

## **Diabetes in Alabama: More than A Touch of Sugar!**

**Satellite Conference and Live Webcast  
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Produced by the Alabama Department of Public Health  
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## **Diabetes in Alabama An Update**

- Diabetes definitions
- Signs and symptoms
- Diabetes and risk factors
- Diabetes complications and prevalence
- Financial impact in the U.S.
- Burden of diabetes in Alabama

## **Diabetes in Alabama An Update**

- Diabetes prevalence in seniors
- ADA standards: older adults medical care
- American Geriatric Society (AGS) guidelines
- Healthy aging & baby boomers
- What can we do?

## **Diabetes Definitions**

- Diabetes mellitus is a metabolic disorder involving the endocrine pancreas
- Diabetes affects carbohydrate, lipid (fat), and protein metabolism and results from a decrease in insulin production and/or a decrease in the ability of target organs to respond to insulin

## **Diabetes Definitions**

- Senior (for our discussion) is a person aged 65 and older
- Type 1
  - Absolute insulin deficiency
  - Exogenous insulin required for survival
  - 5-10% of diabetic population

### **Diabetes Definitions**

- **Type 2**
  - **Relative insulin deficiency**
  - **Various metabolic abnormalities**
  - **Progressive**
  - **Insulin may be required over time**
  - **90-95% of diabetic population**

### **Diabetes Signs and Symptoms**

- **Blurred vision**
- **Feeling very tired**
- **Frequent infections**
- **Increased thirst**
- **Increased hunger**
- **Increased urination**
- **Sexual problems**

### **Diabetes Signs and Symptoms**

- **Sore that will not heal**
- **Sudden weight loss**
- **Numbness or tingling of hands or feet**

### **Diabetes Risk Factors**

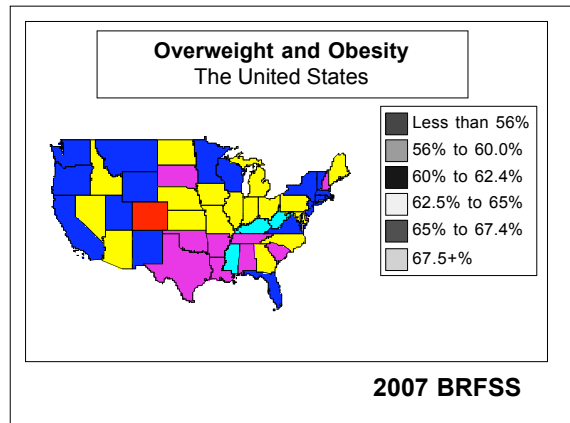
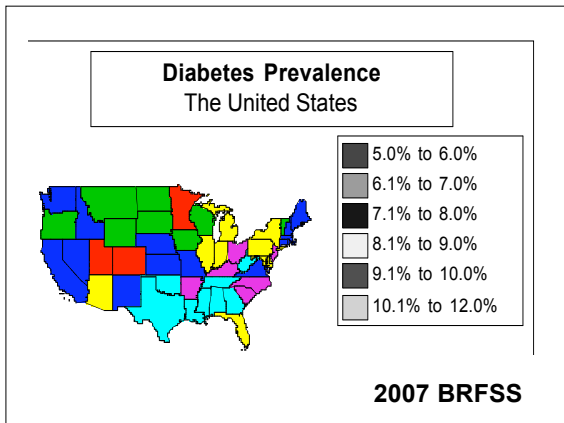
- **Family history of diabetes**
- **Age (greater than 40)**
- **Overweight or obese**
- **High blood pressure**
- **Tobacco use**
- **Lack of experience**

### **Diabetes Risk Factors**

- **Blacks, Hispanics, American Indians or Asians**
- **Stress of an illness or injury**
- **History of gestational diabetes**
- **Had a child weighing over 9 pounds**

### **Diabetes Complications and Prevalence**

- **Blindness**
- **Kidney disease**
- **Heart disease**
- **Nerve damage**
- **Amputations of the feet and/or legs**
- **Sexual problems**
- **Sudden and/or premature death**



**Diabetes Complications and Prevalence**

- More than 23.6 million people in the United States have diabetes
- Life risk of developing diabetes for those born in 2000 is 32.8% with annual risk 1%
- At least 57 million people in the United States have what is referred to as “pre-diabetes”

**Diabetes Complications and Prevalence**

- Pre-diabetics are people whose blood sugar levels are not high enough to be diagnosed as diabetics but are at high risk for diabetes
- Persons with pre-diabetes have 70% lifetime risk to develop diabetes with an annual risk of 5-7%, nearly 10 fold of general population

**Diabetes Complications and Prevalence**

- Within the next 2-6 years 25 million pre-diabetics are estimated to become diabetics
- Another concern is the growing number of overweight Americans is leading to an increased incidence of metabolic syndrome

**Diabetes Complications and Prevalence**

- Metabolic syndrome is a cluster of conditions that occur together, increasing your risk of heart disease, stroke, and diabetes
- Imagine what the population increase in diabetes will do to the fragile healthcare system

## The Financial Impact of Diabetes In the U.S.

- The financial burden of diabetes in the United States was more than \$174 billion in 2007
- In 2007, individuals with diagnosed diabetes incur average expenditures of \$11,744 per year, of which \$6,649 is resulting from diabetes

## What is the Burden of Diabetes in Alabama?

- Based on the 2008 BRFSS data, more than 397,350 people in Alabama are aware they have diabetes
- As many as 200,000 more may have diabetes and do not know they have it

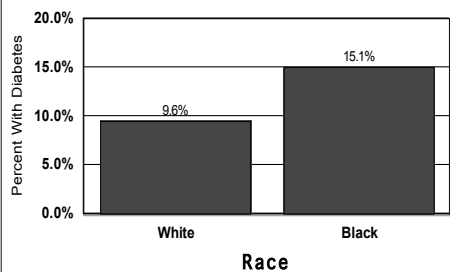
## What is the Burden of Diabetes in Alabama?

- One in ten adults have been diagnosed with diabetes
- Alabama is ranked fifth in prevalence of diabetes
- 65% of Alabama's adults are overweight
  - 2<sup>nd</sup> highest in nation
  - 31.2% are obese

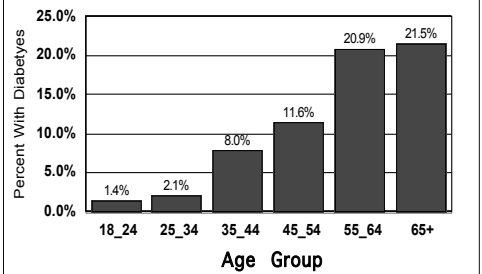
## What is the Burden of Diabetes in Alabama?

- Alabama's youth are 6<sup>th</sup> highest overweight/obese at 31.6%
- Blacks comprise 23% of Alabama's population but 15.1% of that population is diabetic compared to 9.6% for whites
- Over 30% of Alabama's counties have five or fewer primary care physicians per 10,000 population

Diabetes Prevalence In Alabama By Race In 2008



Diabetes Prevalence In Alabama By Age Group In 2008



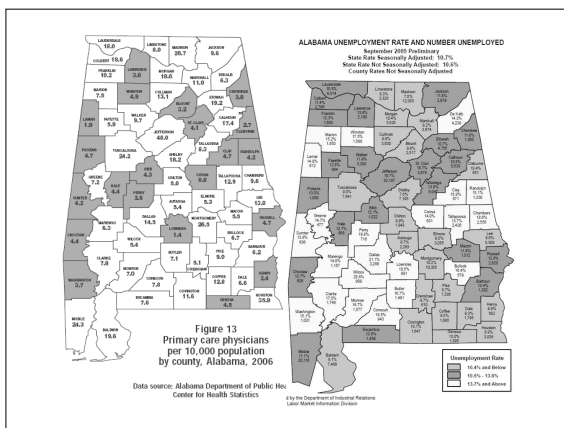
BRFSS

## What is the Burden of Diabetes in Alabama?

- 12.4% of diabetics reported no health coverage
  - 80% of people with diabetes went uninsured after having lost coverage due to various reasons nationally
    - Job change or layoff
    - A move

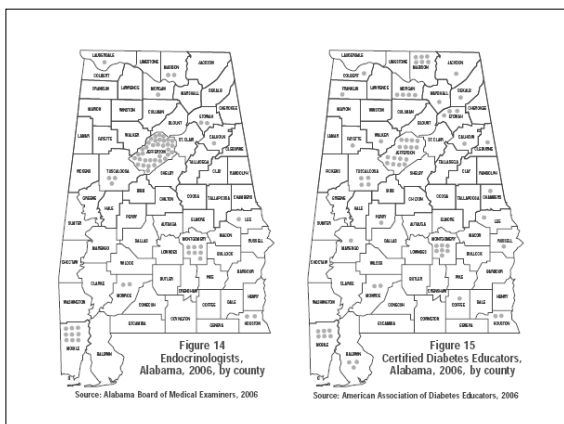
## What is the Burden of Diabetes in Alabama?

- Divorce
- Graduation from college
- Change in income or health status
- 16.5% at some time, within the past 12 months had been unable to afford a visit to the doctor
  - Consistent with national average of 16.6%

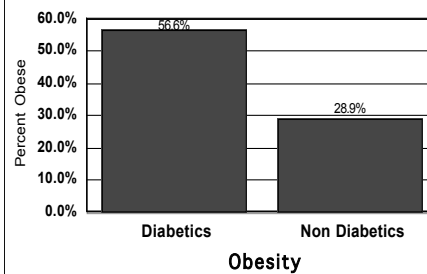


## Endocrinologists and Diabetes Educators

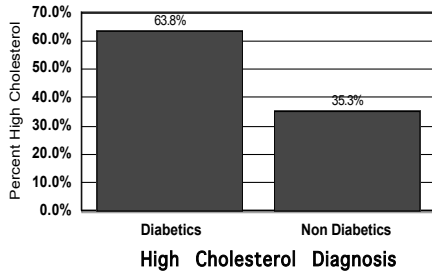
- 55 counties do not have an Endocrinologist
- 42 counties do not have a diabetes educator



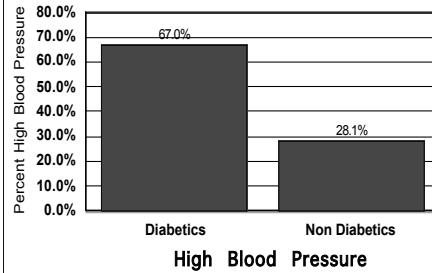
## Obesity And Diabetes In Alabama 2008



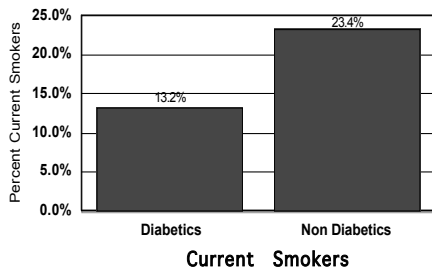
### Diagnosis Of High Cholesterol And Diabetes In Alabama In 2007



### Hypertension And Diabetes in Alabama 2007



### Smoking And Diabetes In Alabama 2008



### Patient Completed Actions

- In 2008
  - Daily foot check
    - White 69.15%
    - Black 72.71%
  - Daily blood check
    - White 61.17%
    - Black 62.37%

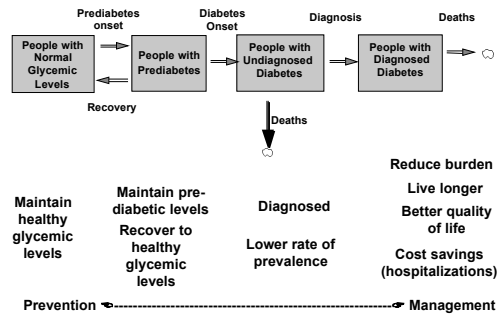
### Physician Completed Actions

- In 2008
  - Flu Shot
    - White 62.79%
    - Black 50.14%
  - Eye Exam
    - White 66.10%
    - Black 68.27%

### Physician Completed Actions

- Foot Exam
  - White 59.03%
  - Black 74.04%
- Hb A1c Test
  - White 76.67%
  - Black 67.11%

## What Do We Need To Do?



## Diabetes State Plan

- **Goals**
  - Access to Care
    - Diabetes Today Site coalitions
  - Education
    - Community level
    - Evidence-based
      - Diabetes Self Care
      - Toll-free Tobacco Quitline, 1-800- QUIT NOW

## Diabetes State Plan

- Health Communications
  - National Diabetes Education Program materials

## Diabetes Prevalence in Seniors

- Diabetes is highly prevalent in persons aged 65 and older
  - Type 2 Incidence continues to increase in this age group
  - Up to 25% of adults 65-74 in some ethnic group

## Diabetes Prevalence in Seniors

- Compared to seniors without diabetes, seniors with diabetes experience higher rates of
  - Premature death
  - Functional disability
  - Coexisting illnesses as high blood pressure, coronary heart disease, and stroke

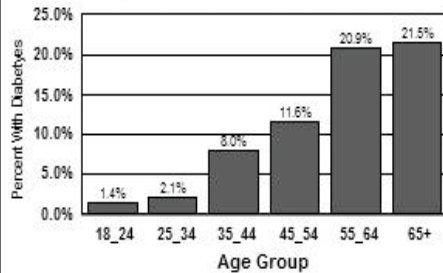
## Diabetes Prevalence in Seniors

- General Population
  - At least 20% of well patients over the age of 65 years have diabetes
  - 7% of the general population have diabetes
  - Patients age 65 and older account for almost 50% of the population with diabetes

## Diabetes Prevalence in Seniors

- Well patients vs seniors in long-term care
  - At least 20% of well patients over the age of 65 years have diabetes
  - Approximately 24% of long-term care patients over the age of 65 have diabetes

Diabetes Prevalence In Alabama  
By Age Group In 2008



## Diabetes Prevalence in Seniors

- Without effective preventive programs targeted to people with pre-diabetes, the incidence and prevalence of diabetes will further increase, placing a tremendous medical, psychological, and economical burden on society

## Diabetes Prevalence in Seniors

- Prevention is key
- 35 million seniors in Medicare are 65 years or older
  - 17 million have undiagnosed diabetes or pre-diabetes
  - Only 10% of people with Medicare have taken advantage of the free diabetes screening

## Diabetes Prevalence in Seniors

- Cost of the prevention test is about \$7.00
- Cost of diabetes related heart attack about \$28,000
- Cost of kidney dialysis about \$70,000 annually
- Prevention is the key in preventing...

## Diabetes Prevalence in Seniors

- Chronic Kidney Disease
  - 16.8% of all adults above the age of 20 years
  - 1 in 6 individuals have kidney disease
  - Over 400,000 patients on dialysis or receiving kidney transplants, another 400,000 at risk



### **Diabetes Prevalence in Seniors**

- 67,000 people die each year from kidney failure
- More prevalent in individuals above 60 years old, Asians, Hispanics, African-Americans, Pacific Islanders, and Native Americans
- 6,000 were on dialysis

### **Diabetes Prevalence in Seniors**

- 3,000 had kidney transplant
- 2,300 were on waiting lists
- Alabama has one of the highest growth rates for the number of dialysis units

### **Diabetes Prevalence in Seniors**

- Physiologic changes in aging affect signs and symptoms associated with diabetes and its complications
  - Diminished taste and olfactory sense (decreased ability to taste sweet, sour, and bitter foods)
  - Decrease in thirst response and saliva production
  - Blurry vision due to hyperglycemia

### **Diabetes Prevalence in Seniors**

- Screening seniors for diabetes
  - Older adults should be screened for diabetes with at 2-hour oral glucose tolerance test
    - Fasting plasma glucose tests may actually miss 31% of cases

### **American Diabetes Association (ADA) Standards for Seniors**

- The ADA acknowledges the care of older adults with diabetes is complicated by their clinical and functional heterogeneity
- Patients vary in
  - How recently they were diagnosed
  - The presence of co-morbidities
  - Activity level/frailty
  - Life expectancy

### **American Diabetes Association (ADA) Standards for Seniors**

- Medical Standards of Care
  - Patients who are active, have good cognitive function, and are willing to undertake the responsibility of self-management should be encouraged to do so and be treated using the goals for younger adults with diabetes

### **American Diabetes Association (ADA) Standards for Seniors**

- The ABCs of Diabetes – Targets for Younger Adults
  - A. Hgb A1c less than 6.5% (ACE) or less than 7.0% (ADA)
  - B. Blood Pressure less than 130/80 mg/dl

### **American Diabetes Association (ADA) Standards for Seniors**

- C. Cholesterol
  - LDL less than 100 mg/dl for ATP III and ADA
  - Triglycerides less than 150 mg/dl for ATP III and ADA
  - HDL greater than 40 mg/dl for men and 50 for women for ADA

### **American Diabetes Association (ADA) Standards for Seniors**

- For patients with advanced diabetes complications, life-limiting co-morbid illness, or substantial cognitive or functional impairment, it is reasonable to set less intensive glycemic goals

### **American Diabetes Association (ADA) Standards for Seniors**

- Glycemic goals, at a minimum, should avoid acute complications of diabetes including
  - Dehydration
  - Poor wound healing
  - Hyperglycemic hyperosmolar coma

### **American Diabetes Association (ADA) Standards for Seniors**

- The ADA's recommendations for the care of older adults
  - Influenced by the American Geriatric Society's (AGS) guidelines for improving the care of the older person with diabetes mellitus

### **American Diabetes Association (ADA) Standards for Seniors**

- Diabetes Mellitus Education
  - Patients, their families, and caregivers should be educated on hypoglycemia and hyperglycemia, foot ulcers, and amputation to include

### **American Diabetes Association (ADA) Standards for Seniors**

- Precipitating factors, prevention, symptoms, and monitoring
- Treatment and when to notify healthcare team

### **AGS Guidelines for the Care of Older Adults with Diabetes**

- Clinicians should establish, in collaboration with partners, specific goals of care or target outcomes
- Targets should be identified for the management of
  - High blood pressure
  - High levels of fat

### **AGS Guidelines for the Care of Older Adults with Diabetes**

- High levels of sugar
- Mood disorders (if present)
- Geriatric syndromes (if present)
- Geriatric syndromes include
  - Polypharmacy, depression, cognitive impairment
  - Urinary incontinence, injurious falls, pain

### **AGS Guidelines**

- Aspirin
  - Patients should be offered daily aspirin therapy of 81-325 mg/d
  - Not for patients on other anticoagulants or with contraindications to aspirin

### **AGS Guidelines**

- Smoking
  - Patients should be offered counseling and pharmacological interventions to help them quit smoking

### **AGS Guidelines**

- Current areas of emphasis
  - Strive to improve A1c, blood pressure, and cholesterol/lipid control (ABCs) through their various programmatic efforts with partners
  - This will reduce occurrences of diabetes complications

### **AGS Guidelines**

- Every percentage point drop in A1c blood test results (i.e. 8.0% to 7.0%) reduces risk of microvascular complications
  - Eye, kidney, and nerve diseases by 40%

### **AGS Guidelines**

- Improved cholesterol or blood lipid control
  - Reduces cardiovascular complications by 20-50%

### **AGS Guidelines**

- Good blood pressure control
  - Reduces the risk of heart disease or stroke among persons with diabetes by 33-50%
  - Reduces risk of microvascular complications by 33%

### **AGS Guidelines**

- High blood pressure
  - Target < 140/80
  - A blood pressure <130/80 may provide further benefit
- Patients with high blood pressure should be treated gradually to avoid complications due to reduced tolerance for blood pressure reduction in the elderly

### **AGS Guidelines**

- Glycemic control
  - A1c less than or equal 7% for healthy seniors
  - A1c less than or equal 8% for seniors for whom intensive glycemic control risks may outweigh benefits or have limited life expectancy or are very frail

### **AGS Guidelines**

- Patients should have their A1c checked
  - At least every 6 months if targets not being met
  - Every 12 months if A1c has been stable for several years

### **AGS Guidelines**

- Patients with severe or frequent hypoglycemia should
  - Have their management plan evaluated
  - Be referred to a diabetes educator, endocrinologist, or diabetologist

### **AGS Guidelines**

- Patients should be evaluated regularly for diet and nutritional status
  - If appropriate, they should be referred for culturally appropriate medical nutrition therapy and dietary counseling

### **AGS Guidelines**

- Patients and caregivers should receive education regarding any new drugs
  - Purpose
  - Dosing
  - Side effects
  - Adverse reactions

### **AGS Guidelines**

- Lipids (fat)
  - Patients with dyslipidemia should be treated as is feasible, based on overall health status
- If patient's LDL is
  - Less than or equal 100 mg/dl, check every 2 years

### **AGS Guidelines**

- 100-129 mg/dl, check every year, initiate MNT (Medical Nutrition Therapy), increase physical activity
- If LDL is greater than 100mg/dl after 6 months, initiate pharmacological treatment
- Greater than 130 mg/dl, initiate pharmacological treatment and lifestyle modification, check at least annually

### **AGS Guidelines**

- Eye care
  - Patients should have initial comprehensive dilated eye examination by an ophthalmologist after diagnosis of diabetes
  - Risk factors include symptoms of eye disease present, evidence of retinopathy, glaucoma, or cataracts on initial dilated-eye examination or subsequent examinations during prior 12 months

### **AGS Guidelines**

- **Foot care**
  - Patients should have foot exam annually
- **Nephropathy (Kidney Disease)**
  - Patients with Type 2 diabetes should be tested at the diagnosis of diabetes and then annually for microalbuminuria and serum creatinine

### **Healthy Aging and Baby Boomers**

- A “senior tsunami” within next 10 yrs.
- Demand for services will not be adequate
  - Health care
  - Financial advice
  - Public safety
    - Crime against elderly expected to skyrocket

### **Healthy Aging and Baby Boomers**

- By 2030 calculation on 2000 census
  - Estimate 65 years of age and older in Alabama and the nation may be more than what we have from birth to 18 years of age
  - Currently, 17.3% of the population are 60 years old or older

### **Healthy Aging and Baby Boomers**

- By 2025 some counties will see a population explosion
  - Colbert 47%
  - Franklin 41%
  - Lowndes 60%
  - Lawrence 87%

### **Healthy Aging and Baby Boomers**

- **Need more**
  - Health specialists, Gerontologists and Gerontology Nurses who specialize in aged and Internal Medicine physicians

### **Healthy Aging and Baby Boomers**

- **Infrastructure**
  - Senior friendly sidewalks
  - Traffic lights with beeper for visually impaired
  - Public transportation state wide for seniors who elect not to drive or no longer allowed or able

## **Healthy Aging and Baby Boomers**

- **Jobs for seniors**
  - For many, retirement at 65 is no longer affordable, they must return to work
  - Many find jobs at odd hours and late at night when street security is at its worst

## **What Can We Do?**

- **Family walk and talk**
  - Side walk and walking trails
  - Quality time and get to know each other well
  - Family shop together and eat together
- **Healthy foods, healthy choices**

## **What Can We Do?**

- **Healthy drinks, water with every meal and throughout the day**
  - Unless has chronic kidney disease

## **What Can We Do?**

- **Youth walk and talk with Seniors**
  - Wealth of knowledge and living history of Life and Alabama
  - Youth can learn from seniors who have an ear to help them avoid mistakes in life

## **What Can We Do?**

- For the first time in America's history the current generation is not expected to outlive their parent-you can make a difference by helping to save our youth and encouraging them to be the doctors that we all need

## **What Can We Do?**

- **Senior centers**
  - Insure adequately equipped for physical activity and events, i.e. exercise, Wii Fit & Sport
  - Nutrition taught and practice, join cook groups
  - Malls (indoor) prescription for walking, form walking teams

### **What Can We Do?**

- Faith based organization and volunteer with groups – stay active, keep moving
- Gardening in neighborhood, wheelchair and walker, and ambulatory, stay active
- Let people know what your needs are

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