MUSC’s Boeing Center for Children’s Wellness School and Community-Based Programs 2013 Executive Summary
There are more people in South Carolina who are overweight or obese than who have a healthy weight. While it is our choices regarding food and physical activity that are most important in being a healthy weight, it is today’s “obesogenic” environment that makes eating nutritiously and getting physical activity more challenging than ever. Current research shows us that policy and environmental changes that address wellness are necessary to impact the childhood obesity epidemic. As children spend the majority of their day in school, the Boeing Center has targeted much of our prevention efforts to working with school districts and individual schools to make these healthy changes. Our school-based obesity prevention initiative has been successful in effecting district level policy and environmental changes that reach all 82 Charleston County School District Schools, and individual changes in 93 schools across Charleston, Berkeley and Dorchester 2 Districts. Our program has now impacted 71,903 tri-county students and staff.

Evaluation of Charleston County schools over the past 3 years has found numerous sustainable, substantive changes in schools such as school gardens (90%), elimination of sugary beverages (84%), and integration of physical activity in afterschool programs (82%). Participating schools receive an annual monetary award to use toward wellness changes that are priorities for their school.

Our Docs-Adopt program grew out of several years of efforts by physicians in the Charleston County Medical Society (CCMS) trying to contribute to the solution for our community. The program links physicians with individual school wellness committees, whereby they serve as a health expert and resource for that school. Each school’s committee is charged with making policy and environmental changes at the local school level that improve nutrition and increase physical exercise, selecting from among existing evidence-based practices that meet the needs of the individual school.

Our MUSC Boeing Center for Children’s Wellness School Wellness Checklist© Contest is a valuable tool that has incentivized schools to make important wellness changes improving nutrition and exercise.
At the Boeing Center for Children’s Wellness, our mission is to reduce childhood obesity in the state of SC by creating healthier school environments through innovative wellness initiatives.

2013 program highlights included:

- 102 schools in Charleston, Berkeley and Dorchester 2 School Districts participated in our school wellness checklist initiative
- 93 of these schools made sufficient wellness policy and environmental changes to qualify for $1,000 wellness achievement awards
- 98 doctors adopted schools in the tri-county area
- 15 schools in Berkeley and Dorchester Counties were newly paired with doctors through the Docs-Adopt program
- 2 new districts (Richland I and Greenville) began replicating the Docs-Adopt program in their schools (2013-2014 school year)
- 34 schools participated in our spring 2013 BMI measurement pilot, measuring 2833 5th graders, 8th graders and high school PE students.
- 30 schools received training to complete the new online version of the CDC’s School Health Index and turn it into a health plan for their school
- 129 girls received sports bras through the Support the Girls program
- An online web-based electronic checklist system was developed and launched
- A blog was launched to enable both physicians and schools to share their success stories

Top to Bottom: Physicians and school wellness leaders at a Docs-Adopt Training; School Food Service Workers learn how to use produce from their garden in their lunch program; Laing Middle School received exercise equipment for a teacher fitness room through a donation arranged by Docs-Adopt physician, Dr. David Habib

Blog developed for physicians and schools to share information
muscboeingcenter.blogspot.com
Because we have found that active, effective wellness councils usually include health professional representation, we also initiated a program to recruit physicians for this effort. Through the Coordinated School Health Advisory Council (CSHAC) and the Charleston County Medical Society, “Docs-Adopt” was created. (From www.musc.edu/leanteam)

The Docs-Adopt© Initiative
In November 2010, the Charleston County Medical Society and the Charleston County School District launched a unique partnership known as “Docs-Adopt”, in which 55 physicians were paired with schools to support their individual wellness efforts. Elements of the Docs-Adopt© program include:

- Training of physicians in childhood obesity best practices, community engagement, working with schools
- Communication support, connecting physicians with schools (often through consolidated training)
- Framework support- MUSC Boeing Center’s School Wellness Checklist© for participating districts
- Signs/banners/ window decals
- Blog- sharing news and best practices
- Surveys

Over the past 3 years, close to 100 physicians have been recruited and paired with > 90% of the 79 schools in CCSD. Physicians have supported their schools in a myriad of ways, including helping them to complete items on their wellness checklist, finding donated wellness supplies and equipment, presenting to teachers and staff on health topics (i.e. hypertension, cholesterol, diabetes, healthy eating) and setting up tables to provide health education for families at school health fairs.

This fall, the Boeing Center was pleased to partner with the Dorchester County Medical Society to bring Docs-Adopt© to Dorchester County School District 2. Both physicians and school wellness leads attended and were trained in program elements. To date, 16 doctors are working with 15 of the 22 Dorchester 2 schools.

The Docs-Adopt© program is in the process of statewide expansion through the leadership of Dr. Janice Key, along with the support of the Charleston County Medical Society and the South Carolina Medical Association’s (SCMA) Childhood Obesity Task Force. Our model is already being tested this year in Greenville and Richland 1 School Districts.
The Wellness Checklist
Developed in 2010 by Jennifer Byrne and Boeing Center staff, in conjunction with Charleston County Medical Society School Health Committee members, the MUSC Boeing Center for Children’s Wellness School Wellness Checklist© is now a mainstay within the Charleston County School District’s (CCSD) wellness programming, with 73 of the 82 schools participating and winning wellness awards in the 2012-2013 school year.

The checklist was developed as a tool to measure (and incentivize) progress toward development of a coordinated school health program, based on the CDC guidelines, with only minor changes in language to match school district initiatives that were being launched in the 2010-2011 school year (which was the time of the checklist’s development). This table summarizes it very succinctly:

<table>
<thead>
<tr>
<th>MUSC Boeing Center for Children’s Wellness School Wellness Checklist©</th>
<th>CDC Coordinated School Health Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health education</td>
<td>Health Education</td>
</tr>
<tr>
<td>Establishing a wellness structure</td>
<td>Health Services</td>
</tr>
<tr>
<td>Social and emotional support</td>
<td>Counseling, Psychological, Social services</td>
</tr>
<tr>
<td>Physical activity time</td>
<td>Physical education</td>
</tr>
<tr>
<td>School meal quality</td>
<td>Nutrition services</td>
</tr>
<tr>
<td>Snack polices</td>
<td>Healthy school environment</td>
</tr>
<tr>
<td>Wellness culture</td>
<td>Health Promotion for staff</td>
</tr>
<tr>
<td>Employee connections</td>
<td>Family/community involvement</td>
</tr>
<tr>
<td>Family friendliness</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>% schools held regular fruit and vegetable tastings for the students</th>
<th>CCSD n=74</th>
<th>BCSD n=17</th>
<th>D2SD n=11</th>
</tr>
</thead>
<tbody>
<tr>
<td>% schools replaced unhealthy snacks with healthier ones</td>
<td>53%</td>
<td>42%</td>
<td>17%</td>
</tr>
<tr>
<td>% schools replaced sugary beverages with non-sugary beverages</td>
<td>84%</td>
<td>42%</td>
<td>33%</td>
</tr>
<tr>
<td>% schools adopted a non-food reward policy</td>
<td>47%</td>
<td>42%</td>
<td>33%</td>
</tr>
<tr>
<td>% schools sent letters home encouraging parents to send healthier snacks to school</td>
<td>53%</td>
<td>33%</td>
<td>0%</td>
</tr>
<tr>
<td>% schools created or maintained a sustainable indoor or outdoor school garden</td>
<td>90%</td>
<td>67%</td>
<td>42%</td>
</tr>
<tr>
<td>% schools replaced unhealthy fundraisers with healthy ones</td>
<td>54%</td>
<td>50%</td>
<td>22%</td>
</tr>
<tr>
<td>% promoted water drinking at school with a marketing campaign</td>
<td>47%</td>
<td>83%</td>
<td>44%</td>
</tr>
<tr>
<td>% incorporated physical activity into their after school programs 3-5 times per week</td>
<td>82%</td>
<td>58%</td>
<td>44%</td>
</tr>
</tbody>
</table>

In 2013 this model was expanded into 2 other nearby school districts as well, Berkeley County School District (BCSD) and Dorchester 2 School District (D2SD), through a partnership with South Carolina DHEC Region 7 and Trident United Way Links to Success. Thanks to this community team approach, 22 schools from the two districts made enough wellness changes to qualify for $1000 awards at the school year’s end.
BMI Measurements in the Charleston County School District

The best outcome measure for childhood obesity prevention programs is change in the child’s BMI percentile over time. However, change in BMI percentile due to prevention efforts alone is extremely hard to effect over a short time period; it is something that should be measured over several years. Currently, there is no organization that routinely measures student BMI in CCSD. Therefore, in order to determine our program effectiveness, we have worked with the schools to establish annual BMI surveillance in at least three school grades (5th, 8th and once in high school).

Last school year 2833 students were measured in 34 CCSD schools:
- 1671 5th graders
- 496 8th graders
- 666 High School students

Only the BMI data from the 5th grade students was representative enough to allow for analyses of statistical significance. What we learned from this data was that many (38%) of CCSD’s 5th graders are overweight or obese; even more in Title 1 low income schools (46%). This demonstrates that children living in poverty are more likely to have an unhealthy weight.

For the 2013-2014 school year, we have already started working with our school district administrators to increase BMI collection. As a result, the Director of PE has required PE teachers to collect BMIs in both the fall and spring semesters. MUSC Boeing Center staff hosted a training in BMI measurement for all CCSD PE Teachers in August 2013, and worked together with the statistician to develop worksheets for each PE teacher that were preformatted and then prepopulated with their school’s current students. Teachers are required to submit their class BMI measurements back to the school district using this spreadsheet. Once the data is de-identified we will be given access to school and grade-level group data.

Outcomes

The good news is that a recent evaluation of our work in Charleston County using 3 years of data has found that our program is particularly able to reach at-risk students. Title I schools actually had a greater increase in wellness activities than non-Title I schools.

We are beginning to see evidence that our program works! Recent analyses comparing school checklist performance to school level BMI data showed that Charleston County School District 5th graders who go to a school with fewer healthy changes (a low physical activity (PA) score or low school meal score) on our wellness checklist are more likely to be overweight or obese than kids that go to a school with a high PA or school meal score, independent of school factors such as Title 1 status. Also, we have found that healthy kids really are better students. Students at schools with greatest participation in our program had fewer behavior problems and improved attendance.

Above: An MUSC medical resident assists with school-based BMI screenings as part of her Boeing Center community rotation
"Slowly but surely, we're beginning to turn the tide on childhood obesity in America. Together, we are inspiring leaders from every sector to take ownership of this issue." – First Lady Michelle Obama, Building a Healthier Future Summit, 3/8/13

**Regional and Statewide Expansion**

The development and expansion of our program has been through collaboration with many partners such as The Boeing Company, Eat Smart Move More (ESMM), SC DHEC, the Charleston County Medical Society and the South Carolina Medical Association. This year, we expanded fully into Dorchester and Berkeley counties. Additional county medical societies have also joined our initiative, including Dorchester, Greenville and Columbia. Our goal is to reach as many districts as we can across the state with our school wellness initiatives, and in so doing, reduce our state’s childhood obesity burden.

Our staff has been very engaged in statewide obesity prevention efforts this year, through leading and serving on statewide boards, committees and physician organizations to address childhood obesity. Our Director, Dr. Janice Key, serves on the ESMM SC Board of Directors and co-chairs the SCMA Childhood Obesity Taskforce. Dr. Key presented 2 Continuing Medical Education workshops that have trained physicians in responding to the childhood obesity epidemic through using tools such as our program.

Additionally, our work has been presented to leaders from across the state including the Diversity Leadership Institute at Furman University’s Riley Center and Leadership South Carolina. These organizations involve leaders from all sectors of society such as lawyers, physicians, school superintendents, corporate CEOs and journalists. We are delighted that two classes of Riley Fellows have selected our advancing the Docs-Adopt School Wellness Initiative as their capstone project.

**Replication**

Our strategy for successful replication in new districts includes the following elements:

- Identification of local champions including physicians and school staff
- Direct communication with champions to plan based upon local needs
- Provision of local workshops for initial training
- Development of web-based tools and materials
- Continued communication, support and problem solving with local champions during the school year
- Verification and tallying of each school’s checklist submission
- Continued evaluation and improvement efforts
- Annual meetings of all sites to share successes and receive refresher training
- Planning and promotion of Boeing Center model for national replication.

We will launch a competitive Request for Proposals (RFP) process in April 2014, whereby school districts and/or communities may apply to implement the Lean Team model in their own community. The RFP will cover multiple trainings of school-level personnel, training of local physicians, support from Boeing Center staff, integration into our online submission database, and monetary wellness awards for all qualifying schools.
MUSC’s Boeing Center for Children’s Wellness and The Healthy SC Initiative

In the spring of 2013, the Boeing Center was awarded a Healthy South Carolina Initiative (HSCI) grant to impact healthy school environments. The objective of the project, led by Coleen Martin and Carolyn Lindstrom, is to use the CDC’s School Health Index in 30 schools from Berkeley, Dorchester 2, and Charleston County School Districts to in order to familiarize them with the CDC School Health Guidelines to Promote Healthy Eating and Physical Activity. This fall, schools were identified and trained, focusing specifically on the physical activity and nutrition topics. Schools were chosen based on interest level and readiness and trained either as an individual wellness committee or in a group setting with other school wellness committees present. The participating schools included 7 in CCSD, 11 in BCSD, and 12 in D2SD.

After finishing the School Health Index, schools join the Boeing Center School Wellness Checklist contest, with an extra 10 points for being in HSCI. These 30 schools will also receive an additional $250 from the HSCI grant as part of their wellness award money at the end of the 2013-2014 school year.

Schools were encouraged to use the strengths, weaknesses and action items identified in the School Health Index as part of their school wellness checklist wellness initiative. Many of the items on the school wellness checklist helped the schools create steps to complete their goals in areas of school health where they may have been weaker than other areas. The two tools really complimented each other as schools strived to increase physical activity and healthy eating at their individual schools. The School Health Index assisted with providing a framework for new schools and helped schools who have been working on the wellness checklist for the past couple of years identify needs.

Top to Bottom: Children express their “like” of new school recipe during a district-wide healthy recipe challenge; School meal make-over is a hit with one elementary student: “Look at me, I love vegetables!”; Teachers get a healthy cooking demo during a School Health Index training.
The Children’s Hospital Wellness Initiative

The Children’s Hospital Wellness Initiative was launched in September 2012 in collaboration with MUSC office of Health Promotion’s Dr. Susan Johnson and Lucie Kramer, MS, RD. Following several months of needs assessment surveying of MUSC Children’s Hospital (CH) employees, we used the model we’ve found to be effective in the school environment. Our goal was to address the needs of MUSC CH staff and ultimately to reach patients, families and visitors.

Our pilot program supported employee wellness committees, empowering them to create a more healthful workplace environment. An overarching CH Wellness Committee included Wellness Champions (staff members committed to changing the environment and supporting the wellness efforts) was instrumental in selecting programs and incentives. Overall, the Children’s Hospital Wellness Initiative was available to every employee within the Children's Hospital and impacted roughly 400 staff members.

Examples of wellness programs that were implemented are listed below:

- Lab screening with incentivized repeat screenings, so that the employee could observe changes over time to markers such as cholesterol (25 CH employees)
- 6 “mini-gyms” in work areas with trainers demonstrating use of equipment in short fitness sessions (120 CH employees)
- Sodexo program with incentives for purchasing healthy meals from the MUSC cafeteria. (200 punch cards were distributed and 10 were collected)
- Sodexo Health Action Meals for children and adolescents who are inpatients at MUSC CH developed based on taste-testing by Heart Health patients, with prizes for each meal
- 10 week “Biggest Loser” style contest (45 participants lost 185 pounds; the winner lost 10.7% of her starting weight.)

MUSC Boeing Center Community Bridge Walks

Our weekly 5-mile community bridge walk continues to offer tri-county residents an opportunity to exercise for free while engaging with BCCW staff and other community partners. We draw a diverse group of people who are working on their own health journey or desire to mentor others who may just be getting started. After achieving our mileage goal last December of circumnavigating the globe we changed from a weekly to a monthly schedule. Our walks are now held the first Saturday of each month. More than 500 participants receive our monthly Bridge Newsletter, which includes BCCW activities, a central health-themed article, wellness tip and trivia, bridge walker spotlight, pictures, upcoming events and cumulative mileage. Participants logged over 17,000 miles these past eighteen months bringing our cumulative total to 42,693 miles.
“Support the Girls” Community Initiative

As part of the South Eastern Virtual Institute for Health Equity and Wellness (SE VIEW), through funding from the Department of Defense, Dr. Janice Key and Ms. Coleen Martin from the Boeing Center have worked with JROTC programs in Charleston County Schools. The aim of the study was to understand barriers to healthy eating and active living faced by these students. One discovery of this project was that a lack of properly fitted sports bras hindered participation in physical activity and physical testing by girls in JROTC. This barrier was identified through focus group discussions with JROTC instructors and students. A program to address this need and increase physical activity, “Support the Girls”, was developed this fall through collaboration between the Boeing Center, the Charleston County School District (CCSD) and a community business partner (Fleet Feet and Moving Comfort). The goal of the program is to provide health education and properly fitted sports bras to all female JROTC students in CCSD. Though a donation program (1 bra donated for each purchased at Fleet Feet) these sports bras are provided at no cost to the students. In October 2013, 129 high school girls in JROTC program received a sports bra. Our goal is for all 900 females in the 11 high schools to receive their bras by September 2014.

This project is possible through the generous funding from:

The Boeing Company

Southeastern Virtual Institute for Health Equity and Wellness
Administered by the U.S. Army Medical Research and Material Command (USAMRMC) and the Telemedicine & Advanced Technology Research Center (TATRC), Fort Detrick, Maryland 21702, under Contract Numbers: W81XWH-10-2-0057 and W81XWH-11-2-0164

Healthy South Carolina Initiative
Funded by the Community Transformation Grant from the Centers for Disease Control and Prevention

Bi-Lo Winn Dixie Foundation

South Carolina Clinical and Translational Research Institute
Through NIH Grant Numbers UL1 RR029882 and UL1 TR000062

Coastal Community Foundation

Left: Our latest initiative with community partner, Fleet Feet of Mount Pleasant, empowers high school girls to lead a more active and healthy lifestyle. Through “Support the Girls”, each girl learns the importance of wearing a properly fitted sports bra and receives one at the end of the program.
Meet The Boeing Center Team

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