

U.S. Health Care Spending In An International Context

Why is U.S. spending so high, and can we afford it?

by Uwe E. Reinhardt, Peter S. Hussey, and Gerard F. Anderson

ABSTRACT: Using the most recent data on health spending published by the Organization for Economic Cooperation and Development (OECD), we explore reasons why U.S. health spending towers over that of other countries with much older populations. Prominent among the reasons are higher U.S. per capita gross domestic product (GDP) as well as a highly complex and fragmented payment system that weakens the demand side of the health sector and entails high administrative costs. We examine the economic burden that health spending places on the U.S. economy. We comment on attempts by U.S. policy-makers to increase the prices foreign health systems pay for U.S. prescription drugs.

FOR A BRIEF MOMENT IN THE EARLY 1990S it seemed that the combination of "managed care" embedded in "managed competition" would allow the United States to keep its annual growth of health care spending roughly in step with the annual growth of gross domestic product (GDP). It was a short-lived illusion. By the turn of the millennium the annual growth in U.S. health spending once again began to exceed the annual growth in the rest of the GDP by ever-larger margins.

In the United States the impact on health spending of managed care and managed competition had been controversial from the start. Skeptics argued that these tools might yield a one-time savings, spread over a few years, but that by themselves they would be unlikely to slow the long-term growth in health spending thereafter.¹ It now appears that these analysts were right. In retrospect, and taking a longer-run view, the cost control of the early and mid-1990s merely represents an abnormal period in the history of U.S. health care.

Data for 2001, released by the Organization for Economic Cooperation and Development (OECD), show that over the period 1990–2001 the United States succeeded only in matching the median growth in inflation-adjusted health spending per capita in the other twenty-nine countries included in the OECD database (Exhibit 1).² Viewed in that context, the United States can hardly claim to have found

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EXHIBIT 1
Health Spending in OECD Countries, 2001

Country	Total health spending per capita			GDP per capita		
	PPP\$	As percent of U.S. spending	Average annual growth, 1991-2001 (%)	PPP\$	Average annual growth, 1991-2001 (%)	Health spending as percent of GDP
United States	4,887	100	3.1	35,182	2.1	13.9
Switzerland	3,322	68	2.3	29,876	0.4	11.1
Norway	2,920	60	2.8	36,462	2.9	8.0
Germany ^a	2,808	57	2.4	26,199	2.2	10.7
Canada	2,792	57	2.1	28,811	2.1	9.7
Luxembourg ^b	2,719	56	3.0	48,687	3.2	5.6
Iceland	2,643	54	3.0	28,879	1.9	9.2
Netherlands	2,626	54	3.0	29,391	2.1	8.9
France	2,561	52	2.4	26,879	1.6	9.5
Australia	2,513	51	4.1	27,408	2.7	9.2
Denmark	2,503	51	2.2	29,216	2.0	8.6
Belgium	2,490	51	3.2	27,775	1.8	9.0
Sweden	2,270	46	2.6	26,052	1.9	8.7
Italy	2,212	45	1.5	26,345	1.4	8.4
Austria	2,191	45	2.5	28,324	1.7	7.7
Japan	2,131	44	3.9	26,652	0.9	8.0
United Kingdom	1,992	41	4.1	26,315	2.4	7.6
Ireland	1,935	40	6.5	30,002	6.7	6.5
Finland	1,841	38	-0.1	26,438	2.5	7.0
New Zealand	1,710	35	3.1	21,077	2.2	8.1
Portugal	1,613	33	5.3	17,560	2.1	9.2
Spain	1,600	33	3.2	21,294	2.3	7.5
Greece	1,511	31	4.4	16,137	1.7	9.4
Czech Republic	1,106	23	5.3	15,143	1.8	7.3
Hungary	911	19	2.1	13,431	2.6	6.8
Korea ^b	893	18	8.1	15,905	4.6	5.9
Slovak Republic ^a	682	14	NA	12,010	3.1	5.7
Poland	629	13	4.0	9,934	4.4	6.3
Mexico	536	11	2.8	8,903	1.3	6.0
Turkey ^c	301	6	6.3	5,734	0.8	4.8
OECD median	2,161	44	3.0	26,392	2.1	8.1

SOURCE: Organization for Economic Cooperation and Development (OECD) data, 2002.

NOTE: Growth rates are calculated from national currency units, not U.S. dollar purchasing power parities (PPPs). NA is not available.

^a 1990.

^b 2000.

^c 1998.

the panacea for cost control during the 1990s.

Furthermore, as can be seen in Exhibit 1, U.S. per capita health spending continued to exceed per capita health spending in the other OECD countries, by huge margins, in 2001. After expenditures are converted into purchasing-power parity international dollars (PPP\$), Switzerland spent only 68 percent as much on health care per capita in 2001 as the United States.³ Neighboring Canada, with a health care delivery system and medical practice styles fairly similar to those in the

United States, spent only 57 percent as much per capita as the United States. PPP-adjusted per capita spending in the median OECD country was only 44 percent of the U.S. level (PPP\$2,161).

Finally, the median percentage of GDP absorbed by health care in the non-U.S. OECD countries in 2001 was only 8.3 percent, compared with 13.9 percent in the United States. Although that percentage remained more or less constant during the 1990s, during the previous two decades the average annual growth of health spending exceeded the growth of total GDP by 2.5–3 percent.⁴ U.S. government actuaries now project that during 2003–2013 U.S. health spending will revert to its traditional, long-term trend. They project the annual growth in U.S. health spending to exceed the annual growth in GDP once again by about two percentage points, and total national health spending to absorb as much as 18.4 percent of U.S. GDP by 2013.⁵

In this paper we examine data from the OECD database in detail. We begin with a brief review of the factors that can explain the relatively high U.S. spending on health care, drawing on earlier papers on the subject.⁶ We then discuss international issues in pharmaceutical pricing. Next, we explore the ways that health spending trends might be a burden on the U.S. economy. We conclude that while these trends are not an imminent burden on the macro economy, they will place an increasing burden on the members of lower-income groups even within the coming decade. Furthermore, by 2040 these trends will force the United States to make do with actual reductions in the nonhealth GDP per capita overall. This prospect leads many observers to judge current trends in U.S. health spending “unsustainable” or “unaffordable,” although, as we argue further on, these terms are so highly subjective that they lose meaning in this context.

Factors Driving High U.S. Health Spending

■ **GDP per capita.** No single factor explains the levels or rates of increase in health spending among industrialized countries.⁷ However, ability to pay, as measured by GDP per capita, has repeatedly been shown to be one of the most important factors.⁸ About 90 percent of the observed cross-national variation in health spending across the OECD countries in 2001 can be explained simply by GDP per capita. An estimated bivariate relationship between GDP per capita and per capita health spending predicts a U.S. per capita health spending level of \$3,435 for 2001. The actual level, \$4,887, is \$1,452 or 42 percent higher than the predicted level.⁹ Both policymakers and clinicians need to examine what other factors can account for that remaining differential.

■ **Distribution of market power and prices.** In a previous paper we argued that Americans pay much higher prices for the same health services than citizens in other countries pay.¹⁰ There are a number of reasons why this might be so.

First, the distribution of compensation in the United States is wider than in most of the other industrialized countries. The highly trained and highly talented

health professionals employed in health care must be recruited from the same talent pool used by other industries offering high compensation, such as law and finance. Because health care is a labor-intensive industry, labor is one factor driving up the cost of producing health care in the United States.

Second, the highly fragmented organization of the financing of health care in the United States serves to allocate relatively greater market power to the supply side of the health system than to the demand side. As we have argued in previous papers, multiple purchasers of care allow U.S. prices to rise above the level attained in other industrialized countries that either endow the demand side of their health systems with strong, monopsonistic (single-buyer) market power (such as the Canadian provincial health plans) or allow multipayer systems to bargain collectively with the providers of health care, sometimes within government-set overall health care budgets (as, for example, in Germany).¹¹

■ **The capacity of health systems.** The relatively greater market power on the demand side of health systems in other countries can explain why so many countries allocate a lower fraction of their GDP to health care even though they appear to be more heavily endowed with hospital capacity and health professionals than the United States.¹²

Many industrialized countries have higher physician- and nurse-to-population ratios than the United States (Exhibit 2).¹³ The supply of U.S. physicians per capita grew only 1 percent per year between 1991 and 2001; only six countries had slower growth rates during this period. A large part of the increase in the U.S. physician supply represents international medical graduates (IMGs), as the capacity of U.S. medical schools has stayed virtually constant since the 1970s.¹⁴ The U.S. nurse-to-population ratio (8.1 per 1,000 population) also was below the OECD median (9.0) in 2001. Growth in the supply of nurses was relatively modest in the United States—about 1.3 percent per year—and below the median growth rate for the OECD (1.6 percent).

Previous comparisons indicated that in recent years the United States has had a relatively low supply of computed tomography (CT) scanners and magnetic resonance imaging (MRI) devices relative to some OECD countries. The United States was an early adopter of these medical technologies and then tended to be relatively well endowed with the new technology by international standards. Ultimately, however, the United States did not acquire as large a supply as Japan and several other countries did.¹⁵

Finally, the United States has a relatively small endowment of hospital beds per capita compared with most other OECD countries (Exhibit 2). The United States is in the bottom quartile of hospital beds per capita. The decrease in U.S. hospital capacity between 1991 and 2001—0.8 beds per 1,000 population—is at the median for OECD countries with available data.

■ **Administrative complexity and costs.** By international standards, the U.S. approach to financing health care is extremely complex. Research suggests that a

EXHIBIT 2**Number Of Health Professionals And Hospital Beds Per 1,000 Population In OECD Countries, 1991-2001**

Country	Physicians		Nurses		Hospital beds	
	Number, 2001	Average annual growth, 1991-2001 (%)	Number, 2001	Average annual growth, 1991-2001 (%)	Number, 2001	Difference, 1991-2001
Australia	2.5	0.8	10.6	-1.3	3.8 ^a	-0.6
Austria	3.2	3.4	9.2	1.9	6.2	-0.6
Belgium	3.9 ^a	1.9	NA	NA	NA	NA
Canada	2.1	0.0	9.9 ^a	-1.4	3.2 ^a	-0.8
Czech Republic	3.4	2.3	9.1	0.9	6.5	-2.0
Denmark	3.4	0.9	9.6	1.0	3.3 ^b	-0.7
Finland	3.1	2.2	14.9	3.7	2.4	-2.4
France	3.3	0.6	7.0	2.3	4.2 ^a	-0.9
Germany	3.3	1.7	9.7	NA	6.3	-1.2
Greece	4.4	2.0	3.9 ^b	1.4	4.0 ^b	0.1
Hungary	2.9	-0.3	4.8	0.2	6.0	-1.1
Iceland	3.5	2.3	14.0 ^a	0.6	NA	NA
Ireland	2.4	2.0	14.8	2.0	3.0	-0.3
Italy	4.3	1.6	5.2 ^b	0.7	4.3 ^a	-1.5
Japan	1.9 ^a	1.4	7.8 ^c	3.4	NA	NA
Korea	1.4	4.5	3.0 ^a	NA	5.2	2.3
Luxembourg	2.5	2.3	10.4	NA	6.6	-0.3
Mexico	1.5	5.2	2.2	2.0	1.0	0.0
Netherlands	3.3	2.4	12.8	NA	3.3	-0.9
New Zealand	2.2 ^a	1.6	9.6 ^a	0.4	NA	NA
Norway	3.0	1.4	10.4	-2.7	3.1	-0.5
Poland	2.2	0.0	4.8	-1.0	5.0	-1.3
Portugal	3.2	1.0	3.8	2.7	3.3 ^c	-0.1
Slovak Republic	3.6	1.7	7.3	0.6	5.6	NA
Spain	3.3 ^a	NA	6.9	3.3	3.2 ^c	-0.1
Sweden	3.0 ^a	1.3	8.8 ^a	0.1	2.4 ^a	-1.5
Switzerland	3.5	1.6	10.7 ^a	NA	3.9	-2.5
Turkey	1.3	2.7	1.7 ^a	2.2	2.1	0.1
United Kingdom	2.0 ^a	1.8	9.0	1.4	3.9	NA
United States	2.7 ^b	1.0	8.1 ^b	1.3	2.9	-0.8
OECD median	3.1	1.7	9.0	1.1	3.9	-0.8

SOURCE: Organization for Economic Cooperation and Development (OECD) data, 2002.

NOTE: NA is not available.

^a2000.

^b1999.

^c1998.

sizable fraction of higher U.S. health spending, not explainable by higher GDP per capita, can be traced to the higher administrative overhead required by such a complex system.¹⁶ To quote economist Henry Aaron on this point: "Like many other observers, I look at the U.S. health care system and see an administrative monstrosity, a truly bizarre mélange of thousands of payers with payment systems that differ for no socially beneficial reason, as well as staggeringly complex public system with mind-boggling administered prices and other rules expressing distinctions that can only

be regarded as weird."¹⁷

Aaron's comment was part of his response to a recent paper by Steffie Woolhandler, Terry Campbell, and David Himmelstein, who find that administrative costs for insurers, employers, and the providers of health care in the U.S. health system (not even including the time costs patients bear in choosing health insurance and claiming reimbursement) were "at least" \$294.3 billion in 1999, or about 24 percent of total U.S. health spending.¹⁸

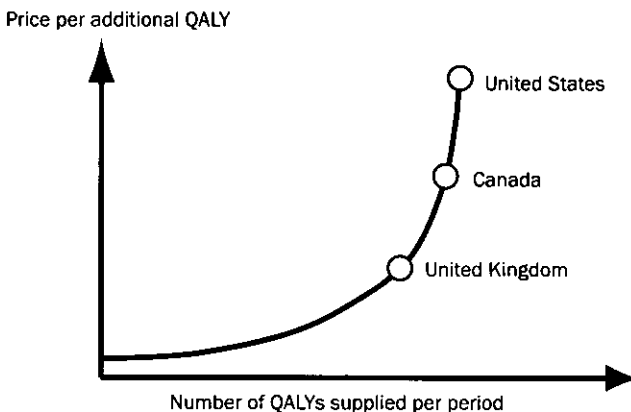
Aaron's remarks may leave the impression that public insurance programs are the chief culprits in this "administrative monstrosity." However, as Commonwealth Fund president Karen Davis observed in her recent testimony before Congress, administrative expenses for private insurance in the United States are two-and-one-half times as high as those for public programs.¹⁹

■ **Unwillingness to ration health care.** A country's health care system—especially its research and development (R&D) infrastructure—continually gives society the option of purchasing, through health care, additional quality-adjusted life years (QALYs) at increasingly higher prices. Exhibit 3 illustrates the shape such supply curves are likely to have.

The hypothetical curve in Exhibit 3 reflects the fact that some relatively low-cost medical interventions can yield additional QALYs at relatively low incremental costs—for example, immunizations or prenatal care. At the other end of the spectrum, however, the health system can wrestle additional life years from nature's course only at increasingly higher incremental costs. Examples of such high-cost procedures would be diagnostic tests broadly applied to populations with a low incidence of the disease targeted by the test, especially in the presence of many false positives. Heroic medical intervention at life's beginning or end also

EXHIBIT 3

Hypothetical Supply Of Quality-Adjusted Life Year (QALY) Curve Offered By A Modern Health Care System



SOURCE: Based on authors' conjecture.

“Concern over unduly low drug prices abroad now finds expression in U.S. trade negotiations with other countries.”

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falls into the high-cost range of the QALY supply curve.

The thrust of modern cost-effectiveness research—a distinct branch of health services research—is aimed at identifying the approximate shape of this curve for policymakers. In principle, policymakers should use that information to answer two morally troublesome questions faced by every country. First, how far up the QALY supply should the health system go to procure added QALYs? Second, should the maximum price to be paid for added QALYs be uniformly applied to all members of society or be allowed to vary with the individual patient's ability to pay or with other factors, such as social status?

As Julian Le Grand suggests, the National Institute for Clinical Effectiveness (NICE) established by the Blair government in the United Kingdom appears to be using a cutoff price of £30,000 (about US\$53,000 at the current exchange rate) per QALY beyond which treatments should not be publicly funded.²⁰ Above this threshold, U.K. patients with discretionary funds or supplemental private health insurance could procure more costly treatments from the country's relatively small private health sector. That cutoff price is mentioned also by Nancy Devlin and colleagues, who write that “it is clear from papers presented to NICE's Annual Public Meeting that £30,000 per QALY has effectively become the benchmark for cost-effectiveness,” although they add that “there have been no directions from the Department of Health or the National Assembly for Wales that they consider this to be an appropriate test.”²¹

Policymakers in other countries typically have shied away from setting an explicit cutoff price per QALY (or other measure of outcome) above which collective funds will not be used to purchase additional output from the health sector. Such a pronouncement would undoubtedly be politically controversial and divisive. Instead, countries typically have sought to set that upper limit implicitly, through a mixture of price controls and limits on capacity. If one had to make a rough guess on the implicit prices that health systems are willing to pay for QALYs, the relative overall positions of the United Kingdom, Canada, and the United States in Exhibit 3 seem plausible, although we make no pretense that the differentials suggested there are accurate. It might be illuminating in future cross-national research to extract through opinion surveys from various stakeholders in health care more explicit notions on the maximum price that should be devoted to wresting an additional QALY from nature through the health care system.

In the United States neither private health insurers nor the publicly funded Medicare and Medicaid programs appear to observe any explicit guidelines on the maximum price per QALY procured through health care. Two possible exceptions are private health insurance policies that have lifetime upper limits and the

Medicare program, which lacks catastrophic benefits. For low-income Americans without health insurance, there may well be much lower, haphazardly imposed, implicit upper limits on the price per QALY that society is willing to pay on their behalf.²² A series of recent reports by the Institute of Medicine (IOM) has documented that uninsured Americans receive less care than insured Americans and that circumstance does affect their health status.²³

The Brewing Battle Over Pharmaceutical Prices

Although health care has not traditionally been a focus of U.S. foreign and trade policy, the relatively high concentration of market power on the demand side of foreign health systems appears to have become a major irritant to U.S. officials, at least with respect to pharmaceutical prices. These officials acknowledge that U.S. prices for pharmaceuticals are high by international standards; however, they accuse foreign governments of keeping those prices artificially and unduly low within their own health systems, thereby beggaring U.S. patients, who now fund the bulk of U.S. pharmaceutical R&D.

In a recent address to pharmaceutical executives, for example, former Food and Drug Administration (FDA) Commissioner Mark McClellan (now head of the Centers for Medicare and Medicaid Services, or CMS) decried as "unfair" that other nations use market power on the demand side for prescription drugs to obtain lower prices. He was concerned that other countries are shifting the burden of financing the R&D cost of new drugs to the United States. "Some of the world's richest nations are driving the world's hardest bargains," he remarked. "For example, many high-income countries regulate their prices by setting them equal to those in other countries that already have rigid price controls. This system is used in Canada, informally in Japan, and in some countries in Europe."²⁴

This concern over unduly low drug prices abroad now finds expression in U.S. trade negotiations with other countries. As the *International Herald Tribune* recently reported, "In talks over a free-trade agreement with Australia, U.S. officials are pressing the Australian government to water down its system for negotiating the prices it pays for prescription drugs."²⁵ Countries that use price controls to constrain the growth of their health spending can expect to be pressured by the U.S. government to raise the prices their health systems pay for drugs sold by U.S. manufacturers. Countries subjected to these tactics by U.S. trade negotiators may resent this intrusion by the U.S. government into what they may regard as purely domestic health policies.

The emerging posture among U.S. policymakers on drug prices raises a number of questions. First, by what mechanism would higher drug prices paid by foreign health systems for U.S.-manufactured drugs actually translate into lower drug prices for U.S. patients? Or would these price increases merely translate into increased revenues of U.S. manufacturers? Second, how much of the added revenue garnered by U.S. manufacturers from drug price increases abroad would flow

through to R&D spending? In 2002 the thirteen largest U.S. pharmaceutical companies allocated their sales revenue to particular objects of expenditures and profits as follows: cost of goods sold, 25.3 percent; selling and administration, 32.8 percent; R&D, 14 percent; taxes, 7.3 percent; and net after-tax profits, 20.6 percent.²⁶ Would added revenues from increased drug prices abroad be similarly allocated? If so, can the U.S. government and U.S. drug manufacturers reasonably expect health systems abroad to underwrite with higher prices outlays by U.S. manufacturers on selling and administration, including the direct-to-consumer (DTC) advertising that is not even permitted in many of these other countries?

Third, would the U.S. government permit other countries's health systems to use approaches with tiered pricing, such as reference pricing, which can be and has been defended as a market-based approach to drug pricing but is profoundly feared by drug manufacturers in the United States and elsewhere?²⁷ How deeply into other countries' health policy would U.S. policymakers penetrate to shore up the revenues of U.S. drug manufacturers?

Finally, it is not clear to what extent drug prices in other nations actually are inappropriately low. A recent study by Patricia Danzon and Michael Furukawa suggests that the differential in prices paid for drugs in different countries is smaller than a simple comparison of drug prices might suggest. They argue that simple comparisons of prices for particular drugs can be highly misleading and that such comparisons should be based on broader market baskets of pharmaceutical products sold in the various countries. Furthermore, they argue that such comparisons should be made with PPP dollars rather than at current exchange rates. On that basis, they conclude that "U.S.- foreign differentials for broad baskets of prescription drugs are in line with income [differentials across countries] and [are] smaller for drugs than for other medical services."²⁸

Health Care In The Macro Economy

■ **Health spending and GDP.** Health spending is included in the calculation of GDP. If spending on health care increases, other things being equal, then GDP rises, just as it does when there is increased spending on sport-utility vehicles (SUVs) or entertainment, other things being equal.

Other things, however, may not remain equal when one component of GDP grows over time. Under full employment of a country's real resources, for example, added spending on health care would draw labor and capital away from other sectors of the economy, whose contribution to GDP would then shrink. That displaced contribution would be the opportunity cost of added health spending.

On the other hand, under conditions of pervasive unemployment, added health spending may not need to draw real resources away from other economic activities and GDP; the opportunity costs of added health spending would be low or close to zero. This is an important point during recessions. In a speech before the Commonwealth Club of California in June 2002, for example, President George W.

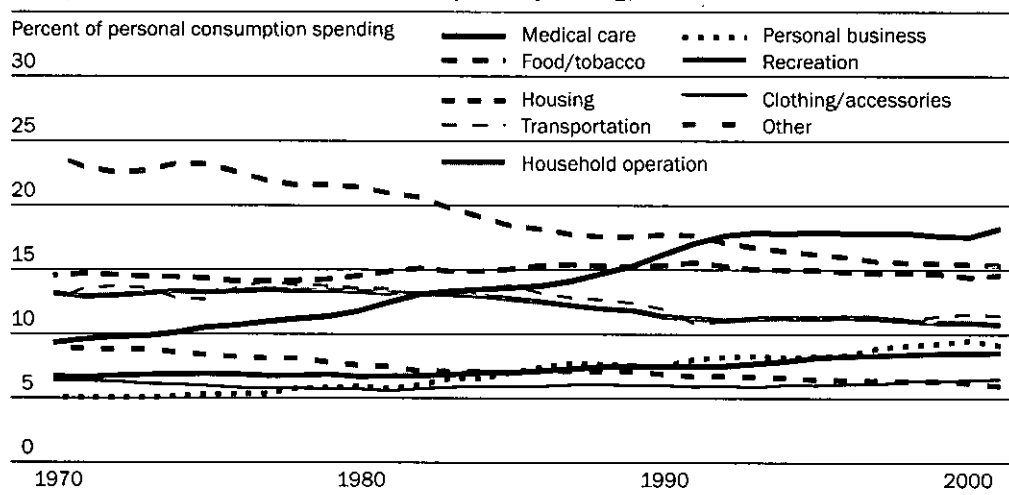
Bush remarked, "Much of the growth we have seen in this quarter is the result of consumer spending, fueled by well-timed tax deductions."²⁹ If one accepts this purely Keynesian strategy of kindling economic growth as appropriate, as evidently the president does, then added health spending, which will create jobs, is a good substitute for tax cuts designed to kindle added consumer spending. The main difference is that added health spending draws added real resources into the production of health care, while tax cuts draw real resources into the production of whatever consumers purchase with their extra disposable income, which may, however, include added production (and jobs) abroad from additional imports purchased by Americans.

Even under conditions of full employment, however, a diversion of real resources from other economic activities to health care might improve economic welfare in society. It would depend on the value of the added health care gained relative to the opportunity costs represented by the value of other output given up. In an efficiently operated economy, the benefit-cost ratios associated with marginal shifts of real resources from any one sector to any other would be the same for all pairs of sectors and would be close to or equal to one.

The fractions of GDP allocated to particular types of output could, of course, vary over time, in accordance with the relative valuations society attaches to particular types of output over time. In other words, the fact that in most industrialized countries health care has absorbed an ever-increasing fraction of GDP while other types of output—for example, agricultural products—have claimed a decreasing share does not by itself imply an excessive allocation of resources to health care.

Exhibit 4 illustrates this point with the changing distribution of personal spending in key sectors of the U.S. economy.³⁰ In 1970 medical care represented less than one-tenth of U.S. personal consumption spending, the fifth-largest component after food, housing, transportation, and household operation. In that year Americans spent roughly the same portion of their personal consumption on clothing as they did on medical care. Since that time, medical care has been a steadily increasing share of personal consumption. The only other major categories that have grown since 1970 are recreation and personal business (financial services and similar expenses). By 2001 medical care represented 18.2 percent of personal consumption spending and was the largest component. Even so, absolute real spending on every component of personal consumption spending—even food—increased from 1970 to 2001.

■ **The alleged economic burden of health spending.** How serious a problem, if it is one at all, is the inexorable growth of health care as a component of GDP? On this question the responses of policymakers can vary, depending on their political purview. At the local level, policymakers usually give much weight to the employment opportunities offered by a growing health sector, which leads them to resist reductions in or closing of local health care facilities. On the other hand, at the mac-

EXHIBIT 4**Components Of U.S. Personal Consumption Spending, 1970–2001**

SOURCE: U.S. Bureau of Economic Analysis.

NOTES: "Other" includes religious activities, education and research, personal care, and foreign travel. Components add to 100 percent.

roeconomic level, policymakers often view growing health spending with alarm, although added consumer spending on other goods and services—on SUVs or entertainment—invariably is viewed as a sign of economic health by both policymakers and the media. What explains these seemingly inconsistent views toward consumer spending?

Singling out health spending as a macroeconomic drag on the economy appears to have two intellectual roots. First, while recent economic studies have shown that in the aggregate, "medical spending as a whole is worth the increased cost of care," the "whole" may hide many individual medical interventions of dubious clinical and economic merit.³¹ For example, the highly critical analyses of the U.S. health system by the IOM and the recent analyses of geographic variations in per capita Medicare spending by Elliot Fisher and colleagues have contributed to this suspicion.³² Second, there is the view that the long-run historical divergence in the growth rates of health spending and of the rest of GDP cannot be "sustained" over the long run without reducing the availability of all other goods and services. Another way in which it is often expressed is that these increases simply are not "affordable." Unfortunately, words such as "sustainable" and "affordable" are more easily pronounced than defined.

The word *sustainable* means "able to be maintained," which raises the question what factors would make something not "maintainable." Here a distinction must be made between "economically sustainable" and "politically sustainable." Continuing the Medicare program in the current form into the indefinite future would be economically sustainable, in the sense that it could be accommodated by an ever-growing GDP. The program may not be politically sustainable, however, if

the public or its political representatives refused to countenance the higher taxes on the private sector or transfers from other public programs that such a policy would entail. A similar argument, of course, can be made with regard to any other tax-financed programs, including defense, transportation, education, and farm subsidies.

To *afford* something, according to the dictionary, means that one has "the means for acquiring it without serious inconvenience." Evidently "affordable" is a highly subjective term as well, which should be sparingly used in the context of health care. What, after all, is meant by a "serious inconvenience"?

Given these ambiguities, we do not use either term in what follows and merely explore instead what impact further health spending growth is likely to have on the partitioning of future GDP into health care and non-health care GDP, leaving it to the reader to draw his or her own inferences from that exploration on "sustainability" and "affordability."

It was noted in Exhibit 1 that during the 1990s real (inflation-adjusted) health spending tended to outpace the growth of GDP in most countries. The median differential in growth rates for the OECD countries was about one percentage point. Historically, that differential has been much higher in the United States. The difference between real per capita health spending and GDP growth averaged 3.4 percentage points during the 1960s, 2.4 during the 1970s, and 3.2 during the 1980s.³³ Only in the 1990s was the differential held to 1.0 percentage points, and most of that can be attributed to robust growth in the overall U.S. economy, not lower health spending. Over the entire period 1960–1999 the differential in the United States had been about 2.4 percentage points.³⁴

The CMS actuaries report that the United States as a whole spent an estimated \$1.5 trillion on health care in 2003, or 14.9 percent of a GDP of \$10.9 trillion.³⁵ They project that by 2013 the United States will spend about \$3.36 trillion on health care, or 18.4 percent of a GDP of \$18.24 trillion. Stated in constant 2003 dollars and on a per capita basis, the actuaries' projections imply an average annual growth rate in real per capita GDP of 1.9 percent, while the corresponding growth rate in real per capita health spending is about 3.8 percent.³⁶ It implies a projected growth rate differential of 1.9 percentage points. All of these calculations, of course, are merely conjectures and subject to error.

Although health spending in the amount of \$3.36 trillion in 2013 may seem alarming, the nonhealth GDP projected to be available to Americans in that year would still be \$5.6 trillion larger than it was in 2003. This implies that in 2003 U.S. dollars, Americans are projected to have 16.4 percent more nonhealth GDP per capita in 2013 than they had in 2003. While nonhealth GDP's share of total GDP is projected to fall over the decade (from 85.1 percent in 2003 to 81.6 percent in 2013), in absolute real dollars Americans are projected to have more of everything, besides health care. During 1960–1990, when the percentage of GDP spent on health care increased rapidly as well, the absolute amount spent on other goods and ser-

vices also continued to increase.

As Michael Chernew and colleagues showed in a recent paper, however, this relatively comfortable scenario might not last.³⁷ They calculate that the U.S. economy most probably could absorb a growth rate differential of about one percentage point throughout the next seven decades and still have real nonhealth GDP per capita grow throughout that period. On the other hand, a growth rate differential of two percentage points would keep nonhealth GDP per capita rising until about 2040, after which time it would begin to decline at an ever more rapid rate. All of these calculations, of course, are highly sensitive to assumptions about future overall productivity growth in the economy.

Pricing Low-Income Americans Out Of Health Care

Although from a macroeconomic perspective the United States could afford to let health spending grow more rapidly than overall GDP for several decades without depressing aggregate nonhealth GDP, that differential in growth rates can induce severe economic distress at the microeconomic level. To illustrate, consider a private business firm whose line of business and workforce skill mix is such that it can tolerate only a maximum total compensation of \$35,000 per worker per year. At higher compensation levels, the firm would lose money on employing such a worker. This assumed total compensation includes the workers' take-home pay, all withholdings from their paychecks, and all contribution the firm makes to payroll taxes and other fringe benefits, including health insurance. It does not matter how these contributions are divided between employer and employee. The crucial point is that the health insurance premiums paid by or on behalf of these workers must be supported by this total compensation of \$35,000 per worker.

If we assume that these workers' productivity (in terms of physical units of output produced) rises at an average rate of 1.5 percent and that the prices of the firm's output inflate at the general price inflation in the economy of about 2.5 percent, then one can plausibly assume that the total wage base per worker in this industry will increase at an average annual rate of 4 percent over the next decade, to about \$50,000 a decade hence.

According to the most recent employer health benefits survey of the Henry J. Kaiser Family Foundation and Health Research and Educational Trust, the total premium for a typical employment-based health insurance policy for a family in 2003 was \$8,800, split somehow between employer and employee.³⁸ In the past several years these premiums have been rising at rates much in excess of 10 percent.³⁹ If they grew at a rate of "only" 10 percent for the next decade, the typical family coverage would then cost about \$21,000 per year a decade hence, or 42 percent of the total wage base of \$50,000 projected for that year. Small changes in the assumed future productivity growth in this firm, product price levels, and health insurance premiums could easily drive the fraction of total compensation absorbed by health insurance over 50 percent. In the end, such a firm would be likely

"The debate over health care is less a pure macroeconomic issue than an exercise in the political economy of sharing."

to cease offering its employees health insurance, and the income of these workers would be too small to absorb health insurance premiums in excess of \$20,000. They would be likely to join the ranks of the uninsured. This prospect puts U.S. policymakers at a crossroads.

One approach would be to persuade the upper half of families in the nation's income distribution to help purchase adequate health insurance for families in the lower third. One may call it the "universal health insurance" road. It would, of course, involve added taxes and transfers flowing through government budgets, which would bring with them additional government regulation, especially if the aim were to structure the U.S. health system as a one-tier system in which sick people have roughly the same health care experiences regardless of their own ability to pay.

The alternative option would be to embrace as official policy, both in employment-based health insurance and in public insurance programs, a multi-tier health system in which a person's health care experience would be allowed to vary by his or her ability to pay for health care. In such a system families in the upper half of the income distribution would have a noticeably superior health care experience than families in the lower half would have. This is certainly already the case for U.S. families with good health insurance and those without it.

The emerging political battle at this crossroads is unlikely to be styled in stark terms such as "rationing by income class" or "one-class" versus "two-class" medicine. Instead, it will be styled as a debate over "market competition versus government regulation"; as a simple, technocratic quest for greater "efficiency"; or as the dubious dichotomy of "rationing versus markets," even though textbooks in economics instruct the reader that market prices are just another way of rationing scarce commodities, on the basis of ability and willingness to pay.⁴⁰ At its core, then, the debate over health care, in the United States as elsewhere, is less a pure macroeconomic issue than an exercise in the political economy of sharing.

An earlier version of this paper was presented at the Commonwealth Fund 2003 International Symposium on Health Care Policy, "Hospitals and Health Care Delivery Systems: Spotlight on Innovation," 22-24 October 2003, in Washington, D.C. The authors thank the Commonwealth Fund for supporting this research, the Organization for Economic Cooperation and Development (OECD) for making its database available to the research community, and Jonathan Cylus for his research assistance. They also thank two anonymous peer reviewers, whose constructive criticism was very helpful, and, as always, the hard-working staff of Health Affairs. None of the foregoing is responsible for the views expressed in this paper.

NOTES

1. See, for example, H.J. Aaron and W.B. Schwartz, "Managed Competition: Little Cost Containment without Budget Limits," *Health Affairs* 12 (Supplement 1993): 204–215.
2. Data provided by the Office of the Actuary, Centers for Medicare and Medicaid Services (CMS), show that the breakdown of the average percentage contribution to total growth in U.S. health spending during 1990–2002, not adjusted for inflation, was as follows: population growth, 15 percent; general price inflation, 32 percent; medical care price inflation over and above general price inflation, 23 percent; and use of services (such as physician visits, inpatient days, and so on), intensity of services (including whatever waste there may have been in service use and intensity), and statistical errors, 30 percent. There were, however, considerable year-to-year variations in these percentage contributions around these 1990–2002 averages. Katharine Levit, CMS Office of the Actuary, personal communication, 24 January 2004.
3. Purchasing power parities (PPPs) adjust for cost-of-living differences between countries by comparing the price of an economywide market basket of goods.
4. M.E. Chernew, R.A. Hirth, and D.M. Cutler, "Increased Spending on Health Care: How Much Can the United States Afford?" *Health Affairs* 22, no. 4 (2003): 15–25, Exhibit 1.
5. S. Heffler et al., "Health Spending Projections through 2013," Exhibit 1, *Health Affairs*, 11 February 2004, content.healthaffairs.org/cgi/content/abstract/hlthaff.w4.79 (12 February 2004).
6. G.F. Anderson et al., "It's the Prices, Stupid: Why the United States Is So Different from Other Countries," *Health Affairs* 22, no. 3 (2003): 89–105; U.E. Reinhardt, P.S. Hussey, and G.F. Anderson, "Cross-National Comparisons of Health Systems Using OECD Data, 1999," *Health Affairs* 21, no. 3 (2002): 169–181; G.F. Anderson and P.S. Hussey, "Comparing Health System Performance in OECD Countries," *Health Affairs* 20, no. 3 (2001): 219–232; and G.F. Anderson et al., "Health Spending and Outcomes: Trends in OECD Countries, 1960–1998," *Health Affairs* 19, no. 3 (2000): 150–157.
7. J.P. Newhouse, "An Iconoclastic View of Cost Containment," *Health Affairs* (Supplement 1993): 153–171.
8. U.-G. Gerdtham and B. Jönsson, "International Comparisons of Health Expenditure," in *Handbook of Health Economics*, vol. 1A, ed A.J. Culyer and J.P. Newhouse (New York: Elsevier, 2000), 11–53.
9. The estimated equation is $Y = .0022G1.3623$, $R^2 = .94$, where Y is predicted health spending per capita and G is GDP per capita, both in PPP\$. The underlying regression equation excludes Luxembourg and Norway. Luxembourg's GDP is unusually high from international financial services, and Norway's is unusually high by virtue of its oil revenues.
10. Anderson et al., "It's the Prices, Stupid."
11. Ibid.; and P.S. Hussey and G.F. Anderson, "A Comparison of Single- and Multi-Payer Health Insurance Systems and Options for Reform," *Health Policy* 66, no. 3 (2003): 215–228.
12. M.V. Pauly, "U.S. Health Care Costs: The Untold True Story," *Health Affairs* 12, no. 3 (1993): 152–159.
13. We recognize that these data can be beset by measurement errors—for example, by differences in the definition of "nurses" or "beds," and so on. Even so, we believe that the OECD database in this regard does portray a rough-and-ready index of real resource endowments.
14. Health Resources and Services Administration, *Graduate Medical Education and Public Policy: A Primer* (Washington: HRSA, December 2000).
15. Anderson et al., "It's the Prices, Stupid"; and E.P. Slade and G.F. Anderson, "The Relationship between Per Capita Income and Diffusion of Medical Technologies," *Health Policy* 58, no. 1 (2001): 1–14.
16. See, for example, McKinsey Global Institute, *Health Care Productivity* (Los Angeles: McKinsey and Company, October, 1996), Exhibit 5. The institute concluded that in 1990 the U.S. health system had higher clinical productivity than the German health system but that virtually all of that higher clinical productivity was absorbed by higher administrative costs.
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18. S. Woolhandler, T. Campbell, and David U. Himmelstein, "Costs of Health Care Administration in the United States and Canada," *New England Journal of Medicine* 349, no. 8 (2003): 768–775.
19. Karen Davis, president, Commonwealth Fund, "American Health Care: Why So Costly?" (Invited testimony before the Senate Appropriations Subcommittee on Labor, Health and Human Services, Hearing on Health Care Access and Affordability: Cost Containment Strategies, 11 June 2003), 2.
20. J. Le Grand, "Methods of Cost Containment: Some Lessons from Europe" (Paper presented at the Fourth International Health Economics Association World Congress, San Francisco, June 2003), 6.

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22. See Institute of Medicine, *Care without Coverage: Too Little, Too Late* (Washington: National Academies Press, 2002), Executive Summary. For a story on explicit rationing for uninsured Americans, see B. Wysocky Jr., "At One Hospital, a Stark Solution for Allocating Care," *Wall Street Journal*, 23 September 2003. This is a story about the withholding of life-saving medicines from uninsured patients.
23. The sixth and final report is IOM Committee on the Consequences of Uninsurance, *Insuring America's Health: Principles and Recommendations* (Washington: National Academies Press, 2004). All reports can be found on the IOM Web site, www.iom.edu/project.asp?id=4660 (31 January 2004).
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26. See U.E. Reinhardt, "An Information Infrastructure for the Pharmaceutical Market," *Health Affairs* 23, no. 1 (2004): 107-112, Exhibit 1.
27. See, for example, H.A. Huskamp et al., "The Medicare Prescription Drug Benefit: How Will the Game Be Played?" *Health Affairs* 19, no. 2 (2000): 8-23; and P. Kanavos and U.E. Reinhardt, "Reference Pricing for Drugs: Is It Compatible with U.S. Health Care," *Health Affairs* 22, no. 3 (2003): 16-28.
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34. Ibid.
35. Heffler et al., "Health Spending Projections through 2013," Exhibit 1.
36. Conversion to constant dollars is made with the chain-weighted GDP deflator, assumed by the actuaries to rise at a rate of 2.55 per year during the decade. The assumed annual population growth rate is 0.81 percent.
37. Chernew et al., "Increased Spending on Health Care."
38. Henry J. Kaiser Family Foundation and Health Research and Educational Trust, *Employer Health Benefits Survey: 2003, Summary and Findings* (Menlo Park, Calif.: KFF/HRET, 9 September 2003), Exhibit 1.
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40. See, for example, M.L. Katz and H.S. Rosen, *Microeconomics* (Homewood, Ill.: Richard D. Irwin Inc., 1991), 15-16; and U.E. Reinhardt, "Rationing in Health Care: What It Is, What It Is Not, and Why We Cannot Avoid It," in *Strategic Choices for a Changing Health System*, ed. S.H. Altman and U.E. Reinhardt (Chicago: Health Administration Press, 1996), 63-99.

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