

# Enhancement of Diabetes Prevention Awareness in Adolescents

Dr. Elizabeth M. Bear (CON), Jordon Brees (CHP), Rita Brown (CHP), Dr. Jay Brzezinski M.D. (COM), Vandy Gaffney, II (COM), Michelle Haynes (CDM), Anna Hicklin (CHP), Anna Hoffius (COM), Chandra Kothapalli (CGS), Allen Pendarvis (COM), Kristie Quarles (CON)

## PURPOSE

- Increase understanding of the magnitude of the adolescent diabetes epidemic in South Carolina
- Facilitate prevention of diabetes and its complications in South Carolinians

## SPECIFIC AIMS

- Aim 1**  
Develop and implement a diabetes education and prevention program for high school students
- Aim 2**  
Organize a diabetes prevention student group at MUSC, which will continue to work on diabetes prevention in the Charleston area
- Aim 3**  
Lobby our elected officials and Department of Education to include diabetes in the statewide educational standards and make prevention a priority statewide

## BACKGROUND

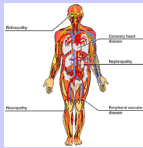
### What is diabetes?

**Diabetes:** chronic disease in which the body does not properly control the amount of sugar in the blood.

- Risk Factors:** obesity, physical inactivity, unhealthy diet, family history, race/ethnicity (African American or Hispanic), older age

### •Complications:

- Stroke
- End-stage renal disease
- Cardiovascular disease
- Blindness
- Peripheral neuropathies
- Amputations
- Periodontal disease



### Why is diabetes important to South Carolinians?

- Diabetes is an epidemic in South Carolina affecting
  - 10% of African Americans and 7% of Caucasians in the state
- Diabetes causes serious complications:
  - 257,000-342,000 people are estimated to be affected by diabetic complications in South Carolina
- Diabetes costs the state millions of dollars:
  - 1 in 3 African Americans hospitalized in SC has diabetes
  - 1 in 5 Caucasians hospitalized in SC has diabetes
  - In one year, the bill for the 8,800 patients seen with diabetes as their primary reason for admission was \$104 million.
  - Tax payers cover 73% of this amount

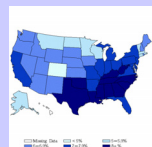


Figure 1: Percent of population with diagnosed diabetes



Figure 2: South Carolina - Age-Adjusted Percentage of Adults with Diagnosed Diabetes, 1994 - 2005



Figure 3: South Carolina - Total Rate of Adults Initiating Treatment for Diabetes-Related End-Stage Renal Disease per 1,000,000 Population, 1984 - 2002

## METHODS

### 1. High School Diabetes Prevention Education:

- Visited a Burke High School health class three times to furthering the students' education regarding diabetes prevention



### High School Student Diabetes Prevention Education



### 2. ADAPT: Adolescent Diabetes Awareness and Prevention Team

- University-wide, student-run organization
- Open to all MUSC students in good academic standing
- Executive board composed of 6 members-one from each college encourages inter-professional team skills
- Objectives:
  - Emphasizing inter-professional teamwork
  - Increasing the awareness and understanding of diabetes mellitus among South Carolinians
- Aims:
  - Community outreach through projects such as community health fairs, education sessions at local schools
  - Work to make legislative changes regarding healthy lifestyles to decrease the burden of diabetes in South Carolina

**ADAPT**

### 3. Legislative Interests

- Identified current South Carolina curriculum standards regarding Diabetes education were vague:
  - Content Area 1, Standard 1: "By the end of 12<sup>th</sup> grade students should be able to:
    - evaluate risk relationships between healthy life style behaviors and disease prevention
    - analyze strategies for detection and treatment of chronic and communicable disease
    - Evaluate the risks and benefits of personal health practices"
- Sent a letter to the Director of Office of Curriculum and Standards: Helena Tillar
- Suggested revision of South Carolina Health and Safety Education Standards to include diabetes education
- Requested a diabetes educator in each South Carolina county to promote diabetes education
- Proposed the important concept of preventing diabetes rather than treating the disease
- Increase awareness of diabetes in South Carolina's high school students
- Increase awareness of the Medical University of South Carolina Presidential Scholars Program
- Traveled to Columbia to meet state legislatures and discuss our concerns as students

## RESULTS

- High School Diabetes Prevention Education:
  - Pre-test: 42% correct
  - Post-test: 59% correct
  - Evaluations indicated a desire for more knowledge from teacher and students
- ADAPT:
  - Charter submitted
  - Interest from students
- Legislative Interests:
  - Letter to Helena Tillar sent awaiting response
  - Traveled to Columbia to support diabetes prevention education during talks with legislatures

"Thank you all for coming in and sharing those tips with us. I truly appreciate it because I live in a home with a diabetic and I can relate to her a little more better" -Student

"I enjoyed all of the presenters and they gave a load of information that was plentiful in a simple style...It is time to get the word out and influence individuals to change their lifestyles for the better!" -Student

## CONCLUSIONS

- Diabetes is an enormous health problem in South Carolina
- Diabetes can be prevented by healthy lifestyle choices, especially when started early
- Poor performance on the pre-test indicates the need for diabetic education in local schools
- Despite some selection bias, the 17% increase in scores on the post-test after only 3 sessions suggests that incorporating diabetes education into the curriculum would be beneficial to the students.
- Suggested Future Programs:
  - ADAPT:** Medical University of South Carolina student-run organization focused on community outreach to continue educating the public in diabetes prevention
  - Legislative goals:** revise the South Carolina Health and Safety Education Standards to include within content area 1: Personal Health and Wellness, not only education on chronic illness in general, but specifically on diabetes.
  - Hire a diabetes specialist for each county in the state whose role will be to provide diabetes education to each school in his/her assigned county.



## ACKNOWLEDGEMENTS

Carolyn Jenkins (Community liaison)  
Ms. Nesmith (Teacher at Burke High School)  
Participating Burke High School Students  
Dr. Jay Brzezinski, Dr. Elizabeth Bear (Faculty Advisors)