CVD. In response to this risk, NHLBI expert panel recommendations call for universal dyslipidemia screening once between the ages of 9 to 11 years and once between the ages of 17 to 21 years. Selective screening is also recommended between the ages of 2 to 8 years and 12 to 16 years. NHLBI recommendations call for a step-wise approach to treatment that begins with basic diet and lifestyle changes and progresses to more stringent diet and lifestyle changes, statin therapy, fish oil therapy, and/or referral to a lipid specialist. The Model for Improvement from the Institute for Healthcare Improvement was used to guide this project since it is a powerful way to create improvement that has been used by numerous health care organizations.

Methodology
The project did not require IRB approval. Following an extensive literature review, six primary care providers and 14 nurses/lab technicians at all three Des Moines Pediatric and Adolescent Clinic locations were given pre-tests to assess their baseline knowledge of NHLBI guidelines. They were then educated about the guidelines through group presentations, one-on-one education, and/or written materials. The guidelines were distributed and handouts of the guidelines were displayed at each clinic location for their reference. The project leader also advised them about the guidelines during clinic site visits. A post-test was administered to assess knowledge gained after education, and data from pre- and post-tests were then analyzed. Parents were educated about the guidelines through the use of informational fliers at the front desk of each clinic location as well as combined informational handouts/selective screening questionnaires located in binders in each patient room. Nurses used these binders to complete selective dyslipidemia screening. Charts were audited to assess adherence to and results of NHLBI screening and treatment guidelines pre- and post-implementation.
Evaluation

One hundred percent of staff and providers received education, either through group presentations, one-on-one education, and/or written materials. Mean test scores increased from baseline to after education from 46% to 94% for staff and 69% to 85% for providers. The differences in knowledge obtained can be attributed to higher baseline knowledge of providers as well as increased difficulty of provider test questions. NHLBI guidelines were implemented at all three clinic locations in August 2014 and continue to be utilized several months later. From November-December 2014, over half of children were screened according to guidelines. This includes 93% of 11 and 16 year olds being universally screened and 31% of 2-8 and 12-15 year olds being selectively screened. Since NHLBI guidelines were not previously utilized, this amounts to a 93% increase in universal screening and a 31% increase in selective screening, or an average increase of 62% pre- to post-implementation. The differences in screening adherence can be attributed to the busy clinic environment and subsequent lack of time for nurses to complete the selective screening questionnaire. Continued nursing education of NHLBI guidelines may be necessary as well as incentives for nurses to complete selective screening. The clinic may also want to consider having providers complete selective screening instead given the longer amount of time they tend to spend with patients. Overall, the number of children screened for dyslipidemia increased from 39 to 167 pre- to post-implementation. Similarly, the number of children identified with at least one abnormal lipid level increased from 17 to 25 pre- to post-implementation, allowing early intervention to take place in order to help prevent consequences of dyslipidemia. Children are also being treated according to guidelines, with 100% of children who had abnormal lipid levels receiving diet and lifestyle counseling compared to 94% pre-implementation.

Conclusions

The Institute of Medicine’s Report on the Future of Nursing recommends that nurses lead and manage efforts to transform practice and improve health outcomes. This nurse-led, evidence-based practice change project meets and exceeds these recommendations; it both changed and improved the way staff and providers screen and treat dyslipidemia in children. As a result, more children with dyslipidemia can be identified and treated, giving them a lower risk of CVD in the future. This project is not limited to a single clinic or organization. NHLBI guidelines can be adopted in a variety of pediatric and family practice settings through advanced practice nursing leadership and implementation strategies. Furthermore, with effective leadership, teamwork, and implementation strategies, NHLBI and other guidelines can be transformed into successful evidence-based practice changes that yield positive outcomes. This project will be orally presented at the 22nd National Evidence-Based Practice Conference, therefore the methods and outcomes of this project will be disseminated to a national audience who may consider adopting the guidelines in their own practice settings.

Kourtney K. Yoder, BSN, RN, DNP/PNP Student  Email: kourtney_yoder@icloud.com
References


