
Commentary

U.S. Health Care Costs: The Untold True Story

by Mark V. Pauly

Discussions of health care reform in the United States invariably begin with a citation of statistics on the comparative shares of gross national product (GNP) represented by spending for medical services. From Ross Perot to administration spokespeople to the speaker at Kiwanis, everyone quotes these statistics to show that in some important way the U.S. medical care financing and delivery system is not only less effective than those in other countries but also imposes a heavier burden on the U.S. economy and on U.S. manufacturing firms trying to compete in global markets. But do these comparisons of relative spending mean anything?

There are some objections, some more than nitpicking, to such data on spending. What is classified as “medical care spending,” despite the often-heroic efforts of the data compilers at the Organization for Economic Cooperation and Development (OECD) (which provides the most frequently cited statistics), may vary across countries, and under-the-table payments or tips may often be missed. However, there is a much more serious defect with these numbers, at least with regard to the purposes for which they frequently are used: They do not measure true economic costs. They measure instead the level of *spending*, which is seriously deficient as a measure of (or even a relative proxy for) the cost the economy bears when medical care rather than other goods and services is produced. Especially in the great debate over health care reform, it is cost that people really ought to compare, and they can be seriously misled if they use spending measures as a substitute.

Why do people care about the share of GNP devoted to medical services? Moving the composition of national output from one product to another does not, in any meaningful sense, reduce the total national income or productivity. Japan spends more on seafood relative to GNP than does the United States, but that “excessive” fish consumption does not impoverish the Japanese or advantage the United States. Is medical spending different? Perhaps the concern over the figures on medical care spending reflects in

part a perspective that sees the true value of a nation's output primarily in terms of tangible manufactured products, and within that set places heavy emphasis on such important industries as automobiles and steel. However, from an economic point of view, anything that consumers value is of value to the economy, so that hamburger flipping, open-heart surgery, and visits to a nursing home patient have as much to do with a nation's well-being and wealth as do pig iron and electrical generators.

A more serious issue is the possibility that growth in medical care services may eventually crowd out the other types of public and private consumption citizens need, or may reduce investment. When growth in payments for health insurance eats up one-third or more of the growth in total employee compensation, one might be led to conclude either that medical spending growth must be stopped or that total compensation must grow faster. However, such spending figures are subject to a serious reservation: One person's spending is another person's income; if medical spending growth were stopped, total compensation of all workers might grow less rapidly.

Opportunity Cost

The most useful way to get behind the monetary veil and see what is really happening in the economy is to define the cost of a medical service (or any other service) in terms of what economists call its opportunity cost. The true cost to the economy of providing a medical service is represented by the other products that could have been produced by the labor, land, and capital used to provide the medical service. Were the service not produced, the cost saved would be represented by the value of the other goods that could be produced in its place. In this sense, the reason to be concerned about growing medical costs is not that they will bankrupt the country but that they will impoverish it.

Looking at the problem in this way spotlights what is the most important adverse consequence of diverting more productive resources to medical services: Doing so is bad for the country as a whole if the additional medical services are worth less than the other products they displace. If medical services are useless, or if their production is wasteful, such inefficiency is to be lamented. The key point, however, is that high medical services cost—even if it should account for 14 percent, or 20 percent, or even 24 percent of GNP—is not bad per se. A problem arises if and only if medical services are worth less than the forgone consumption of other goods and services.

While this pedantic but important point may seem obvious, it has a less obvious policy implication: To tell which countries are giving up more of their total potential product to provide medical services to their citizens,

one should measure and compare opportunity cost. Neither the OECD data nor any other calculations measure opportunity cost. Especially if markets are not competitive, prices paid (and therefore total spending) may differ substantially from costs. The clearest case is that of monopoly (or seller market power, more broadly defined). If sellers (of services or of their own labor) can use either a limitation on supply or imperfections in buyer information to raise their prices or wages above costs, and thus earn above-competitive incomes, the amount buyers pay obviously overstates the cost to the economy as a whole. If the United States is characterized (relative to other countries) by greater monopoly power on the part of sellers of medical services and inputs, our spending may be higher, but our costs may be no different (or may even be lower) than those in other countries.

For instance, suppose that a patent allows a maker of a drug or device to set a price at the monopoly level in the United States, which can be substantially in excess of the cost to make the product and the research costs to develop it. Buyers then spend more than cost, and drug spending is higher in the United States than in other countries with weaker patent protection or greater price regulation. However, the excess of spending over drug company costs—the profit—is not lost to the economy; it simply becomes part of the income stockholders receive. Paradoxically, if monopoly does anything to actual (opportunity) cost, it will probably reduce cost as the higher-than-cost price causes buyers to purchase less than they would have bought had there been no monopoly. That is, the United States may spend more on drugs but actually incur less cost than other countries, other things equal.

The same argument works for specialized labor. If physicians can use buyer ignorance to earn above-normal incomes, if nurses can limit supply by urging the closure of hospital nursing schools, or if dentists can keep denturists from being licensed to practice, payments to such professionals can overstate the cost to the economy of having those well-educated people working in health care rather than in their next-best occupation. The United States may then spend more, but its cost can be less.

It is also possible for a single public insurer or a government that heavily regulates insurers to manipulate wages and prices downward, potentially behaving as a “monopsonist” (single buyer) and pushing price below the competitive level. The conceptual framework is a little tricky here. Short of conscription or social pressure, people cannot be forced to take less (even from a single buyer) than they would get in other occupations, so the price paid per unit does equal the marginal opportunity cost of whatever supply of specialized input or labor government chooses to buy. However, it is quite possible, if higher prices are needed to attract more people into a health profession (or keep them working in it once they are trained), that

relatively modest caps on volumes of such persons hired may be associated with sizable drops in required wages. Put another way, depressing nurses' or technicians' wages substantially below the competitive level may not cause many people to quit but can significantly reduce total expenditure. However, the large drop in total spending would be associated with only a small decline in total opportunity cost.

Here is another paradox. Having government act as a representative of all medical services buyers can improve the lot of those persons who do not have a medical worker in the family, by forcing medical services prices or medical workers' wages below the competitive level. But, from an economywide economic perspective, such a "buyers' cartel" need not save the economy much in the way of total cost; instead, it primarily redistributes incomes from sellers of specialized medical services to buyers of such services. Monopsony actually reduces total welfare, since it reduces quantity or quality, so it actually is a negative-sum game—but the primary effect is to control medical spending by controlling providers' incomes. As long as providers are Americans too, the totality of all citizens is not made better off by having buyers gain at the expense of sellers.

What Difference Does It Make?

No data currently would allow an accurate measure of the opportunity cost of the medical services provided to Americans relative to the costs of those services provided in other countries. All we know for certain is that medical expenditure is not an accurate measure—probably not even close. However, to give a rough idea of the difference different input prices can make, I have used the OECD data to generate two kinds of calculations for *medical labor only*. These calculations make assumptions about the opportunity cost of a "doctor-year," a "nurse-year," or a "technician-year" (I discuss below what it means if these assumptions are untrue).

I show two different measures of the "burden" of medical costs on the economy. One measure calculates the proportion of the population in different countries devoted to providing medical services, while the other prices out medical labor at a set of wage rates that is uniform across countries and calculates this "standardized cost index" relative to gross domestic product (GDP). The first calculation is equivalent to assuming that the cost to any economy of diverting a worker into the health care sector is proxied by GDP per worker in that economy. The other estimate is based on an assumption that sets an upper bound to opportunity cost in other countries relative to the United States, by assuming that the cost of doctors, nurses, and other health workers is the same in other countries as it is in the United States. Since the average productivity of U.S. workers is

the highest in the world, this estimate probably overstates the relative cost share in other countries to some extent. However, the two estimates should bracket the truth about America's relative performance.

Exhibit 1 calculates a "weighted health employment" by weighting physicians by their average income (relative to other health workers) in the seventeen countries that provided income data for physicians and others in 1988. By this measure, a physician equals 4.83 other health workers. Columns 2 and 3 of Exhibit 1 show the total nonphysician health employment (except for employment in pharmaceutical and device firms and research workers) and the weighted equivalent physician employment, respectively. Column 4 shows the calculated total weighted health employment. The last two columns show health workers as a percentage of the working-age population and as a percentage of the labor force.

As can be seen, the United States has a percentage only one or two countries above the median. So almost half of the countries are higher than the United States. Sweden, for example, draws nearly a 50 percent greater

Exhibit 1
Weighted Health Employment As A Percentage Of Total Population,
Seventeen Countries, 1988

Country	Total health employment, excluding physicians	Weighted physicians ^a	Total weighted health employment	Total weighted health employment	
				As percent of population ages 15-64	As percent of labor force
Australia	489,631	170,532	660,463	5.97%	8.24%
Canada	576,964	277,266	854,230	4.85	6.39
Finland	150,386	46,435	196,821	5.88	7.65
France	1,313,853	692,805	2,006,658	5.44	8.31
Germany	1,293,999	854,914	2,148,913	4.97	7.24
Greece	81,855	155,260	237,115	3.56	5.98
Iceland	9,946	3,260	13,206	8.21	10.25
Ireland	52,777	25,227	78,004	3.42	5.94
Italy	896,835	362,080	1,258,915	3.12	5.12
Japan	1,271,253	935,484	2,206,737	2.60	3.58
Norway	177,669	55,211	232,880	8.55	10.66
New Zealand	78,346	29,820	108,166	4.92	6.80
Portugal	76,131	129,777	205,908	3.20	4.52
Sweden	366,211	119,730	485,941	8.94	10.87
Turkey	106,605	210,114	316,719	0.90	1.58
United Kingdom	1,180,514	377,879	1,558,393	4.16	5.52
United States	6,200,400	2,770,488	8,970,888	5.33	7.03
Median				4.92	6.80

Source: Organization for Economic Cooperation and Development (OECD) Health Data Programme, 1991.
^a Number of physicians times the physician weight of 4.830.

share of its work force from other industries into health care. If the opportunity cost of those workers is the same in Sweden as in the United States, the burden of labor cost for medical services is more than 50 percent greater in Sweden than in the United States.

The alternative assumption is that the opportunity cost of a medical worker is the same in other countries as it is in the United States. Exhibit 2 provides calculations based on this assumption for 1988. Column 2 shows (for the United States and for the small number of other OECD countries providing data) each country's actual expenditure on physician net incomes (after deduction of office practice and other expenses) relative to GDP. As expected, the United States has the highest share, at 1.73 percent. The next column, in contrast, "prices out" physicians in each country at the U.S. physician net income value for 1988 and divides that total by GDP, converted into dollars using a purchasing power parity exchange rate. As might be expected, the United States now ceases to be the most expensive but falls close to the middle of the distribution (in a virtual tie with Canada). Columns 4 and 5 do the same thing for nurses. (Interestingly, the United States does not spend the highest share on nursing, even in nominal terms.) The next two columns perform the same exercise for all other

Exhibit 2

Comparisons Of Expenditures On Medical Care Labor, As A Percentage Of Gross Domestic Product (GDP). Seventeen Countries, 1988

Country	Total expenditure on physicians		Total expenditure on nurses		Total expenditure on "other medical care workers"		Total expenditure on all medical care labor, U.S. wages
	Local wages	U.S. wages	Local wages	U.S. wages	Local wages	U.S. wages	
Australia	_a	2.17%	_a	2.28%	_a	2.84%	7.28%
Canada	1.03%	1.75	_a	1.99	_a	1.15	4.89
Finland	0.44	2.04	0.73%	1.50	2.45%	3.74	7.28
France	0.80	2.73	_a	1.21	_a	2.90	6.85
Germany	_a	2.98	_a	1.02	1.45	2.56	6.56
Greece	_a	6.83	_a	1.24	1.24	1.70	9.77
Iceland	0.14	2.46	_a	1.36	_a	4.51	8.32
Ireland		2.64	1.20	2.29	_a	2.31	7.24
Italy	_a	1.45	_a	0.94	1.78	1.94	4.33
Japan	_a	1.58	_a	1.16	_a	0.68	3.42
Norway	0.51	2.40	2.74	4.16	2.13	2.49	9.05
New Zealand	0.69	2.45	_a	2.43	_a	2.88	7.76
Portugal	_a	5.90	_a	1.13	0.98	1.69	8.72
Sweden	_a	2.88	_a	1.78	3.25	5.16	9.83
Turkey	0.03	2.67	0.01	0.47	_a	0.64	3.77
United Kingdom	0.44	1.47	0.50	0.90	2.44	2.72	5.09
United States	1.73	1.73	0.80	0.80	2.24	2.24	4.77

Source: Organization for Economic Cooperation and Development (OECD) Health Data Programme, 1991

^a Not available.

medical workers, and the last column totals up the shares of GDP with all workers receiving U.S. wages.¹

The message is striking. Far from having the highest medical labor cost relative to GDP, by this calculation the United States has one of the lowest percentages, exceeding only Turkey, Japan, and Italy. Nonlabor medical expenses tend to represent a larger-than-average share of U.S. spending, so that a measure of total opportunity cost for all inputs might move the United States up a few notches. But the U.S. total still surely would not be the highest.

Alternatives And Conclusions

The assumption that the opportunity cost of a year's worth of work by a health professional is roughly the same across countries could be challenged. The length and complexity of training periods vary somewhat. However, the major component of cost is likely to be the productivity (and, in competitive labor markets, the wages) the person could have obtained in an occupation or industry other than medical care. Manufacturing productivity in the United States is the highest in the world; a theory suggested by William Baumol of New York University indeed argues that service costs in the United States may be higher than elsewhere in the world precisely for that reason.²

In the medical services context, the Baumol "service cost disease" theory would imply that the U.S. medical share of GNP is high not because our health care sector is less productive than other countries' health sectors, but because our manufacturing sector is more productive. As Baumol points out, higher manufacturing productivity means higher worker wages on average, and this high productivity in itself provides a means to afford the higher medical prices (distributional consideration aside). We could have a health care share like that of the United Kingdom by reducing our productivity in manufacturing to the U.K. level, but no one would want to do that.

This alternative theory does contain some validity but is deficient in explaining the growth over the past fifteen years in the U.S. medical GNP share relative to other countries. If the "cost disease" is to be the explanation, U.S. manufacturing and agricultural productivity would have had to grow more rapidly than in other countries-but it did not.

When politicians and policymakers ask, "How does Germany (or Canada or the United Kingdom) do it?" a large part of the explanation for a lower GNP share is that they pay health professionals less-not just physicians, but nurses and technologists, too. Such redistribution does not benefit the country as a whole, or even the average citizen. Until we can get some reliable measures of true cost of medical services in different countries, a

moratorium on comparisons of spending levels might be the biggest contribution to a more reasoned health reform debate.

NOTES

1. While recalculating labor costs using U.S. wages usually causes a large increase in the share of GNP devoted to particular types of labor, this is not always the case. For example, nurse wages in Canada in local currency in 1986 (the latest year for which data were available) were 1.9 percent of GDP, while conversion to U.S. wages raised the share only slightly, to 2.1 percent. This probably reflects the fact, as illustrated by Joseph Newhouse and colleagues, that Canadian hospitals pay hospital medical workers at wage rates roughly similar to those in the United States. S.G. Haber et al., "Hospital Expenditures in the United States and Canada: Do Hospital Worker Wages Explain the Differences?" *Journal of Health Economics* (December 1992): 453-466.
2. W.J. Baumol, "Private Affluence, Public Squalor," RR 92-15 (New York: C.V. Starr Center for Applied Economics, New York University, April 1992).