An Unhealthy America:
The Economic Burden of Chronic Disease
*Charting a New Course to Save Lives*
and *Increase Productivity and Economic Growth*

Kevin Klowden
Managing Economist
Milken Institute
(310) 570 4626
kklowden@milkeninstitute.org
www.milkeninstitute.org

Presentation for
Pan-American Health Organization
The Economic, Fiscal and Welfare Implications of Chronic Diseases in the Americas
Washington, D.C.
November 23-24, 2009
1. What Does Chronic Disease Currently Cost Us?
2. Where Is the Current Course Taking Us?
3. What Costs Are Avoidable If We Make Improvements in Prevention and Treatment?
4. What Are the Impacts of Chronic Disease at the State Level?
5. What Is the Long-term Impact of Reducing the Disease Burden?
6. What Are the Conclusions and Recommendations of our Findings?
The Human Cost: Number of People Reporting Chronic Disease

Number Reporting Seven Common Chronic Diseases, U.S., 2003

- Pulmonary Conditions: 49.2
- Hypertension: 36.8
- Mental Disorders: 30.3
- Heart Disease: 19.1
- Diabetes: 13.7
- Cancers: 10.6
- Stroke: 2.4
The Human Cost: Number of People Reporting Selected Cancers

U.S., 2003

Population Reporting Condition (Millions)

- Other Cancers: 7.7
- Breast Cancer: 1.1
- Prostate Cancer: 1.0
- Lung Cancer: 0.4
- Colon Cancer: 0.3
The Human Cost
Milken Institute State Chronic Disease Index:
States in Top Quartile have the Lowest Rates of
Seven Common Chronic Diseases
The Economic Cost: Treatment Expenditures by Chronic Disease

U.S., 2003

- Heart Disease: $65 billion
- Cancers: $48 billion
- Mental Disorders: $46 billion
- Pulmonary Conditions: $45 billion
- Hypertension: $33 billion
- Diabetes: $27 billion
- Stroke: $14 billion
The Economic Cost: Lost Productivity by Source, U.S.  
*US$ Billions, 2003*

Presenteeism

- Caregiver, $80.2
- Individual, $828.2

Lost Workdays

- Caregiver, $10.8
- Individual, $127.5

Total Lost Productivity in 2003 = $1,046.7
The Economic Cost: Lost Productivity by Chronic Disease

U.S., 2003

- Hypertension: $280 billion
- Cancers: $271 billion
- Mental Disorders: $171 billion
- Diabetes: $105 billion
- Heart Disease: $105 billion
- Pulmonary Conditions: $94 billion
- Stroke: $22 billion

US$ Billions
## Avoidable Chronic Disease Treatment and Productivity Costs if Obesity were Eliminated

### 2008

<table>
<thead>
<tr>
<th>Disease</th>
<th>Treatment</th>
<th>Productivity</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Billions</td>
<td>$</td>
<td>Millions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percent Diff</td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>17.23</td>
<td>26.3</td>
<td>127.58</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>2.53</td>
<td>34.0</td>
<td>15.57</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>0.08</td>
<td>1.7</td>
<td>0.51</td>
</tr>
<tr>
<td>Prostate cancer</td>
<td>3.15</td>
<td>52.0</td>
<td>19.36</td>
</tr>
<tr>
<td>Other cancers</td>
<td>11.47</td>
<td>30.4</td>
<td>92.14</td>
</tr>
<tr>
<td>Diabetes</td>
<td>13.42</td>
<td>36.5</td>
<td>53.18</td>
</tr>
<tr>
<td>Hypertension</td>
<td>13.48</td>
<td>31.0</td>
<td>124.21</td>
</tr>
<tr>
<td>Heart disease</td>
<td>45.86</td>
<td>52.4</td>
<td>78.10</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.66</td>
<td>10.1</td>
<td>4.41</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91.59</strong></td>
<td><strong>36.7</strong></td>
<td><strong>387.48</strong></td>
</tr>
</tbody>
</table>

Source: Milken Institute.
Projection of Cases and Treatment Costs

Baseline vs. Optimistic Scenario Process

1. Develop Based on Aging Population
2. Develop Based on Behavioral Risk Factors and Other Demographics
3. Develop Based on Screening, Early Detection and Medical Innovations
4. Develop Based on Different Health Care Cost Growth
5. Avoidable Cost = Difference in Expenditure Between Baseline and Optimistic Scenarios
Percent Growth in Number of People Reporting Chronic Diseases


- **ALL CANCERS**
  - Current Path: 33%
  - Alternative Path: 62%

- **Breast Cancer**
  - Current Path: 32%
  - Alternative Path: 51%

- **Colon Cancer**
  - Current Path: 9%
  - Alternative Path: 32%

- **Lung Cancer**
  - Current Path: 9%
  - Alternative Path: 34%

- **Prostate Cancer**
  - Current Path: 38%
  - Alternative Path: 35%

- **Other Cancer**
  - Current Path: 35%
  - Alternative Path: 65%

- **Pulmonary Conditions**
  - Current Path: 13%
  - Alternative Path: 31%

- **Diabetes**
  - Current Path: 33%
  - Alternative Path: 53%

- **ALL CARDIOVASCULAR**
  - Current Path: 6%
  - Alternative Path: 39%

- **Hypertension**
  - Current Path: 13%
  - Alternative Path: 39%

- **Heart Disease**
  - Current Path: -8%
  - Alternative Path: 41%

- **Stroke**
  - Current Path: 5%
  - Alternative Path: 29%

- **Mental Disorders**
  - Current Path: 35%
  - Alternative Path: 54%

- **Total**
  - Current Path: 17%
  - Alternative Path: 42%
Avoidable Treatment Expenditures
U.S., 2023

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total Expenditure (US$ Billion)</th>
<th>Avoided Expenditure (US$ Billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Disease</td>
<td>$110</td>
<td>$76</td>
</tr>
<tr>
<td>Cancers</td>
<td>$109</td>
<td>$37</td>
</tr>
<tr>
<td>Mental Disorders</td>
<td>$107</td>
<td>$28</td>
</tr>
<tr>
<td>Pulmonary Conditions</td>
<td>$92</td>
<td>$26</td>
</tr>
<tr>
<td>Hypertension</td>
<td>$65</td>
<td>$23</td>
</tr>
<tr>
<td>Diabetes</td>
<td>$63</td>
<td>$17</td>
</tr>
<tr>
<td>Stroke</td>
<td>$27</td>
<td>$10</td>
</tr>
</tbody>
</table>
Avoidable Productivity Losses

U.S., 2023

<table>
<thead>
<tr>
<th>Condition</th>
<th>Alternative Future</th>
<th>Productivity Losses Avoided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers</td>
<td>$587</td>
<td>$373</td>
</tr>
<tr>
<td>Hypertension</td>
<td>$666</td>
<td>$173</td>
</tr>
<tr>
<td>Mental Disorders</td>
<td>$480</td>
<td>$88</td>
</tr>
<tr>
<td>Diabetes</td>
<td>$277</td>
<td>$73</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>$182</td>
<td>$137</td>
</tr>
<tr>
<td>Pulmonary Conditions</td>
<td>$218</td>
<td>$47</td>
</tr>
<tr>
<td>Stroke</td>
<td>$47</td>
<td>$14</td>
</tr>
</tbody>
</table>
Avoidable Economic Costs Attributable to Decline in Obesity

**U.S., 2023**

- **Cancers**
  - Obesity: $85
  - Other Factors: $312
  - Total: $397

- **Heart Disease**
  - Obesity: $73
  - Other Factors: $118
  - Total: $191

- **Hypertension**
  - Obesity: $100
  - Other Factors: $87
  - Total: $187

- **Diabetes**
  - Obesity: $52
  - Other Factors: $39
  - Total: $92

- **Stroke**
  - Obesity: $3
  - Other Factors: $15
  - Total: $19

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**Avoidable Economic Impact (US$ Billions)**

- $0
- $50
- $100
- $150
- $200
- $250
- $300
- $350
- $400
- $450
Long-Term Economic Impacts

**Overview**

- **Attempt to quantify health (chronic disease) impact**
  - on human and physical capital formation
  - the restrictions imposed on intergenerational economic growth

- **Determinants of economic growth and model specification**
  - Historically, only few have been found to be significant in explaining growth

- **Human capital’s role**
  - Dynamic economic growth depends upon
    - health (*life expectancy at 65*),
    - stock of labor (*labor force*),
    - quality of labor (*percent of adult population with bachelor’s degree or above*),
    - physical capital (*real stock of equipment and structures*)
  - Good health increases the rate of return on investments in education
  - Improves the nation’s competitiveness in the long-term
  - The higher the income earner’s human capital, the greater the probability that they will invest in their children’s and grandchildren's education
Life Expectancy at 65

Population with Bachelor’s Degree, Percent

Top Quartile  Second  Third  Bottom Quartile

Top Quartile  Second  Third  Bottom Quartile
U.S. Long-Term Forgone Economic Output

Change in Real GDP Between Baseline and Optimistic Scenarios

Year

US$ Trillions

2005 2010 2015 2020 2025 2030 2035 2040 2045 2050
Conclusions:

• Lost Productivity Surpasses Treatment as the Cause of Economic Burden
• Early Interventions and Medical Innovations Improve Quality and Longevity of Life
• Healthcare Expenditure Accounts by Disease Are Needed
• Good Health Is an Investment in Economic Growth

Recommendations:

• Incentives for Prevention and Early Intervention
  – We need private-public partnerships to incentivize patients and providers to prevent chronic disease effectively

• “Healthy Body Weight Initiative”
  – We need a strong, long-term national commitment to promote health, wellness, and healthy body weight
Hungry Man “All Day Breakfast”

Nutrition Facts
Serving Size 1 package (456g)

Amount Per Serving
Calories 1170
Calories from Fat 550

% Daily Value*
Total Fat 61g 94%
Saturated Fat 21g 103%
Cholesterol 255mg 85%
Sodium 1790mg 74%
Total Carbohydrate 125g 42%
Dietary Fiber 7g 29%
Sugars 38g
Protein 31g