

2004

Are the Benefits of Medicine Worth What We Pay for It?

David M. Cutler

Harvard University, John F. Kennedy School of Government, dcutler@harvard.edu

Follow this and additional works at: <http://surface.syr.edu/cpr>

 Part of the [Health Policy Commons](#)

Recommended Citation

Cutler, David M., "Are the Benefits of Medicine Worth What We Pay for It? " (2004). *Center for Policy Research*. Paper 16.
<http://surface.syr.edu/cpr/16>

This Working Paper is brought to you for free and open access by the Maxwell School of Citizenship and Public Affairs at SURFACE. It has been accepted for inclusion in Center for Policy Research by an authorized administrator of SURFACE. For more information, please contact surface@syr.edu.

FIFTEENTH ANNUAL
HERBERT LOURIE MEMORIAL LECTURE ON HEALTH POLICY

**Are the Benefits of Medicine
Worth What We Pay for It?**

David M. Cutler

No. 27/2004

David M. Cutler is Professor of Economics in the Faculty of Arts and Sciences and Kennedy School of Government at Harvard University. He served in 1993 as Senior Staff Economist at the Council of Economic Advisers and Director of the National Economic Council. He was a primary author of the Clinton Administration's health care reform proposal. His current research focuses on the sources of cost growth in medical care, the productivity of the medical system, and the relationship between public provision of medical care and private insurance coverage. His book, *Your Money or Your Life: Strong Medicine for America's Health Care System*, was published in 2004 by Oxford University Press.

The Herbert Lourie Memorial Lecture on Health Policy, sponsored by the Maxwell School of Citizenship and Public Affairs of Syracuse University and the Central New York Community Foundation, Inc., honors the memory of Herbert Lourie, M.D., a distinguished Syracuse neurosurgeon, professor, and community leader for nearly 30 years. Generous contributions from his family, friends, colleagues, and former patients have endowed this series.

The Policy Brief series is a collection of essays on current public policy issues in aging, health, income security, metropolitan studies, and related research done by or on behalf of the Center for Policy Research (CPR) at the Maxwell School of Syracuse University.

Single copies of this publication may be obtained at no cost from the CPR Web site at <http://www-cpr.maxwell.syr.edu> or from the Center for Policy Research, 426 Eggers Hall, Syracuse, NY 13244-1020.

© 2004, Syracuse University. This publication may be distributed freely for educational and researcher uses as long as this copyright notice is attached. No commercial use of this material may be made without express written permission.

Policy Brief

FIFTEENTH ANNUAL
HERBERT LOURIE MEMORIAL LECTURE ON HEALTH POLICY

Are the Benefits of Medicine Worth What We Pay for It?

David M. Cutler

Are the Benefits of Medicine Worth What We Pay for It?

Is medical care worth it? Conventional wisdom says no, but my answer is emphatically yes. The benefits that we have received from medical advance are enormously greater than the costs. I suggest that public policy far outweighs the importance of cost containment relative to coverage expansion; we could in fact spend more and get a lot more for our health care dollars.

In what follows, I talk about the costs and benefits of medical advance, focusing on two areas where I have done the most work: improvements in cardiovascular disease care and care for low birth weight infants. In each case, I present evidence that the benefits justify the costs, and discuss what that implies for public policy.

I note at the outset that I shall be summarizing a large volume of research that I and others have done. I have compiled my views into a book, *Your Money or Your Life*, that the interested reader should consult (Cutler 2004).

The Big Debate: Is Medicine Worth It?

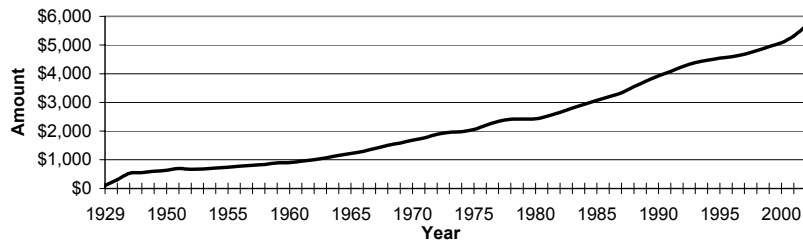
All told, the United States spends nearly 15 percent of GDP—one in seven dollars—on health care. That share is the highest in the world, and nearly twice what many European countries spend. We spend more on health care than the Chinese do on everything, including all the tea in China.

Lourie Memorial Lecture Policy Brief

In addition to being a high amount, medical spending is increasing rapidly. Figure 1 shows data on per capita spending on medical care over time, adjusted for inflation. The earliest good data we have date from 1929, when medical spending was somewhere around \$300 dollars per person, in today's dollars. Even in 1950, spending was only about \$600 per person. Today, it is over \$5,000 per person.

Other countries spend less on medical care than the U.S. does, but medical spending has increased nearly as rapidly. The growth of medical costs in Canada is nearly equal to that in the U.S., for example, even though the level of spending is about 40 percent lower.

Figure 1. Per Capita Health Care Expenditures, 1929-2002
(in 2004 dollars)



Sources: 1929-1959: U.S. Department of Health and Human Services, 1976, Table A.2; 1960-2002: Centers for Medicare and Medicaid Services, 2004, Table nhegdp02.cvs. Dollars converted to 2004 equivalent dollars using Federal Reserve Bank of Minneapolis CPI Inflation Calculator, available at <http://minneapolisfed.org/research/data/us/cal/>.

Conventional Wisdom

For some time, conventional wisdom has been that medical care spending is too high, and is increasing too rapidly. Most health care researchers share that view. Nearly a decade ago, demographer Samuel Preston gave a lecture at Syracuse University titled "American Longevity: Past, Present, and Future" (CPR Policy Brief No. 7/1996) that stands as a bastion in the field. Preston was reviewing the historical evidence on mortality reductions from 1800 until about 1950 or so. He discussed various explanations for why people have become healthier over time, concluding:

One, probably favored by most lay people, is that the advances are primarily a product of *Big Medicine*: doctors

David M. Cutler

and hospitals, drugs and therapies. This explanation is almost certainly wrong. (2)

Preston went on to mention the current situation, concluding that, for Medicare recipients at least, "...unequal access to Big Medicine has not been a critical factor in the health of the American population" (11).

This conclusion is reinforced in other ways as well. The U.S. spends about 5 cents more out of every dollar on medical care than Canada, and nearly 10 cents more than the United Kingdom, and yet health outcomes in those countries don't seem to be demonstrably worse (OECD 2003, Table 10). Other studies show the same in the United States: areas that spend substantially more on medical care have no better health outcomes than areas that spend less (Fisher et al. 2003a,b; Wennberg and Cooper 1999). And direct examination of the care that is received shows that perhaps 10 percent of the people receiving high-tech medical interventions do not meet clinical criteria for when those interventions are appropriate (Rand 1998). All of that argues for a low value of medical care.

When I was in Washington, D.C., working on the Clinton Health Plan, that was certainly the prevailing view. Indeed, the conventional wisdom went even further: not only was medical spending largely wasteful but it was damaging the economy. President Bill Clinton summarized this best in his address to the Joint Session of Congress in September 1993, when he was introducing his Health Security Act:

...[R]ampant medical inflation is eating away at our wages, our savings, our investment capital, and our public treasury. It undermines America's economy, competitiveness, confidence, and living standards....Our competitiveness, our whole economy, the integrity of the way the government works and, ultimately, our living standards depend upon our ability to achieve savings [in medical care costs] without harming the quality of health care. (Clinton 1993)

In the decade since the Clinton Health Plan, conventional wisdom has not changed greatly. The Republicans' plan for Medicare reform stresses the need to save money in the program. President Bush

Lourie Memorial Lecture Policy Brief

mentions the high cost of health care frequently (often blaming it on malpractice and trial lawyers). The headlines that greet annual spending data ('ominous trends', 'resurgent inflation') suggest that most reporters, analysts, and members of the public agree.

The Limitations of Conventional Wisdom

Before presenting a different view of the situation, let me offer a few observations about this combined evidence. One point to note is the distinction between the value of *some care* and the value of *medical care as a whole*. Just because some of the medical care provided is not worth it does not mean that all of the care provided is not worth it. It may be, for example, that the U.S. provides a lot more unnecessary care than Canada, but both the U.S. and Canada provide a lot of care that is very valuable. The studies discussed above are not designed to analyze how much of care is valuable; rather they demonstrate only that some care is not. In thinking about the future course of medical care and what we can afford, the value of spending as a whole is more important than knowing whether there is some waste.

In addition, a lot of the evidence about the changes in the medical system over time predate the growth of the modern medical system. Most of the demographic data on health improvement, for example, focus on the long time span of human health over the past few centuries, often up until about 1950. When we talk about the growth of the medical system, however, we are dealing with a relatively recent time historically—really the past 50 years. (see Muller, CPR Policy Brief 26/2003, 3-4). In 1950, medical care was still only 4 percent of the economy; today it's 14 percent of the economy. So what we want to evaluate is the medical system of the last half century.

That is the question I want to focus on: Has the era when big medicine has come to dominate the landscape of health been a good era for us or a bad one? What have we put into it and what have we received? The existing data are not up to answering this question.

Benefits Count, Too

After the Clinton plan was rejected (see Marilyn Moon, CPR Policy Brief No. 4/1995), I returned to Harvard University and asked myself how we really knew that we spent too much on medical care. What is

David M. Cutler

the evidence on which that is based? After a decade of research and contemplation, I'm finally willing to tell you my answer: I think the conventional reasoning is wrong.

To decide whether we spend too much on medical care—or any good—we need to weigh costs against benefits. Money that we spend on medicine can't be used for other priorities, and that is a real cost to society. But what do we get for our money? Are the benefits large enough to justify the costs?

Conceptually, there are two possible benefits of medical care that we need to account for:

- People on average live longer, higher quality lives because of their interaction with the medical system, and this longer life has value to them.
- Providing health care to people may allow them to work and earn more, contributing financially to others, or may lead to greater Social Security and other costs, taking away from the income of others. These financial consequences of medicine also need to be addressed.

The personal value of better health is non-monetary, the same way that having cleaner parks or less dirty air or safer streets is not expressed in money earned. In that sense, we are tempted not to measure it. But ignoring it is not right; one of the things that differentiates us from our ancestors a century or two ago is that life is much better now than it was then. The major challenges we face in evaluating the costs and benefits of medical care are measuring changes in health and attaching a dollar value to the benefits.

Trends in Health

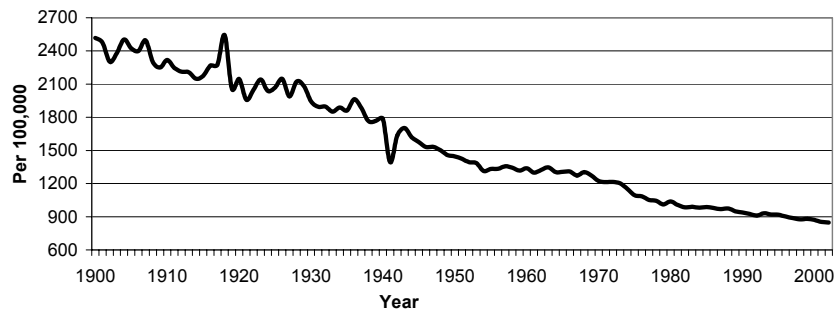
Health has many dimensions. Mortality is a clear one—what share of people are alive. Quality of life is also important, but more difficult to measure.

Figure 2 shows age-adjusted mortality in the United States in the twentieth century. Mortality has fallen substantially in the past hundred years. In 1900, more than 2,500 per 100,000 people died in a typical year (about 2.5 per 100). Today, mortality is two-thirds lower. The

Lourie Memorial Lecture Policy Brief

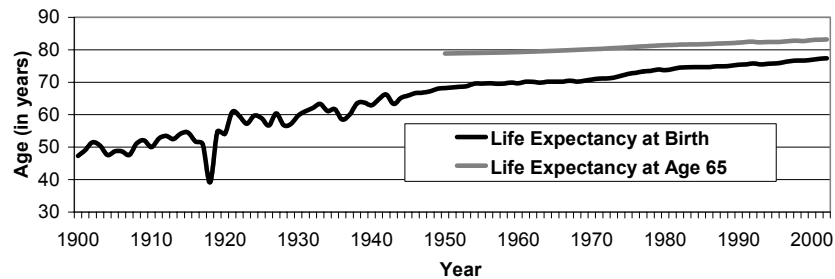
translation of this is substantially greater life expectancy at birth, shown in the bottom line in Figure 3. Life expectancy at birth has increased by about 30 years in the past century, and by about 10 years just in the past half-century.

Figure 2. Age-Adjusted Deaths, All Causes, 1900-2002



Source: For 1900-1998: NCHS (2003d); for 1999-2000: NCHS (2003b); for 2001-2002, Kochanek and Smith 2004.

Figure 3. Life Expectancy at Birth, 1900-2002, and at Age 65, 1950-2002



Source: from birth: Arias (2002, Table 12); from age 65: NCHS (2003a, Table 27).

Looking backward, of course, life expectancy couldn't have been increasing this rapidly forever. Life expectancy at birth was estimated to be about 35 years in 1800, and 40,000 years before that it was probably about 25 years. So there's been a substantial increase in the rate at which we are getting healthier over time.

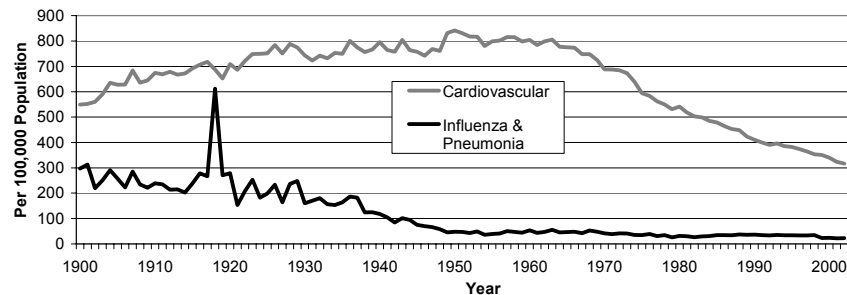
The trend of declining mortality looks pretty uniform in the twentieth century, but if you stare longer, it breaks apart into a few different pieces. There is a period of fairly steady decline from 1900 until the

David M. Cutler

1950s. There is then a period from the mid-1950s to the mid-1960s when mortality is no longer declining, after which it resumes its decline.

Disaggregating by cause shows the reason for this pattern. Figure 4 graphs mortality from pneumonia and influenza (representative of infectious diseases as a whole) and cardiovascular disease. The vast bulk of mortality reduction in the first half of the twentieth century—indeed, for the few centuries before that—is a result of fewer people dying of infectious diseases. This is true in the U.S. and other countries as well. Nutritional advance was important in this decline (McKeown 1976; Fogel 1994), as was ‘big’ public health (clean water, sanitation, and the like) and ‘little’ public health (hand washing, refrigeration, etc.). By the 1940s, penicillin and sulfa drugs crowned the achievement. Since 1950, there has been little reduction in infectious disease mortality; it has fallen about as low as we know how to drive it.

Figure 4. Age-Adjusted Death Rates for Cardiovascular Disease and Influenza/Pneumonia, 1900-2002



Source: For 1900-1998: NCHS (2003d); for 1999-2000: NCHS (2003b); for 2001-2002, Kochanek and Smith 2004.

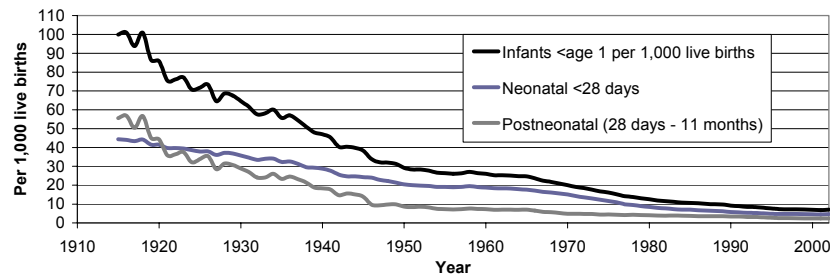
Through about 1960, mortality from everything else was relatively constant. Thus, around the mid-1950s and 1960s was an era when there was essentially no improvement in infectious disease mortality and no change in anything else either (see Figure 3 above). In 1969 biologist René Dubos gloomily predicted that “modern medicine has little to offer for the prevention or treatment of chronic and degenerative diseases that dominate the pathological picture of technologic societies” (328). Indeed, cardiovascular mortality, which was the leading cause of death, had been increasing over that same half-

Lourie Memorial Lecture Policy Brief

century. There was no evidence in any society of people reducing mortality from the chronic diseases of old age. It was the age of diminished expectations.

And then, very shortly thereafter, cardiovascular disease mortality started declining extremely rapidly. Since then it has declined by about two-thirds. Reduced cardiovascular disease mortality is the largest contributor to improved mortality in the past half century: it contributes over 5 years to the 8.8 year increase in life expectancy at birth. Continued reductions in infant mortality are second in importance, accounting for over another year (Figure 5). Together, these two factors explain about three-quarters of the increase in life expectancy since 1960.

Figure 5. Infant, Neonatal, and Postneonatal Mortality, 1915-2002



Source: For 1915-1993: NCHS (2002), Table 2-2; for 1995-2000, NCHS (2003a), Table 22; for 2001-2002: Kochanek and Smith (2004), Table 4.

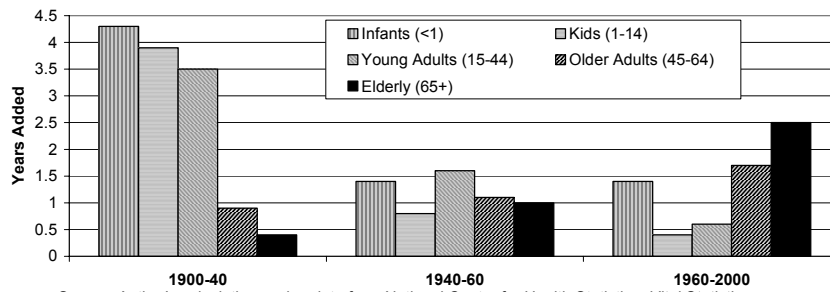
There is an important change in infant mortality, however, that is central to the story. In the first half of the century, most of the reductions in infant mortality were in the post-neonatal period (between one month and one year of life). Infants in this age range generally die of infectious diseases. Since 1960, however, reductions in neonatal mortality (death in the first month of life) have been more important. These deaths are much more a product of medical care delivered in the early post-birth period.

Figure 6 shows the transition in mortality reduction in a different way. The chart shows the age groups accounting for the increase in life expectancy over time. The height of each bar indicates how many years of life were added from mortality reductions at the indicated ages. Between 1900 and 1940, life expectancy grew by 13 years. Four years

of life were added because of the sharp decline in infant mortality; reductions in mortality among young children added another 4 years; and mortality reductions for young adults another 3.5 years. In all, 90 percent of all the improvement in mortality in that four-decade span was because mortality fell for people below age 45.

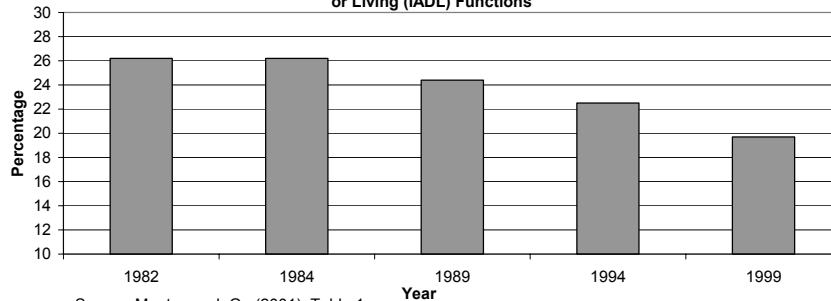
From 1960 up to the present, that trend has reversed. Now, nearly two-thirds of the life expectancy improvement (4.2 out of 6.6 years) is coming from people at older ages living longer. Life expectancy at age 65 has been rising recently, where historically it had not.

Figure 6. Change in Life Expectancy, by Age Group



Source: Author's calculations using data from National Center for Health Statistics, *Vital Statistics*, various years.

Figure 7. Percentage of Elderly with Impairments in Personal (ADL) or Living (IADL) Functions



Source: Manton and Gu (2001), Table 1.

Quality of Life

While I focus primarily on mortality, I would be remiss not to at least mention quality of life. Figure 7 shows that the share of the elderly with impairments in the ability to live independently has fallen by 1 to 1.5

Lourie Memorial Lecture Policy Brief

percent annually in the past two decades (Manton and Gu 2001). Indeed, Dora Costa (2000), using data from the Union Army pension program and other sources, estimates that the historical annual rate of decline in chronic disability from 1910 to 1985 was about 0.6 percent per year. People are living healthier, even as they are living longer.

How Important Is Medical Care?

The central question for my analysis is: How important is medical care for better health? Is the improvement in health a result of medical intervention or other factors? I consider cardiovascular disease and infant mortality first, and then come to more general conclusions.

Cardiovascular Disease: Roosevelt, Eisenhower, and Cheney

Cardiovascular disease is a natural condition to study since it has seen such major mortality reductions over time. There are any number of explanations for lower cardiovascular disease, ranging from medical advances like new surgical procedures and medications, to behavioral changes such as reduced smoking, to public health advances such as the lower fat campaign. Although decomposing these various factors is difficult, I have done so in the context of the book that I am summarizing.

My bottom line conclusion is that about two-thirds of reduced cardiovascular disease mortality is the result of medical interventions, and the remaining one-third is attributable to behavioral factors such as reduced smoking. Rather than going through the gory details, I'll illustrate the results with a couple of case studies.

Franklin Delano Roosevelt died of a stroke in 1945, brought on by hypertension, or high blood pressure. Roosevelt's blood pressure was far above anything you would see in the population today: a typical recording was perhaps 180/90 (Ferrell 1998, 45). Most people who have high blood pressure are asymptomatic and do not experience any impairment in their daily functioning. In Franklin Roosevelt's case, however, hypertension had a substantial impact on his daily functioning. He couldn't concentrate for long periods of time. In the last year of his life—mind you, he was fighting World War II and negotiating with Stalin at Yalta—he took off every Thursday, came into the office late in the morning, and left early in the afternoon. He took a

David M. Cutler

five-week vacation to Hawaii to talk with the Commander of the Pacific fleet, a conversation which lasted one hour. When Winston Churchill's doctor saw Roosevelt at Yalta he remarked, "I doubt, from what I have seen, whether he is fit for his job here" (Moran 1966, 223).

If you wonder why Roosevelt wasn't treated, the answer is that there were no good treatment options. The leading possibilities were sympathectomy, a dangerous surgery to cut the nerves to the arteries, and drugs that are very incapacitating. Today, we could control Roosevelt's hypertension for a few dollars a day and pretty much prevent his stroke. Lack of care was cheap, but it was also deadly.

Dwight David Eisenhower was President shortly after Roosevelt, from 1952 to 1960. In 1955 Dwight Eisenhower had a heart attack. Standard medical therapy at the time, if you look in the textbooks, was to keep the patient in bed, literally in bed, for six weeks, and then to gingerly transport the patient home, where he would remain in bed for six months. The theory at the time was that the heart attack didn't kill people; what killed them was the strain on the heart afterwards. So Eisenhower was kept in bed for six weeks. Of course, that therapy is not only ineffective, but it actually harms the patient.

In Eisenhower's day, it was also expected that a person who had a heart attack would never really resume a regular life, although that wasn't the case with Eisenhower, who actually ran for and won re-election after his heart attack. A very rare person in his time, he was able to survive and lead a good quality life (Lasby 1997).

Nowadays we would treat Eisenhower very differently. If you want to know how we would treat him, just ask **Dick Cheney**, because the current Vice President has had everything that you could have—some multiple times. To start, a person with a heart attack would get drugs that work to dissolve the clot blocking the coronary arteries. In addition, he would likely get a surgical technique to figure out the extent of the blockage, and maybe he'd have a balloon inserted and inflated to expand the blocked artery, with a wire mesh tube permanently installed to keep it open. Or he might have bypass surgery, with a major opening of the chest and a new blood flow created around the blockage.

Lourie Memorial Lecture Policy Brief

All of that technology has had a substantial impact on survival after a heart attack. Mortality in the the first three months after a heart attack, for example, has fallen by about 75 percent. That explains about a third of the overall mortality decline. Another third is a result of preventive medications that were not available to Roosevelt: anti-hypertensive and cholesterol-lowering pharmaceuticals. The remaining third is a result of behavioral and other interventions, including reduced smoking and dietary changes.

All of that technological advance was very expensive. The average 45-year-old will spend \$30,000 in present value on cardiovascular disease over the course of his or her remaining life. That figure includes many who spend nothing, averaged in with some who spend hundreds of thousands of dollars. But, based on the calculations described above, the average 45-year-old will live another 3 years because of the medical advance. So, here is the question in a nutshell: Is 3 additional years of life worth \$30,000?

What Is a Life Worth?

Economists have a not-very-distinguished history of determining the value of a life. They have tended to look at what a person will earn over their lifetime and attribute that value to the life itself. The first person to do this seems to have been Sir William Petty, an English economist who suggested in 1690 that the mass of mankind was worth 20 years purchase—that is, people are worth roughly what they’ll earn over 20 years. The amount Petty came up with, in today’s dollars, is about \$150. Courts today use a similar approach; in litigation, the value of health is determined by how much a person would have earned over their remaining lifetime.

Of course this is wrong, because what we care about most is not simply what we will earn. We want to enjoy life, and earnings are but a way to do that. The real question is how much people value the intrinsic quality of being alive.

Economists have estimated this value in a number of ways. Typically, they look to see how much people are willing to pay to avoid being in risky situations and use that to impute the value of a life. For example, are you willing to pay \$300 for an airbag in a car? Most people are. It turns out that an air bag will save the life of about 1 driver in 10,000,

David M. Cutler

which means that people willing to pay this amount are valuing life at about \$3 million per person. Think about that value as a conditional statement: How much are you willing to pay *now* so that in the event of an auto accident you'll be saved? That's not so different from medical care, where we want to decide whether we should pay more for insurance now so that it covers a valuable procedure we may need at some time in the future.

For a typical middle-aged person, valuing life at \$3 million translates into about \$75,000 to \$100,000 per year of additional longevity. That's the kind of number that gets used in the cost-effectiveness or quality assessment literature. A general range is about \$75,000 to \$150,000 per year. In my analysis I assume a value of \$100,000 per year.

Back to Cardiovascular Disease

With an approximate value of a life, we can estimate the benefits of medical advance for cardiovascular disease. Valuing the additional years at \$100,000 per year and discounting to age 45 yields a benefit of medical advance of \$120,000 per person in total.

Comparing this to the cost, the increase in medical spending on cardiovascular disease care seems well worth it. We spent \$30,000 per person and received \$120,000 in benefits per person. The rate of return is 4 to 1, or 300 percent. That is a phenomenal advance by any metric. To put it in perspective, a typical investment businesses consider might yield a return of 10 to 20 percent. We should be delighted by what we have been able to do.

Low Birth Weight Infants

I have undertaken a similar analysis for low birth weight infants. Again, the book I have written gives the details, so let me stick with the summary.

Once again, the costs of medical advance have been high. In 1950, little could be done for low birth weight infants. The first incubators had already been developed, but they were not well suited to very premature infants. Furthermore, there was little doctors could do to promote respiratory development, the leading cause of death among premature infants. When little can be done, little is spent. The average

Lourie Memorial Lecture Policy Brief

low birth weight infant used very little on medical care over what a normal birth weight infant would have spent.

Today, the same infant would use about \$70,000 of medical care over their remaining life beyond what a normal birth weight infant would use. Medical advance explains the increase. Low birth weight infants are whisked into very intensive (and expensive) neonatal care units, given artificial surfactant and other drugs to speed respiratory development, placed in specialized ventilators, and treated with countless other innovations.

The result, not surprisingly, has been a dramatic increase in survival. Mortality for low birth weight infants has fallen by three-quarters since 1950, from 5 deaths in 20 to 1 death in 20. The quality of those years is not perfect—some infants have severe developmental problems—but many are fine. Indeed, many infants who had problems in 1950 are normal, healthy children today, since the same innovations that improve survival at higher birth weights also prevent complications.

Once again, we can value this improvement in health quantitatively. Using the \$100,000 value of a year of life leads to a benefit of medical advance of \$350,000 per low birth weight infant. That is 5 times the increase in spending, or a 400 percent rate of return. As with cardiovascular disease, we spend much more caring for low birth weight infants than we used to, but it is worth it.

Adding It All Up

For both cardiovascular disease and low birth weight infants, technical advance has increased the amount that we spend on medical care. But in each case, the benefits of that advance have far exceeded the costs. We spend more, but we get even more in return.

How general is this statement? Is it true of the medical system as a whole? Without more analysis, I cannot answer that question yet. I did not choose cardiovascular disease and low birth weight infant care randomly; each is an area where mortality has fallen substantially. Thus, it is natural to suspect that the value of medical advance is particularly high for these cases.

David M. Cutler

While I cannot draw firm conclusions about the medical system as a whole, however, there is a strong conclusion I can make. The benefits that come *solely* from lower mortality for people with cardiovascular disease and for low birth weight infants—from these two conditions alone—have added over 3 years to life expectancy at birth. Valuing the additional years using the methodology above yields a present value of medical improvement of \$50,000 per person.

Now consider the *entire* increase in medical spending over time—for low birth weight infants, people with cardiovascular disease, and everything in between. The average person can expect to spend \$50,000 more on medical care today than a similar person would have spent in 1950. In other words, the benefits of medical advance for these two conditions alone are equal to the entire increase in medical costs in the past half century.

If the rest of medical care has any value at all—and it surely does—the increase in the scale of the medical system must be worth it. That is my primary conclusion: We spend more on medical care than we used to, but what we get is greater still.

Why We Value Health So Highly

Here's the way I make sense of it all. We are a fairly rich society. We can generally afford enough food, clothing, and shelter for all of us. What else do we want? What we want, when we're this wealthy, is to enjoy life more. One of the ways we do this is by living longer and higher quality lives. That's why the value of health is so high. And that's why spending more on medical care is worth it, even if the amount we spend is great.

I think that's why the "R" word is so hard to mention. You know, that nine-letter R word, *rationing*. Why are people more averse to rationing medical care than, say, rationing access to new clothes or new cars? Because the value of medical care is perceived to be so high. And it's that intrinsic value that's showing up here, that says "Even if we're spending \$50,000 more per person, it still may be a good deal." Just because we're spending a lot doesn't mean that what we're spending is excessive.

Lourie Memorial Lecture Policy Brief

Put another way, even if there is waste and we could do better than we have, what we do is actually quite valuable. We have developed a modern 'medical industrial complex' that is incredibly expensive, but also extremely productive.

Can This Continue?

Will this trend continue? Can we possibly let the medical system go on as it has? Many handwringers suggest that we cannot. I disagree. There are two parts to my thinking.

The first question is whether there will be continue to be valuable things to buy. That is, could we spend more in the future and continue to improve our health? I am neither a futurologist nor a geneticist. But it seems pretty clear that fundamental medical advance will enable us to continue to improve our lives, if we are willing to pay for it. The revolution in understanding the genome and genetic therapy promises to bring important new imaging devices, new types of medications, and new forms of treatment entirely. Cancer is a disease that we have yet to conquer, but it seems very amenable to genetic therapy. The same is true for countless other diseases, from Alzheimer's to diabetes.

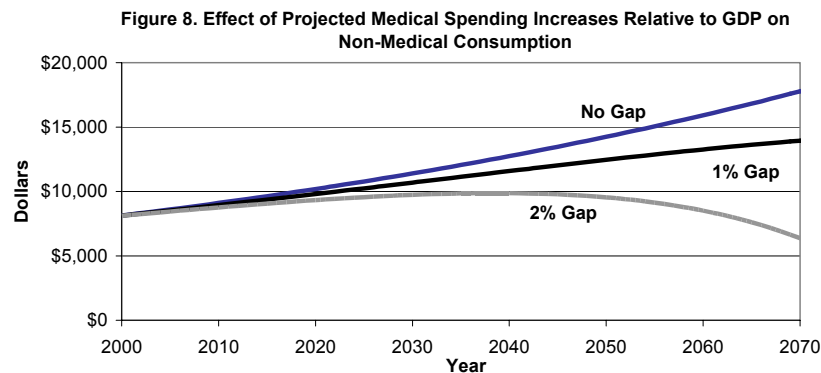
Economists always worry that we have plucked the low-hanging fruit; perhaps we have developed all the really valuable medical advances already, and there is little left that will extend life greatly. I don't think this model is correct. Even if the low-hanging fruit has been found, biomedical advance is building us ladders that will enable us to reach the sweet fruit at the very top of the tree.

The second question is: Can we afford to spend more in the future than we do now? Once again, I think we can. Economists' favorite food is the pie. We talk about medical care being 14 percent of the economic pie. If we double the medical care part of the pie—all of a sudden, medical care goes from being 1 slice out of 7 to 2 slices out of 7—we have to cut back on other goods and services by a significant amount. That's pretty scary.

But the pie is not the right analogy. It is wrong because we're getting richer over time; in essence, the pie is growing bigger. In that sense, one would do better to imagine the economy as a chocolate chip

cookie. As it bakes, it expands. Now imagine that the cookie is getting bigger. We take a bigger slice for medical care, but the rest of the cookie could still be growing, if the whole cookie is getting bigger at a fast enough rate.

That is what current forecasts suggest. I won't go through it in great detail, but Figure 8 gives a hint. The most common assumption analysts make is that medical care costs will increase 1 percent per year more rapidly than will the overall economy. Under this scenario, the amount of money available for non-medical consumption will continue to increase, albeit at a lower rate than if medical care did not expand. If these forecasts are correct, we will continue to have more of non-medical stuff, just not as rapid an increase in it.



Source: Chernew, Hirth, and Cutler (2003), Exhibit 4.

So that's what the tradeoff will involve, for at least most of the next 50 to 75 years: more medical care, and less rapid increases in other consumption, but not an absolute decline. Everyone has their own definition of affordability, but to me this seems very much affordable.

Why the Worry?

If this is the situation we face, why does it provoke such concern? Why are increases in computer spending seen as good, but increases in medical spending regarded with such gloom? To a great extent, I think the concern about health costs is a result of displaced anxiety. We

Lourie Memorial Lecture Policy Brief

worry about medical costs because of the adverse—but avoidable—consequences they bring.

To afford increased medical spending over time, government revenue will have to increase. If government revenue is kept constant, increases in public medical costs will crowd out other valuable services—education, public parks, and the like. This would certainly be a bad idea.

We have a natural tendency to resist increases in government spending. But it has always struck me as silly that if the economy expands—if the cookie is increasing in size—the sliver that we give to the government should necessarily stay the same. Like it or not, government spending has increased enormously in the past century. In 1900, government spending was 5 percent of the economy. Today, it is one-third. The increase is a result of our growing demand for government, a government that insures full employment, fights wars, provides for the elderly and people with low income, and pays for medical care. If we want that latter commitment to expand, we will have to make the resources available.

Concern about the poor is a second, related concern. While overall incomes are increasing, incomes of the poor are not. Rising health costs are thus a particular burden for people at the lower end of the income distribution. If we want to have medical spending increase and not have society divided even further into the haves and the have nots, we're clearly going to have to redistribute more from the wealthy to the less wealthy. This is related to the previous concern: the job of redistribution inherently falls to the government. We have to allow for this as well.

Finally, there are those who oppose medical spending increases because of concern that the increase in spending is not valuable. To be sure, there is a lot of waste in medical care, but there is great value as well. My analysis shows that, as a whole, the value far outweighs the waste.

Of course, that does not mean we should ignore the waste. Any time we spend more money on something than is needed, that is bad. But we should not lose sight of the fact that our primary goal—to improve

David M. Cutler

health when it is justified economically—is being met in the current medical system.

Summary and Conclusion

Over time, we have witnessed the medicalization of health. Medical care has replaced public health and nutritional advance as the major contributors to health improvement. This involves much more spending on medicine than used to be the case, but also significant benefits. We are rich enough to afford our desire for better health, and satisfied enough with other services to want to spend our money on medicine.

The tendency to misjudge medical spending is why health care reform so frequently fails. A central tenet of virtually all health reforms is that we cannot afford what we are paying now—that we have to cut back. When you couple that with wanting to insure everybody, health reform becomes a plan to cut back on care to middle and higher income people, and to transfer the resources to lower income people. Americans don't like redistribution much, especially when it means giving up something they value dearly. When I was in Washington a friend of mine said that there were two possible headlines, one good and the other bad. The good headline was "Poor to Get Same Health Care as Rich." The bad headline was "Rich to Get Same Health Care as Poor." Any time you suggest something like the second headline, people are going to back away.

To make progress, we have to turn the conversation away from saving money and cutting back, and toward increasing the value of care. How can we provide more of the services that are valuable and avoid services that are less valuable? How can we cut fat and build muscle? Eliminating care of low value saves money, but adding care of high value costs more. A health system truly focused on value could spend more than the current one. But there is nothing wrong with that.

Lourie Memorial Lecture Policy Brief

For More Information

- Arias, Elizabeth. 2002. "United States Life Tables, 2000." *National Vital Statistics Reports* 51 (3) (December 19) http://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_03.pdf.
- Blendon, Robert J., Cathy Schoen, Catherine DesRoches, Robin Osborn, and Kinga Zapert. 2003. "Common Concerns Amid Diverse Systems: Health Care Experiences In Five Countries." *Health Affairs* 22 (3) (May-June): 106-121.
- Centers for Medicare and Medicaid Services. 2004. "Table nhegdp02.cvs. Historical National Health Expenditures Aggregate, per Capita, Percent Distribution, and Annual Percent Change by Source of Funds: Calendar Years 1960-2002." Baltimore, MD: CMS. <http://www.cms.hhs.gov/statistics/nhe/>.
- Centers for Medicare and Medicaid Services. 2004. "National Health Care Expenditures, 2002." Centers for Medicare and Medicaid Services. <http://www.hcfa.gov/stats/nhe-oact/>.
- Clinton, William Jefferson. 1993. "Address of the President to the Joint Session of Congress: Health Security for All Americans." Washington, DC: White House, Office of the Press Secretary. September 22. <http://www.ibiblio.org/nhs/supporting/remarks-final.html>.
- Cutler, David M., and Elizabeth Richardson. 1997. "Measuring the Health of the U.S. Population." *Brookings Papers on Economic Activity. Microeconomics* 1997: 217-282.
- Cutler, David M., and Mark McClellan. 2001. "Is Technological Change in Medical Care Worth It?" *Health Affairs*, 20(5), September/October, 11-29
- Cutler, David M., Mark McClellan, Joseph P. Newhouse, and Dahlia Remler. 1998. "Are Medical Prices Declining? Evidence from Heart Attack Treatments." *Quarterly Journal of Economics* 113 (4) (November): 991-1024.

David M. Cutler

- Cutler, David M., and Elizabeth Richardson. 1999. "Your Money and Your Life: The Value of Health and What Affects It." In *Frontiers in Health Policy Research*, edited by Alan M. Garber. Cambridge, MA: MIT Press, 99-132.
- Cutler, David M. 2004. *Your Money or Your Life: Strong Medicine for America's Health Care System*. Oxford, UK, and New York: Oxford University Press.
- Dartmouth Atlas Project. 2004. "The Dartmouth Atlas of Health Care Web Site." <http://www.dartmouthatlas.org>.
- Dubos, René J. 1969. "The Diseases of Civilization." *Milbank Memorial Fund Quarterly* 47: 327-339.
- Federal Reserve Bank of Minneapolis. 2004. "What Is a Dollar Worth? CPI Inflation Calculator." Federal Reserve Bank of Minneapolis. <http://minneapolisfed.org/research/data/us/calc/>.
- Ferrell, Robert H. 1998. *The Dying President: Franklin D. Roosevelt, 1944-1945*. Columbia, Missouri: University of Missouri Press.
- Fisher, Elliott S., David E. Wennberg, Thérèse A. Stukel, Daniel J. Gottlieb, F. L. Lucas, and Étoile Pinder. 2003a. "The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care." *Annals of Internal Medicine* 138 (4) (February 18): 273-287. <http://www.annals.org/cgi/reprint/138/4/273.pdf>.
- Fisher, Elliott S., David E. Wennberg, Thérèse A. Stukel, Daniel J. Gottlieb, F. L. Lucas, and Étoile Pinder. 2003b. "The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care." *Annals of Internal Medicine* 138 (4) (February 18): 288-298. <http://www.annals.org/cgi/reprint/138/4/288.pdf>.
- Fogel, Robert W. 1994. "Economic Growth, Population Theory, and Physiology: The Bearing of Long-Term Processes on the Making of Economic Policy." *American Economic Review* 84 (3) (June): 369-395.
- Kochanek, Kenneth D., and Betty L. Smith. 2004. "Deaths: Preliminary Data for 2002." *National Vital Statistics Reports* 52 (13)

Lourie Memorial Lecture Policy Brief

(February 11). http://www.cdc.gov/nchs/data/nvsr/nvsr52/nvsr52_13.pdf.

Lasby, Clarence G. 1997. *Eisenhower's Heart Attack: How Ike Beat Heart Disease and Held On to the Presidency*. Lawrence, Kansas: University Press of Kansas.

Manton, Kenneth G., and Xi Liang Gu. 2001. "Changes in the Prevalence of Chronic Disability in the United States Black and Nonblack Population Above Age 65 from 1982 to 1999." *Proceedings of the National Academies of Science: Social Sciences* 98 (11) (May 22): 6354-6359. <http://www.pnas.org/cgi/reprint/98/11/6354.pdf>.

McKeown, Thomas. 1976. *The Modern Rise of Population*. New York: Academic Press.

Moon, Marilyn. 1995. "The Rhetoric and the Reality of Health Care Reform Legislation." CPR Policy Brief No. 4. Sixth Annual Herbert Lourie Memorial Lecture on Health Care Policy. Syracuse, NY: Center for Policy Research, Syracuse University. <http://www-cpr.maxwell.syr.edu/pbriefs/pbriefs/pb4.pdf>.

Moran, Charles McMoran Wilson. 1966. *Winston Churchill: The Struggle for Survival, 1940-1965*. London: Constable.

Muller, Ralph W. 2003. "The Changing American Hospital in the Twenty-first Century." CPR Policy Brief No. 26. Syracuse, NY: Center for Policy Research, Syracuse University. April. <http://www-cpr.maxwell.syr.edu/pbriefs/pb26.pdf>.

National Center for Health Statistics. 2002. *Vital Statistics of the United States 1993*. DHHS Publication No. (PHS) 2002-1101. II - Mortality, Part A. Hyattsville, MD: National Center for Health Statistics. http://www.cdc.gov/nchs/data/vsus/mort93_2a.pdf.

National Center for Health Statistics. 2003a. *Health, United States, 2003*. Hyattsville, MD: NCHS. <http://www.cdc.gov/nchs/products/pubs/pubd/hs/03hustop.htm>.

David M. Cutler

- National Center for Health Statistics. 2003b. "GMWK293 Age-Adjusted Death Rates for 113 Selected Causes, United States, 1999-2000." NCHS. Page reviewed on April 16, 2003. http://www.cdc.gov/nchs/datawh/statab/unpubd/mortabs/gmwk293_10.htm.
- National Center for Health Statistics. 2003c. "Unpublished Historical Data: Death Rates, Age-Specific Death Rates, Age-Adjusted Death Rates, Life Expectancy, Leading Causes of Death." National Center for Health Statistics. Page reviewed on August 15, 2003. <http://www.cdc.gov/nchs/datawh/statab/unpubd/mortabs/hist-tabs.htm>.
- National Center for Health Statistics. 2003d. "HIST293 Age-Adjusted Death Rates for Selected Causes, Death Registration States, 1900-32, and United States, 1933-98." NCHS. Page reviewed on April 16, 2003. <http://www.cdc.gov/nchs/datawh/statab/unpubd/mortabs/hist293.htm>.
- Newhouse, Joseph P. 1992. "Medical Care Costs: How Much Welfare Loss?" *Journal of Economic Perspectives* 6 (3) (Summer): 3-21.
- Nordhaus, William D. 2003. "The Health of Nations: The Contribution of Improved Health to Living Standards." Chapter 2 in *Measuring the Gains from Medical Research: An Economic Approach*, edited by Kevin M. Topel Robert H. Murphy. Chicago: University of Chicago Press.
- Organization for Economic Cooperation and Development. 2003. *OECD Health Data 2003*. Paris: OECD. Table 10. <http://www.oecd.org/dataoecd/1/31/2957323.xls>.
- Petty, Sir William. 1690. *Political Arithmetick*. Third edition. Prepared as an e-text by Rod Hay and posted at the Archive for the History of Economic Thought, McMaster University, Canada, April 1, 1998. <http://www.marxists.org/reference/subject/economics/petty/index.htm#index>.
- Preston, Samuel H. 1996. "American Longevity: Past, Present, and Future." Center for Policy Research, Policy Brief No. 7/1996.

Lourie Memorial Lecture Policy Brief

Syracuse, NY: Syracuse University. <http://www-cpr.maxwell.syr.edu/pbriefs/pb7.pdf>.

- RAND Corporation. 1998. "Assessing the Appropriateness of Care: How Much Is Too Much?" Research Brief 4522. Santa Monica, CA: RAND Health. <http://www.rand.org/publications/RB/RB4522/>.
- Skinner, Jonathan, Elliott Fisher, and John E. Wennberg. 2001. "The Efficiency of Medicare." NBER Working Paper No. 8395. Cambridge, MA: National Bureau of Economic Research. July.
- Tolley, George S., Donald S. Kenkel, and Robert G. Fabian (editors). 1994. *Valuing Health for Policy: An Economic Approach*. Chicago: University of Chicago Press.
- U.S. Census Bureau. 1976. *The Statistical History of the United States from Colonial Times to the Present [1970]*. With an Introduction and User's Guide by Ben J. Wattenberg. New York: Basic Books.
- U.S. Census Bureau. 2004. *2003 Statistical Abstract of the United States*. Washington, DC: Government Printing Office. <http://www.census.gov/prod/www/statistical-abstract-03.html>.
- U.S. Department of Health and Human Services [formerly DHEW]. 1976. *Health United States, 1975*. DHEW Publication No. (HRA) 76-1232. Washington, DC: Government Printing Office. <http://www.cdc.gov/nchs/data/hs/hs75acc.pdf>.
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. 2004. *Health, United States, 2003*. <http://www.cdc.gov/nchs/hs.htm>.
- Viscusi, W. Kip, "The Value of Risks to Life and Health", 1993, *Journal of Economic Literature*, 31, December, 1912-1946.
- Wennberg, John E., and Megan McAndrew Cooper (editors). 1999. *The Quality of Medical Care in the United States: A Report on the Medicare Program. The Dartmouth Atlas of Health Care 1999*. Hanover, NH: Dartmouth Medical School and American

David M. Cutler

Hospital Association. <http://www.dartmouthatlas.org/default.php>.

Wennberg, John E., Elliott S. Fisher, and Jonathan S. Skinner. 2002. "Geography and the Debate over Medicare Reform." *Health Affairs* (February 13): W96-W114.