National Agenda to Reduce Diabetes-Related Hospitalizations in Biodiverse Communities

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Disclosures: Consultant: AstraZeneca, Medtronic;
Honoraria/Royalties: UpToDate; Research: Medtronic, Novartis, Takeda
National Agenda to Reduce Diabetes-Related Hospitalizations in Biodiverse Communities

Big Picture Items:

1. Social determinants account for ~80% of the variance in health outcomes, medical determinants ~20%

2. Diabetes is more common in minorities, risk factor control is lower, and complications are more frequent

3. Adults with diabetes have multiple chronic conditions (MCC)

4. An integrated approach to addressing social and medical determinants of health and MCC is required to improve health and reduce emergency care and hospital stays
Population Health: IHI Composite Model for Health Equity

Interventions

Age-Adjusted Prevalence of Obesity and Diagnosed Diabetes Among U.S. Adults Aged 18 Years or older

“ACCESS TO EXCESS” . . . calories, sugar, fat, salt, labor saving devices and *passive* entertainment

Lambert, Craig And Bing, Christopher. The Way We Eat Now. *Harvard Magazine*; May-June, 2004; Page 50.
Healthy People in Healthy Communities: Easy as . . .

1. Healthy Lifestyles
2. Timely access to and adherence with evidence-based care
3. Heart at Peace, Life of Purpose, Labor of Love

Population by Race and Ethnicity, Actual and Projected, 1960, 2011 and 2050

% of total

- **White**
  - 1960: 85
  - 2011: 63
  - 2050: 47

- **Hispanic**
  - 1960: 3.5
  - 2011: 17
  - 2050: 29

- **Black**
  - 1960: 11
  - 2011: 12
  - 2050: 13

- **Asian**
  - 1960: 0.6
  - 2011: 5
  - 2050: 9

Note: All races are non-Hispanic; American Indian/Alaska Native not shown. Projections for 2050 indicated by light green bars.
Incidence of Diabetes per 100 Person-Years

Waist Circumference (cm)

Chinese

Hispanic

Black

White

Prevalent Diabetes ‘Favors’ Minority Groups

Estimated Age-Adjusted Total Prevalence of Diabetes in People ≥ 20 Years by Race/Ethnicity, US

Diabetes Affects Minorities to Different Degrees

Risk of Diabetes **Is Greater** in Minority Populations

Prevalence of Diabetes **Is Not the Same** for All Hispanic/Latino Groups

Increase in Risk of Diabetes vs. NonHispanic Whites

<table>
<thead>
<tr>
<th>Minority Group</th>
<th>Increase in Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>18%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>66%</td>
</tr>
<tr>
<td>Asian Americans</td>
<td>77%</td>
</tr>
</tbody>
</table>

Prevalence of Diabetes

- **Cuban Americans**: 7.6%
- **Mexican Americans**: 13.3%
- **South Americans**: 13.8%
- **Puerto Ricans**: 13.8%

Diabetes Prevalence by U.S. County
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Steno-2 Study: Multifactorial Intervention for Type 2 Diabetes

Cumulative Incidence Cardiovascular Event (%)

Years of Follow-up

No. at Risk
Intensive Therapy 80 72 65 61 56 50 47 31
Conventional Therapy 80 70 60 46 38 29 25 14

P<0.001

Five of six age/race-ethnicity groups had better concurrent control of HbA1c, non-HDL and BP in 2005–2010 than 1999–2004; exception Hispanics <65 years old

Legend:
- \( p<0.05 \), \( \dagger p<0.01 \), \( \ddagger p<0.001 \) for changes within white, black and Hispanic patient groups between 1999–2004 and 2005–2010
- \( \S p<0.05 \), \( || p<0.01 \), \( \| p<0.001 \) between group comparison within 1999–2004 and 2005–2010
## Multiple Chronic Conditions in Adults ≥65 with Diabetes

<table>
<thead>
<tr>
<th>Co-Morbid Conditions (86,410 Patients)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hypertension</td>
<td>83%</td>
</tr>
<tr>
<td>2. Lipid (Cholesterol) Disorders</td>
<td>68%</td>
</tr>
<tr>
<td>3. Obesity</td>
<td>48%</td>
</tr>
<tr>
<td>4. Coronary Disease</td>
<td>27%</td>
</tr>
<tr>
<td>5. COPD/Asthma</td>
<td>23%</td>
</tr>
<tr>
<td>6. Cardiac Arrhythmia</td>
<td>22%</td>
</tr>
<tr>
<td>7. Chronic Kidney Disease</td>
<td>21%</td>
</tr>
<tr>
<td>8. Mental Health</td>
<td>17%</td>
</tr>
<tr>
<td>9. Heart Failure</td>
<td>16%</td>
</tr>
<tr>
<td>10. Cancer</td>
<td>15%</td>
</tr>
<tr>
<td>11. Peripheral Vascular Disease</td>
<td>14%</td>
</tr>
<tr>
<td>12. Cerebrovascular Disease</td>
<td>12%</td>
</tr>
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Medicare Moves Away from FFS

Target percentage of Medicare FFS payments linked to quality and alternative payment models in 2016 and 2018

- All Medicare FFS (Categories 1-4)
- FFS linked to quality (Categories 2-4)
- Alternative payment models (Categories 3-4)

2016:
- 30% All Medicare FFS
- 85% All Medicare FFS

2018:
- 50% All Medicare FFS
- 90% All Medicare FFS

Multiple Competencies for Population Health

- Improved Quality and Access
  - Clinical Integration
    - Value-based Payment Models
    - Funds Flow Distribution
    - Expand Primary Care Base
    - Clinical Integration
    - Define Membership Criteria

- Finance/Managed Care
- Delivery Network
- Care Model/Information Technology
- Organizational Structure
  - Physician Leadership
  - Entity Formation
  - Change Management
  - Establish Governance
Population Health: IHI Composite Model for Health Equity

Equity

Prevention & Health Promotion: ~80% Health Variance
- Socioeconomic Factors
- Physical Environment

Medical Care ~20% Health Variance
- Behavior
  - Genetic
  - Physiology
  - Spirituality
  - Resilience
- Disease and Injury
- Health and Function
  - Mortality

Upstream Factors
- Individual Factors
- Intermediate Outcomes
- States of Health
- Quality of Life

Well-Being

Interventions

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