Can We Turn Around Our Expensive Unhealthy Health Care System

Professor Jeffrey Keefe
School of Management and Labor Relations
Rutgers University
Established two Committees to oversee the design of the plans: one for the State Health Benefits Program (SHBP) and one for the School Employees’ Health Benefits Program (SEHBP). The Committees will be responsible for determining the design of all plans offered by the SHBP and the SEHBP.

The State Health Benefits Plan Design Committee is composed of 12 members:

- six members who shall be appointed by the Governor as representatives of public employers whose employees are enrolled in the program;
- three members who shall be appointed by the Public Employee Committee of the AFL-CIO;
- one member who shall be appointed by the head of the union, that is not affiliated with the AFL-CIO, that represents the greatest number of police officers in this State;
- one member who shall be appointed by the head of the union, that is not affiliated with the AFL-CIO, that represents the greatest number of firefighters in this State; and
- one member who shall be appointed by the head of the State Troopers Fraternal Association.
<table>
<thead>
<tr>
<th>Salary Range</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
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<td>0.75%</td>
<td>1.50%</td>
<td>2.25%</td>
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<tr>
<td>25,000-29,999.99</td>
<td>1.00%</td>
<td>2.00%</td>
<td>3.00%</td>
<td>4.00%</td>
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<tr>
<td>30,000-34,999.99</td>
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<td>5.00%</td>
</tr>
<tr>
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</tr>
<tr>
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<tr>
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<tr>
<td>65,000-69,999.99</td>
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<tr>
<td>100,000-109,999.99</td>
<td>8.00%</td>
<td>16.00%</td>
<td>24.00%</td>
<td>32.00%</td>
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<tr>
<td>110,000 and over</td>
<td>8.75%</td>
<td>17.50%</td>
<td>26.25%</td>
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## 2012 Annual Premium Rates for the State Health Benefits Plan – STATE ACTIVE EMPLOYEES

### State Active Employee Plans

<table>
<thead>
<tr>
<th>Coverage Type</th>
<th>2012 Annual Premiums</th>
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<tr>
<td></td>
<td>Current</td>
<td>Plan A Medical</td>
<td>Plan B Medical</td>
<td>HDHP 0.5</td>
<td>HDHP 1.5</td>
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<tr>
<td><strong>Single Coverage</strong></td>
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<tr>
<td>Horizon PPO</td>
<td>$8,400</td>
<td>$8,100</td>
<td>$7,700</td>
<td>$4,800</td>
<td>$7,200</td>
</tr>
<tr>
<td>Aetna HMO</td>
<td>$8,600</td>
<td>$8,300</td>
<td>$7,900</td>
<td>$4,900</td>
<td>$7,300</td>
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<tr>
<td>CIGNA HMO</td>
<td>$8,700</td>
<td>$8,300</td>
<td>$7,900</td>
<td>$4,900</td>
<td>$7,300</td>
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<tr>
<td><strong>Parent Coverage</strong></td>
<td></td>
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<tr>
<td>Horizon PPO</td>
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<td>$12,800</td>
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<td>$7,300</td>
<td>$10,900</td>
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<tr>
<td><strong>Married Coverage</strong></td>
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<td>$16,200</td>
<td>$15,500</td>
<td>$9,600</td>
<td>$14,300</td>
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<td>$15,800</td>
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<tr>
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<tr>
<td><strong>Family Coverage</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Horizon PPO</td>
<td>$21,100</td>
<td>$20,200</td>
<td>$19,300</td>
<td>$12,100</td>
<td>$17,900</td>
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<tr>
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<td>$20,700</td>
<td>$19,800</td>
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<td>$18,300</td>
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<tr>
<td>CIGNA HMO</td>
<td>$21,700</td>
<td>$20,800</td>
<td>$19,800</td>
<td>$12,400</td>
<td>$18,400</td>
</tr>
</tbody>
</table>
Can We Reduce the Cost of Health Insurance in New Jersey?

Inflation in Health Costs in Excess of 10%
United States’ total health spending accounted for 16.0% of GDP in the in 2007.
Health expenditure per capita, public and private expenditure, OECD countries, 2007

USD PPP

Public expenditure on health
Private expenditure on health

$4100 of US Public Expenditure Per Capita Buys Universal Healthcare Anywhere in the World

- The **United States** also ranks far ahead of other OECD countries in terms of total health spending per capita, with spending of 7,290 USD.
- The public share of health expenditure in the United States (45%) is much lower than in any other OECD country (except Mexico, also 45%), but nevertheless public expenditure on health is higher than in most other OECD countries, because overall spending per capita is so much greater.
- Private insurance accounts for 35% of total health spending in the **United States**, by far the largest share among OECD countries.
US Government Finances 56% of Health Expenditures

**Government funded programs include:**

- **Medicare**, generally covering citizens and long-term residents 65 years and older and the disabled.
- **Medicaid**, generally covering low income people in certain categories, including children, pregnant women, and the disabled. (Administered by the states.)
- **State Children's Health Insurance Program**, which provides health insurance for low-income children who do not qualify for Medicaid. (Administered by the states, with matching state funds.)
- Various insurance programs for government employees, including **TRICARE** for military personnel (for use in civilian facilities)
- The **Veterans Administration**, which provides care to veterans, their families, and survivors through medical centers and clinics,
- National Institutes of Health treats patients who enroll in research for free.
- Government run community clinics
- Medical Corps of various branches of the military.
- Certain county and state hospitals

**Tax Exemption:** The exemption of employer-sponsored health benefits from federal income and payroll taxes is valued by the lost tax revenue from a benefits in kind tax is an estimated $165 billion a year
Tax Expenditures in 2007 for Health Care and Pensions in Billions

- Healthcare: $165.5 Billion
- Pension: $109.3 Billion

Total Tax Expenditure: $274.8 Billion
Average Annual Health Insurance Premiums and Worker Contributions for Family Coverage, 2005-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Worker Contribution</th>
<th>Employer Contribution</th>
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</thead>
<tbody>
<tr>
<td>2005</td>
<td>$8,167</td>
<td>$2,713</td>
</tr>
<tr>
<td>2010</td>
<td>$10,880</td>
<td>$3,997</td>
</tr>
</tbody>
</table>

Note: The average worker contribution and the average employer contribution may not add to the average total premium due to rounding.

Health Care Costs Concentrated in Sick Few—Sickest 10 Percent Account for 64 Percent of Expenses

Distribution of health expenditures for the U.S. population, by magnitude of expenditure, 2003

<table>
<thead>
<tr>
<th>U.S. Population</th>
<th>Health Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>$715</td>
</tr>
<tr>
<td>97%</td>
<td>$6,992</td>
</tr>
<tr>
<td>49%</td>
<td>$12,046</td>
</tr>
<tr>
<td>24%</td>
<td>$36,280</td>
</tr>
<tr>
<td>1%</td>
<td>$10%</td>
</tr>
</tbody>
</table>

Decrease in Employer Sponsored Insurance (million)

2.8%

National Unemployment Rate Increase since 2008
(from 7.2% in Dec-08 to 10.0% in Nov-09)

= 6.9

Medicaid/CHIP Enrollment Increase (million)

&

Uninsured Increase (million)

2.8

3.0

Note: Totals may not sum due to rounding and other coverage.
Source: Based on John Holahan and Bowen Garrett, Rising Unemployment, Medicaid, and the Uninsured, prepared for the Kaiser Commission on Medicaid and the Uninsured, January 2009.
Impact of a 1% Point Increase in Unemployment on State Revenues, Medicaid, CHIP & Uninsured

1% Increase in National Unemployment Rate = Decrease in State Revenues & Increase in Medicaid and CHIP Enrollment (million) & Increase in Uninsured (million)

3-4%

Health Insurance Coverage in the U.S., 2009

Employer-Sponsored Insurance 49%
Medicaid/Other Public 17%
Medicare 12%
Private Non-Group 5%
Uninsured 17%
Total = 303.3 million

NOTE: Includes those over age 65. Medicaid/Other Public includes Medicaid, CHIP, other state programs, military-related coverage, and those enrolled in both Medicare and Medicaid (dual eligibles).
Average Annual Worker and Employer Contributions to Premiums and Total Premiums for Family Coverage, 1999-2010

* Estimate is statistically different from estimate for the previous year shown (p<.05).

The Obesity Epidemic

Driving the Rising Costs of Chronic Disease
Chronic Conditions Account For Rise In Medical Spending From 1987 To 2011

- Twenty years ago, most spending growth was linked to intensive inpatient (hospital) services, chiefly for heart disease.
- Recently, much of the growth has been attributable to chronic conditions such as diabetes, arthritis, hypertension, and kidney disease.
- These conditions are chiefly treated not in hospitals but in outpatient settings and by patients at home with prescription drugs.
Body Mass Index

Diagnosing Obesity
Source NIH
# Body Mass Index for Adults

<table>
<thead>
<tr>
<th>BMI</th>
<th>21</th>
<th>22</th>
<th>23</th>
<th>24</th>
<th>25</th>
<th>26</th>
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<tr>
<td>4'10&quot;</td>
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<td>111</td>
<td>116</td>
<td>122</td>
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<td>5'3&quot;</td>
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<td>222</td>
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<tr>
<td>6'1&quot;</td>
<td>159</td>
<td>166</td>
<td>174</td>
<td>182</td>
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<td>6'3&quot;</td>
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<td>240</td>
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What Does Body Mass Index Mean?

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<th>BMI</th>
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<tr>
<td>18.5–24.9</td>
<td>Normal weight</td>
</tr>
<tr>
<td>25.0–29.9</td>
<td>Overweight</td>
</tr>
<tr>
<td>30.0–39.9</td>
<td>Obese</td>
</tr>
<tr>
<td>40.0 and above</td>
<td>Extreme obesity</td>
</tr>
</tbody>
</table>
For most people, overweight and obesity are caused by not having energy balance. Weight is balanced by the amount of energy or calories you get from food and drinks (this is called energy IN) equaling the energy your body uses for things like breathing, digesting, and being physically active (this is called energy OUT).

Energy balance means that your energy IN equals your energy OUT.

The same amount of energy IN and energy OUT over time = weight stays the same

More IN than OUT over time = weight gain

More OUT than IN over time = weight loss

Overweight and obesity happen over time when you take in more calories than you use.
Calories

- Cutting back on calories (energy IN) will help you lose weight. To lose 1 to 2 pounds a week, adults should cut back their calorie intake by 500 to 1,000 calories a day.
- In general, 1,000 to 1,200 calories a day will help most women lose weight safely.
- In general, 1,200 to 1,600 calories a day will help most men lose weight safely. This calorie range is also suitable for women who weigh 165 pounds or more or who exercise routinely.
- These calorie levels are a guide and may need to be adjusted. If you eat 1,600 calories a day but don’t lose weight, then you may want to cut back to 1,200 calories. If you’re hungry on either diet, then you may want to boost your calories by 100 to 200 a day. Very low-calorie diets of less than 800 calories a day shouldn’t be used unless your doctor is monitoring you.
Physical Activity

• To increase energy out, to improve overall health and to lower the risk of disease, aim for at least 30 minutes of moderate-intensity physical activity most days of the week.
• Physical activity also will benefit you in other ways. It will:
  • Lower the risk of heart disease, diabetes, and cancers (such as breast, uterus, and colon)
  • Strengthen your lungs and help them to work better
  • Strengthen your muscles and keep your joints in good condition
  • Slow bone loss
  • Give you more energy
  • Help you to relax and cope better with stress
  • Allow you to fall asleep more quickly and sleep more soundly
Obesity Trends* Among U.S. Adults


(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1985
(*BMI ≥30, or ~30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1986

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1987

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1988

(*BMI ≥30, or ~30 lbs. overweight for 5’4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1989
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4’’ person)
Obesity Trends* Among U.S. Adults
BRFSS, 1990

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1991
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1992

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1993

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1994

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1995

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1996
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1997

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1998
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 1999

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2000

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2001

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2002

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2003

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2004  (*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2005
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2006
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2007
(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
Obesity Trends* Among U.S. Adults
BRFSS, 2008

(*BMI ≥30, or ~ 30 lbs. overweight for 5’ 4” person)
CDC's LEAN Works!
A Workplace Obesity Prevention Program
http://www.cdc.gov/leanworks/

In 2008, the annual healthcare cost of obesity in the US was estimated to be as high as 147 billion dollars a year.

The annual medical burden of obesity increased to 9.1 percent in 2006 compared to 6.5 percent in 1998.

Medical expenses for obese employees are estimated to be 42 percent higher than for a person with a healthy weight.

Workplace obesity prevention programs can be an effective way for employers to reduce obesity and lower their health care costs, lower absenteeism and increase employee productivity.
Obesity Trends Among U.S. Adults between 1985 and 2008

Source of the data:

- The data shown in these maps were collected through CDC’s Behavioral Risk Factor Surveillance System (BRFSS). Each year, state health departments use standard procedures to collect data through a series of telephone interviews with U.S. adults.

- Prevalence estimates generated for the maps may vary slightly from those generated for the states by BRFSS (http://aps.nccd.cdc.gov/brfss) as slightly different analytic methods are used.
Trends

• In 1990, among states participating in the Behavioral Risk Factor Surveillance System, ten states had a prevalence of obesity less than 10% and no states had prevalence equal to or greater than 15%.

• By 1999, no state had prevalence less than 10%, eighteen states had a prevalence of obesity between 20-24%, and no state had prevalence equal to or greater than 25%.

• In 2008, only one state (Colorado) had a prevalence of obesity less than 20%. Thirty-two states had a prevalence equal to or greater than 25%; six of these states (Alabama, Mississippi, Oklahoma, South Carolina, Tennessee, and West Virginia) had a prevalence of obesity equal to or greater than 30%.
Medical Complications Which May Be Associated With Obesity

Pulmonary disease
• Abnormal function
• Obstructive sleep apnea

Idiopathic intracranial hypertension
Stroke

Nonalcoholic fatty liver disease
• Steatosis
• Steatohepatitis
• Cirrhosis

Gall bladder disease

Gynecologic abnormalities
• Abnormal menses
• Infertility
• Polycystic ovarian syndrome

Osteoarthritis

Skin Problems

Gout

Cancer
• Breast, uterus, cervix, colon, esophagus, pancreas, kidney, prostate

Phlebitis
• Venous stasis

Gout

More than 30 medical conditions are associated with overweight and obesity, diabetes being among the most severe
Relationship Between BMI and Risk of Type 2 Diabetes

<table>
<thead>
<tr>
<th>Body Mass index (kg/m²)</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;22</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>&lt;23</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>23.9</td>
<td>4.3</td>
<td>1.0</td>
</tr>
<tr>
<td>24.9</td>
<td>5.0</td>
<td>1.5</td>
</tr>
<tr>
<td>24.9</td>
<td>8.1</td>
<td>2.2</td>
</tr>
<tr>
<td>26.9</td>
<td>8.1</td>
<td>4.4</td>
</tr>
<tr>
<td>28.9</td>
<td>15.8</td>
<td>6.7</td>
</tr>
<tr>
<td>30.9</td>
<td>27.6</td>
<td>11.6</td>
</tr>
<tr>
<td>32.9</td>
<td>40.3</td>
<td>21.3</td>
</tr>
<tr>
<td>34.9</td>
<td>54.0</td>
<td></td>
</tr>
<tr>
<td>35+</td>
<td>93.2</td>
<td>42.1</td>
</tr>
</tbody>
</table>

Cost of Obesity

Obesity increases the risk of chronic health conditions, similar to aging 20 years.

Increased healthcare costs for obese individuals, compared to those of normal weight:

Health Services: up 36%
Medications: up 77%

Obese Members Cost More

As BMI level increases, so do medical costs and lost work days.
13x higher for BMI 40+.

<table>
<thead>
<tr>
<th>BMI 25-29</th>
<th>BMI 30-34</th>
<th>BMI 35-39</th>
<th>BMI 40+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total annual medical costs attributable to high BMI</strong></td>
<td>$186,600</td>
<td>$602,500</td>
<td>$282,300</td>
<td>$286,400</td>
</tr>
<tr>
<td>[% of total costs across BMI groups]</td>
<td>14%</td>
<td>44%</td>
<td>21%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Total annual work loss costs attributable to high BMI</strong></td>
<td>$193,800</td>
<td>$215,900</td>
<td>$181,600</td>
<td>$167,900</td>
</tr>
<tr>
<td>[% of total costs across BMI groups]</td>
<td>26%</td>
<td>28%</td>
<td>24%</td>
<td>22%</td>
</tr>
<tr>
<td>Annual work days lost</td>
<td>709 days</td>
<td>790 days</td>
<td>565 days</td>
<td>615 days</td>
</tr>
<tr>
<td><strong>Total costs attributable to high BMI</strong></td>
<td>$380,400</td>
<td>$818,400</td>
<td>$463,900</td>
<td>$454,300</td>
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<tr>
<td>[% of total costs across BMI groups]</td>
<td>18%</td>
<td>39%</td>
<td>22%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Number of employees with high BMI</strong></td>
<td>1,606</td>
<td>954</td>
<td>367</td>
<td>254</td>
</tr>
<tr>
<td>[% of high-BMI population across BMI groups]</td>
<td>50%</td>
<td>30%</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Average attributable cost per high BMI employee</strong></td>
<td>$237</td>
<td>$858</td>
<td>$1,264</td>
<td>$1,789</td>
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<tr>
<td>Medical costs</td>
<td>$116</td>
<td>$632</td>
<td>$769</td>
<td>$1,127</td>
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<tr>
<td>Work loss costs</td>
<td>$121</td>
<td>$226</td>
<td>$495</td>
<td>$561</td>
</tr>
</tbody>
</table>

High-BMI attributable cost estimates represent the expected additional costs per year due to overweight and obesity (2007 $). Cost estimates based on data from NHIS and MEPS. All costs of high BMI are assumed to accrue to employers. Actual costs may be higher or lower than those presented. Total costs may not equal the sum of medical and work loss costs due to rounding.

Source: RTI Obesity Cost Calculator; CDC
Effect of Weight Loss on Risk Factors

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>~5% Weight Loss</th>
<th>5%-10% Weight Loss</th>
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</thead>
<tbody>
<tr>
<td>Blood Sugar</td>
<td>📉</td>
<td>📉</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>📉</td>
<td>📉</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>📈</td>
<td>📈</td>
</tr>
<tr>
<td>HDL Cholesterol</td>
<td>📉</td>
<td>📉</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>📉</td>
<td>📉</td>
</tr>
</tbody>
</table>

## NBGH Steps to Reduce Obesity

### BMI Category

<table>
<thead>
<tr>
<th>BMI Category</th>
<th>18.5–24.9</th>
<th>25–29.9</th>
<th>30–34.9</th>
<th>35–39.9</th>
<th>&gt;40</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disease Risk</strong></td>
<td>Low</td>
<td>Increased</td>
<td>High</td>
<td>High</td>
<td>Very High</td>
</tr>
<tr>
<td>Nutrition Counseling</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Ensure Appropriate Physical Activity</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Weight Management Behavioral</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

### Treatment Options

- **Medication**
  - Web-based or other self-directed program
  - Enrollment in formal, structured program
  - Multi-component, intense program lasting for > 12 months

- **Surgery**

---


Long Term Weight Loss with Various Treatment Options

Why Bariatric Surgery?

- Nonsurgical treatment for those suffering from severe obesity produce a failure rate near 100%\(^1\)

- Surgery is the only approach that provides consistent, permanent weight loss for severely obese patients\(^2\)

- With a follow-up time of 5.3 years, bariatric surgery resulted in a 67% mean reduction in excess weight\(^3\)

---

Systematic Reviews: Comorbidities

1. **Buchwald et al. JAMA. 2004;292:1724-1737**
   - 2004 meta-analysis of all types of bariatric surgery
     - Average 61% EWL (n=10,172)*
     - **76.8%** patients had complete resolution of type 2 diabetes and resolved or improved in **86.0%**
     - **70.0%** of patients with hyperlipidemia improved
     - Hypertension resolved in **61.7%** of patients and resolved or improved in **78.5%**
     - Sleep apnea resolved in **83.6%**

   - 2009 meta-analysis of bariatric surgeries and diabetes
   - 55.9% EWL (n=34,329), weight loss overall was 38.5 kg*
   - **78.1%** patients had complete resolution of type 2 diabetes
   - **86.6%** improvement or resolution of type 2 diabetes in patients

---

*References:
Cremieux Study Demonstrates Return on Investment (ROI) Data¹

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Evaluate private third-party payer ROI for bariatric surgery in treatment of morbid obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study Design</td>
<td>Retrospective claims analysis with matched cohort sample of non-surgery patients†</td>
</tr>
<tr>
<td>Results</td>
<td>ROI within approximately 4 years for open bariatric surgery and approximately 2 years for laparoscopic bariatric surgery</td>
</tr>
<tr>
<td>Conclusion</td>
<td>Downstream savings associated with bariatric surgery are estimated to offset the initial costs in 2 to 4 years</td>
</tr>
<tr>
<td>Limitations</td>
<td>ROI estimates are driven more by the rising costs in matched control group rather than reduction in costs postsurgery</td>
</tr>
</tbody>
</table>

### ROI for Bariatric Surgery‡

- **Laparoscopic**
  - Average cost of $26,000
- **Open**
  - Average cost of $17,000

#### Statistical Table

<table>
<thead>
<tr>
<th>Months</th>
<th>0</th>
<th>6</th>
<th>12</th>
<th>18</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
<th>48</th>
<th>54</th>
<th>60</th>
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</thead>
<tbody>
<tr>
<td>Laparoscopic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Open</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- *Based on 5 years of post-op cost data from 1999-2005 from Ingenix private insurer claims database.
- †Cohort sample of non-surgery patients were based on patient demographics, selected comorbidities, and cost.
- ‡Estimate based on surgeries performed between 2004 and 2005 for laparoscopic surgeries and between 2003 and 2005 for open surgeries.

Favorable Policy Decisions

- CMS implemented national coverage decision in 2006\(^1\)
- 45 states cover bariatric surgery for Medicaid patients\(^2\)
- Agency for Healthcare Research and Quality (AHRQ) 2004 technology assessment concluded for patients with BMI $\geq 40$, surgical therapy is superior to existing pharmaceutical and diet therapy.\(^3\)

---

1. CMS NCD 100.1 2006
2. Trust for America’s Health 2008 report
3. AHRQ Pub no 04-E028-2, July 2004
5. BCBS TEC 2007
Labor Management Goals

• Optimize outcomes for severely obese employees and members through coverage for bariatric surgery

• Provide access to the most cost effective, least invasive and lowest risk method of bariatric surgery

• Require that surgery patients obtain appropriate pre and post-care support including behavior and nutrition counseling

• Minimize turnover among employees and members who obtain bariatric surgery prior to the employer or trust fund realizing an ROI for covering the surgery

• Provide an incentive so that employees and members have a vested interest in minimizing failures and optimizing personal outcomes
Illustrative Weight Loss/Obesity Plan

Outcomes
- Optimal outcomes for severely obese employees through coverage for bariatric surgery
- Access to the most cost effective, least invasive and lowest risk method of bariatric surgery
- Employee utilization of the highest quality health care provider
- Bariatric surgery patients obtain appropriate pre and post-care support including behavior and nutrition counseling
- Minimized turnover among employees and members who obtain bariatric surgery prior to the employer or trust fund realizing an ROI for covering the surgery
- Incentives so that employees and members have a vested interest in minimizing failures and optimizing personal outcomes
Summary

More than 30 medical conditions are associated with overweight and obesity impacting both health care costs and an employers bottom line.

The magnitude of the cost of this epidemic will continue to increase for the foreseeable future.

Various tools and strategies are available to employers to focus on weight loss, nutritional and exercise programs.

Effective surgical treatments for severe obesity are available and should be readily accessible to eligible individuals.
20. Worst Fast Food Chicken Meal

Chicken Selects Premium Breast Strips from McDonald's (5 pieces) with creamy ranch sauce

830 calories 55g fat (4.5g trans fat) 48g carbs

The only thing "premium" about these strips is the caloric price you pay. Add a large fries and regular soda and this seemingly innocuous chicken meal tops out at 1,710 calories.
19. **Worst Drink**
Jamba Juice Chocolate Moo'd Power Smoothie (30 fl oz)

900 calories 10 g fat 183 g carbs (166 g sugar)

Jamba Juice calls it a smoothie; we call it a milk shake. In fact, this beverage contains more sugar than two pints of Ben and Jerry’s Butter Pecan ice cream.
**18. Worst Supermarket Meal**

Pepperidge Farm Roasted Chicken Pot Pie (whole pie)

*1,020 calories 64 g fat  86 g carbs*

The label may say this pie serves two, but who ever divided a small pot pie in half? Once you crack the crust, there will be no stopping.

**Pick a Better Pie:** Swanson’s pot pie has just 400 calories.
17. **Worst "Healthy" Burger**

Ruby Tuesday Bella Turkey Burger

![Burger Image]

1,145 calories 71 g fat 56 g carbs

We chose this burger for more than its calorie payload: Its name implies that it's healthy.
16. Worst Mexican Entree

Chipotle Mexican Grilled Chicken Burrito

1,179 calories 7 g fat 125 g carbs 2,656 mg sodium

Despite a reputation for using healthy, fresh ingredients, Chipotle's menu is limited to king-size burritos, overstuffed tacos, and gigantic salads—all of which lead to a humongous waistline.
15. **Worst Kids' Meal**
Macaroni Grill Double Macaroni 'n' Cheese

1,210 calories 62 g fat 3,450 mg sodium

It's like feeding your kid 1 1/2 boxes of Kraft mac 'n' cheese.

**Your Best Option:** The 390-calorie Grilled Chicken and Broccoli.
14. Worst Sandwich

Quizno's Classic Italian

A large homemade sandwich would more likely provide about 500 calories.

Cut the Calories: Isn't it obvious? Order a small — or save half for later.
13. Worst Salad

On the Border Grande Taco Salad with Taco Beef

1,450 calories 102 g fat  78 g carbs 2,410 mg sodium

This isn't an anomaly: Five different On the Border salads on the menu contain more than 1,100 calories each.

The Salad for You: The Sizzling Chicken Fajita Salad supplies an acceptable 760 calories. But remember to choose a non caloric beverage, such as water or unsweetened iced tea.
12. Worst Burger
Carl's Jr. Double Six Dollar Burger

1,520 calories  111 g fat

Carl's brags about this, but also provides convenient nutrition info on its Web site —so ignorance is no excuse for eating it.

A Simple Solution: The Low Carb Six Dollar Burger has just 490 calories.
11. Worst Steak

Lonestar 20 oz T-bone

1,540 calories 124 g fat

Add a baked potato and Lonestar's Signature Lettuce Wedge, and this is a 2,700-calorie blowout.

Choose with Your Head: The golden rule of steak restaurants is this: Limit yourself to a 9-ouncer or smaller. After all, that's more than half a pound of meat. You won't walk away hungry.
10. **Worst Breakfast**

Bob Evans Caramel Banana Pecan Cream Stacked and Stuffed Hotcakes

1,540 calories  77 g fat  (9 g trans fat)  198 g carbs (109 g sugar)

Five Egg McMuffins yield the same caloric cost as these sugar-stuffed flapjacks.

**Order This Instead:** The Western Omelet has 654 calories and 44 grams of protein.
9. Worst Dessert
Chili's Chocolate Chip Paradise Pie with Vanilla Ice Cream

1,600 calories  78 g fat 215 g carbs

Would you eat a Big Mac for dessert? How about three? That's the calorie equivalent of this decadent dish. Clearly, Chili's customers get their money's worth.

Don't Overdo It: If you want dessert at Chili's, order one single-serving Sweet Shot; you'll cap your after-dinner intake at 310 calories.
8. **Worst Chinese Entree**

P.F. Chang's Pork Lo Mein

1,820 calories 127 g fat 95 g carbs

The fat content in this dish alone provides more than 1,100 calories. And you'd have to eat almost five servings of pasta to match the number of carbohydrates it contains. Now, do you really need five servings of pasta?

**Pick Another Noodle:** P.F. Chang's Singapore Street Noodles will satisfy your craving with only 570 calories. Or try the Moo Goo Gai Pan or the Ginger Chicken & Broccoli, which have 660 calories each.
Chili’s Honey Chipotle Crispers with Chipotle Sauce

2,040 calories 99 g fat 240 g carbs

"Crispers" refers to an extra-thick layer of bread crumbs that soaks up oil and adds unnecessary calories and carbs to these glorified chicken strips.

Switch Your Selection: Order the Chicken Fajita Pita: At 450 calories and 43 grams of protein, it's one of the healthiest entrees you'll find in a chain restaurant.
6. **Worst Fish Entree**
On the Border Dos XX Fish Tacos with Rice and Beans

2,100 calories 130 g fat 169 g carbs 4,750 mg sodium

Perhaps the most misleadingly named dish in America: A dozen crunchy tacos from Taco Bell will saddle you with fewer calories.

**Lighten the Load:** Ask for grilled fish, choose the corn tortillas instead of flour (they're lower in calories and higher in fiber), and swap out the carbohydrate-loaded rice for grilled vegetables.
5. **Worst Pizza**
Uno Chicago Grill Chicago Classic Deep Dish Pizza

![Pizza Slice]

**2,310 calories 162 g fat 123 g carbs 4,470 mg sodium**

Downing this "personal" pizza is equivalent to eating 18 slices of Domino's Crunchy Thin Crust cheese pizza.

**Swap Your Slices:** Switch to the Sausage Flatbread Pie and avert deep-dish disaster by nearly 1,500 calories.
4. Worst Pasta
Macaroni Grill Spaghetti and Meatballs with Meat Sauce

2,430 calories 128 g fat 207 g carbs 5,290 mg sodium

This meal satisfies your calorie requirements for an entire day.

**Downsize the Devastation:** Ask for a lunch portion of this dinner dish (or any pasta on the menu, for that matter), and request regular tomato sauce instead of meat sauce. You'll cut the calories in half.
3. **Worst Nachos**  
On the Border Stacked Border Nachos

*2,740 calories 166 g fat 191 g carbs 5,280 mg sodium*

The only way you should ever consider eating these is if you're rolling with a crew of eight.

**Turn away:** You won't find a decent option on the appetizer menu. Instead, turn to the Chicken Tacos on the entree portion of the menu; at 250 calories a pop, they make as good a start to your meal as you can hope for.
2. Worst Starter

Chili’s Awesome Blossom

2,710 calories 203 g fat 194 g carbs 6,360 mg sodium

Hard to believe that a single onion can wreak so much nutritional havoc, but batter and fry anything and serve it with a rich dipping sauce and your bound to do some damage.

Start properly: At Chili’s, take a detour to the "Sides" menu and try the Garlic & Lime Grilled Shrimp. 4 shrimp will only cost you 160 calories.
1. The Worst Food in America
Outback Steakhouse Aussie Cheese Fries with Ranch Dressing

2,900 calories 182 g fat 240 g carbs

Even if you split this “starter” with three friends, you'll have downed a dinner's worth of calories before your entree arrives. Follow this up with a steak, sides, and a dessert and you could easily break the 3,500 calorie barrier.

**Front-load:** Start your meal with a protein-based dish that’s not deep-fried. A high-protein starter helps diminish hunger without putting you into calorie overload. At Outback, that translates to either the Seared Ahi or the Shrimp on the Barbie.
### Cost Per Quality-Adjusted Life-Year (QALY) Saved of Various Interventions To Prevent Or Reduce Obesity

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Description</th>
<th>Estimated cost per QALY saved</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Youth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinated Approach to Child Health (CATCH)</td>
<td>Comprehensive intervention in elementary schools</td>
<td>$900</td>
<td>Brown et al. (2007)</td>
</tr>
<tr>
<td>Planet Health</td>
<td>Comprehensive intervention in middle schools</td>
<td>$4,305 for females, not effective for males</td>
<td>Wang et al. (2003)</td>
</tr>
<tr>
<td>Moving School Bus</td>
<td>Adults walk set routes to facilitate children’s walking rather than riding to school</td>
<td>Not effective</td>
<td>Moodie et al. (2009)</td>
</tr>
<tr>
<td><strong>Adults</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xenical (orlistat)</td>
<td>Anti-obesity drug that inhibits absorption of, and promotes excretion of, dietary fat</td>
<td>$8,327</td>
<td>Maetzel et al. (2003)</td>
</tr>
<tr>
<td>Meridia (sibutramine)</td>
<td>Anti-obesity drug that suppresses the appetite</td>
<td>$9,299</td>
<td>Warren et al. (2004)</td>
</tr>
<tr>
<td>Wheeling Walks</td>
<td>Communitywide campaign using paid media to encourage walking among sedentary adults</td>
<td>$14,286</td>
<td>Roux et al. (2008)</td>
</tr>
<tr>
<td>Gastric bypass surgery</td>
<td>Limits food intake by reducing the effective size of the stomach and bypassing part of the small intestine</td>
<td>$5,000-$16,100 for women, $10,000-$35,600 for men</td>
<td>Craig and Tseng (2002)</td>
</tr>
<tr>
<td>Social support to promote walking</td>
<td>Provision of maps, handouts on strategies for social support of walking, frequent calls to prompt participants to walk</td>
<td>$27,373</td>
<td>Roux et al. (2008)</td>
</tr>
</tbody>
</table>
### How The Framing Of Costs Influences Public Support For Improving The Nutrition Of School Food

<table>
<thead>
<tr>
<th>Question wording</th>
<th>Strongly agree or agree (%)</th>
<th>Strongly disagree or disagree (%)</th>
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</thead>
<tbody>
<tr>
<td>The government should improve the nutrition of food in school cafeterias</td>
<td>92.1</td>
<td>4.4</td>
</tr>
<tr>
<td>The government should improve the nutrition of food in school cafeterias, even if it requires raising taxes</td>
<td>69.5</td>
<td>22.6</td>
</tr>
<tr>
<td>The government should raise taxes in order to improve the nutrition of food in school cafeterias</td>
<td>40.5</td>
<td>53.2</td>
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</table>

### How The Framing Of Costs Influences Public Support for Improving Physical Education In Schools

<table>
<thead>
<tr>
<th>Question wording</th>
<th>Strongly agree or agree (%)</th>
<th>Strongly disagree or disagree (%)</th>
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</thead>
<tbody>
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<td>The government should increase the quality and quantity of physical education in schools</td>
<td>86.2</td>
<td>9.7</td>
</tr>
<tr>
<td>The government should increase the quality and quantity of physical education in schools, even if it requires raising taxes</td>
<td>59.9</td>
<td>33.9</td>
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<td>The government should raise taxes in order to increase the quality and quantity of physical education in schools</td>
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<td>55.8</td>
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