A Decade Of Health Care Cost Growth Has Wiped Out Real Income Gains For An Average US Family

ABSTRACT Although a median-income US family of four with employer-based health insurance saw its gross annual income increase from $76,000 in 1999 to $99,000 in 2009 (in current dollars), this gain was largely offset by increased spending to pay for health care. Monthly spending increases occurred in the family’s health insurance premiums (from $490 to $1,115), out-of-pocket health spending (from $135 to $235), and taxes devoted to health care (from $345 to $440). After accounting for price increases in other goods and services, the family had $95 more in monthly income to devote to nonhealth spending in 2009 than in 1999. By contrast, had the rate of health care cost growth not exceeded general inflation, the family would have had $545 more per month instead of $95—a difference of nearly $5,400 per year. Even the $95 gain was artificial, because tax collections in 2009 were insufficient to cover actual increases in federal health spending. As a result, we argue, the burdens imposed on all payers by steadily rising health care spending can no longer be ignored.

In 2009 the US economy contracted, millions of Americans lost their jobs, and nearly seven million people lost employer-based health insurance. Nevertheless, health spending in 2009 continued to increase, as it has routinely year by year. In fact, US health spending grew by $96 billion in 2009, an increase of 4 percent from the previous year. This produced the largest one-year jump in health care spending as a percentage of gross domestic product (GDP) since the government began keeping records. That year also capped a ten-year period in which US health spending nearly doubled, from $1.3 trillion to $2.5 trillion. During this period, the percentage of GDP devoted to health care climbed from 13.8 percent to 17.6 percent, and per capita health spending grew from $4,600 to just over $8,000.

Although these figures are sobering, they don’t easily translate to real-world consequences for American families—or for any taxpaying, working adults, for that matter—because many health care costs are hidden from their view. In this article we describe the burden of health care costs borne by a typical US family in 1999 and 2009. We also project what family spending for other items would have been if health care cost growth had turned out differently.

Because no single data source can provide a complete picture of an average family’s finances and health care spending, our analysis relies on data from several sources and therefore lacks some precision. However, it fairly depicts the manner in which the changing health care cost burden has affected a representative family: substantially eroding what is left for them to spend on everything else.

Study Data And Methods
We use a median-income married couple with two children and employer-sponsored health
insurance—and describe them as a typical family—in our analysis. Married-couple families make up the majority of US family households. Among married couples with children, according to 2010 census data, the average family size is slightly more than four people. A family of four is also the most frequently reported family size according to census data. Employer coverage is the most common type of health insurance for married couples with children.

Most surveys on income ask respondents to report only cash income and exclude other forms of income such as food stamps; housing subsidies; home equity; and employer-provided benefits such as retirement contributions, child care benefits, and health insurance payments. For our analysis, we added employer-paid health insurance premium contributions to income to more accurately reflect changes in health care costs and earnings over the time period. We excluded other forms of noncash income. This accounting assumes that increased employer premium contributions took the place of wages, although not dollar-for-dollar because of the employer’s share of payroll taxes, which is treated as a net loss to the employee.

In the case of taxes devoted to health care, we used data on average tax rates for families of four that match the percentile of the income distribution of our typical family. This is higher than average—roughly the seventieth percentile of four-person families—because families with employer-sponsored insurance tend to have more overall income than families without it. The share of family taxes devoted to health care spending involves several implicit assumptions about, for example, the share of each category of taxes paid by the family (such as income and payroll tax), and the share of federal and state spending on health care ultimately derived from these revenue streams. Our analysis is complicated and our conclusions altered by the fact that the federal budget was roughly in balance in 1999 but ran a 40 percent deficit in 2009.

At the latter point, much of the federal government’s health spending appeared to be “free” to a typical family but was, in fact, carrying a price: It added to the national debt. To account for this phenomenon, we ran parallel analyses of 2009 spending in a hypothetical scenario. In that scenario, federal taxes were increased to fully cover the portion of the budget deficit attributable to federal health spending—that is, federal taxes for health care grew at the same pace as the increase in federal health care spending.

All dollar figures reported have not been adjusted for inflation, because price changes themselves are forefront in the analysis.

Study Results

Typical Family Health Care Spending in 1999

In 1999 the median income of a family of four with employer-sponsored health insurance was roughly $76,000 per year, before taxes. Federal income, Social Security, Medicare, and other taxes paid amounted to about $17,000, and state taxes (sales, property, and income) claimed another $7,000. This left the family with roughly $52,000 per year, or $4,300 per month, to spend on food, clothing, shelter, health care, and other priorities.

Then and now, health care costs affect a family’s bottom line in four major ways. Two are visible: the monthly premium the family pays for its share of the cost of private health insurance; and out-of-pocket spending for copayments, deductibles, prescription and over-the-counter medications, medical equipment, and—in many instances—vision and dental care.

The other two costs of health care are largely hidden: the employer’s share of the family’s premium for private health insurance, which in effect reduces employee wages and thus dampens family income; and the not inconsequential portion of the family’s federal and state tax burden that is devoted to public health programs, including Medicare, Medicaid, the military health system, the Department of Veterans Affairs, and the Indian Health Service. In some communities, families also devote a portion of their local taxes to public hospitals and clinics, but such costs were omitted from the current analysis.

In 1999 our family’s health insurance premium for a typical preferred provider organization plan, the most common form of employer-sponsored insurance then and now, was approximately $1,560 per year, or $130 per month. Because this amount was not taxed, the actual net cost to the family was approximately $85 per month. The employer’s contribution, also not taxed, in effect cost the family an additional $240 per month (because economists generally agree that employees bear the costs of employer contributions to health insurance through reduced wages). The family’s out-of-pocket spending for health care was roughly $135 per month.

In 1999 about 20 percent of federal spending went to Medicare, Medicaid, military health, and other health programs. This calculation implies that about 20 percent of the family’s annual federal tax bill, or about $290 per month, also went to health care. Using the same logic, about 12 percent of the family’s state taxes, or $55 per month, was applied to the state’s share of the Medicaid program and other state health programs.

Added together, the family devoted approximately $805 of its monthly income to health care
in 1999. These costs, along with total monthly income, are depicted in the first column of Exhibit 1.

**Typical Family Health Care Spending in 2009** During the next decade, the median income of a typical family of four with employer-sponsored health insurance grew 30 percent, to $99,000. This rise barely kept pace with inflation: Average prices grew 29 percent during this period. At the same time, the family’s monthly premium for private health insurance grew by 128 percent, from $490 to more than $1,115. The true cost to the family of these premiums, accounting for their tax deductibility, rose from $325 to $745.10

Out-of-pocket spending for health care reached $235 per month, an increase of 78 percent.16 This increase was largely due to higher levels of employee cost sharing. In 1999 the annual deductible associated with employer-sponsored health insurance was about $250. Ten years later, more than half of US families with a preferred provider organization plan carried a deductible of $1,000 or more. Those opting for a high-deductible or “consumer-directed” health plan faced deductibles of $1,000 or more per family member.17

Copays grew as well. In 1999 the average copay for a physician office visit was in the range of $5–$10; in 2009 it was in the range of $20–$30. In 1999 copays for emergency room visits were relatively rare. A decade later they were $10 or more.

In addition to higher monthly insurance premiums and out-of-pocket spending, the portion of the family’s monthly tax bill devoted to health care also grew—from $345 to roughly $440. This increase is misleadingly modest because it does not fully capture actual growth in government spending on health care: 140 percent at the federal level and 76 percent at the state level. As a result of tax cuts enacted early in the decade, and of intentional and recession-induced deficit spending at the decade’s end, the US government collected only $6 for every $10 it spent in 2009.13 But even with the tax breaks, our 2009 family’s monthly health care cost was $1,420, almost twice the $805 per month it spent a decade before (Exhibit 1).

**Impact on the Family’s Budget** What did this extra spending do to our prototypical family’s 2009 budget? Between 1999 and 2009 its before-tax monthly income grew by nearly $1,910, from $6,350 to $8,260 (Exhibit 2). About 43 percent of that increase ($820) went to higher payments for health care, including taxes devoted to state and federal health care programs.18 Another $125 went to taxes unrelated to health care, and $870 was absorbed by price increases for goods not associated with health care, leaving the family with an extra $95 per month to spend on other priorities.19

Unfortunately, even that modest amount of added buying power was somewhat artificial—aided by reduced tax rates insufficient to cover government spending. Had taxes grown proportionally to cover only the part of federal deficit spending devoted to health care, our typical family of four would have paid an additional $390 per month in taxes, leaving the family $295 in the red every month (see Exhibit 2). That is, the family would have had less—instead of slightly more—for spending on goods and services not related to health care.

**Alternative Scenarios** To understand the consequences of health care cost growth for the family’s bottom line, we reanalyzed its 2009 spending using two alternate scenarios.

### Exhibit 1

Components Of Monthly Health Spending For A Typical US Family Of Four, 1999 And 2009

<table>
<thead>
<tr>
<th>Category of spending</th>
<th>1999</th>
<th>2009</th>
<th>2009, health spending grows at GDP + 1%</th>
<th>2009, health spending grows with inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee premium contribution*</td>
<td>$85</td>
<td>$195</td>
<td>$140</td>
<td>$105</td>
</tr>
<tr>
<td>Employer premium contribution*</td>
<td>240</td>
<td>550</td>
<td>400</td>
<td>295</td>
</tr>
<tr>
<td>Out-of-pocket spending</td>
<td>135</td>
<td>235</td>
<td>220</td>
<td>165</td>
</tr>
<tr>
<td>Taxes devoted to health care</td>
<td>345</td>
<td>440</td>
<td>390</td>
<td>320</td>
</tr>
<tr>
<td>Total</td>
<td>805</td>
<td>1,420</td>
<td>1,150</td>
<td>885</td>
</tr>
<tr>
<td>Additional spending to cover health</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>portion of deficit (not included in total)</td>
<td></td>
<td>390</td>
<td>300</td>
<td>190</td>
</tr>
</tbody>
</table>

**Source** Authors’ calculations from many sources. **Notes** Dollar amounts reported are nominal amounts (not adjusted for inflation) in that year and are rounded to the nearest $5. OECD is Organization for Economic Cooperation and Development. GDP is gross domestic product. *Figures are adjusted to account for tax deductibility, for comparability with other health spending. In some parts of the text, premiums are reported as their full amounts, not after adjustment for tax deductibility—and therefore will not match the sum of the “contribution” figures reported in this exhibit.
In the first, health care costs rose 5.2 percent per year between 1999 and 2009, one percentage point faster than GDP growth (GDP plus 1 percent). In the second, health care costs rose at the same rate as other goods in the Consumer Price Index.\textsuperscript{19}

In the first scenario, health care costs as a share of the economy would have increased from 13.8 percent of GDP to 15.1 percent by 2009 (instead of the actual 17.6 percent). Had health spending in the United States followed that path, our family of four would have had $335 in additional monthly spending power in 1999 instead of $95—a net difference of $240 per month, or $2,880 per year. With federal deficit spending taken into account, the family’s outlook goes from a $295 monthly net loss to a $35 net gain.\textsuperscript{20}

In the second scenario, our family would have had $545 more per month to spend than it had in 1999—a difference of almost $5,400 per year compared with what actually occurred. (To arrive at the $5,400, we began with the additional $95 per month [from 1999 to 2009] a family would have to spend on other priorities in our default scenario: $95 \times 12 = $1,140 more per year. But if health care costs grew with inflation, the family would have had $6,540: $6,540 − $1,140 = $5,400.) After accounting for deficit spending, the family would still have $355 per month to spend on other priorities. These alternative scenarios are depicted in Exhibit 3.

**Is The Rising Burden Worth Bearing?**

Although moderating health care cost growth to the average rate of inflation would be extremely difficult to achieve at this juncture, it should be noted that limiting cost growth to GDP plus one percentage point was achieved in the United States from 1990 to 1999. This growth rate was largely the result of robust economic growth, the spread of managed care, and Medicare cuts enacted under the Balanced Budget Act of 1997.\textsuperscript{20} This growth rate is also the target rate for Medicare spending growth under the Affordable Care Act of 2010. In addition, it is the approximate growth rate experienced from 1999 to 2009 by Switzerland, Germany, and several other countries in the Organization for Economic Cooperation and Development.\textsuperscript{21}

What value did our typical US family receive from its higher rate of health care spending in the first years of the twenty-first century? Compared to a decade earlier, Americans in 2008 made about 10 percent more doctor and same-day hospital visits and the same number of overnight hospital visits. However, the intensity of their care during those visits, reflected in the use of diagnostic testing and other health care technologies, grew dramatically. For example, between 1999 and 2007 the number of scans using magnetic resonance imaging that were performed per 1,000 people grew 84 percent, and scans using computed tomography more than doubled, despite scant evidence of benefits from the increased use of imaging.\textsuperscript{21,22}

Did this greater intensity of service deliver better health? From 1999 to 2009 overall adult life expectancy in the United States grew by approximately one year—less than half the improvement achieved by the other thirty-four countries in the Organization for Economic Cooperation and Development (2.2 years on
At the same time, the evidence suggests that life expectancy of a significant segment of the population is actually declining or at best stagnating. What’s more, even though America’s rate of “amenable mortality”—that is, deaths from readily treatable conditions—fell by 5 percent from 1998 to 2003, amenable mortality rates in other high-income countries declined by 10–25 percent. The United States thus dropped to last place on the list of nineteen high-income countries in terms of amenable mortality in 2003, and it has lost even more ground since then.

To be sure, improvements in technology, new drugs, and new treatments have improved the lives of many. Additional health care spending has also created more jobs. According to the Bureau of Labor Statistics, between 1998 and 2008 the United States added 3.6 million jobs in the health care and social assistance sectors, while losing 4.1 million manufacturing jobs. As a result, those categories now surpass manufacturing in total employment. But at the same time that growth in health care added millions of jobs, it also added ten million people to the ranks of uninsured Americans, with potential adverse consequences for their health.

Controlling Health Care Spending: A Defining Challenge

In the absence of transformational changes in how US health care is delivered or priced, current trends in cost growth are likely to continue. In 2007 the nonpartisan Congressional Budget Office projected that if health care spending in the United States stays on its current course, it will constitute half of the nation’s GDP by 2082. Even if Americans don’t watch the numbers, they will find it increasingly difficult not to notice their other spending options being compromised.

The Affordable Care Act took a small step toward curbing health care cost growth by seeking to limit federal spending on health care to no more than one percentage point above GDP—although the proposed spending cap is not binding. Future cuts in Medicare and Medicaid spending would reduce federal and state government spending on health care. However, their overall impact on health care costs and growth is less certain, and their enactment may face political opposition.

America’s complex system of financing health care delivery has successfully spread out—and therefore masked—the day-to-day consequences of cost growth for many American families. Employer-based health insurance obscures premium increases because they tend to become mixed in with, and thus indistinguishable from, changes in wages or other forms of compensation. Paying for Medicare and Medicaid through general taxation makes it difficult to readily identify the effect of increases in health spending on tax payments—particularly when the country runs substantial deficits.

In this article we have quantified the impact of rising health care costs on the finances of a typical American family. Our analysis reveals that during the past decade, growth in health care spending sharply reduced the disposable income of Americans while increasing the federal deficit. Given the perilous state of the US economy, the fiscal burdens imposed on all payers by steadily rising health care costs can no longer be ignored. Controlling health care spending is a defining challenge of our times.
The authors acknowledge the help of Chapin White and Carole Roan Gresenz in reviewing earlier versions of the manuscript and Federico Girosi in providing some data and calculations from RAND’s COMPARE model.

NOTES


5 Although there is evidence that this assumption may not always hold, particularly for workers near the minimum wage, most economists assume that it is approximately correct on average. See, for example, Gruber J. Health insurance and the labor market. In: Newhouse J, Culyer AJ, editors. The handbook of health economics. Amsterdam: North-Holland; 2001. p. 645–706. The substitution is still not quite dollar-for-dollar, however, because of the employer contribution to payroll taxes.

6 A family of four with employer-based insurance earned roughly 20 percent more than a median family of four during this period according to authors’ calculations, ultimately derived from data from the Census Bureau’s Survey of Income and Program Participation.


11 Employer-sponsored insurance premiums are generally not taxable, so the after-tax cost to the family is lower than the total premium cost. The marginal tax rate for the family is assumed to be 33 percent, based on data from the Tax Policy Center (see Note 8).


16 Data were not available for 2009. We used 2008 data and inflated expenditures by the average 2008–09 rate of growth in overall medical expenditures.


18 The increase in health spending, $820, is different from the $615 increase from $805 in 1999 to $1,420 in 2009 implied in Exhibit 1. In this case, the change in health spending is being compared to the change in total income, which includes the employer premium contribution. Thus, the premium is not adjusted for non-taxability in either case.

19 The medical care component of the Consumer Price Index as calculated by the Bureau of Labor Statistics only includes out-of-pocket health care spending (and not the other sources of spending such as employer-paid health insurance premiums and government spending, as noted here). Therefore, a nonmedical Consumer Price Index was constructed for all goods but reweighting health care according to national health care expenditures as a percentage of GDP. If we had used the family’s own health care spending as a percentage of its income, the results would have been nearly identical.


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ABOUT THE AUTHORS: DAVID I. AUERBACH & ARTHUR L. KELLERMANN

David I. Auerbach is a health economist at RAND.

In this month’s Health Affairs, David Auerbach and Arthur Kellermann show that the rapidly escalating cost of health care between 1999 and 2009 wiped out all income gains for an average American family of four. Auerbach observes that much recent literature about health costs’ rising faster than general inflation has focused on “some abstract doomsday scenario when health care costs become unbearable to society or a large segment of it.” The authors chose to focus instead on the compromises that have already occurred but that are normally hidden from the average American’s view.

As a health economist at RAND with expertise in health insurance costs and coverage, Auerbach is currently engaged in a number of projects reflecting his interests in health care costs, the health care workforce, and the coverage effects of health reform. He also serves as an external adjunct faculty member of the Center for Interdisciplinary Health Workforce Studies at Vanderbilt University.

From 2003 to 2010, Auerbach was a principal analyst in the Health and Human Resources Division of the Congressional Budget Office (CBO). During that time, he was a lead developer of CBO’s health insurance coverage microsimulation model and a key member of the team that employed it to analyze proposed reforms. He holds a doctorate in health policy, with an economics concentration, from Harvard University, as well as two master’s degrees—one in technology and policy from the Massachusetts Institute of Technology and the other in chemistry from the University of California, Berkeley.

Arthur L. Kellermann is vice president and director of RAND Health.

Kellermann is vice president and director of RAND Health. Before joining RAND, he was a professor of emergency medicine and public health and associate dean for health policy at the Emory School of Medicine. Kellermann founded Emory’s Department of Emergency Medicine and served as its first chair from 1999 to 2007. As a Robert Wood Johnson Health Policy Fellow (2006–07), Kellermann worked for the professional staff of the Committee on Oversight and Government Reform in the House of Representatives. Elected to the Institute of Medicine in 1999, Kellermann received his master of public health degree from the University of Washington and his medical degree from Emory University.