The Unindicted Conspirator: High Healthcare Spending and the Rise of Third-Party Payment

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ABSTRACT

Healthcare spending in the United States is dominated by government and insurers, which are collectively called "third-party payers." In 1960, patients controlled how almost 50 cents of each dollar spent on health care was paid. That number is now down to just over 10 cents, with the rest controlled by third-party payers. This separation of payer from consumer is associated with a significant increase in real healthcare spending per capita, with poor quality, and with waste that amounts to about one-third of healthcare spending. However, this result is not a natural economic outcome. Rather, it is the consequence of public policy that can, and should, be amended or reversed.

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Since 1960, the proportion of healthcare spending controlled by patients directly has shrunk from 48 percent to 11 percent. This decline is associated with a rapid increase in real healthcare spending per capita, with poor quality, and with waste that amounts to about one-third of healthcare spending.

The loss of patient control is the mirror image of the dominance of third-party payment. These third parties include private insurers and the state and federal governments. However, that dominance did not arise naturally. It is the result of deliberate government policy that can be amended or reversed.

Although the United States appears to have poor health outcomes relative to other countries that spend proportionally less money on health care, it is not clear that these outcomes are a result of greater control by third-party payers (primarily governments) in other countries. In most other high-income countries, patients control a higher share of healthcare spending than they do in the United States.

Health savings accounts, which were established by federal law in 2003, have transferred a very small portion of spending back to patients' control. However, those accounts have not had a systemic effect on reducing the dominance of third-party payment that continues to inflict harm on the healthcare system.

Although some health-related goods and services dominated by third-party payment have experienced real price increases for decades, healthcare markets without third-party payment, such as cosmetic surgery or laser eye surgery, have experienced real price declines over the years. This divergence shows the path for reform of US health care.

"In 2013, direct spending by patients accounted for less than 12 percent of US healthcare spending."

INSURANCE PRINCIPLE

In 1963, Kenneth Arrow wrote what was to become the classic characterization of healthcare services as subject to significant market failure.[1] At that time, there was little third-party payment. Nevertheless, Arrow described a market that did not appear to be in competitive equilibrium. Arrow theorized that medical care had fundamental factors that explained why normal market processes were not observed:

- The nature of demand by each consumer was inconstant and unpredictable.
- Doctors had specialized knowledge impenetrable to their patients.
- There was great uncertainty about the quality of the service delivered.
- Entry to the profession of medicine was restricted by licensing.
- Physicians were committed to the fee-for-service payment model, without risk sharing.
- Physicians preferred to avoid competing on price (although price differentiation by patients' household incomes was widespread).

Overcoming those problems would appear to demand the intervention of third-party payers. However, Arrow also recognized the problems of insurance:

- Moral hazard
- Lack of consensus about the best method of payment (fee-for-service, managed care, indemnification)
- Third-party payers' demands for direct institutional control of payments to providers
- Administrative costs

1. Kenneth J. Arrow, "Uncertainty and the Welfare Economics of Medical Care," *American Economic Review* 53, no. 5 (December 1963): 941–73.

- Predictability that some medical care (chronic care, maternity care) will be very expensive and therefore not insurable
- Community rating, rather than experience rating, of risks
- Gaps in coverage (at the time, for those without employer-based coverage)

Arrow concluded that the benefits of third-party payment outweighed the costs, and he recommended government intervention to ensure adequate insurance.

Arrow's theoretical conclusion led to empirical research, especially on the role of physicians in driving demand for their services. Peaking in the 1980s, the literature on "physician-induced demand" tested the hypothesis that physicians' superior information enabled them to induce patients to undergo medically unnecessary procedures. Hospitals collaborated with physicians in this practice, for which the vernacular slogan "a bed built is a bed filled" was coined.

Although fee-for-service medicine is still criticized by policymakers for motivating physicians to do too many procedures, the scholarly conclusions have become less confident. Statistical techniques used to support the hypothesis were ridiculed by David Dranove and Paul Wehner in a 1994 article that purported to "prove" that physicians induced demand for childbirth![2]

Although the term "physician-induced demand" is no longer as popular as it was in the 1980s, the current trend is to criticize overuse of preventive care, especially screening. Such overuse leads to false positive results and overtreatment as a consequence of overdiagnosis. Dr. Gil Welch of Dartmouth has made this case.[3]

However, the empirical research prompted by Arrow's theoretical conclusion either minimizes or ignores the role of moral hazard. "Moral hazard" refers to individuals' demanding much more of a good or service when they are insured against cost than they do when they pay directly. Moral hazard shifts the demand function to the right, thereby increasing the equilibrium price.[4] Third-party payers have significantly increased their share of medical spending since Arrow's 1963 article. In 2013, direct spending by patients accounted for less than 12 percent of US healthcare spending.

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2. David Dranove and Paul Wehner, "Physician-Induced Demand for Childbirths," *Journal of Health Economics* 13, no. 1 (March 1994): 61–73.
3. H. Gil Welch, Lisa Schwartz, and Steve Woloshin, *Overdiagnosed: Making People Sick in Pursuit of Health* (Boston: Beacon Press, 2011).
4. Maureen J. Buff and Timothy D. Terrell, "The Role of Third-Party Payers in Medical Cost Increases," *Journal of American Physicians and Surgeons* 19, no. 3 (2014): 76–79.

In 2001, Milton Friedman wrote an article in which he identified the almost complete takeover of healthcare spending by third parties as a cause of moral hazard and other problems in the market for health care. Friedman concluded that this takeover has consequences for health status. For example, life expectancy, while growing, has slowed its rate of increase since third parties came to dominate medical spending. That slowdown occurred because the rise of third-party payment has added grit to the gears of the market, making it operate less efficiently.

Insurance is valuable when three conditions are met: (1) the cost of experiencing the insured event would be catastrophically expensive in the absence of insurance; (2) the chance of an individual's experiencing the event is random and small; and (3) the group of people willing to pay the premium is large enough that the risk is diversified enough to make the premium affordable. Such insurance was first recorded in Germany around the year 1260, when it was offered on a voluntary basis by charitable organizations. It was first offered in the United States in 1850 to cover accidents among railroad and steamboat crews.

DIAGNOSING WASTEFUL HEALTHCARE SPENDING

Over the past two decades, scholars and practitioners on the commanding heights of American healthcare policy have turned their attention to two problems that have grown increasingly difficult to avoid: poor quality and waste. In 1999 and 2001, the Institute of Medicine at the National Academies of Science published two scathing reports on the quality of health care. The 1999 report concludes that tens of thousands of patients died in hospitals because of poor quality of care.[5]

The 2001 report recommends principles to guide the healthcare system across the so-called quality chasm.[6] It notes that payment is an important factor in improving quality and that "even among health professionals motivated to provide the best care possible, the structure of payment incentives may not facilitate the actions needed to systematically improve the quality of care, and may even prevent such actions."[7]

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5. Institute of Medicine, Committee on Quality of Health Care in America, *To Err Is Human*, ed. Linda T. Kohn, Janet M. Corrigan, and Molla S. Donaldson (Washington, DC: National Academies Press, 2000).
6. Institute of Medicine, Committee on Quality of Health Care in America, *Crossing the Quality Chasm: A New Health System for the 21st Century* (Washington, DC: National Academy Press, 2001).
7. Ibid., 181.

The 2001 report's recommendations on payment reform focus almost entirely on the actions of government and private insurers in designing new payment methods. It does not fully ignore patients: "The committee believes consumers and patients should have a direct role in rewarding quality care. To have this role, consumers should have choices, receive information about their choices, and have the power to act on those choices."[8] And that is the extent of it. New payment methods that reward quality are just assumed to be the responsibility of government or insurers. The report never considers the option of allowing patients to control their own healthcare dollars and allowing providers to price offerings directly to patients.

A decade later, the Institute of Medicine published an equally disturbing 825-page report on a problem that should be easier to solve than improving quality: reducing waste. A series of expert workshops convened by the Institute concluded that $765 billion (31 percent) of the $2.5 trillion spent on US health care that year was "waste" (figure 1).[9] The components of that waste were

- Unnecessary services (such as too many surgeries): $210 billion
- Excessive administrative costs (such as billing and claims processing): $190 billion
- Inefficiently delivered services (such as duplicative testing): $130 billion
- Prices that are too high (from, for example, lack of effective auction markets for commodified products used in medical care): $105 billion
- Missed prevention opportunities (such as screening for tobacco or alcohol use): $55 billion

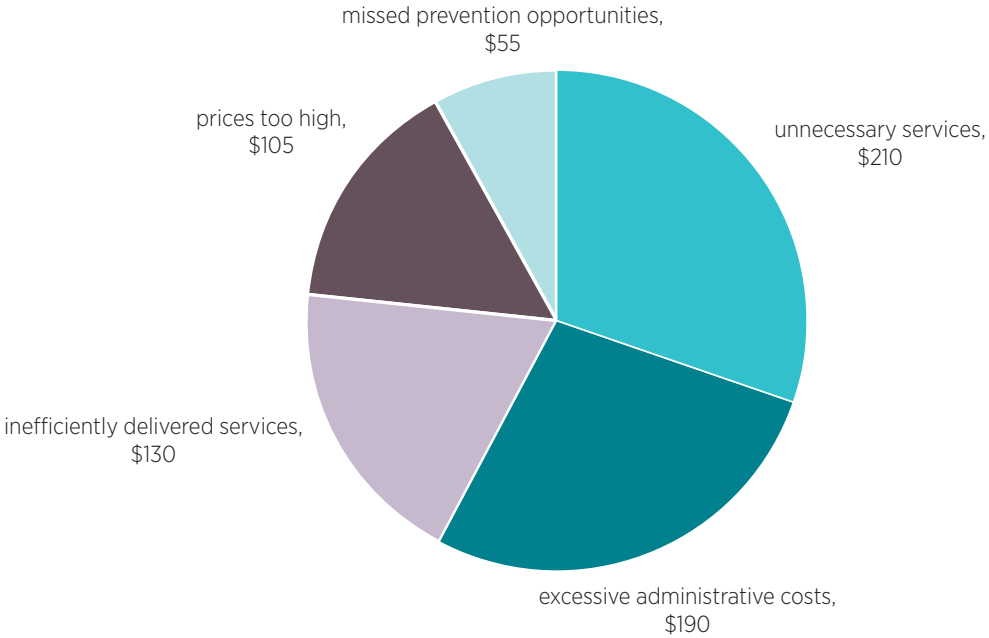
Further, the 2010 report concluded that there were ways to save more than $463 billion within 10 years (figure 2):

- Streamline administrative costs: $181 billion
- Improve hospital efficiency: $80 billion
- Decrease costs of episodes of care: $53 billion
- Prevent avoidable hospital admissions: $48 billion
- Reform medical liability: $30 billion

8. Ibid., 185.

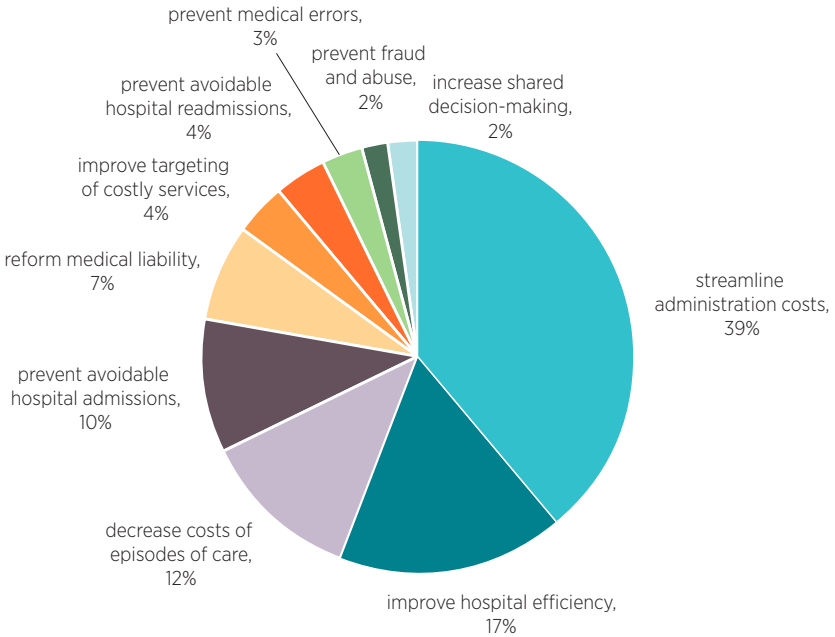
9. Pierre L. Yong, Robert S. Saunders, and LeighAnn Olsen, eds., *The Healthcare Imperative: Lowering Costs and Improving Outcomes* (Washington, DC: National Academies Press, 2010).

FIGURE 1. COMPONENTS OF WASTE IN US HEALTH CARE, 2010 ($ BILLIONS)



Source: Pierre L. Yong, Robert S. Saunders, and LeighAnn Olsen, eds., *The Healthcare Imperative: Lowering Costs and Improving Outcomes* (Washington, DC: National Academies Press, 2010).

FIGURE 2. PLACES TO CUT WASTE IN US HEALTH CARE, 2010–2020



Source: Pierre L. Yong, Robert S. Saunders, and LeighAnn Olsen, eds., *The Healthcare Imperative: Lowering Costs and Improving Outcomes* (Washington, DC: National Academies Press, 2010).

- Improve targeting of costly services: $20 billion
- Prevent avoidable hospital readmissions: $20 billion
- Prevent medical errors: $12 billion
- Prevent fraud and abuse: $10 billion
- Increase shared decision-making: $9 billion

Although the figures were reported in 2009 dollars, the institute stated that these goals were achievable by 2018. Further, a major justification for believing that these cuts were achievable was a comparison of US healthcare spending with international healthcare spending. The report made an implicit assumption that other countries' lower healthcare spending per capita is a result of wasting fewer healthcare dollars. The fact that many countries have better life expectancies and other desirable health outcomes than does the United States, despite spending significantly less, supports that assumption.

Donald Berwick, MD, was one of the leaders of the institute's workshop effort. Berwick later became well known to the broader public as the administrator of the Centers for Medicare and Medicaid Services (CMS), a position he held from July 2010 through December 2011. Collaborating with Andrew Hackbarth of the RAND Corporation, Berwick managed to communicate his approach to cutting waste in a concise four-page article in *JAMA: The Journal of the American Medical Association*: "Keep processes, products, and services that actually help customers and systematically remove the elements of work that do not."[10]

Berwick and Hackbarth identify six categories of waste and their cost to US health care in 2011, by average and range of costs:

- Administrative complexity: $248 billion ($107 billion to $389 billion)
- Overtreatment: $192 billion ($158 billion to $226 billion)
- Fraud and abuse: $177 billion ($82 billion to $272 billion)
- Pricing failures: $131 billion ($84 billion to $178 billion)
- Failures of care delivery: $128 billion ($102 billion to $154 billion)
- Failures of care coordination: $35 billion ($25 billion to $45 billion)

Overall, the total amount of waste ranges from $558 billion to $1.263 trillion, with a midpoint estimate of $910 billion, even more than the Institute of

10. Donald M. Berwick and Andrew D. Hackbarth, "Eliminating Waste in U.S. Health Care," *JAMA* 307, no. 14 (April 11, 2012): 1513–16.

Medicine's workshop proceedings had estimated. As shares of US healthcare spending in 2011, the waste ranges from 21 percent to 47 percent, with a midpoint estimate of 34 percent.

Further, looking at the midpoint estimate of $910 billion, or 34 percent of healthcare spending, only three categories—overtreatment, care delivery, and care coordination—are in the domain of physicians and allied health professionals. These categories of waste add up to $355 billion, which is 39 percent of the waste and 13 percent of healthcare spending. The other three categories — administrative complexity, fraud and abuse, and pricing failures—add up to $556 billion, which is 61 percent of the waste and 21 percent of healthcare spending. However, these three sources of waste cannot really be attributed to healthcare professionals. Rather, these sources of waste are part of the "system" designed and run by government and insurers.

Berwick and Hackbarth also break down the waste into two categories: (1) waste that burdens Medicare and Medicaid and (2) waste that affects non-Medicare and non-Medicaid spending. However, Berwick and Hackbarth do not suggest that government programs, especially Medicaid and Medicare, are remarkably better at controlling waste than other actors are. When Berwick and Hackbarth's measurement of waste is divided among Medicare and Medicaid and other national healthcare expenditures, $299 billion is attributable to Medicare and Medicaid and $612 billion to other programs, primarily private coverage. Using their midpoint estimate, this finding implies that 27 percent of spending in Medicare and Medicaid is waste, compared with 39 percent of spending in the rest of the healthcare system (table 1). Thus, even America's leading advocate of a single-payer healthcare system recognizes that the government healthcare systems that monopolize access to care for elderly and poor Americans still suffer from a lot of waste.

Apart from Medicare and Medicaid, the rest of the healthcare system is mostly private health insurance. However, it also includes the Veterans Health Administration and the Children's Health Insurance Plan (CHIP). Further, employer-based benefits, which are usually considered "private," actually include plans in which governments are employers of the beneficiaries. These plans are much more expensive than private employers' plans.

In 2015, the national average cost per employee of a private-employer group plan was $9,736, of which employees paid $3,333 directly as premiums, according to United Benefit Advisors.[11] Within that set of employer groups,

11. United Benefit Advisors, "UBA: Small Businesses See Big Hikes in Health Plan Costs," news release, April 7, 2016.

TABLE 1. MIDPOINT ESTIMATES OF US HEALTHCARE WASTE, BY CATEGORY ($ BILLIONS, 2011) AND SHARE OF SPENDING

	Medicare and Medicaid		Other programs	
	Amount	Share of spending (%)	Amount	Share of spending (%)
Administrative complexity	$36	3	$212	13
Overtreatment	$77	7	$115	7
Fraud and abuse	$64	6	$113	7
Pricing failures	$56	5	$75	5
Failures of care delivery	$36	3	$92	6
Failure of care coordination	$30	3	$5	0
Total waste	$299	27	$612	39
Total spending	$1,117	100	$1,580	100

Note: Total spending includes out-of-pocket spending by beneficiaries. Attribution of out-of-pocket spending is explained in the appendix.

Source: Author's calculations used data from Donald M. Berwick and Andrew D. Hackbarth, "Eliminating Waste in U.S. Health Care," *JAMA* 307, no. 14 (April 11, 2012): 1513–16.

government employers' healthcare benefits cost $11,817, over one-fifth more than the national average cost. Further, government employees pay, on average, only $2,105 directly toward premiums.

The Kaiser Family Foundation's 2015 annual survey of employer-based plans shows similar evidence, categorized by household size.[12] Single coverage at private, for-profit firms averages $5,902 annually, versus $6,873 (a 16 percent premium) at government workplaces. For family coverage, the average premium is $17,077, versus $17,534 (a 3 percent premium) at government workplaces.

I am unaware of a current explanation for this discrepancy between premiums.[13] I tentatively conclude that employees of government agencies, hospitals, and universities (which dominate not-for-profit employers) might be more risk-averse than employees of for-profit firms, and so they might prefer to take a higher share of their compensation as nontaxable health benefits rather than as taxable wages. Or a greater agency problem may exist among these employers, such that representatives of taxpayers and donors are less motivated to monitor benefits than they are wages. Whatever the cause, these turbo-charged benefit plans compound the third-party-payment problem.

12. Gary Claxton et al., *Employer Health Benefits 2015 Annual Survey* (Menlo Park, CA: Henry J. Kaiser Family Foundation, 2015), 29–30.

13. Previously, government employers did not have to report other postemployment benefits (that is, other than pension obligations). That lack of information biased both retirees' and workers' remuneration toward healthcare benefits. However, this loophole was closed by Government Accounting Standards Board Statement 45, which was approved in 2004.

Nevertheless, if one oversimplifies and thus characterizes the non-Medicare and non-Medicaid spending in table 1 to be private sector, Berwick and Hackbarth's allocation of waste likely underestimates some waste in Medicare and Medicaid. Only 3 percent of Medicare and Medicaid spending is wasted on administrative complexity, according to their estimate. Yet administrative complexity wastes 13 percent of non-Medicare and non-Medicaid healthcare spending, according to their estimate.

Berwick and Hackbarth suggest that the difference is that in the private sector, "payers may fail to standardize forms, thereby consuming limited physician time in needlessly complex billing procedures." This is a well-known complaint from physicians' offices. However, it is also a bit of a red herring. For example, if one segregates Medicare (which usually grants exclusivity to one administrative contractor in a region—generally a subsidiary of a private insurer) and measures its "administrative complexity," it will certainly be lower than the "administrative complexity" of the rest of insurers serving everybody else.

Further, government healthcare programs contain costs that are disguised. Administrative costs of Medicare reported in the National Health Expenditure Accounts (NHEA) amount to about 3 percent of costs. However, comparing this to private insurance ignores a measurement bias: because Medicare beneficiaries are older than working-age people with private coverage, they have higher medical costs. A fixed dollar of administrative cost per beneficiary is a lower share of Medicare's costs than of private benefits' costs.[14] The share of spending on costs other than claims submitted by providers is 6 percent for Medicare versus 12 percent for private insurance.[15] However, Medicare spending per enrollee in 2014 was $11,986, versus only $5,380 for the privately insured.[16] Six percent of Medicare spending per enrollee amounts to $719, whereas 12 percent of private insurers' spending per enrollee is just $648.

Furthermore, many overhead costs, especially personnel costs and imputed rent, are excluded from the NHEA. Adding those costs doubles the administrative costs of Medicare. In addition, the government enjoys the benefit of not having to collect revenue by persuasion. Rather, it collects taxes to fund Medicare and Medicaid, and most of the costs of collecting those taxes are borne by

14. Christopher J. Conover, *American Health Economy Illustrated* (Washington, DC: AEI Press, 2012), 22–23.
15. US Department of Health and Human Services, *National Health Expenditure Accounts: Methodology Paper* (Washington, DC: US Department of Health and Human Services, 2013).
16. US Department of Health and Human Services, *NHE Projections, 2015–2025—Tables* (Washington, DC: US Department of Health and Human Services, 2016), tables 2, 17.

employers who deduct taxes from their employees' paychecks. These costs do not appear in the NHEA.[17]

Berwick and Hackbarth's analysis also suggests that Medicare and Medicaid outperform non-Medicare and non-Medicaid programs in the category of care delivery. This difference is somewhat confusing because care delivery is determined by providers, especially doctors, not by payers. On the other hand, Berwick and Hackbarth's analysis suggests that Medicare and Medicaid underperform in the area of care coordination versus non-Medicare and non-Medicaid programs. Remarkably, their results suggest effectively zero wasteful lack of care coordination among non-Medicare and non-Medicaid payers.

Waste associated with overtreatment, fraud and abuse, and pricing failures is about the same share of spending in both the Medicare and Medicaid and the non-Medicare and non-Medicaid columns of table 1. Overall, this suggests that the same (or similar) remedies should be applied to Medicare, Medicaid, and other payers.

Berwick and Hackbarth propose taking individual "wedges" out of this waste, such that healthcare spending does not increase its share of GDP. Berwick and Hackbarth note that cutting waste intelligently would save more than $3 trillion from federal Medicare and Medicaid spending through 2020 and would save $11 trillion throughout the healthcare system. They estimate that gradually increasing the reduction of waste by 4 percent annually would lead to a 37 percent reduction of waste within a decade. That reduction would bring healthcare spending down to a sustainable level (presumably, the same share of GDP that it was in 2011, about 17.6 percent).

Berwick and Hackbarth's proposal has met with bipartisan support. In March 2016, the Centers for Medicare and Medicaid Services announced that it had beat its target of tying 30 percent of Medicare Part A and Part B payments to "quality of care rather than quantity of services."[18] That goal was initially set for the end of 2016, but it was actually achieved in January 2016.

In April 2015, Congress passed the Medicare Access and CHIP Reauthorization Act with overwhelming bipartisan support. The new law supports the Obama administration's initiative by creating incentives to move doctors to a so-called Merit-Based Incentive Payment System or Alternative Payment

17. Benjamin Zycher, *Comparing Public and Private Health Insurance: Would a Single-Payer System Save Enough to Cover the Uninsured? Medical Progress Report, No. 5* (New York: Manhattan Institute for Policy Research, 2007).
18. US Department of Health and Human Services, "HHS Reaches Goal of Tying 30 Percent of Medicare Payments to Quality Ahead of Schedule," news release, March 3, 2016.

Models within a few years. The Obama administration had a goal of tying 90 percent of payments to "quality" by 2018, and this appears to be a realistic target. The future will tell whether this top-down approach will succeed. However, the history of such reforms is littered with failed, albeit good, intentions.

Over a decade after the 1999 report was published, the Institute of Medicine concluded, "The U.S. health care system continues to fall far short of its potential. . . . The nation has yet to see the broad improvements in safety, accessibility, quality, or efficiency that the American people need and deserve."[19] The report emphasizes the need to adopt technological solutions that had arisen since the turn of the millennium, such as fast computing power and connectivity of devices.

Unfortunately, the Institute's report never really explores why the healthcare system, having awakened from its slumber 12 years previously, had not already solved its quality problems with technological solutions that had recently revolutionized entire value chains in industries from banking to filmmaking, from travel to music.

The root cause of the healthcare system's failure to provide value for money cannot stem from a lack of highly intelligent and committed people with good ideas. Rather, the analyses discussed previously ignore the fundamental change in US health care in the 20th century: the rise of third-party payment to dominate the cash flows that providers chase and the diminution of patient payments as a source of income for doctors and other providers.

"The root cause of the healthcare system's failure to provide value for money cannot stem from a lack of highly intelligent and committed people with good ideas."

THE RISE OF THIRD-PARTY PAYMENT AND ITS CONSEQUENCES

In 2001, economist Milton Friedman published an article showing how the productivity of health care had decreased

19. Committee on the Learning Health Care System in America, *Best Care at Lower Cost: The Path to Continuously Learning Health Care in America*, ed. Mark Smith et al. (Washington, DC: National Academies Press, 2013).

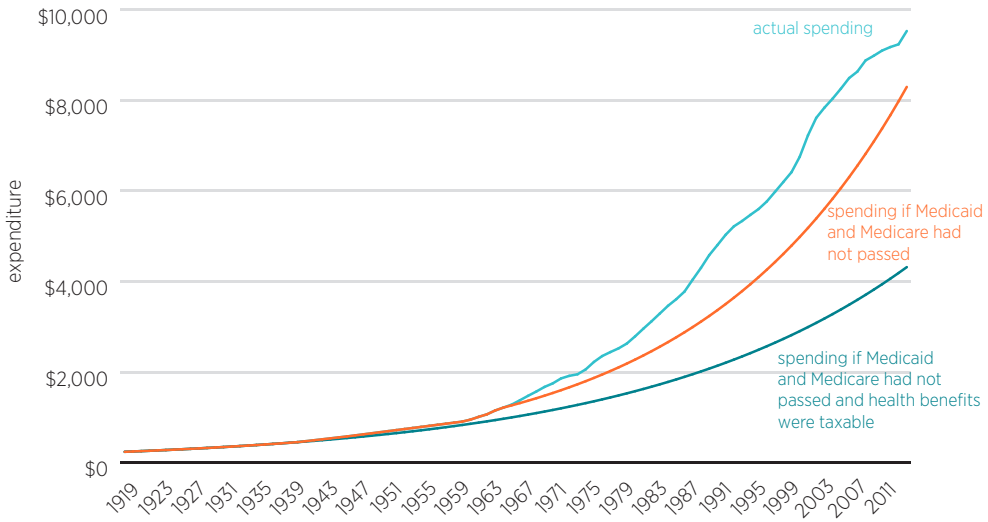
significantly since the middle of the 20th century.[20] Friedman identified two major shocks leading to higher spending through third-party payment: the exclusion of employer-based benefits from taxable income and the introduction of Medicare and Medicaid. The first major shock happened so long ago that almost no living American can remember matters being any other way. It happened on October 26, 1943, as a result of a run-of-the mill rule issued by the IRS, which was later codified in the Internal Revenue Code of 1954. The rule recognized that employers were offering healthcare benefits to their workers in lieu of wages. This benefit was a result of wage and price controls imposed by the federal government during World War II. The labor market was undersupplied, so employers competed by offering healthcare benefits. The IRS decided that these noncash benefits were nontaxable. After the war, high personal income tax rates ensured that nontaxable healthcare benefits remained popular.[21] Although President Ronald Reagan cut marginal income tax rates dramatically in 1981, catastrophically high marginal income tax rates had previously been applied only to very high earners. In 1945, the top rate of 94 percent was applied to married, joint filers with household incomes of $2.5 million (in 2013 dollars). In 2013, a married, joint filer reached a marginal income tax rate of 25 percent at a household income of $71,030. In 1945, that household's marginal income tax rate would have been 29 percent.[22]

Exempting healthcare benefits from income tax introduced an artificial bias in favor of benefits and against wages, and it accelerated the growth of real healthcare spending per capita. Friedman noted that real healthcare spending grew at a rate of 3.1 percent annually from 1919 through 1940. During that period, GDP per capita increased by one-third.[23] Economists categorize health care as a normal good, which means people will consume more as their incomes increase. Friedman figured that the rate of growth would have remained the same if the tax code had not introduced this bias in favor of healthcare benefits.

Friedman also noted that the second major shock—the introduction of Medicare and Medicaid, which started spending in 1966—gave another boost to healthcare spending because those programs offered "free" health care to entitled segments of the population. The real rate of healthcare spending growth

20. Milton Friedman, "How to Cure Health Care," *Public Interest* 142 (Winter 2001): 3–30.
21. David Gratzer, *The Cure: How Capitalism Can Save American Health Care* (New York: Encounter Books, 2006), 25–26.
22. Tax Foundation, "Federal Individual Income Tax Rates History," October 19, 2013.
23. Louis Johnston and Samuel W. Williamson, "What Was the U.S. GDP Then?," MeasuringWorth website, accessed August 8, 2016, http://www.measuringworth.org/usgdp/.

FIGURE 3. PER CAPITA SPENDING ON HEALTH CARE FOR THE US POPULATION, 1919–2014, THREE SCENARIOS (CONSTANT 2014 DOLLARS)



Source: Data through 1997 are from Milton Friedman, "How to Cure Health Care," *Public Interest* 142 (Winter 2001): 3–30. Data for the 1998–2014 period are from Centers for Medicare and Medicaid Services, "National Health Expenditure Data: Historical," December 6, 2016. Constant 2014 dollars are estimated from the GDP deflator at Bureau of Economic Analysis, "Implicit Price Deflators for Gross Domestic Product," February 28, 2017, table 1.1.9.

(per capita) from 1946 through 1965 was 4.0 percent. That rate was higher than the rate in the previous period because of the exclusion of healthcare benefits from taxable income. However, it jumped yet again after the introduction of Medicare and Medicaid. Friedman figured it would have kept growing at 4.0 percent in the absence of those programs.

This insight allowed Friedman to deconstruct real per capita health spending in 1997 into that which would have prevailed in the absence of the World War II and Great Society changes that boosted healthcare spending. Friedman concluded that real per capita healthcare spending would have been only 48 percent of what it actually was in 1997. Of the total increase in cost, which slightly more than doubled per capita healthcare spending from what it would otherwise have been in 1997, Friedman estimated that 57 percent of the increase was because of the tax exclusion and 43 percent was because of Medicare and Medicaid.

Figure 3 updates Friedman's original analysis through 2014. As in Berwick and Hackbarth's analysis, the figure describes "wedges" that can be removed to cut waste. However, instead of experts with government or corporate power wielding the knife that cuts out the wedges, patients would do so directly through controlling their own healthcare spending.

The wedges have continued to grow in the 17 years following Friedman's analysis. The effect of the tax exclusion has become even more important than the government spending programs in artificially increasing healthcare spending. Actual healthcare spending per capita in 2014 was $9,532. According to Friedman's model, if Medicare and Medicaid had not been introduced, per capita spending would have been only $8,297 (shown as the difference between the light blue line and the orange line). However, if healthcare benefits were included in taxable income, healthcare spending per capita would have been only $4,316, just 45 percent of actual spending (shown as the difference between the light blue line and the dark blue line). So, three-quarters of the increased per capita spending is owing to the tax exemption, and only one-quarter to Medicare and Medicaid.

Arithmetically, the increased share is a result of the differential growth rates (3.1 percent versus 4.0 percent) that prevailed before these two shocks. However, there is also an economic explanation. The tax exclusion had the consequence of significantly shifting workers' preferences toward healthcare consumption, to avoid taxes. Medicare and Medicaid, on the other hand, largely shifted the source of healthcare financing from patients to taxpayers. While Medicare had no effect on mortality among the elderly in its first 10 years, it did lead to a 40 percent reduction in out-of-pocket spending by the elderly.[24]

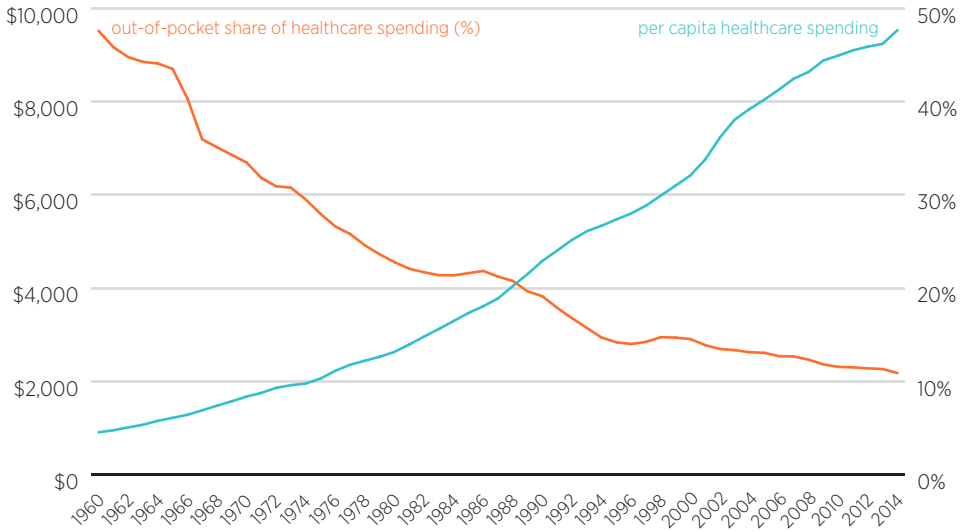
Figure 4 shows the relationship between the rapidly declining share of healthcare spending controlled by patients directly and the rapidly increasing real healthcare spending per capita. As the share of healthcare spending controlled directly by patients declined from 48 percent to 11 percent, real healthcare spending per capita climbed from less than $1,000 to more than $9,000.

This significant shift from direct payment to third-party payment stifled patients' ability to signal to the healthcare system what they valued and how much they valued it. Friedman demonstrated that this lack of a proper signal had a negative impact on productivity. He reported that the number of occupied beds per resident of the United States rose 2.4 percent annually from 1929 to 1940, the real cost of hospital care per resident rose 5.0 percent annually, and the real cost per patient day increased 2.0 percent per year. After World War II, output declined but costs increased faster:

> From 1946 to 1996, the number of beds per 1,000 population fell by more than 60 percent; the fraction of beds occupied, by more

24. Amy Finkelstein and Robin McKnight, "What Did Medicare Do? The Initial Impact of Medicare on Mortality and Out of Pocket Medical Spending," *Journal of Public Economics* 92 (2008): 1644–68.

FIGURE 4. PER CAPITA HEALTHCARE SPENDING AND OUT-OF-POCKET SHARE, US POPULATION, 1960–2014 (CONSTANT 2014 DOLLARS)



Source: Data through 1997 are from Milton Friedman, "How to Cure Health Care," *Public Interest* 142 (Winter 2001): 3–30. Data for the 1998–2014 period are from Centers for Medicare and Medicaid Services, "National Health Expenditure Data: Historical," December 6, 2016. Constant 2014 dollars are estimated from the GDP deflator at Bureau of Economic Analysis, "Implicit Price Deflators for Gross Domestic Product," February 28, 2017, table 1.1.9.

> than 20 percent. In sharp contrast, input skyrocketed. Hospital personnel per occupied bed multiplied nine-fold, and cost per patient day, adjusted for inflation, an astounding 40-fold, from $30 in 1946 to $1,200 in 1996 (at 1992 prices). A major engine of these changes was the enactment of Medicare and Medicaid in 1965. A mild rise in input was turned into a meteoric rise; a mild fall in output, into a rapid decline.[25]

This phenomenon has continued since 1996. Table 2 extends Friedman's analysis to 2013 and adds detail. The number of beds per thousand residents has continued to decline, from 4.5 in 1980 to 2.5 in 2013. However, the number of hospital employees per bed has grown from 2.94 in 1990 to 5.22 in 2013. This growth indicates a continuing decline in productivity. Further, occupancy has dropped from 78 percent in 1980 to 65 percent in 2013. When the number of employees per bed is adjusted by occupancy, the head count looks even less productive.

25. Friedman, "How to Cure Health Care," 11–12.

TABLE 2. US HOSPITALS: INPUT VERSUS OUTPUT

	1980	1990	2000	2010	2013
Beds per 1,000 residents	4.5	3.7	2.9	2.6	2.5
Employees per bed		2.94	4.05	4.98	5.22
Occupancy (%)	78	70	66	67	65
Employees per bed, adjusted for occupancy		4.23	6.13	7.48	8.07
Average length of stay (days)	10.0	9.1	6.8	6.2	6.1
Patient-days per employee		86	60	49	45

Sources: Bureau of Labor Statistics, "Employment, Hours, and Earnings from the Current Employment Statistics Survey (National)," series ID CES6562200001, NAICS code 622; Centers for Disease Control and Prevention, *Health, United States, 2015* (Hyattsville, MD: US Government Printing Office, 2016), 281, 288; author's calculations.

Fortunately, there has also been a significant reduction in the average length of inpatient stay, from 10.0 days in 1980 to just 6.1 days in 2013. This positive development is surely a result of technological advancement in devices, drugs, and procedures that get people on their feet and out the door faster after an operation. However, as Friedman also noted, such technological advances in other industries are associated with cost reductions. That is not the case in hospitals, in which overall productivity per employee has not improved. In 1980, one hospital employee covered 86 patient-days, on average. In 2013, that person covered only 45 patient-days.

Hospital employees include those who are delivering care to patients (especially nurses and technicians) and administrative staff. It may be that the nurses and technicians have become more productive, but the improvement in their productivity is overwhelmed by more administrative staff. Administrative staff has grown significantly; however, the number of nurses and technicians has also grown significantly.

In 1910, workers in the healthcare sector accounted for just over 1 percent of total employment. Forty years later, the proportion had increased to a little more than 2 percent in 1950.[26] It took only 20 years for the proportion to increase another percentage point in 1970. Thirty years after that, in 2000, the proportion of workers in health care had more than doubled to 7 percent of all workers. Administrative staff appear to have increased as well during this period:

26. Ian D. Wyatt and Daniel E. Hecker, "Occupational Changes during the 20th Century," *Monthly Labor Review* (March 2006): 40–43. It is not clear from the source how many "attendants" are serving patients and how many are administrative.

the number of "attendants" increased from virtually zero in 1910 to about 2.25 percent of total employment in 2000. However, nurses accounted for about one-quarter of 1 percent of total employment in 1910 and rose to a little more than 2 percent of total employment in 2000. The growth in nurses broadly matched the growth in all workers in health care, and nurses remained about one-quarter of all workers in health care. Technicians were not counted until 1950, when they accounted for about one-quarter of 1 percent of total employment, and rose to 1.0 percent of total employment in 2000.

Friedman also examined how the physician workforce has developed, reporting that the number of physicians rose from about 6 per 10,000 residents in 1930 to about 17 in 1960. The number of active physicians per 10,000 reached 15.30 in 1975, 20.70 in 1985, 25.80 in 2000, and 29.45 in 2013.[27] Friedman also reports a significant increase in physicians' incomes, from an annual average of about $133,000 in 1930 to $265,000 in 1996 (expressed in 2015 dollars).[28] This amount appears to have stabilized or even declined since 1996. Specialists in 2015 reported an average income of $284,000, but primary-care doctors reported only $195,000.[29]

Of course, those are still very high earnings. Friedman suggests that they are disproportionately high because third-party payment makes patients insensitive to cost. In this instance, Friedman might overstate his case somewhat. David Cutler and Dan Ly have explained that physicians' incomes are a major factor driving up US healthcare spending. The average specialist in the United States earned $230,000 in 2004, as opposed to $129,000 in 12 other developed countries.[30]

That is a dramatic difference. Cutler and Ly implicitly disagree with Friedman's suggestion that the moral hazard associated with third-party payment has driven up physicians' salaries. In fact, Cutler and Ly believe that the rise in salaries has little to do with health care per se. Rather, it is a specific case of the general distribution of labor income within a country. Overall, high-income earners in other developed countries earn significantly less than high-income earners in the United States. Cutler and Ly define high earners as those in the 95th to

27. Centers for Disease Control and Prevention, National Center for Health Statistics, *Health, United States, 2015: With Special Feature on Racial and Ethnic Health Disparities* (Hyattsville, MD: National Center for Health Statistics, 2016).
28. Friedman reports them in constant 1992 dollars, which I have inflated to 2014 using the GDP deflator.
29. Carol Peckham, "Medscape Physician Compensation Report 2015," *Medscape*, April 21, 2015.
30. David M. Cutler and Dan P. Ly, "The (Paper) Work of Medicine: Understanding International Medical Costs," *Journal of Economic Perspectives* 25, no. 2 (Summer 2011): 3–25.

99thpercentile of the earnings distribution. They show that US specialists earn 37 percent more than the average of those US high earners. However, their international peers earn 45 percent more than their high-earning, nonphysician peers. That is, the gap between doctors and other high earners is smaller in the United States than in other developed countries.

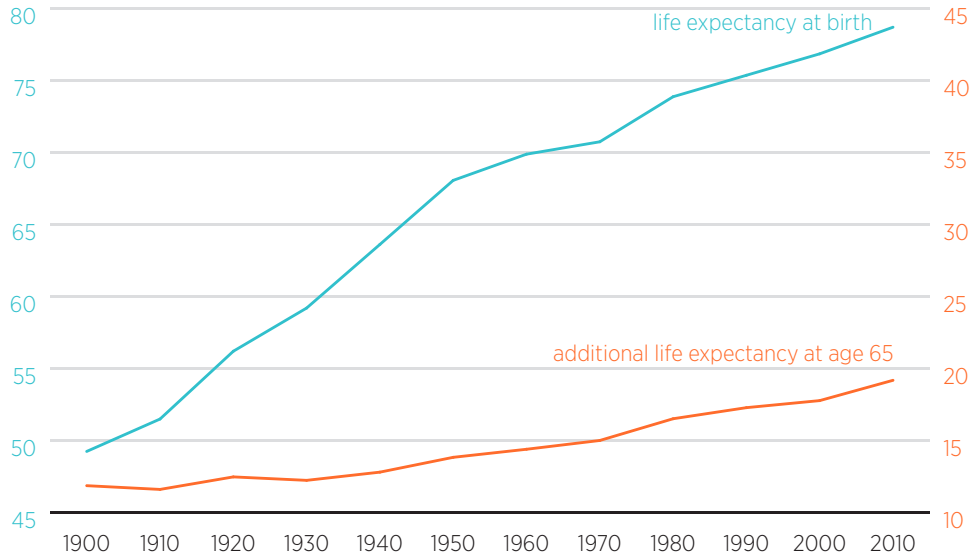
When American physicians lament the state of medicine and encourage their children to become venture capitalists or investment bankers instead, this gap is what they are talking about. It suggests a difference in rate of productivity improvement. Financiers in the United States earn very high incomes because America's hyperefficient capital markets make them productive. Nobody would call US health care hyperefficient. So, it is doubtful that physicians' pay hikes over the decades are rewards for their improved productivity.

It is important to note that Friedman is measuring the income change in physicians as a share of US residents. Because labor force participation increased significantly during the 20th century, the proportion of physicians in the *workforce* did not increase dramatically like it did for other healthcare workers.[31] Physicians have constituted between 0.3 percent and 0.6 percent of the workforce from 1910 to 2000.[32] From 1990 to 2012, the number of workers in health care increased by nearly 75 percent, but only 5 percent of that increase was physicians. By 2012, less than 6 percent of the workers in health care were physicians; about one-third were other clinical workers (such as nurses and technicians), and about 60 percent were nonclinical workers.[33] The evolution of the healthcare

"Financiers in the United States earn very high incomes because America's hyperefficient capital markets make them productive. Nobody would call US health care hyperefficient."

31. Abraham Mossisa and Steven Hippie, "Trends in Labor Force Participation in the United States, *Monthly Labor Review* (October 2006): 35–57.
32. Ian D. Wyatt and Daniel E. Hecker, "Occupational Changes during the 20th Century."
33. Robert Kocher, "The Downside of Health Care Job Growth," *Harvard Business Review*, September 23, 2013.

FIGURE 5. ADDITIONAL YEARS OF LIFE EXPECTANCY AT BIRTH AND AT AGE 65, US POPULATION, 1900–2010



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, *National Vital Statistics Reports* 64, no. 11 (September 22, 2015): 51.

workforce strongly suggests that the efficiency of the workforce, in the aggregate, has continued to decline.

Friedman also examined outputs, focusing on the bluntest measurement of productivity: life expectancy at birth and at age 65. Remarkably, he found that life expectancy at birth improved much more in the first half of the 20th century than in the period from 1950 to 1996. From 1950 on, longevity grew at less than half the rate that it had grown from 1900 to 1950—averaging less than two-tenths of a year per year compared with the earlier four-tenths. In the first 50 years of the 20th century, the life span increased by 21 years; in the next 47 years, by only 8 years. As in the first 50 years, the increase proceeded at a surprisingly steady pace.

Figure 5 replicates and extends Friedman's analysis through 2010 and confirms that his finding persists into the new millennium. In the six decades since 1950, life expectancy at birth has increased by 10.64 years, or almost 65 days per year, instead of about 146 days per year in the first half of the century. Friedman suggests that the great public health victories in the early part of the 20th century (such as hygiene and clean water) were exhausted by 1950.

Those improvements in public health are apparent in the divergent improvement in life expectancy at birth versus age 65. In 1900, life expectancy at birth was 49 years. If a person reached age 65, life expectancy was another 12

years (to 77 years of age). This gap of 28 years reflected the large proportion of people who died young. By 2010, life expectancy at birth was 79 years, and life expectancy at age 65 was an additional 19 years (to 84 years of age). The gap had shrunk from 28 years to 5 years because very few young people in the United States are carried away by typhoid fever, measles, scarlet fever, whooping cough, diphtheria, influenza, pellagra, or tuberculosis anymore. Those were common causes of death among young people a century ago,[34] but those ailments were largely defeated by the middle of the century.

As calculated from the data underlying figure 5, life expectancy at birth increased an average of 6.7 percent every decade in the first half of the century. From 1950 through 2010, it increased only 2.5 percent each decade. Life expectancy for those who had reached 65 years of age changed by much less: an average of 0.5 percent every decade in the first half of the century and 1.1 percent from 1950 through 2010.

However, as indicated by figure 5, life expectancy at birth increased at a fairly constant rate starting in 1950, but life expectancy at age 65 increased at a fairly constant rate starting in 1930, three-and-a half-decades before Medicare.

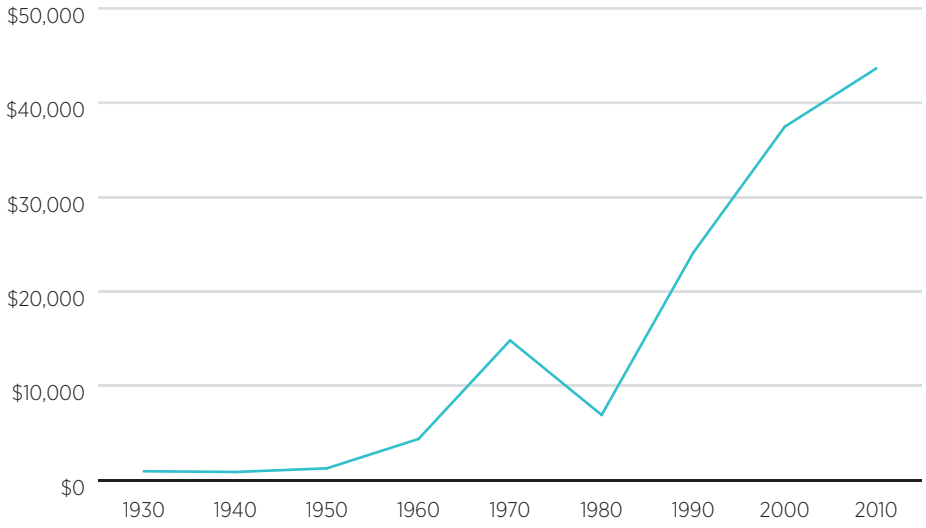
The longevity results invite the question: Why are Americans throwing more and more money at an acute-care system that is delivering far less than previous generations' investments in public health? Figure 6 illustrates this issue in a way not demonstrated by Friedman: estimating how much healthcare spending is necessary to buy one more year of life expectancy. Total per capita healthcare expenditures in the 1920s were $2,907 (in constant 2014 dollars), And life expectancy increased by three years. Therefore, each additional year cost $969 of healthcare spending. By 2010, that quotient was $43,642 for every year added to life expectancy![35]

Of course, figure 6 presents a very blunt measurement. Not all healthcare spending is meant to extend life. Unfortunately, there is no better measurement for our purpose. Some healthcare spending, such as cosmetic surgery, has no measure of positive outcome that can be aggregated among the population. Some new developments, such as joint replacement, are meant to improve quality of life, not necessarily extend life. However, no single measure of good or bad health is generally accepted among scholars, especially because some treatments

34. Bureau of the Census, *Mortality Statistics: 1910* (Washington, DC: Government Printing Office, 1912).

35. Centers for Disease Control and Prevention, National Center for Health Statistics, *National Vital Statistics Reports* 64, no. 11 (September 22, 2015): 51; Centers for Medicare and Medicaid Services, "National Health Expenditure Data," accessed March 6, 2017; author's calculations dividing healthcare spending per capita by increase in life expectancy.

FIGURE 6. COST PER YEAR ADDED TO LIFE EXPECTANCY IN PREVIOUS DECADE, 1930–2010 (CONSTANT 2014 DOLLARS)



Source: *National Vital Statistics Reports* 64, no. 11 (September 22, 2015): 51; National Health Expenditure Accounts; author's calculations.

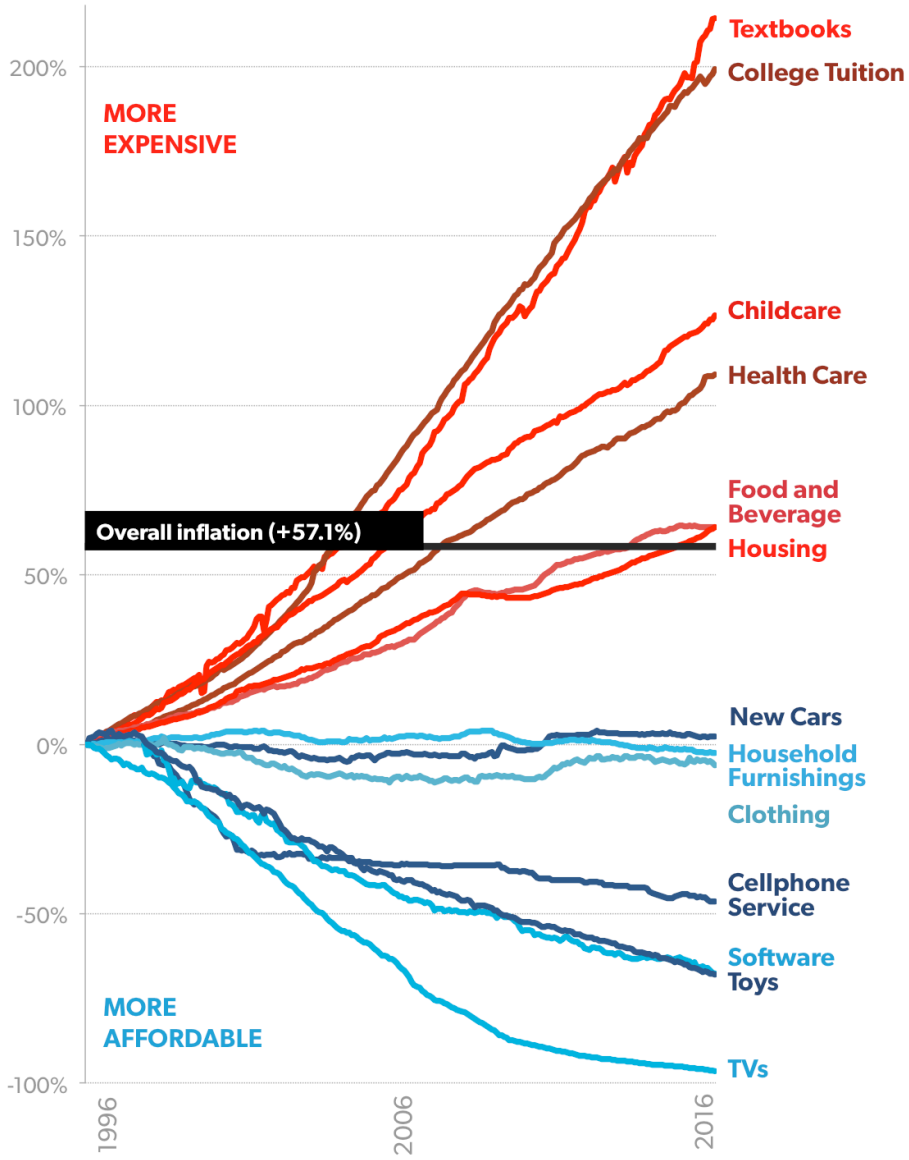
improve quality of life but do not add years, while other treatments add years to life that are not free of disease.[36]

Further, although it is simple to measure mortality from birth and death records, aggregate measures of healthy living are moving targets. According to very recent research, life expectancy at age 65 increased 1.3 years between 1992 and 2008, while years living disabled decreased by 0.5 years. Therefore, "disability-free life expectancy" increased by 1.8 years.[37] However, these types of estimates are recent developments, and it is not possible to extend such estimates earlier than 1970, well after third-party payment had become the norm.[38]

It is not plausible to claim that medical spending has been subject to a law of diminishing returns over such a long period. Investment in human capital, innovation, and facilities has increased significantly in health care and in many other industries. Figure 7 reproduces a chart, created by Mark Perry of the American Enterprise Institute, of changes in prices for 13 categories of goods and

36. Michael Chernew et al., "Understanding the Improvement in Disability-Free Life Expectancy in the U.S. Elderly Population," in *Insights in the Economics of Aging*, ed. David A. Wise (Chicago: University of Chicago Press, forthcoming).
37. Ibid.
38. Eileen M. Crimmins, Yasuhiko Saitu, and Dominique Ingegneri, "Changes in Life Expectancy and Disability-Free Life Expectancy in the United States," *Population and Development Review* 15, no. 2 (June 1989): 235–67.

FIGURE 7. PRICE CHANGES OF SELECTED CONSUMER GOODS AND SERVICES, JANUARY 1996 THROUGH DECEMBER 2016



Source: Reproduced from Mark J. Perry, "Tuesday Evening Links," *Carpe Diem*, August 19, 2016.

services since 1996.[39] Over the 20-year period, prices of health care increased twice as much as the overall price level did. Further, the three categories of consumer spending for which prices increased more than they did for health care were categories not characterized by technological innovation—textbooks, college tuition, and child care. Three out of four categories characterized by technological innovation (cellphones, software, and televisions) experienced dramatic declines in price, while automobile prices remained flat. The primary difference between health care and those technology-heavy goods and services is that only health care is controlled by third parties.

However, when patients have controlled healthcare spending directly, real prices of medical goods and services have dropped under price competition. Consider corrective eye surgery. From 1999 through 2011, the price of conventional Lasik surgery fell about one-fourth because of intense competition. Eye surgeons who wanted to charge more had to provide more advanced Lasik technology, such as Custom Wavefront and IntraLase (a laser-created flap). By 2011, the average price per eye for doctors performing Wavefront Lasik was about equal to what conventional Lasik had been more than a decade before, but in 2011 the quality was far better. In inflation-adjusted terms, this change represents a huge price decline. This progression is illustrated in figure 8, which reproduces a chart created by Devon Herrick of the National Center for Policy Analysis.[40]

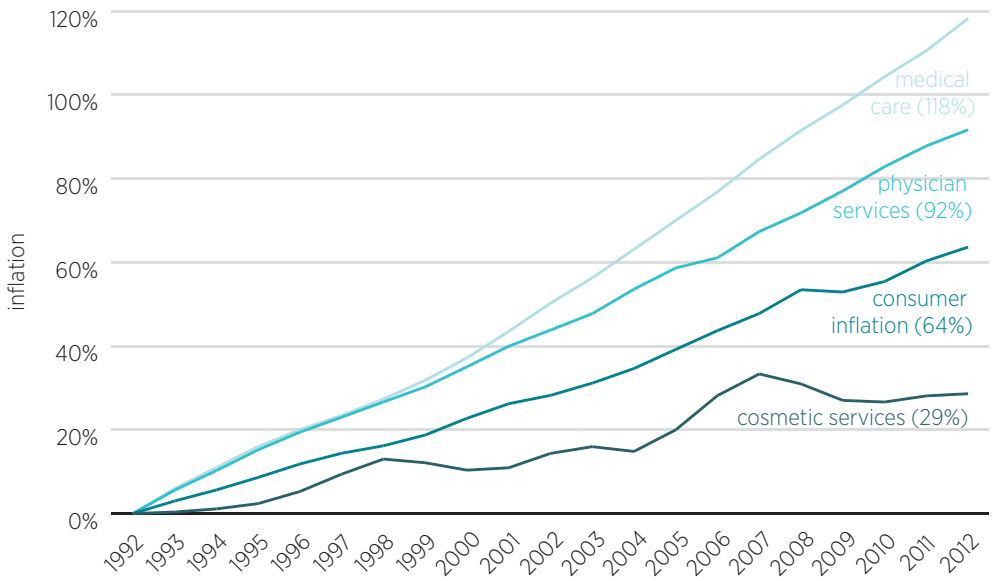
The data discussed in the preceding section, much of which extends Friedman's dataset from the late 1990s through the first decade of the 21st century, corroborate Friedman's argument that third-party payment has led to a significant decline in the productivity of medical care since third-party payment came to dominate healthcare payments. Another line of inquiry examines US healthcare spending in an international context and suggests that the United States would get more for less if it adopted some methods from abroad to control healthcare spending.

US HEALTHCARE SPENDING AND OUTCOMES IN AN INTERNATIONAL CONTEXT

Critics of US healthcare spending point out that the United States spends both a far greater share of GDP and far more real dollars per capita (adjusted for purchasing power parity) on health care than other developed countries do. They

39. Mark J. Perry, "Tuesday Evening Links," *Carpe Diem*, August 19, 2016.
40. Devon Herrick, *The Market for Medical Care Should Work Like Cosmetic Surgery* (Policy Report No. 349, National Center for Policy Analysis, Dallas, TX, May 2013).

FIGURE 8. NOMINAL HEALTHCARE INFLATION, 1992–2012



Source: Devon M. Herrick, "The Market for Medical Care Should Work Like Cosmetic Surgery" (NCPA Policy Report No. 349, National Center for Policy Analysis, Dallas, TX, May 2013). Data are from the American Society of Plastic Surgeons, the Consumer Price Index, the US Bureau of Labor Statistics, and the US Department of Commerce.

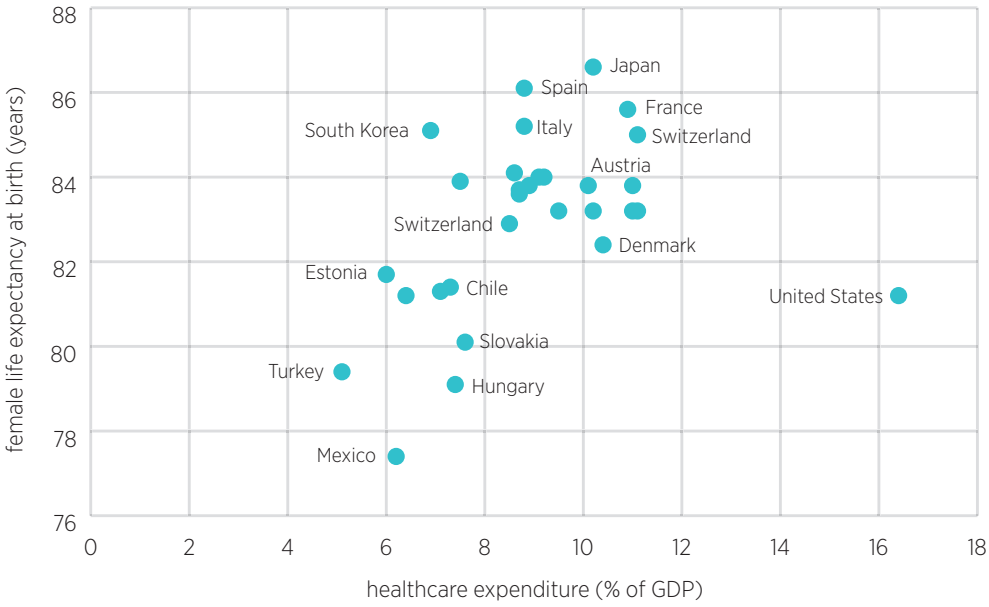
Note: Cosmetic services is a three-year moving average.

often assert that this higher level of spending imposes an economic burden on American prosperity. However, these critics generally ignore the fact that other countries allow patients to control a greater share of healthcare spending than the United States does.

Despite its high healthcare spending, the United States does not get proportionately good clinical outcomes. In examining female life expectancy in the United States and in other countries in 1996, Friedman notes that the United States performs poorly, given its high healthcare spending, versus other developed countries.

Figure 9 shows healthcare spending as a share of GDP and female life expectancy at birth in 2013 for 30 countries that belong to the Organisation for Economic Co-operation and Development (OECD). US life expectancy is similar to that in Estonia, Chile, Poland, and the Czech Republic, although the United States commits at least 10 percentage points more GDP to healthcare spending than those other countries do. There is actually no statistically significant trend line connecting the two variables.

FIGURE 9. HEALTHCARE EXPENDITURE AND FEMALE LIFE EXPECTANCY AT BIRTH IN 30 OECD COUNTRIES, 2013



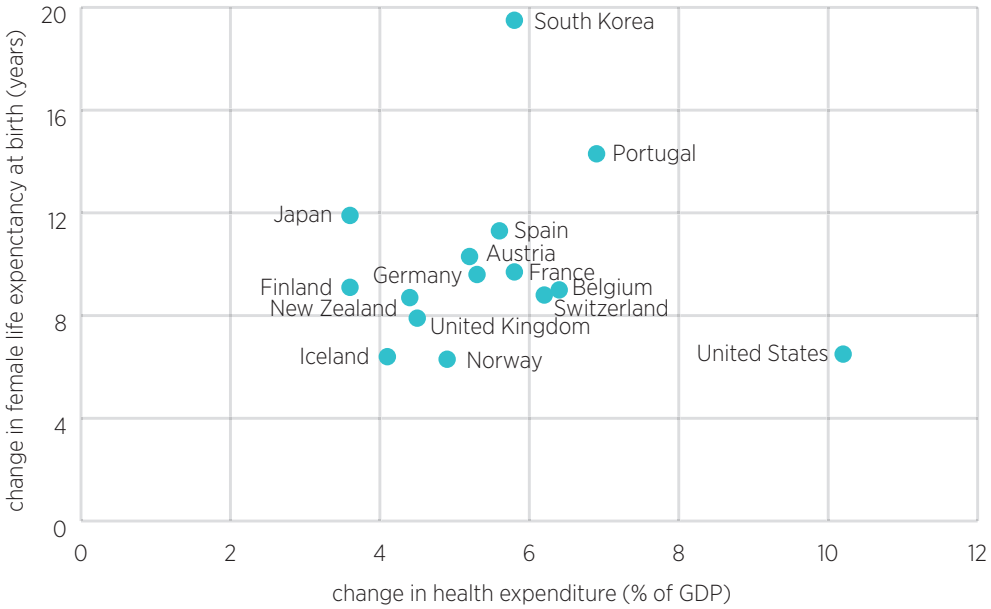
Source: Organisation for Economic Co-operation and Development, "OECD Health Statistics 2016," online database, June 30, 2016, available at http://www.oecd.org/els/health-systems/health-data.htm.

Figure 10 tells an apparently even worse story. All 30 OECD countries have increased healthcare spending since 1970 and have experienced improved female life expectancy. However, the United States has spent more and gotten less than any other country. The United States has increased its healthcare spending as a share of GDP by over 10 percentage points, but it has only improved female life expectancy by an amount similar to that of Iceland or Norway, both of which increased healthcare spending as a share of GDP by only 4 or 5 percentage points.

American observers often jump to the conclusion that these suboptimal outcomes indicate a need to increase third-party control of healthcare spending. However, this conclusion is not substantiated. First, it is well known that prices for medical goods and services in the United States are generally higher than those in other developed countries.[41] Nevertheless, imposing price controls

41. Gerard F. Anderson et al., "It's the Prices, Stupid: Why the United States Is So Different from Other Countries," *Health Affairs* 22, no. 3 (May 2003): 89–105; David Squires and Chloe Anderson, *U.S. Health Care from a Global Perspective: Spending, Use of Services, Prices, and Health in 13 Countries* (New York: Commonwealth Fund, 2015).

FIGURE 10. CHANGE IN HEALTHCARE EXPENDITURE AND CHANGE IN FEMALE LIFE EXPECTANCY AT BIRTH IN 15 OECD COUNTRIES, 1970–2013



Source: Organisation for Economic Co-operation and Development, "OECD Health Statistics 2016," online database, June 30, 2016, available at http://www.oecd.org/els/health-systems/health-data.htm.

would generate a number of obstacles if the goal is to cut wasteful spending. Although Friedman suggested that the rise of third-party payment has been associated with an increase in physicians' salaries, the evidence put forward by Cutler and Ly indicates that high-skilled labor would not continue to enter the US healthcare sector if it could not continue to earn high wages. Rather, it would enter finance or other industries in which free-market incomes are higher in the United States than in other countries.[42]

Also, one cannot just jump to the conclusion that other countries do not have wasteful spending just because they experience lower healthcare prices than people in the United States do. Although life expectancy is the best (though a very imperfect) gauge of healthcare system performance, the healthcare system is not the most important driver of improvement in life expectancy. Indeed, household incomes are a far more significant indicator of life expectancy than anything in the healthcare "system."[43] When it comes to actually treating people

42. Cutler and Ly, "(Paper)Work of Medicine."
43. Raj Chetty et al., "The Association between Income and Life Expectancy in the United States, 2001–2014," *JAMA* 315, no. 16 (April 26, 2016): 1750–66.

TABLE 3. OUT-OF-POCKET SHARE OF HEALTHCARE SPENDING, 2013

Country	Out-of-pocket share (%)
Switzerland	25.8
Australia	18.7
Sweden	14.1
Norway	13.9
Canada	13.6
Japan	13.5
Germany	13.2
Denmark	12.9
United States	11.8
New Zealand	10.9
United Kingdom	9.5
France	6.4
Netherlands	5.3

Source: Author's calculations are from David Squires and Chloe Anderson, *U.S. Health Care from a Global Perspective: Spending, Use of Services, Prices, and Health in 13 Countries* (New York: Commonwealth Fund, 2015).

who are seriously ill, there are many areas in which the United States performs better than other countries.[44]

Finally, many countries that outperform the United States on performance measurements have less third-party control of payment than the United States does. The United States ranks in the bottom half of 13 high-income countries on the share of healthcare spending that patients pay directly out of pocket. The Swiss control one-quarter of healthcare spending directly, more than double the share Americans do. Even Canadians, subjects of the most tightly controlled single-payer system in the free world, control a slightly greater share of their healthcare spending than Americans do. (See table 3.)

THE NECESSARY BENEFITS OF REDUCING THIRD-PARTY PAYMENT

When Friedman wrote his article in 2001, an effort by some market-oriented scholars and advocates had already gained some traction toward reducing third-party payment. Those scholars and advocates coined the term "consumer-driven" health care and advocated tax-free savings accounts to allow people to

44. Dana Goldman, Darius Lackdawalla, and Tomas Philipson, "Mortality versus Survival in International Comparisons of Cancer Care," *Health Affairs*, March 20, 2015.

save and spend on health care directly. Although limited moves were made in this direction in the US Congress in the late 1990s, real change happened in the Medicare Modernization Act of 2003, which introduced Health Savings Accounts (HSAs) for every working-age American.

In one respect, HSAs have been quite successful. At the end of 2015, 16.7 million HSA accounts were in existence, with $30.2 billion in assets.[45] However, HSAs have not yet had a systemic effect on reducing the dominance of third-party payment, even though patients appear to be paying more out of pocket. According to a recent analysis,

> From 2004 to 2014, the average payments by enrollees towards deductibles rose 256% from $99 to $353, and the average payments towards coinsurance rose 107 percent, from $117 to $242, while average payments for copays fell by 26%, from $206 to $152. Overall, patient cost-sharing rose by 77 percent, from an average of $422 in 2004 to $747 in 2014. During that period, average payments by health plans rose 58%, from $2,748 to $4,354. This reflects a modest decline in the average generosity of insurance—large employer plans covered 86.7 percent of covered medical expenses on average in 2004, decreasing to 85.3 percent in 2014. Worker's wages [*sic*], meanwhile, rose by 32 percent from 2004 to 2014.[46]

Certainly, as written, the analysis looks as if patients are bearing a much higher share of the costs directly. However, patients paid 14.6 percent of costs directly in 2014, versus 13.3 percent in 2004. There has not really been a big shift of costs directly onto patients. So-called consumer-driven health care, whereby patients disintermediate insurers and respond directly to prices presented by providers, has not really taken root. Instead, insurers continue to administer prices, even for goods and services less than the deductible, for which patients pay directly. This defeats the main benefit of direct payment: price formation through the interaction of patients and providers that reflects and signals value to both.

Further, while there has been significant growth in patients' direct payments, it is increasingly misdirected. In 2015, deductibles accounted for 47

45. Devenir Group, LLC, "Health Savings Accounts Surpass $33 Billion," news release, February 17, 2016.

46. Gary Claxton, Larry Levitt, and Michelle Long, "Payments for Cost Sharing Increasing Rapidly over Time," Peterson-Kaiser Health System Tracker, April 12, 2016.

percent of patients' direct payments, versus only 23 percent in 2004. However, deductibles are the crudest and least effective way for patients to increase the share of healthcare spending they control directly. Deductibles are determined by the calendar year. They are a characteristic of what I have elsewhere described as the (very flawed) heliocentric doctrine of health insurance.[47]

As currently defined, consumer-driven health care consists of little more than shifting a small proportion of costs from insurers back to individuals. Providers still consider insurers and governments as primary payers and individuals as residual payers.

Deductibles do almost nothing to contain costs incurred by the small share of very sick patients who account for most healthcare costs. The system requires more sophisticated methods of cost sharing, in which all patients participate in price formation. That is the only way to get costs under control, and it looks like the current US system is incapable of letting such methods arise.

"Deductibles do almost nothing to contain costs incurred by the small share of very sick patients who account for most healthcare costs. The system requires more sophisticated methods of cost sharing."

The best way to illustrate the problem is to consider an alternate universe where the government gave a homeowner a mortgage-interest tax deduction only if he received a home from a "home maintenance organization" (HMO) chosen by his employer.[48] The homeowner would pay not only the purchase price, but also almost all maintenance and renovation costs—and traditional homeowner's insurance—to the HMO.

If the homeowner decided he needed new carpeting, he would not just go out and buy new carpeting. He would go to the carpet store and order carpets, and the carpet store would send a claim to the HMO. The homeowner would pay, for example, a $100 deductible. However, in order to limit moral hazard, he would need to order from an "in-

47. John R. Graham, "A New Year's Resolution: Moving beyond the Heliocentric Doctrine of Health Insurance," *Daily Caller*, January 2, 2015.
48. This illustration is not to concede that any tax preference to home consumption or healthcare consumption is socially beneficial. It just accepts the reality that such a preference exists.

network" carpet store. His choice of fabrics and quality would be limited (and perhaps preapproved) by the HMO, and a huge burden of administrative cost would be laid on top of the transaction.

This is the situation that exists in the United States today with a healthcare system dominated by third-party payers. To unravel it, public policy must resume moving in the direction of equalizing the tax preference of healthcare spending between direct payment and third-party payment. For example, the government should not mandate that health insurance cover preventive care or other costs that are within the reach of most households' budgets. Rather, the government should allow people to buy health insurance that covers only catastrophically expensive accidents and illnesses, like homeowner's insurance and automobile insurance do.

With respect to government healthcare programs such as Medicare, benefits should be (for lack of a better term) "voucherized" so that the government transfers the means to pay to patients, and patients in turn pay providers.

Reforms in this direction will greatly reduce the moral hazard and other unnecessary costs associated with too much third-party payment. Prices will come down, waste will shrink, and quality will improve. The only thing lacking is the political and popular will to overcome the tyranny of the status quo.

APPENDIX

Attribution of Out-of-Pocket Spending to Medicare and Medicaid (Table 1)

Table 1 estimates total spending on Medicare and Medicaid in 2011 at $1.1 trillion. The NHEA reports $953 billion for both programs. It reports out-of-pocket spending of $310 billion but does not attribute out-of-pocket spending to specific entities (Medicare beneficiaries, Medicaid beneficiaries, the privately insured, the uninsured, and so on). Scholars affiliated with the Center on Budget and Policy Priorities estimated that nondisabled Medicaid patients faced average out-of-pocket costs of $210 in 2002, and disabled Medicaid patients faced out-of-pocket costs of $441.[49] Those figures would rise to $350 and $735, respectively, in 2011.[50] A report from the Kaiser Family Foundation estimates that those in households at or below the federal poverty level (FPL)—$22,050 in 2009—spent $638 out of pocket in 2009. The report estimates that those in households between 100 percent and 125 percent of the FPL paid $840. So, on average, I assume $600 out-of-pocket spending per Medicaid beneficiary in 2011. The average Medicare beneficiary paid $2,744 out of pocket in 2010.[51] That would be $2,857 in 2011, according to the National Health Expenditure Deflator.[52] The NHEA data report 47.7 million Medicare beneficiaries and 55.9 million Medicaid beneficiaries in 2011. In 2010, 9.6 million Americans were dual eligible for both Medicare and Medicaid.[53] I attribute those individuals to Medicare, thereby reducing the number of Medicaid beneficiaries to 46.3 million: ($2,857 × 47.7 million) plus ($600 × 46.3 million) = $164 billion out-of-pocket spending attributed to Medicare and Medicaid beneficiaries.

Healthcare Spending before 1960

The NHEA data contain historical spending to 1960, but identifying data on healthcare spending before 1960 is challenging. Christopher Chantrill has

49. Matt Broaddus and Leighton Ku, *Out-of-Pocket Medical Expenses for Medicaid Beneficiaries Are Substantial and Growing* (Washington, DC: Center on Budget and Policy Priorities, 2005).
50. Centers for Medicare and Medicaid Services, Office of the Actuary, *NHE Deflator Methodology*, December 3, 2015.
51. Juliette Cubanski et al., *How Much Is Enough? Out-of-Pocket Spending among Medicare Beneficiaries* (Menlo Park, CA: Henry J. Kaiser Family Foundation, 2014).
52. Centers for Medicare and Medicaid Services, Office of the Actuary, *NHE Deflator Methodology*.
53. Katherine Young et al., *Medicaid's Role for Dual Eligible Beneficiaries* (Menlo Park, CA: Henry J. Kaiser Family Foundation, 2013).

analyzed government data to estimate government spending on health care starting in 1900.[54] Government healthcare spending accounted for just 0.25 percent of GDP in 1900, peaking at 1.00 percent of GDP in 1933, declining during World War II, and hitting 1.00 percent of GDP again in 1961. However, there was virtually no government involvement in healthcare spending in the early 20th century. Of the 0.25 percent of GDP accounted for by healthcare spending in 1900, 0.13 percentage point was state and 0.12 percentage point was local government. By 1959, federal healthcare spending accounted for 0.26 percent of GDP, while state and local each accounted for 0.35 percent (for a total of 0.96 percent of GDP). However, Chantrill does not estimate private healthcare spending, whether out of pocket or by third-party payers such as insurers or employers.

Using a source published in 1975, Christopher Conover estimated healthcare spending back to 1929, in tables with points at 20-year intervals through 2009. Conover represents healthcare spending at a little more than 3 percent of GDP in 1929 and about 5 percent of GDP in 1949.[55]

54. Christopher Chantrill, "US Health Care Spending History from 1900," accessed April 8, 2016, http://www.usgovernmentspending.com/healthcare_spending.
55. Conover, *American Health Economy Illustrated*, 7.

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