Alabama

Arkansas

Delaware

District of Columbia

Florida

Georgia

Kentucky

Louisiana

Maryland

Mississippi

Missouri

North Carolina

Oklahoma

South Carolina

Tennessee

Texas

Virginia

West Virginia

SOUTH CAROLINA OBESITY ASSESSMENT PROJECT
Final Report

NOVEMBER 2005

Southern Institute
ON CHILDREN & FAMILIES

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South Carolina Obesity Assessment Project
Final Report

Prepared For

BlueCross BlueShield of South Carolina Foundation

Southern Institute on Children and Families
500 Taylor Street, Suite 202
Columbia, SC 29201
(803) 779-2607
www.thesoutherninstitute.org

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Southern Institute on Children and Families Project Staff

Bob Amundson, MPA
Research Analyst
SCOAP Project Coordinator

Glenn Mainwaring
Policy and Research Program Assistant
SCOAP Program Assistant

Nicole Ravenell, MPP
Policy and Research Director
SCOAP Project Director

Beth R. Shine, MMC
Communications Coordinator

Sarah C. Shuptrine
President and Chief Executive Officer

South Carolina Obesity Assessment Project Consultants

North Carolina Prevention Partners has been instrumental in bringing a science base to the analysis of the overweight and obesity problem and to bringing leadership and resources to science-based solutions for addressing the obesity epidemic. North Carolina Prevention Partners staff consulting on the SCOAP Project are Meg Molloy, DrPH, MPH, RD, Executive Director; Meg van Staveren, MPH, RD, National Winner's Circle Manager; and Elizabeth Zimmerman, MPH, RD, Childhood Obesity Project/Financial Manager.

Truls Ostbye, MD, MPH, MBA, PhD, FFPHM, has over 30 years experience in the health field. Much of his research, spanning over 20 years and having produced more than 165 articles in peer reviewed medical and public health journals, has focused on obesity and related factors and consequences.

Katrina M. Krause, MA, supported the work of Dr. Ostbye on this project. Krause has 10 years of research experience and an extensive knowledge of the academic literature on the causes and consequences of obesity, as well as several co-authored journal articles regarding obesity, health service delivery and chronic disease prevention.

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Executive Summary

In the past 30 years, the prevalence of overweight has doubled in children ages 2-5 and 12-19 years, and more than tripled in children ages 6-11. Further, the severity of overweight is increasing even faster than the prevalence, as children overweight are heavier than their counterparts 30 years ago. Overweight children are stigmatized and subject to negative stereotyping and discrimination both by their peers and by the larger community.

The BlueCross BlueShield of South Carolina Foundation commissioned the Southern Institute on Children and Families to produce an assessment of the issues related to obesity, particularly childhood obesity, in the State of South Carolina. The *South Carolina Obesity Assessment Project* (SCOAP) results will be instrumental in the development of a strategic action plan to decrease the incidence of overweight and/or obese children and adolescents in South Carolina. The Southern Institute engaged consultants, North Carolina Prevention Partners (NCPP), Dr. Truls Ostbye and Katrina Krause, with expertise in program and data analysis related to obesity to assist with SCOAP. SCOAP has two primary areas of focus: 1) the identification of obesity data and 2) the identification of obesity prevention and treatment promising practices. SCOAP focused on addressing the following questions:

1. What are the primary indicators that an individual will be overweight or obese? Which indicators appear to be more strongly correlated with being overweight or obese?

2. What obesity data are available from South Carolina local school districts, hospitals and others studying this issue? What does this data tell us about obesity, particularly childhood obesity, in South Carolina?

3. Are there programs or effective strategies to help reduce the effects of being overweight or obese?

    a. What successful intervention programs have been implemented nationally and internationally to prevent or alleviate the effects of being overweight and obese?
    b. What successful intervention programs have been implemented in South Carolina to prevent or alleviate the effects of being overweight and obese?

Each of these questions was addressed in two separate reports previously submitted to the BlueCross BlueShield of South Carolina Foundation. This is the final SCOAP report, and it is a compilation of the two previously developed documents: 1) a review of

childhood obesity data and 2) a review of promising practices related to the prevention and treatment of overweight and obese children. In addition, findings and recommendations are provided based on the analysis and synthesis of the identified data and promising practices, as well as additional research.

In simplistic terms, obesity is the result of an imbalance between energy intake and energy expended. However, this report clearly highlights that the issue of obesity is not a simple one. Obesity develops due to multi-faceted and complex hereditary, community and social influences. Effective strategies to reverse this epidemic of childhood obesity need to be multi-level and must involve government, community organizations, businesses, schools, families and individuals. To demonstrate the complex nature of obesity, SCOAP uses an adaptation of a socioecological model to demonstrate the various sectors of the community that can and should be mobilized to address childhood obesity. The socioecological model in this report, the SCOAP Childhood Obesity Conceptual Model shown on page 3 (Diagram 1), depicts five levels: policy and government, community, schools, family and the child. The child is the ultimate target of the strategies included in this report.

Childhood Obesity Data Review

A basic measure used to indicate if an individual is overweight or obese is Body Mass Index (BMI), which is a measure of weight taking height into account for different groups. Because children are still growing, the measured BMI is interpreted using age-for-BMI charts accounting for the age and gender of the child. When BMI in children is reported, it is stated in terms of percentiles on an age and gender distribution scale. In general, children who are at or above the 85th percentile are considered overweight, and children at or above the 95th percentile are considered "obese." However, because of the negative connotations associated with the term "obese," there is no consensus as to the appropriate way to describe the groups falling within these percentile ranges. The definitions of weight status used in this report are as follows: children at the 85th percentile and less than the 95th percentile of BMI-for-age are referred to as "at risk for overweight" and those at the 95th percentile or above are referred to as "overweight." The term "childhood obesity" is used to describe the issue in general.

The majority of information about the prevalence of childhood obesity comes from three national datasets: 1) the Youth Risk Behavior Surveillance System (YRBSS), 2) the National Survey on Children's Health (NSCH) and 3) the Pediatric Nutrition Surveillance System (PedNSS). Additional information comes from the National Health and Nutrition Examination Survey (NHANES), but data from NHANES is not available on a state-by-state basis. The data review section briefly describes these datasets and then describes the prevalence of childhood obesity nationally and in the Southern Region, including South Carolina. Childhood obesity data identified in the literature for specific southern states also is described. (Table 1 on the next page shows a state-by-state comparison of the three datasets.)

TABLE 1

Comparison of Overweight and At Risk Children for National Survey of Children's Health (NSCH), Youth Risk Behavior Surveillance System (YRBSS) and Pediatric Nutrition Surveillance System (PedNSS)

	NSCH		YRBSS		PedNSS	
	At Risk	Overweight	At Risk	Overweight	At Risk	Overweight
Alabama	17.9	16.7	14.5	13.5	16.4	14.7
Arkansas*	16.4	16.4	15.9	13.8	14.5	12.2
Delaware	20.7	14.8	16.7	13.5	N/A	N/A
District of Columbia	16.7	22.8	16.8	13.5	14.2	13.3
Florida	18.0	14.4	14.0	12.4	14.8	13.4
Georgia	15.3	16.4	15.1	11.1	14.4	12.4
Kentucky	17.6	20.6	15.3	14.6	17.8	17.2
Louisiana	18.4	17.2	N/A	N/A	15.0	13.3
Maryland	16.6	13.3	N/A	N/A	N/A	N/A
Mississippi	18.8	17.8	15.7	15.7	N/A	N/A
Missouri	15.4	15.6	14.9	12.1	16.4	13.3
North Carolina	14.7	19.3	14.7	12.5	N/A	N/A
Oklahoma	12.8	15.4	14.2	11.1	N/A	N/A
South Carolina**	17.2	18.9	12.9	11.7	13.5	12.4
Tennessee	15.3	20.0	14.8	15.2	13.8	12.0
Texas	13.3	19.1	16.4	13.9	N/A	N/A
Virginia	16.7	13.8	N/A	N/A	N/A	N/A
West Virginia	15.6	20.9	15.1	13.7	14.5	13.2
United States	**15.7**	**14.8**	**14.8**	**12.1**	**15.7**	**14.7**

Note: YRBSS is missing data for Louisiana, Maryland and Virginia. Grades 9th-12th.
All States 2003 except for *Arkansas 2001, **South Carolina 1999.

Note: PedNSS is missing data for Delaware, Maryland, Mississippi, North Carolina, Oklahoma, Texas and Virginia.

The data indicate the prevalence of overweight among children has reached epidemic proportions. According to data from the 1999-2002 NHANES surveys, 23% of children ages 2-5 in the United States are overweight or at risk for overweight, as are 31% of children ages 6 and older. Sixteen percent of children ages 6 and older are at or above the 95th percentile of BMI for age, the standard defining childhood obesity.

The impact of various programs and projects focused on childhood obesity and prevention is examined. Those programs that are targeted and involve multiple levels of the community such as schools and families appear to be most effective at influencing changes to personal health and nutrition behaviors which have long-term results in weight control.

There is little published research dealing specifically with childhood obesity in South Carolina. A literature search produced only one published report focused specifically on South Carolina. The public education community does not gather uniform, standard obesity data for all schools and school districts. The health care community also does not gather childhood obesity data, in part because treatment or intervention for obesity is generally not a covered service by the insurance industry. Therefore, there is little incentive on the part of providers to track this information. Following is a review of what is known about childhood obesity in South Carolina based on data from 2003.

- South Carolina had the 12th lowest percentage (12.4%) of overweight, low-income children ages 2-5 in the nation.

- Of all children ages 10-17,
  - 162,077 (36.1%) are at risk of overweight or are overweight.
  - 30,229 (31.9%) of children ages 10-11 are overweight.
  - 72,911 (28.5%) White children and 82,031 (48.2%) Black children are at risk of overweight or are overweight.

- Of lower-income children ages 10-17,
  - 44.3% of children in families below poverty ($18,400 for a family of four) are at risk of overweight or are overweight.
  - 38.0% of children in families above poverty and below 200% of poverty ($36,800 for a family of four) are at risk of overweight or are overweight.

- The percent of uninsured children ages 10-17 at risk of overweight or are overweight is 46.1%.

Childhood Obesity Promising Practices Review

The promising practices in this section of the report are organized within the SCOAP socioecological model in order to demonstrate the various sectors of the community such as government, business, health care and media that can and should be mobilized to address childhood overweight and obesity. Some components of the model have numerous promising practices, as resources have been invested in developing and testing

interventions. On the other hand, there are some components where it is clear certain sectors must play a significant role, but there are fewer tested programs and practices related to the sectors. For example, within the faith community many programs have been evaluated and have been shown to be effective in changing adult behaviors, but have been less effective for childhood obesity. Programs reviewed in this report were selected from international, national, state and local levels. The majority of the promising practices are domestic programs and policies due to the incompatibility of international programs and systems with United States' programs and systems. The primary reasons programs do not transfer well are differences in culture, political structure, the financing of health care and the structure of education systems. However, a more intensive assessment of specific international programs may provide some helpful insights on obesity prevention program design for the United States.

The national and international promising practices presented in this report were selected based on the current scientific body of knowledge about what is effective in achieving healthy weight in children. An additional set of criteria also was used in the selection of practices in this report to assure the programs and policies are practical, cost-effective and replicable. An inventory of the major programs and initiatives in South Carolina currently addressing obesity prevention and treatment are described in this section of the report as well. Taken together, the international, national and state information in this report can be used to identify the needs and missed opportunities to prevent and treat childhood obesity within South Carolina.

Below are the specific findings and recommendations SCOAP is presenting to the BlueCross BlueShield of South Carolina Foundation.

Findings

- The epidemic of childhood obesity is a global problem.
- International programs dealing with childhood obesity may not be replicable in the United States because of cultural and social differences.
- Combating the childhood obesity epidemic will require considerable efforts of leaders in government, business, health care, media and the community.
- The epidemic of obesity is a strain on the United States economy and health care system.
- The health care system does not adequately address obesity or childhood obesity.
- There is no cohesive national plan to address obesity or childhood obesity.
- South Carolina has developed a comprehensive state plan to address obesity (Appendix F).

- Key decision makers in South Carolina are not engaged in the implementation of the South Carolina Coalition for Obesity Prevention Efforts state plan.

- There are many programs dealing with childhood obesity in the United States and South Carolina, but the success of these programs is uncertain.

- There are weaknesses in childhood obesity data, especially early childhood (ages 2-10) data.

- There is insufficient obesity-related data about local communities, including South Carolina.

- Available data show key variables such as race, gender and age are correlated with childhood obesity.

- There are initiatives and opportunities to gather better data on childhood obesity in South Carolina.

- The Student Health and Fitness Act of 2005 (Act 102) is a significant first step towards addressing childhood obesity within the school setting, but funding for Act 102 has not been appropriated.

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500 Taylor Street, Suite 202
Columbia, SC 29201

T 803.779.2607
F 803.254.6301
www.thesoutherninstitute.org