Characterization of Lack of Diabetes Screening Among Nondiabetic Persons in Alabama, 2013

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CSTE
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Background

- **29 million Americans have diabetes**
  - 12.3% of U.S. adult population
  - One in 4 remain undiagnosed

- **86 million U.S. adults have prediabetes**
  - 37% of U.S. adults
  - Only 11% are aware of having prediabetes

Diabetes Screening Recommendations

- ADA recommends screening:
  - Age ≥45
  - Overweight or obese with one other risk factor*

- New USPSTF draft recommendation for diabetes screening:
  - Age ≥45
  - Overweight or obese
  - First-degree relative with DM
  - Certain minority groups
    - Including African American, Hispanic/Latino, American Indians
  - Women with:
    - history of gestational diabetes
    - polycystic ovarian syndrome

- Screen every 3 years
  - Annual if higher risk or previously elevated values

*Additional risk factors include: racial/ethnic minority, hypertension, low LDL, high triglyceride, history of cardiovascular disease, gestational diabetes or insulin resistance, first degree relative with diabetes, physical inactivity, delivery of baby >9 lb
Diabetes Screening Question

- So why do so many people NOT know they have prediabetes or diabetes?
- Are they being screened for it?
- If you don’t know you have it, you can’t fix it!
Data Source

- Behavioral Risk Factor Surveillance Survey (BRFSS)
  - Nationwide annual telephone survey (cell phone and landline)
  - Collects self-reported health and health risk data
  - >100,000 U.S. participants
    - 6,500 in Alabama
  - Provides state-level estimates of disease conditions and health behaviors

* Sponsored by Centers for Disease Control and Prevention, other federal agencies and participating states
2013 BRFSS Questionnaire

Awareness of diabetes screening:

“Has a doctor, nurse or other health professional EVER told you that you have diabetes?”

or

“Have you ever been told by a doctor or other health professional that you have prediabetes or borderline diabetes?”

NO

“Have you had a test for high blood sugar or diabetes within the past 3 years?”

NO

Lacks Screening

YES

DIABETES or PREDIABETES (excluded)

NO

YES

No diabetes or prediabetes
Methods

- Diabetes screening analysis (n=4,239) excluded respondents with:
  - Known diabetes, gestational diabetes, prediabetes or missing diabetes status (n=1,998)
  - Unknown or missing testing status (n=266)
- SAS 9.2 weighted analysis accounting for sampling design
- Calculated prevalence ratios for respondent characteristics
Prevalence of Self-reported Diabetes Screening Within 3 Years Among Nondiabetic Persons—Alabama, 2013

<table>
<thead>
<tr>
<th>Factor</th>
<th>Prevalence of diabetes screening (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>53.5</td>
</tr>
<tr>
<td>Male</td>
<td>50.3</td>
</tr>
<tr>
<td>Education &lt; high school</td>
<td>47.1</td>
</tr>
<tr>
<td>Annual household income &lt;$25,000</td>
<td>47.6</td>
</tr>
<tr>
<td>Physical activity guidelines met</td>
<td>53.2</td>
</tr>
<tr>
<td>African American</td>
<td>51.5</td>
</tr>
<tr>
<td>Age ≥ 45 years</td>
<td>63.7</td>
</tr>
<tr>
<td>Body mass index (BMI) ≥ 25</td>
<td>56.8</td>
</tr>
<tr>
<td>History of hypertension</td>
<td>66.1</td>
</tr>
<tr>
<td>History of elevated cholesterol</td>
<td>67.3</td>
</tr>
</tbody>
</table>

Highlighted factors are among indications for receiving diabetes screening.
## Health System-related Factors for Lacking Diabetes Screening

<table>
<thead>
<tr>
<th>Factor</th>
<th>Prevalence Ratio</th>
<th>95% CI</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived cost barriers to care</td>
<td>1.3</td>
<td>1.16—1.45</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Gap in health insurance coverage</td>
<td>1.4</td>
<td>1.10—1.66</td>
<td>0.010</td>
</tr>
<tr>
<td>No health insurance</td>
<td>1.6</td>
<td>1.43—1.76</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Lacks identified personal health provider</td>
<td>1.7</td>
<td>1.55—1.87</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>No medical checkup &lt;5 years</td>
<td>1.9</td>
<td>1.72—2.07</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Conclusions on Self-reported Testing for Diabetes

- Many Alabama adults not aware of diabetes status
  - Nearly half of nondiabetic Alabama adults report NOT tested for diabetes <3 years
  - Includes 1 in 3 people aged ≥45 years
  - Nearly half of African Americans and overweight/obese persons

- Many lacking diabetes screening have other medical conditions increasing risk
  - 24% have high blood pressure
  - 33% have elevated cholesterol
Barriers to Diabetes Screening

- Financial barriers to health care access
  - Lack of health insurance
  - Recent gap in coverage
  - Perceived cost barriers

- Inadequate patient engagement in health care systems
  - No recent general medical checkup
  - No identified personal health-care provider
Consequences

- Missed opportunity for early detection and treatment
- Earlier care reduces health complications and costs
Possible Solutions

- Increase awareness of diabetes, prediabetes, and importance of early screening
- Improve screening using new, broader recommendations of risk groups
- Expand access to health insurance and health systems
- Focus on patient-centered wellness homes and preventive services
Summary

- Identifying people at risk and testing them early for diabetes or prediabetes is key.
- Progression of diabetes, complications, and costs can be reduced with early intervention.
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