
Increased Spending On Health Care: How Much Can The United States Afford?

It remains to be seen whether U.S. consumers will accept the growing percentage of income growth devoted to health care that is forecasted over the next several decades.

by **Michael E. Chernew, Richard A. Hirth, and David M. Cutler**

PROLOGUE: The question of affordability, be it at the micro level of the individual household or the macro level of state and federal governments, is often a subject of consuming interest because resources are far more scarce than demands for their use. During a period when health care spending continues to soar even in a sour economy, this question becomes all the more important. And, of course, the views of any particular stakeholders are overwhelmingly influenced by their role in the system. In this paper three economists bring new thinking to the subject of affordability and come up with an answer that may well surprise some readers. Economists Michael Chernew, Richard Hirth, and David Cutler step back from all of the expressed concern over escalating costs and examine how these increases relate to overall spending. Using the Medicare Technical Advisory Panel's definition of *affordability* and making a couple of critical assumptions, they plot a trajectory for increased health spending out to 2075. They conclude that although we may not want to spend more on health care, we can afford to do so without reducing overall non-health care spending. Readers may disagree about their assumptions but may appreciate a fresh look at the health care "guns versus butter" debate.

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ABSTRACT: Perceptions of whether health care cost growth is affordable contribute greatly to pressures for health system reform. In this paper we develop a framework for thinking about affordability, concluding that a one-percentage-point gap between real per capita growth in health care costs and growth in GDP would be affordable through 2075. A two-percentage-point gap would only be affordable through 2039. In either case, the share of income growth devoted to health care would exceed historical norms. The value of care, which determines willingness to pay, and distributional issues are more important than our ability as a society to pay for care.

THE RISING SHARE of U.S. gross domestic product (GDP) devoted to health care has been well documented and often lamented. Growth in health care spending appears to have recently accelerated after a slowdown in the mid- and late 1990s. In fact, for most of the post-World War II period, inflation-adjusted health care costs rose at a much faster rate than did GDP. To illustrate, between 1945 and 1998 the growth rate in real per capita national health care spending averaged 4.1 percent, compared with a 1.5 percent increase in GDP. Moreover, for every ten-year period between 1945 and 1998, spending on health care grew at a rate faster than that of income. Although some increase in health spending would be expected solely from the aging of the U.S. population, evidence suggests that historically, changing demographics have accounted for only a small fraction of the gap between the growth of real health care spending and GDP.¹

■ **The CMS's new methodology.** Recently, the Office of the Actuary, Centers for Medicare and Medicaid Services (CMS), altered its methodology for forecasting long-term health care cost growth upward to assume that over the long run, inflation- and demographic-adjusted per capita health care costs would grow one percentage point faster than inflation-adjusted per capita GDP.² This new assumption implies that after the projected change in population demographics is accounted for, health care spending will consume 38 percent of GDP by 2075, a figure some might find alarming and unaffordable. In fact, the previous CMS forecasting methodology assumed no gap between health care cost growth and GDP growth in the long run, in part because it was perceived that such a gap could not be sustained by the economy and would therefore not occur.

■ **Reform and affordability.** Perceptions of whether such health care cost growth is affordable contribute greatly to pressures to reform the health care system. They influence pressure on providers to accept reductions in reimbursements and to alter practice styles. Yet to date there has been little discussion or analysis about what rate of health care spending growth is affordable or even about how the concept of *affordability* might be defined.

Health care costs and cost growth have primarily been discussed via cross-sectional comparisons with other countries at a point in time or via comparisons of the percentage change in health care spending relative to that of real (inflation-adjusted) national income. We believe that these traditional methods are not

well suited to yielding insights about how much we, as a nation, can afford to spend on health care and how much we are willing to spend. Therefore, in this study we present a framework for thinking about affordability and ultimately suggest that under the current CMS assumption about long-term health care cost growth, health care costs will be affordable through 2075.

■ **Value of health care.** The central message of this work is that discussions of health care financing must address the value of health care services. Strict thresholds of affordability imply that we could not consume certain services regardless of their value. Our belief is that within a reasonable range of projected health care spending growth, we can afford to spend more for health care if we place sufficient value on those services relative to forgone non-health care consumption.

Several subtleties of the argument should be mentioned at the onset. First, we take a broad perspective when discussing affordability, focusing on affordability at the level of the economy as a whole. We do not discuss the extent to which rising private health care costs are ultimately paid by employees, as the evidence suggests, or by employers.³ We also do not discuss in detail mechanisms for funding future spending growth.

Similarly, the distributional consequences of health care cost inflation are important and deserve greater attention than we devote to them here. Any statement about the ability of the economy to sustain any given rate of health care spending growth is not meant to imply that all consumers can afford such growth. Distributional issues will certainly be a central aspect of the political economy surrounding how society responds to rising health care costs. Yet these issues are more closely related to whether we are willing as a society to sustain rising health care costs and how care should be financed or subsidized, as opposed to whether we are able to sustain rising health care costs.

Finally, even if the economy is able to “afford” a given rate of spending growth, that rate may not be desirable. Certainly there exists wasteful spending in the health care system (that is, spending that does not result in health improvements or justify the associated reduction in consumption of non-health care goods and services such as housing, entertainment, and education). Although we may be able to afford wasteful spending, we should nevertheless strive to eliminate it. Increases in the efficiency of the health care system are valuable regardless of our ability to afford current or future levels of spending.

Framework

The concept of *affordability* is vague. Literally, a product is affordable if one is able to bear the cost. Yet how do we determine if the cost is bearable? Certainly, if the price of health care services were greater than one’s economic resources, then they would not be affordable. However, insurance may be affordable, even if health care services would otherwise not be, because the cost of the premium is proportional to the probability of illness.

How should we think of affordability of insurance in the case when health care costs do not exceed income? One approach would be to pick a minimum level of nonhealth spending. By definition we could “afford” the difference between national income and that minimum spending amount. What should the minimum level be? We could define the minimum based on the level of nonhealth spending observed at some point in the past. For example, in 1960 we spent much less on non-health care commodities than we do now. Would it be affordable to devote the same amount of spending to non-health care products as we did in 1960 and devote the rest to health care? Whether we would want to do this depends on the effectiveness of care and the relative desirability of non-health care goods and services, but it might not be unreasonable to say we could afford to if we wanted to.

A second, more conservative approach asks what share of the increase in income over time can we afford to spend on health care. If we spent 100 percent of the inflation-adjusted increase in income each year on health care, we would still have the same amount to spend on non-health care products as we do now. If in any given year we spent less than 100 percent of our increase in income on health care, so that nonhealth spending increased, the minimum amount of nonhealth spending would be assumed to rise in future years. Using this definition, there would never be a downward trend in nonhealth spending.

Regardless of which approach one takes, the absolute amount of money the United States could afford to spend on health care (or health insurance) would obviously rise with income (and wealth). Moreover, the percentage of income that could be devoted to health care, without reducing spending on other products, would also rise with income because the increase in income allows spending on all products to rise even if most of the increase is devoted to health care. This implies that as our society gets richer, we can spend a greater absolute amount, and a greater share of income, on health care.

A recent Medicare Technical Review panel employed the second approach to defining affordability—that there would never be a downward trend in nonhealth spending—and we adopt this definition. Reasonable people may prefer alternate definitions, and we believe that a discussion of different concepts would be useful. Yet in the meantime, we believe that this is a conservative definition because it defines minimum nonhealth spending based on observed consumption patterns as opposed to some theoretical minimum acceptable consumption.

Some may argue that we have become accustomed to, and demand, rising nonhealth spending, and therefore we should not consider spending 100 percent of our increase in income each year on health care. We recognize that devoting 100 percent of increased income to health care would be outside of historical norms, and we discuss this below. Yet we believe that greater nonhealth spending is an issue of desirability, not affordability. By definition, we can bear the level of nonhealth spending we currently enjoy. Many societies exist with a lot less.

Methods

We simulate the impact of different rates of health care cost growth on non-health care spending, computing the rate of change and the fraction of aggregate income growth devoted to non-health care goods and services. We assume that real GDP per capita grows according to the Medicare trustees' assumptions (1.2 percent per year).

Health care spending growth reflects overall GDP growth, the excess rates of health care spending growth above overall GDP growth, plus an adjustment for changing demographics based on data from the CMS.⁶ Spending on goods and services outside of the health sector is the difference between GDP and health care spending. We then compute the average rate of growth in nonhealth spending and the share of income growth devoted to health care spending, following the methods of George Kowalczyk and colleagues.⁷

As a sensitivity analysis, we assume that investment spending grows at the same rate as GDP in order to support rising GDP. We assume an investment share of 18 percent of GDP. This is at the high end of the historical share of GDP devoted to investment. With this assumption, health care spending growth will be less affordable because increases in health care spending would have to come from the noninvestment portion of GDP.

Results

We start by examining trends in the growth of health care and non-health care spending from 1960 to 1999 (Exhibit 1). Despite rapidly growing real (inflation-adjusted) health care expenditures, both in absolute terms and as a percentage of GDP, income growth has been sufficient to allow substantial growth in non-health care spending as well.

This is a message that can easily be lost when examining time trends in the percentage of GDP devoted to health care. Such a measure masks the overall increase

EXHIBIT 1
U.S. Health Care And Non-Health Care Spending, With All Values Adjusted To 1996 U.S. Dollars, Selected Years 1960–1999

	1960	1970	1980	1990	1999
(1) Health care spending as percent of GDP ^a	5.1%	7.0%	8.8%	12.0%	13.1%
(2) Per capita GDP ^a	\$12,764	\$17,022	\$21,271	\$26,388	\$31,962
(3) Per capita health care spending ^a	646	1,197	1,870	3,165	4,192
(4) Per capita spending on all items other than health care ^b	12,118	15,825	19,401	23,223	27,770

SOURCES: See below.

NOTE: GDP is gross domestic product.

^a Authors' tabulations based on data from U.S. Bureau of the Census, *Statistical Abstract of the United States, 2001*, Table 640; and Centers for Medicare and Medicaid Services, www.cms.hhs.gov/STATISTICS/NHE/historical/nhegdp01.zip.

^b Authors' tabulations based on Rows (2) and (3). Row (2)–Row (3) may not equal Row (4) because of rounding.

in GDP over time. In fact, in each decade a relatively small share of the increase in inflation-adjusted income was devoted to health care (Exhibit 2). For example, in the 1980s (the decade that saw the highest share of income growth spent on health care), real health care spending per capita rose by nearly 70 percent, but this growth consumed only about one-quarter of the increase in real income per capita. That is, the substantial growth in health spending during the 1980s did not prevent three-quarters of real income growth from being spent on goods other than health care.

■ **Spending growth and GDP.** The reason health expenditures could rise so much faster than GDP while still consuming only a relatively small fraction of real income growth is that health care has consumed a relatively small share of GDP throughout the postwar period. Because of the relatively low base share, rapid increases relative to GDP do not necessitate a drop in non-health care spending, provided that overall real income is rising by at least a moderate rate. Yet as the share of GDP devoted to health care rises, greater sacrifices will have to be made if the rate of growth in inflation-adjusted health care spending exceeds inflation-adjusted GDP growth.

■ **Two spending-growth scenarios.** Exhibit 3 illustrates the impact of different rates of health care spending growth on nonhealth spending and on the share of income growth devoted to health care. The first set of results assumes that real per capita national health care spending rises one percentage point faster than real per capita GDP, before accounting for demographic changes. The second set assumes that the differential is two percentage points, again before adjusting for demographic changes.

One-percentage-point gap. Under the one-percentage-point-gap assumption, which matches what the technical review panel recommended and what was adopted by the Medicare trustees as the base scenario, spending on non-health care goods and services continues to rise throughout the seventy-five-year period. Even between 2050 and 2075, about 35 percent of the forecasted increase in per capita GDP remains available for increased spending on non-health care products. By 2075 health care represents 38 percent of GDP.

By our definition, the one-percentage-point gap between health care spending

EXHIBIT 2
Percentage Real Change In Health Spending And Percentage Increase In Real Income Devoted To Health Care, 1960–1999

	1960–1970	1970–1980	1980–1990	1990–1999 (est.)
Percent real increase in per capita health care expenditures	85.2%	56.3%	69.2%	32.5%
Percent of real increase in per capita income devoted to health care	12.9	15.8	25.3	18.4

SOURCE: Authors' tabulations based on Exhibit 1.

EXHIBIT 3
Percentage Real Change In Health Spending And Percentage Increase In Real Income Devoted To Health Care, 1999–2075

Differential between real per capita GDP growth and health care spending growth	1999–2010	2010–2050	2050–2075	1999–2075
One percentage point				
Average annual percent increase in inflation-adjusted non-health care spending per capita	1.0%	0.8%	0.6%	0.8%
Percent of real increase in per capita income devoted to health care	30.9	45.5	66.3	54.8
Two percentage points				
Average annual percent increase in inflation-adjusted non-health care spending per capita	0.8	0.2	-2.1	-0.7
Percent of real increase in per capita income devoted to health care	44.9	87.8	165.6	124.2

SOURCE: Authors' tabulations.

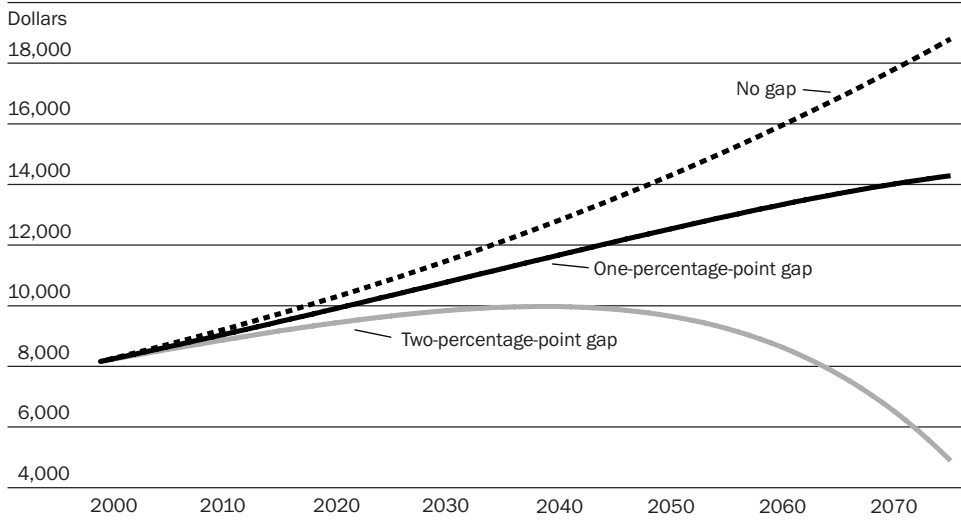
NOTE: GDP is gross domestic product.

and GDP would be affordable. Yet it should also be noted that even under this assumption, the share of income growth devoted to health care is quite high by historical norms. The highest percentage devoted to health care in any of the past four decades (25.3 percent in the 1980s) is lower than the projected percentage in the 1999–2010 period (30.9 percent).

Further, the projected percentage of income growth consumed by health spending continues to rise after 2010. This suggests that should health care costs continue to grow even at this seemingly conservative rate, it would represent a major break with historical norms in terms of the share of income growth devoted to health care. If we as a society are unwilling to accept having a large and growing fraction of income growth go to the health sector, even the seemingly conservative scenario could set the table for another perceived health care cost crisis and motivate policy action to control spending below forecasted levels.

Two-percentage-point gap. The two-percentage-point assumption, which is closer to the historical gap between health care spending growth and GDP growth, reveals a greater burden on the economy. Through 2039 spending on non-health care goods and services continues to grow, but at a much slower rate (Exhibit 4). About two-thirds of the increase in per capita income between 2010 and 2040 is devoted to health care.

The period between 2040 and 2075 exhibits a drop in spending on non-health care goods and services (which would not be affordable according to the definition adopted by the technical review panel). Under this scenario, per capita non-health spending drops to 1999 levels around 2062. By 2075 the rise in health care spending has reduced nonhealth spending to about 60 percent of current levels, which suggests that a two-percentage-point differential would not be sustainable by the second half of this century.

EXHIBIT 4**Spending On Nonhealth Goods And Services, In 1999 Dollars, Assuming Different Gaps Between Real Per Capita GDP And Health Care Cost Growth, 1999–2075**

SOURCE: Authors' tabulations.

NOTE: GDP is gross domestic product.

Discussion

Health care spending appears once again to be on an upward trajectory. The resulting concern has generated considerable debate. Our analysis suggests that the economy could sustain a differential of one percentage point between growth of real per capita health care costs and growth of GDP well into the future. However, we believe that it is important to distinguish between spending that we cannot afford to pay for and spending that we are unwilling to pay for—a difference between unsustainable and unwilling to sustain. The former approach emphasizes a need to curb spending, whereas the latter phrasing emphasizes the extent to which the extra spending can be justified by extra value received relative to the value of non-health care services that could otherwise be consumed.

■ **Limitations of the analysis.** The analysis that leads us to these conclusions has several limitations because of its aggregate nature. First, it is not based on a complete, detailed model of the economy. We make several simplifying assumptions such as assuming that the rate of GDP growth is not influenced by the rate of health care cost growth. A macroeconomic analysis using a more detailed economic model, conducted by the INFORUM group at the University of Maryland, indicates that there are two important issues to consider when examining the results from simplified models such as ours: financing and productivity.⁸

Financing and productivity. The sustainability of health care cost growth depends on the mechanism of financing the cost growth. The INFORUM model suggests that financing policies do exist that would allow the economy to sustain growth rates in health care spending of one percentage point above GDP through 2075.⁹

“Our challenge is to develop systems to reduce the amount and share of spending that exceeds our willingness to pay.”

These financing policies may entail raising taxes to support growing public spending on health care through programs such as Medicare and Medicaid.

The sustainability of health care cost growth also depends on the productivity of workers in the health care sector. Productivity in the health care sector has been notoriously hard to measure because of difficulty in measuring health care prices.¹⁰ The INFORUM model confirmed that reasonable assumptions regarding productivity could allow the economy to cope with health care spending growth of one percentage point above GDP.¹¹

Personal consumption missing. Second, our measure of affordability is based on trends in spending on all nonhealth goods and services. Some of that spending will reflect investment and government spending. A more detailed approach, which would require greater assumptions about investment and other government spending, would base affordability on the impact of growing health spending on personal consumption expenditures. Mark Freeland and colleagues, using slightly different scenarios in which the spending differential above GDP was phased in, estimate that a one-percentage-point gap between real per capita GDP and health care spending growth would translate into about a 52 percent share of personal consumption spending, but personal consumption spending would continue to grow throughout the seventy-five-year study window.¹² This is consistent with our sensitivity analysis, which held investment to 18 percent of GDP.¹³ Yet because investment and government spending may adjust in response to the growth in health care spending, we prefer the more aggregate measures.

Distributional impacts. Third, although the rise in health care costs may be affordable at the national level, it is important to recognize the distributional consequences of rising health care costs. What is affordable on average may not be affordable to all segments of society. Rising health care costs may contribute to falling rates of health insurance coverage and reductions in access to care.¹⁴ The appropriate response requires discussion about the ramifications of the lack of coverage and the merits of subsidizing insurance or care for various segments of the population. Discussion of society’s willingness to pay must recognize that, in part, this will reflect the willingness of some people to pay for care used by others.

■ **Value we can afford.** Despite these issues, our fundamental message is that medical services and new medical technologies create value that people desire. Our analysis suggests that at least for the foreseeable future, we can afford to purchase these services. In fact, in many cases, we should feel fortunate to have the opportunity to purchase these services.

However, simply because we can afford to pay more for health care services does not imply that we should reduce efforts to reduce wasteful practices in the

health care sector. Information technologies and management strategies will continue to play an important role in promoting more cost-effective and -efficient care. However, even as we strive to eliminate waste, some will remain. For example, a substantial part of health care cost growth is attributable to new technologies, and we should recognize that when new technologies are approved for coverage, unnecessary and cost-ineffective care inherently comes with valued care. We must accept a portion of that as part of the cost of the new technology and ask: Even with some level of unnecessary or even inappropriate use, does the value of the new technology justify its coverage?

IT REMAINS TO BE SEEN whether U.S. consumers will accept the growing percentage of real income growth devoted to health care that is forecasted even under conservative assumptions, or demand policy action to check the increases. One way in which our willingness to pay for new technologies, and hence cost growth, is now measured is by the threshold applied in cost-effectiveness analysis. Thresholds used to define cost-effective care (care we are willing to pay for), if enforced, essentially define the societal value of health. A recent review of the “value of life” literature suggests that traditional thresholds used to define cost-effective care (\$50,000–\$100,000 per quality-adjusted life year, or QALY) greatly underestimate the value of health.¹⁵ Discomfort with these thresholds, although they are admittedly seldom enforced, may suggest that as a society we are willing to sustain high and rising health care spending. Our challenge for the next several decades is to develop systems to reduce the amount and share of spending that is wasteful and that exceeds our willingness to pay.

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NOTES

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6. The demographic adjustment is 0.43 percentage points per year.
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10. J.E. Triplett, *Measuring the Prices of Medical Treatments* (Washington: Brookings Institution, 1999); and D.M. Cutler and E.R. Berndt, *Medical Care Productivity and Output* (Chicago: University of Chicago Press, 2002).
11. Technical Review Panel, *Review of the Assumptions and Methods*.
12. M. Freeland et al., "Issues on the Sustainability of Long-Term Health Spending Projections" (Paper prepared for the meetings of the Allied Social Sciences Association on Long-Term Cost Projections, Atlanta, Georgia, 4–6 January 2002).
13. We label that 18 percent as investment, but it could be any goods or services that must grow at the rate of GDP. Health care spending growth under the one-percentage-point-gap scenario remains affordable throughout the seventy-five-year window, although the nonhealth percentage increase in the non-health care, noninvestment GDP over the entire period drops from 0.8 percent to 0.6 percent, and the share of noninvestment GDP growth devoted to health care between 2050 and 2075 is about 81 percent, compared with 67 percent of total GDP growth devoted to health care. Under the two-percentage-point-gap scenario, health care spending would become unaffordable by 2030 instead of 2039, and nonhealth, noninvestment GDP would reach 1999 levels around 2051 instead of 2062.
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