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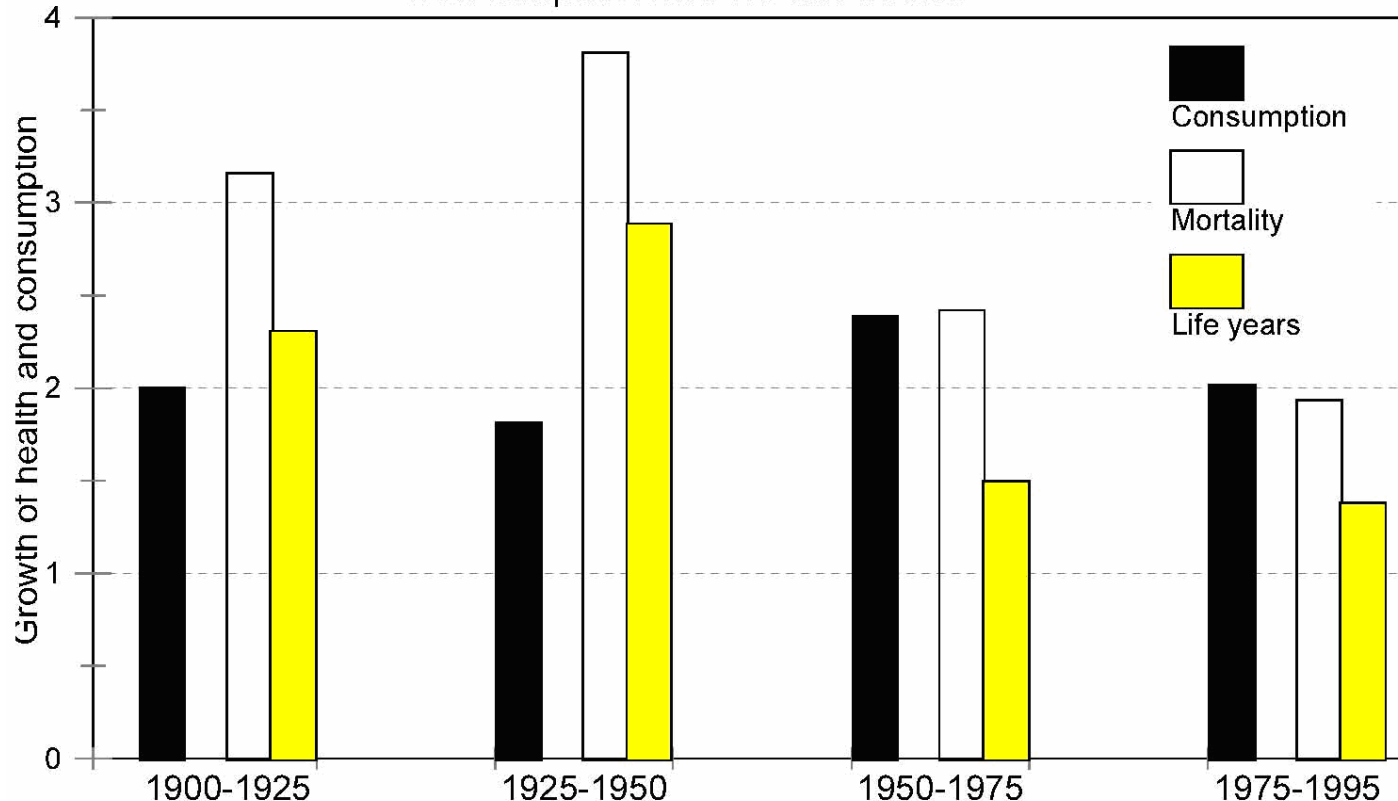
Advanced Medical Technology Association

Health Care Costs: A View from the Medical Technology Industry

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Economic Contribution: Consumption and Health Status



Source: William D. Nordhaus, "The Health of Nations: The Contribution of Improved Health to Living Standards," in Kevin M. Murphy and Robert H. Topel, *Measuring the Gains from Medical Research: An Economic Approach*, University of Chicago Press, 2003.

Technology: The Human Value Change In Selected Health Indicators 1980-2000^[1]

- Life expectancy increased 3.2 years
- Disability among the elderly declined 25% (and is saving Medicare \$73 billion annually) ^[2]
- Mortality from heart attack was cut by 50%
- Mortality from stroke was cut by one-third
- Mortality from breast cancer has been cut 20%

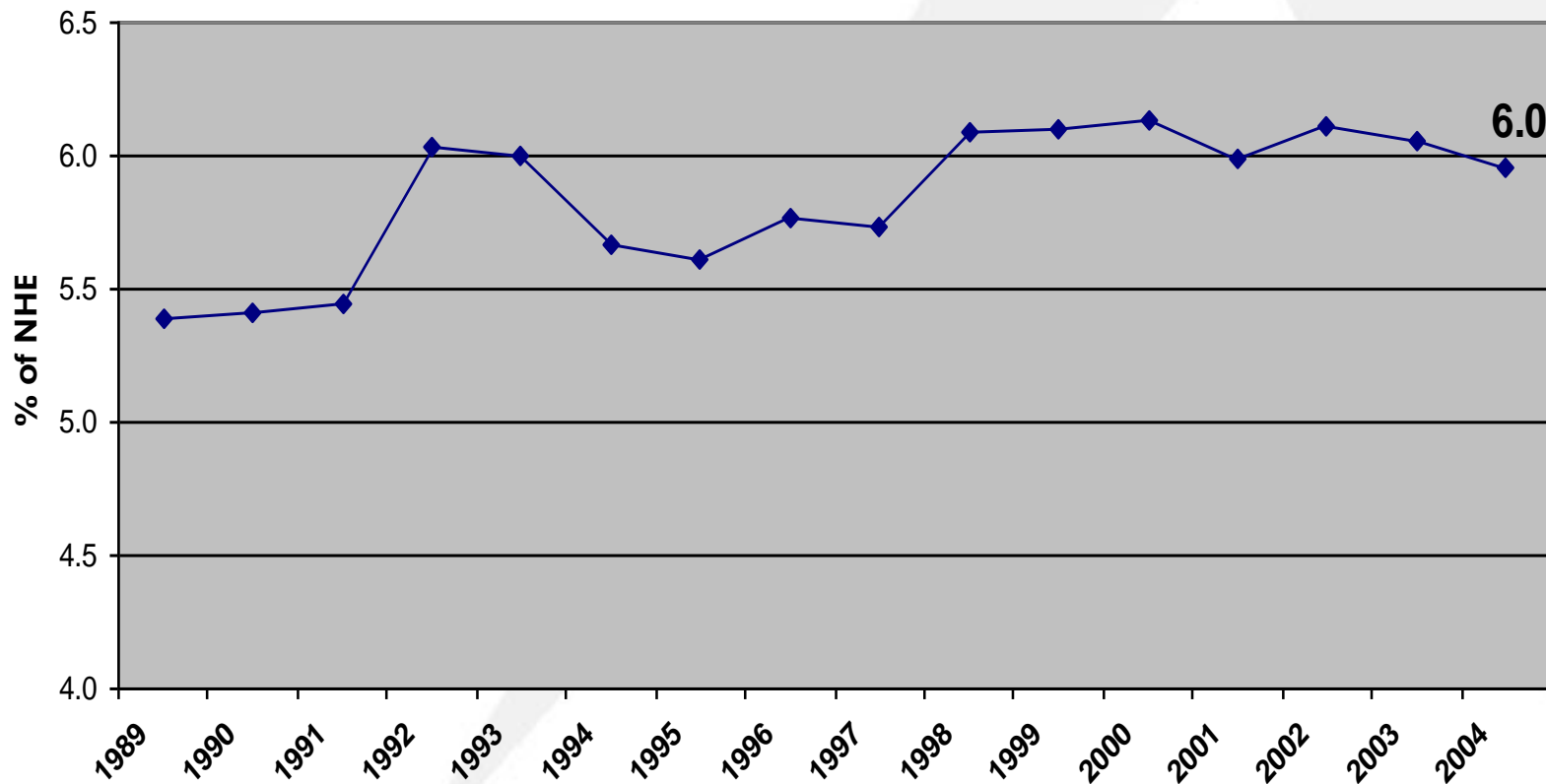
[1] Medtap, The Value of Investment in Health, 2002.

[2] Kenneth G. Manton, et al., Journal of Aging Health, 2007; 19; 359.

Medical Devices: A Small and Relatively Constant Share of National Healthcare Expenditure

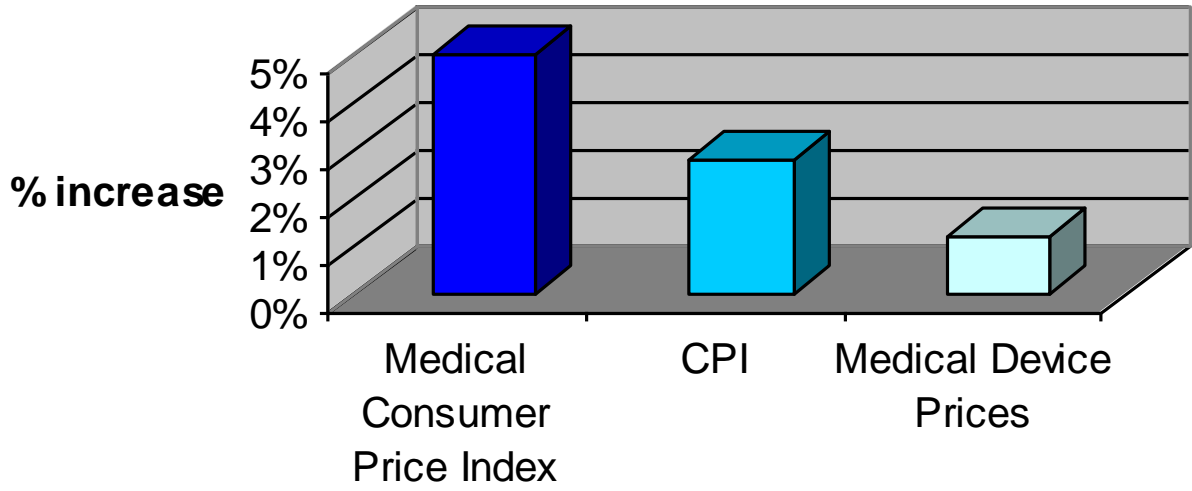


Figure 2. Medical Devices as a Percentage of National Health Expenditures



Source: Roland "Guy" King, *Estimates of Medical Device Spending in the United States*, AdvaMed 2007

Average Annual Increase in Medical Consumer Price Index, Consumer Price Index, and Medical Device Prices from 1989-2004



Source: Roland "Guy" King, *Estimates of Medical Device Spending in the United States*, AdvaMed 2007

“Excess” Cost Increases: Does the Residual Estimate Overstate the Contribution of Technology?

	Cost Factors	Remaining Residual
Residual estimate (technology):	50% [1]	
Factors reducing residual		
Obesity increase	12% [2]	38%
Treated prevalence of chronic disease	0-16% [3]	38-22%
Increase in specialists per capita	? [4]	?-0%
Increase in physicians per capita	? [5]	?-0%
Other unmeasured factors	?	?-0%

[1] Average of Smith, et. al and Cutler estimates cited in CBO, *Technological Change and the Growth of Health Care Spending*, p. 8, January, 2008. Newhouse estimate was not included because of failure to estimate impact of prices in medical sector and administrative costs.

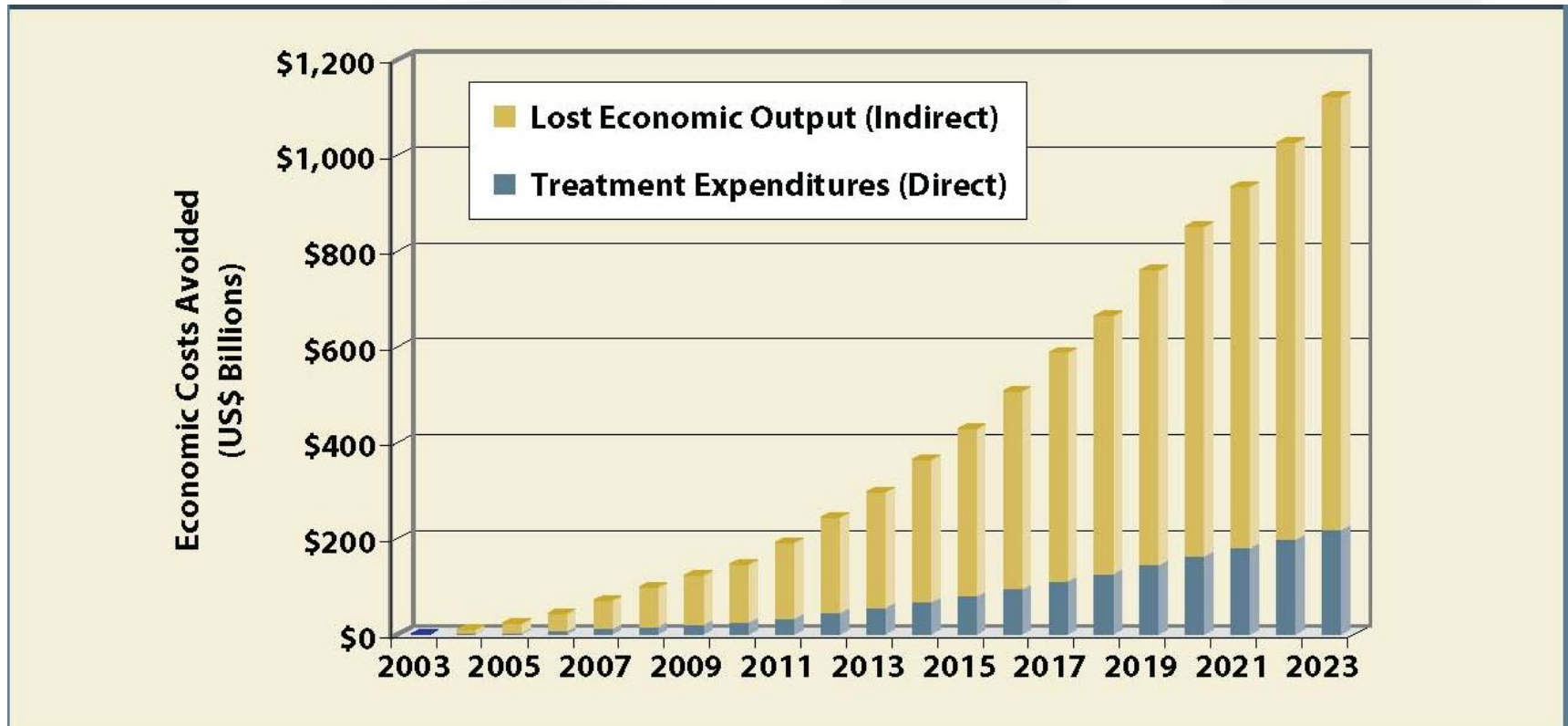
[2] CBO, “*Technological Change and the Growth of Health Care Spending*,” p. 10. Using a regression model, Ken Thorpe estimates the obesity share of spending growth over the last 20 years at 27%.

[3] Ken Thorpe, et al., “The Rising Prevalence of Treated Disease: Effects on Private Health Insurance Spending,” *Health Affairs*, web exclusive, 2005. Thorpe, et al., estimated 28% of cost growth over 20 years was due to increase in treated prevalence of chronic disease. Numbers cited subtract obesity impact. Thorpe does not separate out prevalence from expanded proportions treated. Technology may contribute to both prevalence (because of more sensitive diagnostic tests) and treatment rates (because of development of new technology thought to be effective in treating these conditions), but is unlikely to account for all increases in treated prevalence..

[4] Elliott S. Fisher, et al., “The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care,” *Annals of Internal Medicine*, 2003, found that one of the factors most associated with regional differences in spending is greater use of medical sub-specialists. A study using similar data found that, in 2000, an increase of one specialist per 10,000 population increased Medicare costs per beneficiary by \$526 (8.9%). Between 1970 and 2000 the number of specialists per capita increased 123% or 8.14 specialists per 10,000 population. SOURCE: American Medical Association. Physician Characteristics and Distribution in the US 2002-2003 Edition, Chicago, 2002. Also prior annual issues (formerly titled Physician Distribution and Medical Licensure in the U.S.)U.S. Bureau of the Census. Current Population Reports. Series P-25 Nos. 941, 943, 1023, 1036, 1049, 1075, and 1093, Statistical Abstract of the United States: 2001. Washington, DC, 2001.

[5] Fischer, et al., also found that overall number of physicians per capita had a substantial effect on explaining cost differences between areas. Between 1970 and 2000, the number of physicians per capita has increased 76%. Ibid.

Two Alternative Paths for Chronic Disease (\$ in billions)



Source: Ross DeVol and Armen Bedroussian, “An Unhealthy America: The Economic Burden of Chronic Disease”, Milken Institute, 2007

- Flawed Methodology
- Stifle/Delay Medical Progress
 - Inherent uncertainty of development
 - Dependence on venture capital funding
 - Time dimension
 - value increases over time
 - unit costs reduce over time
 - clinical practice typically leads systematic evidence



Improve Efficiency and Quality

- Change incentives
- Develop measures
- Management of chronic disease
- Reduce medical errors
- Comparative effectiveness research
- HIT

Health promotion and disease prevention

Medical Innovation

Hypothetical Savings

Hypothetical Savings – Medical Progress^[1]

New Cure or Treatment	Estimated Annual Savings (\$ in billions)	
	National	Federal
Delay onset of Alzheimer’s disease by five years ^[2]	\$50	\$40
Medical innovation resulting in continued decline in disability among the elderly through 2009 ^[3]	\$73	\$73
Improved efficiency and effectiveness of cancer prevention and treatment by 25% ^[4]	\$15	\$9
Total savings	\$138	\$122

^[1] AdvaMed staff estimates.

^[2] Alzheimer’s Association as cited in Alliance for Aging Research 2007 *The Silver Book: Chronic Disease and Medical Innovation in an Aging Nation*.

^[3] Assumes rate of decline in disability among the elderly observed 1982-1999 continues through 2009. Kenneth G. Manton, et al., *Journal of Aging Health*, 2007; 19; 359.

^[4] Cost of cancer from National Institutes of Health: Cancer Progress Report, cited in The Lasker Foundation 2000, *An Investment in Research Saves Lives and Money*. Savings include direct medical costs only. Advances may come from such innovations as: vaccines, better targeting of drug therapies through molecular diagnostics and molecular imaging, development of new drug therapies, earlier diagnosis.