

Health Care and Behavioral Economics

A Presentation to the National Academy of Social Insurance

May 29, 2008

It has been said that “goodness without knowledge is weak and feeble, yet knowledge without goodness is dangerous.”¹ Peter Diamond is one of those extremely rare people who combine knowledge and goodness. Indeed—and I hope this doesn’t offend anyone in the room—Peter is probably the smartest person I know. In addition to that, he is simply a wonderful person and colleague. I am thrilled that the National Academy of Social Insurance (NASI) has awarded him this year’s Robert Ball Award. I will have more to say about Peter during the award ceremony later on.

Peter is perhaps best known in these circles for his copious and foundational work on social insurance in general and Social Security in particular. In the language of classical microeconomics, his research often serves as the “numeraire”—the standard by which other work is measured. It seems clear, however, that he’s already addressed most of the outstanding analytical issues on Social Security—at least in the view of his coauthor.² Peter definitively did not want this talk to address Social Security.

In the spirit of Peter’s intellectual energy and curiosity, I will therefore focus my remarks on another important area that has attracted Peter’s attention: behavioral economics, which combines insights from psychology with those from more traditional economics. But that raises two problems. First, behavioral economics is a rapidly growing subject that is now too broad for short talks. Second, when both the NASI staff and I had asked Peter what topic he would like covered in this talk, his response was health care. As Peter has noted in a forthcoming article in the *Journal of Public Economics*, “One of the key messages of behavioral economics is that context (also referred to as situation) matters in ways that are not recognized in standard modeling.” In health care, standard modeling alone is insufficient, and an effective policy response to rising health care costs will undoubtedly have to reflect what we are learning from behavioral economics. So I will focus on behavioral economics and health care, and I hope that will satisfy all the constraints.

1. Deed of Gift, Phillips Exeter Academy, available at www.exeter.edu/libraries/4513_4623.aspx?tab=2.

2. See Peter A. Diamond and Peter R. Orszag, *Saving Social Security: A Balanced Approach* (Washington, D.C.: Brookings Institution Press, 2004). In the process of writing our book together, there were many episodes in which it took several days for me to understand and then to appreciate a point Peter had casually made in our discussions. He was (usually) patient during the time it took me to catch up.

Peter Diamond is an admitted “card-carrying behavioral economist,” who has been interested in the field before it was a field, since he met Amos Tversky in 1969.³ He has coedited a volume in the field.⁴ In the forthcoming article I mentioned, Peter writes that while we have not solved all issues in behavioral economics, “policy making, and so policy recommendations, can not wait for a complete solution. Moving ahead with what we think we know, and moving in recognition of the limitations of how much we do know is appropriate.”

The Fiscal Challenge and the Opportunity

Put simply, health care costs are the single most important factor influencing the federal government’s budget trajectory—and they already exert a major influence, larger than most of us perhaps realize, on our paychecks. According to the Congressional Budget Office’s (CBO’s) projections, without any changes in federal law, total spending on health care will rise from being 16 percent of the economy in 2007 to being 25 percent in 2025 and almost 50 percent in 2082, and net federal spending on Medicare and Medicaid will rise from being 4.1 percent of the economy to being almost 20 percent over the same period.⁵ The primary driver of future costs will be the increasing cost for treating each beneficiary, rather than the increased number of older beneficiaries (as can be seen in Figure 1).

Embedded in this fundamental long-term fiscal challenge is a substantial opportunity: to reduce health care costs without adversely affecting health outcomes. Perhaps the most compelling evidence suggesting this opportunity is that per capita health care spending varies widely across the United States (see Figure 2), and yet the very substantial variation in cost per beneficiary is not correlated with health outcomes. For example, a comparison of composite quality scores for medical centers, as determined by the Centers for Medicare and Medicaid Services (CMS), and average spending per beneficiary shows no clustering around an upward slope, which would suggest that higher costs do not produce better health outcomes (see Figure 3 on page 5); if anything, it would appear that the clustering implies a slope in the wrong direction.

One might note that the highest-cost areas are concentrated around the top U.S. medical centers and assume that it is the work of these centers that drives the cost differences across the nation. However, even among elite medical centers, there is significant variation in cost. Among the UCLA Medical Center, Massachusetts General Hospital, and the Mayo Clinic (St. Mary’s Hospital), for example, CMS’s composite quality scores are very similar (81.5, 85.9, and 90.4, respectively). Although the Mayo

3. See Giuseppe Moscarini and Randall Wright, “An Interview with Peter Diamond,” *Macroeconomic Dynamics*, vol. 11, no. 4 (2007), pp. 543–565.

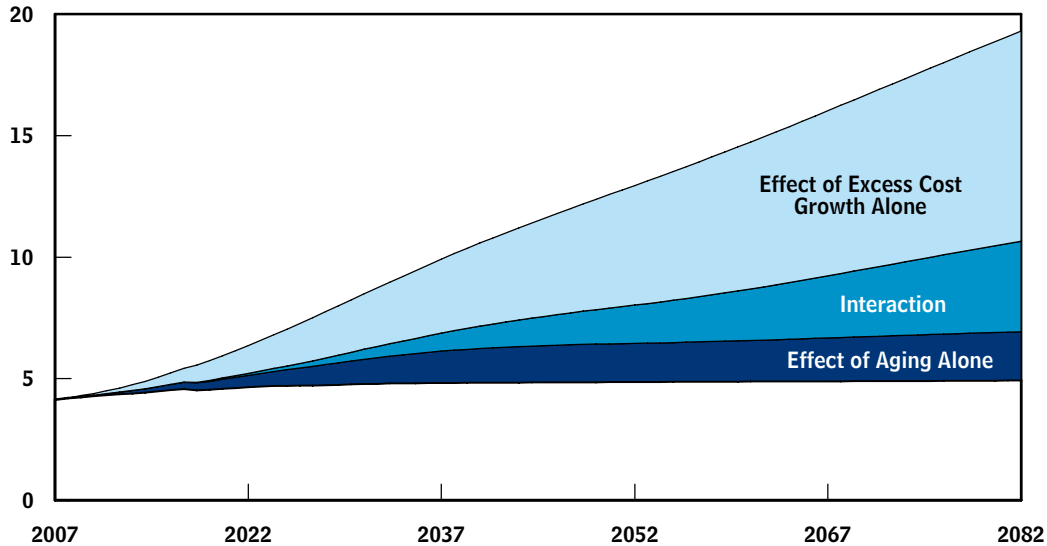
4. Peter Diamond and Hannu Vartiainen, eds., *Behavioral Economics and Its Applications* (Princeton, N.J.: Princeton University Press, 2007).

5. Congressional Budget Office, *The Long-Term Outlook for Health Spending* (November 2007).

Figure 1.

Sources of Growth in Projected Federal Spending on Medicare and Medicaid

(Percentage of gross domestic product)



Source: Congressional Budget Office.

Notes: The phrase excess cost growth refers to the extent to which the increase in health care spending for an average individual exceeds the growth in per capita gross domestic product. Excess cost growth and the aging of the population interact and result in greater growth in spending than would result from either factor separately.

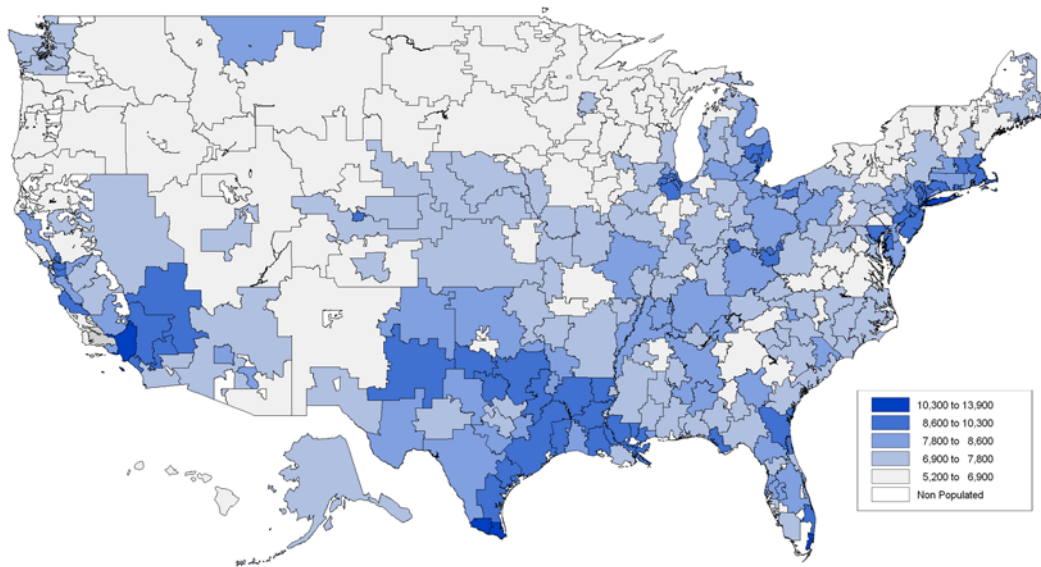
Clinic scores above the other two, its cost per beneficiary for Medicare clients in the last six months of life (\$26,330) is nearly half that at the UCLA Medical Center (\$50,522) and significantly lower than the cost at Massachusetts General Hospital (\$40,181). I'll quote Uwe Reinhardt, renowned professor of economics and political economy at Princeton University, who asks, "How can it be that 'the best medical care in the world' costs twice as much as the best medical care in the world?"⁶ The American taxpayer is financing these large differences in costs, but we have little evidence of what benefit we receive in exchange.

Variations in health care are often most dramatic when there is uncertainty about what kind of treatment to administer. For example, best practice involves providing an aspirin upon admission for a heart attack, and there is very little variation in that practice. However, there is significant geographic variation in the use of imaging and diagnostic tests, and there is often ambiguity about which specific settings for these interventions produce better health outcomes. Overuse of supply-sensitive services

6. As quoted in Gina Kolata, "Sharp Regional Incongruity Found in Medical Costs and Treatments," *Women's Health*, January 30, 1996, available at www.nytimes.com/specials/women/warchive/960130_1576.html.

Figure 2.

Medicare Spending per Capita in the United States, by Hospital Referral Region, 2005



Source: *Dartmouth Atlas Project, The Dartmouth Atlas of Health Care.*

and social norms among local physicians seem to drive regional approaches in the use of these innovations. Some regions appear more prone to adopt low-cost, highly effective patterns of care, whereas others are more prone to adopt high-cost patterns of care and to deliver treatments that provide little benefit or are even harmful.

In a recently published study on this topic, CBO found that the regional variation in health care costs has remained roughly stable in the past two to three decades, while the variation in Medicare-specific health care spending has decreased.⁷ Regional variation in the United States is greater than that in Canada or the United Kingdom, and regional variation in Medicare spending is now about equal to the variation in health care spending by the Department of Veterans Affairs, though it used to be greater. So how much could all this amount to? John Wennberg and his colleagues estimate that nearly 30 percent of Medicare's costs could be saved without negatively affecting health outcomes if spending in high- and medium-cost areas could be reduced to the level in low-cost areas—and those estimates could probably be extrapolated to the health care system as a whole.⁸ With health care spending currently representing 16 percent of gross domestic product (GDP), this would suggest that nearly 5 percent

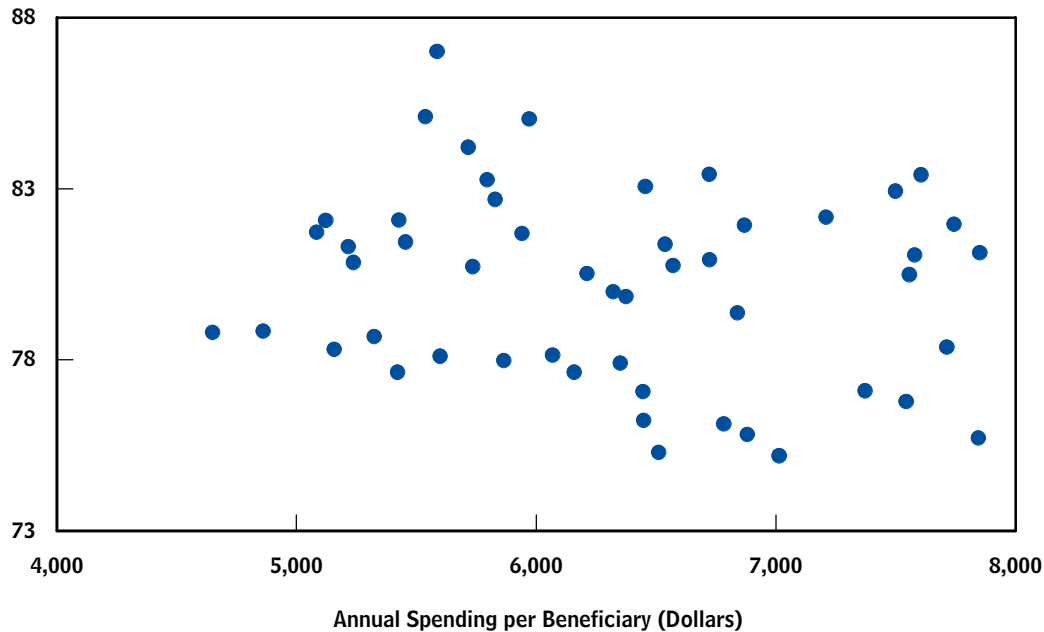
7. Congressional Budget Office, *Geographic Variation in Health Care Spending* (February 2008).

8. See John E. Wennberg and others, "Geography and the Debate Over Medicare Reform," *Health Affairs*, Web Exclusive (February 13, 2002), pp. W96–W114; and Elliott Fisher, "More Care Is Not Better Care," *Expert Voices*, Issue 7 (National Institute for Health Care Management, January 2005), available at www.nihcm.org/publications/expert_voices.

Figure 3.

The Relationship Between Medicare Spending and Quality of Care, by State, 2004

(Composite measure of quality of care)



Source: Congressional Budget Office based on data from Department of Health and Human Services, Agency for Healthcare Research and Quality, *National Healthcare Quality Report, 2005 (December 2005)*, Data Tables Appendix, available at www.ahrq.gov/qual/nhqr05/index.html, and data from the Centers for Medicare and Medicaid Services' Continuous Medicare History Sample.

Notes: The composite measure of the quality of care, based on Medicare beneficiaries in the fee-for-service program who were hospitalized in 2004, conveys the percentage who received recommended care for myocardial infarction, heart failure, or pneumonia.

Spending figures convey average amounts by state.

of GDP—or roughly \$700 billion each year—goes to health care spending that can't be shown to improve health outcomes. To be sure, figuring out how to reduce spending only for inappropriate and unnecessary care is quite a challenging exercise. Nevertheless, there do not appear to be other examples that credible academics can identify for a potential efficiency gain of this magnitude for our economy.

The \$700 billion question is therefore: How do we get individuals and health care providers to improve health yet slow the growth in health care spending? I won't fully answer that question, in part because we don't know the full answer and in part because I want to focus specifically on the contribution that behavioral economics can make, which by itself will not be sufficient to "solve" the problem. But before turning to some of the insights from behavioral economics that may help us improve efficiency in health care, let me first address a question of political economy.

Political Economy in Improving Efficiency in the Health Sector

One factor helping to perpetuate inefficiencies in health care is a lack of clarity regarding the cost and incidence of health insurance, especially employment-based health insurance. Employers' payments for employment-based health insurance and nearly all payments by employees for that insurance are excluded from individual income and payroll taxes. Although both theory and evidence suggest that workers ultimately finance their employment-based insurance through lower take-home pay, the cost is not salient or clear to many workers.

We know from other settings that salience, and not just underlying financial incentives, matters—and indeed that salience often matters much more than the underlying financial incentives, at least when relatively small sums are involved. When consumers go into a store, for example, they see pretax prices on the items. One might assume—or at least the Econ 101 rational optimizing model would assume—that consumers are generally aware of which items are taxable and what the tax rate is. Yet when Raj Chetty, Adam Looney, and Kory Kroft went into a grocery store and posted posttax prices on some items, sales of those goods fell by about 8 percent.⁹ They found similar effects when examining the effects of sales taxes and excise taxes (which are included in posted prices) on alcohol sales. Amy Finkelstein looked at a related question: When highway tolls are automated, does the reduced salience induce higher prices?¹⁰ The answer is that it does. She found that in the steady state, toll rates were 20 percent to 40 percent higher than they would have been without electronic toll collection.

I suspect, on the basis of similar logic, that workers demand less efficiency from the health system than they would if they knew the full cost that they pay via forgone wages for coverage or if they knew the actual cost of the services being provided. I similarly suspect that making the underlying costs associated with employment-based insurance more transparent may prove to be quite important in containing health care costs. As transparency increases and workers see how much their income is being reduced for employers' contributions and what those contributions are paying for, there may be a broader change in cost-consciousness that shifts demand. For workers and dependents with employment-based insurance, deductibles and copayments account for only about a fifth of their health care spending. The remainder comes from insurance premiums, only a quarter of which are paid directly by workers.¹¹

9. Raj Chetty, Adam Looney, and Kory Kroft, *Salience and Taxation: Theory and Evidence*, Working Paper No. 13330 (Cambridge, Mass.: National Bureau of Economic Research, August 2007).

10. Amy Finkelstein, *E-ZTax: Tax Salience and Tax Rates*, Working Paper No. 12924 (Cambridge, Mass.: National Bureau of Economic Research, January 2007).

11. Note that we could achieve some measure of cost-consciousness without changing the tax treatment of health care, simply by providing more transparency in the costs associated with employment-based insurance and their sources.

Behavioral Pathways to Improving Efficiency

What could be done to improve the efficiency with which health care is delivered—and specifically to reduce the delivery of services with little or no value? In health care, the vast majority of decisions are heavily influenced by doctors and other medical professionals (to whom I will refer collectively as health care providers). Restraining cost growth will therefore primarily require changing their choices. Cost constraints could be implemented by refusing to pay for certain services; I suspect, however, that more subtle actions will be more sustainable from a political economy perspective.

A particularly important aspect of behavioral economics is the role of norms of behavior. Like other people, doctors tend to follow professional norms of behavior. There are a number of reasons for that behavior, among them that following professional norms is simple and that it may help defend against charges of malpractice. The problem is that the professional norms in different parts of the nation do not always follow evidence-based standards of best practice. Indeed, the regional pattern of health care delivery (apparent in Figure 2) probably reflects, at least in part, differences in social norms among doctors. Professional norms may differ by locality because local colleagues may have a disproportionate influence and because status quo bias may make norms slow to change in the face of new evidence.

How can norms be shifted? One mechanism involves greater use of evidence-based medicine. Anesthesiology provides one example of a great success story in putting standards into practice. In the mid-1980s, the American Society of Anesthesiologists promulgated standards of optimal practice (both in procedures and equipment) after analyzing the most common sources of errors.¹² Providers had an incentive to follow the standards because deviations from them made the imposition of malpractice liability more likely.¹³ After the standards were adopted, mortality rates fell to about 5 per million encounters, as compared with averages of over 100 per million during earlier periods.¹⁴ This experience thus provides a case study showing that aggressively promulgated standards backed by some incentives can alter a long-standing and sub-optimal status quo.

12. For a description of those standards, see www.asahq.org/safety.htm.

In another example of the importance of salience, Ellison Pierce, then-President of the American Society of Anesthesiologists, who spearheaded the effort to impose standards, may have been motivated to pursue the issue in part because he had a friend whose child had died as a result of anesthetic error. See Jeffrey B. Cooper, “Getting Into Patient Safety: A Personal Story,” *AHRQ WebM&M: Morbidity and Mortality Rounds on the Web* (Agency for Healthcare Research and Quality, August 2006), available at www.webmm.ahrq.gov/perspective.aspx?perspectiveID=29.

13. David Hyman and Charles Silver, “You Get What You Pay For: Result-Based Compensation for Health Care,” *Washington and Lee Law Review* (Fall 2001).

14. *Ibid.*

Research suggests, however, that the “mere provision of information” to physicians results in “exceedingly modest behavioral response.”¹⁵ Therefore, to alter providers’ behavior, it is probably necessary to combine comparative effectiveness research with aggressive promulgation of standards and changes in financial and other incentives.¹⁶

Another familiar finding from behavioral economics is that, in the design of systems that involve choice, the “default” assigned to people who don’t choose any of the options can be very influential. Many people end up with the default, whether because of inertia (when they make no selection) or the belief that the default designation implies an endorsement of that option. For example, studies have shown that making enrollment in a defined-contribution retirement plan the default can raise participation rates significantly, by 50 percentage points in one analysis involving new workers.¹⁷

The application of this insight to health systems suggests that policymakers should take particular care in the designation of default options, because many, if not most, people may end up taking those options. Jeffery Liebman and Richard Zeckhauser note that a key benefit of the employment-based system of insurance is that employers effectively provide defaults for most workers, including insurance itself.¹⁸ Some recent proposals, such as the Wyden-Bennett bill, would retain some “facilitation” role for employers, even while shifting the insurance system away from an employment-based one. In addition, the proposal would enroll those who did not actively choose a health plan in the lowest-cost plan available to them.

As another example, the default choice for less-expensive generic versus name-brand drugs can influence how people fill prescriptions, and the default choice for drug plans themselves can influence which plan people wind up in. For example, the Medicare drug benefit has enrolled individuals eligible for its low-income subsidies into one of the lower-cost drug plans that charge no premium to them; although they have the option of switching to another plan, many of those enrollees have not done so. Somewhat more far-fetched but still possible to imagine are policies in which default treatments might influence behavior: Some types of preventive care, such as immunizing those over 65 against pneumococcal disease, have been found to be particularly

15. David E. Kanouse, Joel Kallich, and James P. Kahan. “Dissemination of Effectiveness and Outcomes Research,” *Health Policy*, vol. 34, no. 3 (1995), pp. 167–192.

16. Congressional Budget Office, *Research on the Comparative Effectiveness of Medical Treatments: Issues and Options for an Expanded Federal Role* (December 2007).

17. Brigitte Madrian and Dennis Shea, “The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior,” *Quarterly Journal of Economics*, vol. 116, no. 4 (November 2001); see also William G. Gale, J. Mark Iwry, and Peter R. Orszag, *The Automatic 401(k): A Simple Way to Strengthen Retirement Saving*, Policy Brief 2005-1 (Washington, D.C.: Retirement Security Project, 2005).

18. Jeffery Liebman and Richard Zeckhauser, “Simple Humans, Complex Insurance, Subtle Subsidies” (presentation at the Tax Policy Center and the American Tax Policy Institute’s seminar “Taxes and Health Insurance: Analysis and Policy,” Washington, D.C., February 29, 2008).

cost-effective but are still underutilized.¹⁹ Under one option for addressing that problem—which may sound a little crazy at first blush or even second blush—people could be signed up for (and charged for) appointments to receive those types of care by default, unless they changed or canceled them.

We should also think about defaults when it comes to doctors' recommendations. Physicians' behavior seems to be significantly influenced by salience and other "irrational" influences. For example, doctors may overemphasize personal experience (especially recent events) in providing diagnoses and prescribing care because it is memorable and easily retrieved. In one computer-based study, experienced vascular surgeons monitored an expanding balloon intended to simulate an asymptomatic abdominal aortic aneurysm; some were randomly assigned a bad outcome; others, a good one. They were then presented with the same statistical information about future risk. Those who had experienced the bad outcome tended to choose to operate more quickly than those who had experienced the good outcome.²⁰ Other evidence suggests that many doctors' imperfect knowledge of biostatistics makes it difficult for them to interpret clinical research,²¹ and that when they are presented with a positive screening test, they tend to overestimate the probability that a patient actually has a disease.²² Designing mechanisms in which the default choice for providers is based on underlying statistical evidence, but with an option for the provider to override that default, may help to overcome these types of biases.

Behavioral Economics and Healthy Living

Finally, the ultimate objective of any health care system is to promote health, whether by treating diseases that arise or by preventing them from occurring in the first place. Indeed, perhaps an even more important determinant of health than the health care system is an individual's behavior. I will therefore finish up by talking a bit about things that may help us live healthier lives—which may be socially desirable even if it does not reduce health care costs (and, indeed, many steps to improve health outcomes may not reduce costs).

19. Michael V. Maciosek and others, "Priorities Among Effective Clinical Preventive Services: Results of a Systematic Review and Analysis," *American Journal of Preventive Medicine*, vol. 31, no. 1 (July 2006), pp. 52–61.

20. William Dale and others, "Can Induced Anxiety from a Negative Earlier Experience Influence Vascular Surgeons' Statistical Decision-Making? A Randomized Field Experiment with an Abdominal Aortic Aneurysm Analog," *Journal of the American College of Surgeons*, vol. 203, no. 5 (November 2006), pp. 642–652.

21. Donna M. Windish, Stephen J. Huot, and Michael L. Green, "Medicine Residents' Understanding of the Biostatistics and Results in the Medical Literature," *Journal of the American Medical Association*, vol. 298, no. 9 (2007), pp. 1010–1022.

22. Johann Steurer and others, "Communicating Accuracy of Tests to General Practitioners: A Controlled Study," *BMJ (British Medical Journal)*, vol. 324, no. 7341 (April 6, 2002), pp. 824–26.

The share of Americans who are overweight or obese has risen dramatically over the past three decades, from about one-half to roughly two-thirds—with the share who are obese accounting for the entire increase. According to one recent study, the rise in obesity rates in the United States is related mostly to an increase in caloric intake—and, in particular, an increase in calories from snacks—rather than a decline in caloric expenditures—that is, reduced activity.²³ Obesity is associated with many serious medical conditions, including diabetes, heart disease, and high blood pressure.

Smoking rates have declined in the United States, but roughly one-fifth of the population still smokes. Smoking rates among pregnant women have also shown a steady decline, but about 10 percent of expectant mothers still smoke despite the substantial health risks that doing so poses to their babies.²⁴ Cigarettes create “external costs” for society that are not paid by smokers or tobacco producers, such as higher costs for health insurance (to cover the higher medical expenses incurred by smokers) and the damaging effects of cigarette smoke on the health of nonsmokers. Furthermore, people may underestimate the harm they do to themselves by smoking or the addictive power of nicotine. Teenagers in particular may not be capable of evaluating the long-term effects of beginning to smoke. For reasons that are not entirely clear, the smoking rate for teens (which had been comparable to the rate for adult men) increased in the early 1990s. But that rate fell substantially following the significant increases in cigarette prices that accompanied a multibillion-dollar settlement agreement between major tobacco companies and the states.

Reform proposals could encompass preventive measures and efforts to encourage healthier lifestyles. Broadly speaking, three basic policy approaches could be adopted. First, more information about the consequences of unhealthy behavior or the factors contributing to it could be made available, in forms that would be salient enough to affect individual behavior and social norms. (Nutritional information, for example, is readily available for packaged foods but more difficult to come by for restaurant meals.) Second, financial incentives could be modified to encourage healthier living and to discourage unhealthy activities. For example, cigarette taxes could be increased, which would discourage smoking, especially among teenagers. Third, defaults could be established and other steps could be taken to encourage healthy behavior and discourage poor health habits. I have an intuition, admittedly not based on much direct empirical evidence, that this final category could prove to be the most important channel for affecting health behavior.

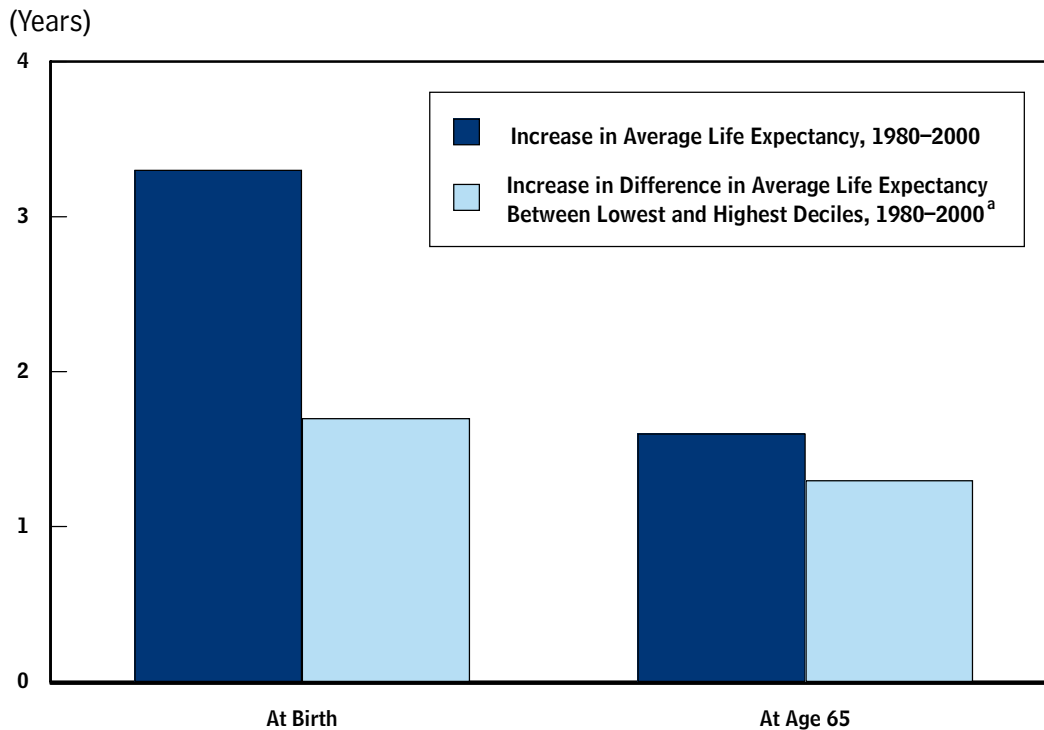
In retirement saving, defaults are particularly important for less educated and lower-income workers. In terms of their health, less educated and poorer groups exhibit worse behaviors and have worse outcomes than do more educated and richer groups.

23. David M. Cutler, Edward L. Glaeser, and Jesse M. Shapiro, “Why Have Americans Become More Obese?” *Journal of Economic Perspectives*, vol. 17, no. 33 (Summer 2003), pp. 93–118.

24. National Center for Health Statistics, *Health, United States, 2007* (Hyattsville, Md., 2007), Table 12, p. 145.

Figure 4.

Increase in Life Expectancy, and Increase in Difference in Life Expectancy by Economic Status



Source: Congressional Budget Office using data from Gopal K. Singh and Mohammad Siahpush, "Widening Socioeconomic Inequalities in U.S. Life Expectancy, 1980–2000," *International Journal of Epidemiology*, vol. 35, no. 4 (2006), pp. 969–979; and National Center for Health Statistics, *Health, United States, 2007* (Hyattsville, Md., 2007), Table 27, p. 175.

a. Socioeconomic groups are defined using county-level indicators of education, occupation, unemployment, wealth, income, and housing conditions.

For example, less advantaged groups smoke more and have higher rates of obesity. This observation raises the issue of whether well-designed defaults could help to narrow the differences in health behaviors. If so, defaults may also help to reduce the growing gap in life expectancy by education and income (see Figure 4).²⁵ (The growing differential in mortality rates by socioeconomic status, by the way, was first pointed out to me by Peter Diamond several years ago and motivated some of the policy proposals in our book on Social Security.)

What sorts of defaults may matter? As just one example, a growing body of research demonstrates that eating habits are strongly affected by the environment and

25. Congressional Budget Office, *Growing Disparities in Life Expectancy* (April 17, 2008).

presentation.²⁶ In one study, placing candies just three feet away from one's desk, as opposed to directly on one's desk, reduced the volume of chocolate consumption by five to six chocolates a day.²⁷ In another study, subjects provided with a bowl of M&Ms in 10 colors ate 77 percent more than people given a bowl with only 7 colors.²⁸ As explained by David Just, Lisa Mancino, and Brian Wansink in a recent article, food marketers use this type of knowledge to encourage sales, but the same types of approaches could assist people in their efforts to eat healthier foods.²⁹ About 20 percent of Americans participate in federal nutrition programs, so, the authors note, restructuring those programs could have a considerable effect. The school lunch program, in which governments can determine the food served to children, may be most amenable to presentational changes. But Just, Mancino, and Wansink also explore options for other federal nutrition programs, such as the Women, Infants, and Children program and the Food Stamp program.

People naturally exercise more when their environments are conducive to exercise.³⁰ For example, one small study of older women found that those who lived within walking distance of a store walked 36 percent more than those who did not.³¹ I suspect, but have not been able to find empirical evidence on the hypothesis, that people are particularly sensitive to small impediments to exercising. For example, someone with a gym down the hallway and therefore quite easily accessible may be much more likely to exercise than someone with a gym even just a few blocks away.

Conclusion

These are just some preliminary thoughts on both the provider and the beneficiary sides of the equation. As Peter Diamond has noted (in the forthcoming article mentioned at the beginning of my talk), "The description of the setting where an economic decision is being made needs to include far more information than the usual description of the setting." To be sure, the underlying financial incentives will

26. See Brian Wansink, *Mindless Eating: Why We Eat More Than We Think* (New York: Bantam Dell, 2006).

27. James E. Painter, Brian Wansink, and Julie B. Hieggelke, "How Visibility and Convenience Influence Candy Consumption," *Appetite*, vol. 38, no. 3 (June 2002), pp. 237–238.

28. Barbara E. Kahn and Brian Wansink, "The Influence of Assortment Structure on Perceived Variety and Consumption Quantities," *Journal of Consumer Research*, vol. 30 (March 2004), p. 525.

29. David R. Just, Lisa Mancino, and Brian Wansink, "Could Behavioral Economics Help Improve Diet Quality for Nutrition Assistance Program Participants?" (U.S. Department of Agriculture, Economic Research Service, Economic Research Report No. 43, June 2007).

30. See, for example, Neville Owen and others, "Understanding Environmental Influences on Walking: Review and Research Agenda," *American Journal of Preventive Medicine*, vol. 27, no. 1 (July 2004), pp. 67–76.

31. Wendy C. King and others, "The Relationship Between Convenience of Destinations and Walking Levels in Older Women," *American Journal of Health Promotion*, vol. 18, no. 1 (September/October 2003), pp. 74–82.

continue to inform our analysis of how people respond to policy changes—but at a minimum, contributions from behavioral economics can inform us about how people process that information and when their choices might be “predictably irrational.” So while the existing behavioral economics literature is beginning to inform research on health policy, much more needs to be done. There are still plenty of questions to be answered.

