

# Prevention in Minnesota

## Background Information Prepared for the Health Care Transformation Task Force by Minnesota Department of Health staff September 17, 2007

Placing greater emphasis on prevention is believed to have considerable potential to lower health care expenditures. Prevention efforts encompass a range of activities including:

- **Screening:** more intensive screening for disease, such as mammograms, pap smears, and colorectal cancer screening
- **Changing risk factors:** changing unhealthy behaviors that are known risk factors for chronic disease, such as tobacco use, poor nutrition, and physical inactivity

While many prevention efforts make important contributions to health and wellness, changing unhealthy behaviors that are known risk factors for chronic disease is believed to have some of the largest cost saving potential.

Table 1 shows the annual direct medical costs of tobacco use, physical inactivity, and obesity in Minnesota and the U.S. These costs are high and account for significant percentages of overall health spending; for example, in Minnesota, medical costs associated with obesity in 2000 were estimated to represent about 5% of all health care spending in the state.<sup>1</sup> It is important to note that the costs for these risk factors are not mutually exclusive; physical inactivity obviously contributes to the cost of obesity and tobacco use is probably highly correlated with the other risk factors as well; in other words, there may be substantial overlap in these cost estimates.

Table 1: Estimated Annual Direct Medical Cost of Modifiable Health Risks

<b>Risk Factor</b>	<b>Minnesota</b>	<b>U.S.</b>
Tobacco <sup>2</sup>	\$1.98 billion	\$75 billion
Physical Inactivity <sup>3</sup>	\$495 million	<i>Not available</i>
Obesity <sup>4</sup>	\$1.31 billion	\$75 billion

### Potential Cost Savings

Risk factors associated with chronic disease have high medical costs. How much money can be saved by changing these behaviors is an important question for policymakers. Generally, these estimates come from two primary sources: studies that compare medical expenditures by risk group (for example, comparing medical charges for people that are obese to adults of normal weight) and evaluations of prevention and wellness programs. We briefly review both sources below.

## Cost Impact of Unhealthy Behaviors

Several studies have shown that risk factors such as tobacco use, obesity, and physical inactivity significantly increase health care costs. For example:

- A HealthPartners study of over 5,000 adult enrollees in 1995-1996 found that <sup>5</sup> :
  - Each additional unit of body mass index (BMI) increased medical charges by 1.9%
  - A history of tobacco use was associated with 25.8% higher medical charges
  - Each additional day of physical activity per week reduced medical charges by 4.7%
- A national study found that 27% of health care charges for adults over age 40 are associated with people being physically inactive, overweight, and/or obese. <sup>6</sup>
- Per capita private health insurance expenditures for obese adults were \$1272 higher than those for normal weight adults in 2002; this represents a 56% increase in the gap in spending between obese and normal weight adults from 1998 to 2002. <sup>7</sup>
- From 1987 to 2001, obesity-related health spending accounted for an estimated 27% of the increase in inflation-adjusted per capita health spending. <sup>8</sup>

## Impact of Prevention and Wellness Initiatives

While the association between certain risk factors and increased health care costs is well established, there is less information about the cost effectiveness of specific interventions to change people's health behaviors. Much of the available research comes from evaluations of employer-sponsored wellness initiatives. Some of the findings from this research include:

- A preliminary study of *Fit Choices*, which subsidized gym memberships for Minnesota Medica enrollees, showed that participants had lower health care costs than a control group. <sup>9</sup>
- Preliminary analysis of the HealthPartners 10,000 Steps program shows that participants increased their daily steps by an average of 21% and 42% of them lost at least 4 pounds. <sup>10</sup>
- A recent review of health promotion and disease management programs found a significant return on investment, with benefit-to-cost ratios ranging from \$1.49 to \$4.91 in benefits for every dollar spent. <sup>11</sup>
- Johnson & Johnson's *Health & Wellness Program* showed a \$225 reduction in average annual medical costs per employee over a 4 year period. The program is designed to integrate occupational health, wellness, and medical benefits. <sup>12</sup>
- Participation in Motorola's *Wellness Initiatives* resulted in a \$3.93 return on investment (ROI). <sup>13</sup>

Much of this research has important limitations. For example, employees who choose to participate in the programs may be different from those who do not, which limits the generalizability of the findings. Additional research is necessary to determine which aspects of employer wellness initiatives are most cost effective. However, this area of research provides some encouraging insight into the potential for well-designed prevention efforts to cut costs and improve health outcomes.

## Endnotes

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<sup>1</sup> Finkelstein EA, Fiebelkorn IC, Wang G. State-level estimates of annual medical expenditures attributable to obesity. *Obes Res.* 2004 Jan; 12(1):18-24.

<sup>2</sup> Health Care Costs and Smoking: The Bottom Line, Blue Cross Blue Shield of Minnesota; estimates were calculated using a tool from the Centers for Disease Control and Prevention

<sup>3</sup> Health Care Costs of Physical Inactivity in Minnesota, report prepared by Minnesota Department of Health

<sup>4</sup> Finkelstein, EA.

<sup>5</sup> Pronk NP, Goodman MJ, O'Connor PJ, Martinson BC. Relationship between modifiable health risks and short-term health care charges. *JAMA.* 1999 Dec 15;282(23):2235-9.

<sup>6</sup> Anderson DR, Whitmer RW, Goetzel RZ, Ozminkowski RJ, Dunn RL, Wasserman J, Serxner S. The relationship between modifiable health risks and group-level health care expenditures. *Am J Health Promot.* 2000 Sep-Oct;15(1):45-52.

<sup>7</sup> Thorpe, KE. Factors accounting for the rise in health-care spending in the United States: the role of rising disease prevalence and treatment intensity. *Public Health.* 2006 Nov;120(11):1002-7.

<sup>8</sup> Thorpe KE, Florence CS, Howard DH, Joski P. The impact of obesity on rising medical spending. *Health Aff (Millwood).* 2004 Jul-Dec;Suppl Web Exclusives:W4-480-6.

<sup>9</sup> The Medica/Life Time Fitness Study. The Health and Financial Benefits of Exercise, The Value of Incentives for Healthy-Ways-of-Life.

<sup>10</sup> VanWormer, J.; Pronk, N.; Boucher, J. Experience Analysis of a Practice-Based, Online Pedometer Program. *Diabetes Spectrum.* 2006; 19: 197-200.

<sup>11</sup> Prevention Makes Common Cents. U.S. Department of Health and Human Services. September 2003.

<sup>12</sup> Ozminkowski, R.; Ling, D.; et. al. Long-Term Impact of Johnson & Johnson's Health & Wellness Program on Health Care Utilization and Expenditures. *Journal of Occupational and Environmental Medicine.* 2002 January; 44(1):21-29.

<sup>13</sup> C. Everett Koop National Health Awards. Website: <http://healthproject.stanford.edu/koop>