5-2-1-0 Approach to Address Childhood Obesity

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Abstract: The project aims to provide the ability to identify children over the age of 3 years old with a BMI in the 95th percentile or greater by using an obesity questionnaire at each well child check, then document specific goal focused healthy lifestyle modification and provide counseling with a specific handout by 2016 for CHOC patients. We compared the 5 different areas (BMI, charting BMI, goal setting, follow up and handout information) pre and post intervention. Each of the 5 areas had a greater than 50% of improvement. In conclusion, the obesity questionnaire serves as an aid in screening for pediatric obesity, engaging children and their family in setting goal and education on how implement those goals into their lifestyles.

Introduction:
Childhood obesity is a growing epidemic that is affecting more families each day. Over the last 20 years, the prevalence of obesity in the US children has increased 300 percent (1). Obesity is defined as a BMI greater than 95th percentile in a 2 year old or greater (2). There have been several theories for the substantial increase in BMI including, lack of exercise, increase in screen time, enlarged portion sizes and unnecessary intake in sugary drinks. Since elevated BMI leads to comorbidities, the more important aspect of addressing obesity is the need to be a focus on preventing and intervening when identified as obese. Invention is crucial because a high BMI leads to persistent obesity, metabolic and non-metabolic abnormalities, and higher mortality in adulthood. This is a major medical concern in South Carolina as affects 39.2% of our children that will affect the future of the patient and will affect the future of healthcare. The pediatrician is the ideal resource to implement interventions and prevention when fighting childhood obesity.

In Children’s Hospital Outpatient Clinic (CHOC), we currently we address nutrition, exercise and obtain a BMI at each well child check and screen with a lipid panel for an elevated BMI. Currently, there is no standardized screening tool for obesity or a specific way to address treatment for those with a BMI in the 95th percentile or greater. Several studies have shown that early intervention improves the outcome of BMI. It is imperative to approach this issue with a well-studied evidenced based method. Screening a child and identifying the need for further assistance for families and patients will be the first step to improving BMI. Implementing an obesity questionnaire the CHOC clinic would provide a simple resource to help identify children who are obese and an intervention. The questionnaire and the rest of the toolkit will offer education for families about healthy lifestyle modifications in a goal oriented treatment strategy. This follows the 5-2-1-0 dietary and activity recommendation which stands for 5 vegetable and fruits per day, less than 2 hours of screen time, 1 hour of exercise and zero sugary drinks. The project aims to provide the ability to identify children over the age of 3 years old with a BMI in the 95th percentile or greater by using an obesity questionnaire at each well child check, then document specific goal focused healthy lifestyle modification and provide counseling with a specific handout by 2016 for CHOC patients.

Methods:
This screening tool was implemented at the resident clinic, which is part of the Palmetto Health Children’s Hospital. Residents from pediatrics and family medicine rotate through the clinic in 4-week increments. The majority of patients served at this clinic have Medicaid insurance and/or of a minority ethnic group. Patients were excluded if they only spoke Spanish. Baseline data for BMI, obesity documentation, goal directed intervention and follow up. The project was initially introduced to the staff, residents and attending in March of 2015. Instructed that the BMI documented at the time of weight and height was obtained. The nurse technician or registered nurse input the BMI electronically for each well child exam for 3 years old and older. Once the intake was completed, they were given a healthy habits questionnaire. This is part of the childhood obesity toolkit was developed in collaboration with South Carolina Medical Association,
Eat Smart, Move More South Carolina, Dr. Simmons, MUSC Boeing Center and DHEC to provide content for physicians and families to help guide intervention for children who are obese. The questionnaire was in English, printed in color and broken down into age groups 2-9 years old and 9-18 years old. The parent completed the handout for the younger child while the patient completed the handout for the older child. Prior to being seen by the physician, they were asked to complete the form by providing check marks in the box that appropriately reflects their lifestyle in the areas of fruit and vegetable intake, meal habits, screen time, length of daily physical activity, beverage choices and amount of daily intake. There was a coordinating pamphlet that addresses 5, 2, 1.0 healthy lifestyle.

Prior to physician entering the exam room, they were to review the document BMI and note if the patient meet criteria for obesity. If the patient met criteria, there were to review the handout during the well child visit and address ways to successfully complete the goal the parent/patient selected.

Baseline data was collected to evaluate documentation of BMI and goal directed strategies for intervention. For PDSA cycle 1, spoke the clinic staff about integrating the documentation of BMI and distribution of the questionnaire at each well child exam 3 years old or greater. PDSA cycle 2, reviewed the specific with pediatric residents documentation of goal PDSA cycle 3, implementation of scheduling a follow up appointment in 2-3 months to re-address weight concerns. PDSA cycle 4 was giving pamphlets that coordinated with the goal.

Results
Baseline results showed a BMIs charted 80% of the time and resident documentation was 70%. There was a goal documented in notes for 50% of the well child checks and follow up 20% appointments scheduled.

Baseline verse post-intervention for the BMI, resident documentation, goal and follow-up appointments. Shown in figure 1 and 3. In figure 2, there was an increase in consistency of providing the healthy lifestyle questionnaire during the project intervention. Initially showed and 100% rate that fell down to 60% during the 3 month and return to the 100% for the remainder of the project.
Discussion:
Overall, the aim of the project was successfully met with the aid of the obesity toolkit that included the healthy habits questionnaire and correlating handouts. The addition of the tool kit to the well child check ups increased the BMI and charting of BMI to 100%. The handouts placed an emphasized identifying those who are obese and served as a reminder for both the staff and residents. The reason for the success is the multiple individuals involved to implement this tool kit. There were multiple PDSA cycles within the 4 major categories discussed in the methods. There were limitations with this project and the main one being that it excluded Spanish speaking
families which is a major population that needs to screened and educated. There were multiple staff changes and running out of the questionnaires account for the decrease in percentage during the 3rd month of the project. There is also limitation with the data since it was largely a comparison from before and after the initiation of the obesity toolkit. This was a successful intervention but there is much more to be done. This is a wonderful first step in fighting the obesity epidemic but there needs to be monitoring patients BMI changes to identify whether this has a clinical impact on the patients BMI. In conclusion, the healthy lifestyle questionnaire will help with setting