Improving Diabetes Outcomes in the Black Community

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Over the next 24 hours

- 4110 diabetic patients newly diagnosed
- 614 diabetic patients will die
- 66 diabetic patients will go blind
- 122 diabetic patients diagnosed with ESRD
- 225 diabetes-related amputations

The Epidemic Called Diabetes

Lifetime Risk for Diabetes in the US

For individuals born in 2000:
Males – 32.8%
Females – 38.5%

Estimated loss of life expectancy if diagnosed at age 40:
Males – 11.6 years
Females – 14.3 years

Narayan JAMA 2003
Diabetic Patients: High Risk for Cardiovascular Mortality

The greatest cause of mortality in type 2 diabetes is atherosclerotic vascular disease.

- Diabetic patients have
- (2- to 4-fold greater risk of CVD)
  - Poorer prognosis for survival
  - 3-fold greater mortality from stroke
  - Greater risk of permanent brain damage and recurrent stroke
  - 3-fold risk of sudden death

Sowers JR 2006
Percent Change in BMI Distribution Among U.S. Adults With Diagnosed Diabetes, 1960-2000

Very Obese (> 35 kg/m²)

Obese (30 – 34.9 kg/m²)

Overweight (25 – 29.9 kg/m²)

Normal weight (< 25 kg/m²)

Obesity Trends* Among U.S. Adults
BRFSS, 2003

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
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# Obesity Trends* Among U.S. Adults

**BRFSS, 2005**

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person*)

<table>
<thead>
<tr>
<th>No Data</th>
<th>&lt;10%</th>
<th>10%–14%</th>
<th>15%–19%</th>
<th>20%–24%</th>
<th>25%–29%</th>
<th>≥30%</th>
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Obesity Trends* Among U.S. Adults
BRFSS, 2006

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
What causes the rising incidence of diabetes mellitus (DM) and the cardiometabolic syndrome?
Insulin Resistance: Inherited and Acquired Influences

**Inherited**
- Rare Mutations
  - Insulin receptor
  - Glucose transporter
  - Signaling proteins
- Common Forms
  - Largely unidentified

**Acquired**
- Overeating
- Overweight
- Inactivity
- Aging
- Medications
- Illness
- Hyperglycemia/glucose toxicity

INSULIN RESISTANCE
"The Diabesity Epidemic"

Demographics
Genetics
Behaviors
Environment
FRENCH (Freedom?) FRIES

20 Years Ago

210 Calories
2.4 ounces

Calorie Difference: 400 Calories

How to burn* 400 calories:
Walk 2 hr 20 Minutes

Today

610 Calories
6.9 ounces

*Based on 130 pound person.
Diabetes-CVD Connection

- More than 65% of all deaths in people with diabetes are caused by cardiovascular disease.

- Heart attacks occur at an earlier age in people with diabetes and often result in premature death.
Diabetes-CVD Connection

- Up to 60% of adults with diabetes have high blood pressure.

- Nearly all adults with diabetes have one or more cholesterol problems, such as:
  - high triglycerides
  - low HDL ("good") cholesterol
  - high LDL ("bad") cholesterol
The Good News...

- By managing the ABCs of diabetes, people with diabetes can reduce their risk for heart disease and stroke.

A stands for A1C
B stands for Blood pressure
C stands for Cholesterol
General Tips to the Public

Take steps to lower your risk of D-CVD complications:

- A1C < 7.
- Blood pressure < 130/80.
- Cholesterol (LDL) < 100.
- Cholesterol (HDL) > 40 (men) and > 50 (women).
- Triglycerides < 150.
- Get help to quit smoking.
- Be active.
- Make healthy food choices.
- Talk to your doctor about medication.
What About Prevention?
Key attributes of Delivery of Diabetes Prevention Interventions:

Prevention Program
Structured and intensive
Individualized/small-group
Multi-disciplinary
- weight loss
- diet
- physical Activity
- behavioral support
  self-monitoring
  stimulus control
  relapse prevention

60% reduced Diabetes Risk

High Risk Adult: Overweight + glucose intolerance
Man-to-Man Approach  
(Clinical/Health Services Model)

- Identify high risk persons
- Multidisciplinary (dietitian, exercise specialists, behavioral specialists).
- Structured curriculum for education of diet, exercise, and behavior change.
- Application of cognitive behavioral change principles.
- Individual or small-groups with case management
- Frequent contact.
- Long-term maintenance.
The People

Skill-Building

Home and Telephone Visits for Education and Follow-Up

Media Messages

Group and Individual Education Sessions

Neighborhood Walk and Talk Groups

Volunteer Networks
Research Objectives

- To explore the meanings, symbols, and personal and interpersonal significance of diabetes as experienced by African American men living in southeast Raleigh
- To use the findings from this project to enhance diabetes care and improve outcomes for African American men
Findings

- Diabetes is an interruption of the “normal” and codes a man “sick”
- Seeking medical care was only precipitated by the inability to work, to perform sexually, or weight loss
- Considerable self-diagnosing and the use self-prescribed medications characterized the illness behaviors of these men
Findings

- Heredity and diet were linked to the development of type 2 diabetes, but there was little consciousness about “prevention”

- In spite of the high prevalence of diabetes in the African American community, it is a stigmatized condition among black men
Social Ecological Model
for Considering Public Health Interventions
(Burdine & McLeroy, 2006)
Community-Based Clinical/Health Services

- Programs/ facilities in work sites
- Promotion and support of health clubs, YMCAs, etc.
- Organization of community support groups (e.g. walking clubs)
- Physical education in schools
Environmental and Policy Change

- Mass media and education
- Bicycle and walking trails
- Provision of fitness centers
- Building and improving parks
- Neighborhood safety
- Building design
- Community / urban planning
- Health insurance
In Closing...
Efficacy (quality) \times Exposure (access) = \text{Impact}

A. \quad 70\% \times 20\% = 14\%

B. \quad 30\% \times 90\% = 27\%
CLINICAL PUBLIC HEALTH

Efficacy \( \times \) Exposure = Impact

\( (quality) \times (access) \)

A. \( 70\% \times 20\% = 14\% \)

B. \( 30\% \times 90\% = 27\% \)
The Public Health System

Assuring the Conditions for Population Health

Community

Health care delivery system

Governmental Public Health Infrastructure

Employers and Business

Academia

The Media

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