EDITORIAL

The Real Cost of the US Health Care System

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That the US health care system is excessively costly is not news. The controversy involves 3 connected questions: (1) what are the real drivers of high costs, (2) what policies have the highest probability of reducing those costs, and (3) what are the consequences of not reducing excessive health care costs?

The Drivers of High Health Care Costs

The late Uwe Reinhardt is famous for answering the question about what drives high US health care costs with the assertion "It's the prices, stupid."[1] In their Special Communication in this issue of *JAMA*, Papanicolas and colleagues essentially agree.[2] In a detailed analysis of health care spending in the United States and 10 other high-income, mainly European, countries, the authors found that the United States spends approximately twice as much on medical care and that the "[p]rices of labor and goods, including pharmaceuticals, and administrative costs appeared to be the major drivers of the difference in overall cost."[2]

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Health care costs essentially are prices multiplied by volume. Contrary to Reinhardt's belief, it is unlikely that prices alone drive excessive health care costs in the United States. Consider physician salaries. As Papanicolas et al note, "the salaries [prices] paid to both generalist and specialist physicians were markedly higher in the United States, where specialists were paid twice as much as those in the United Kingdom or Germany."[2] While salaries of US physicians are high, paradoxically this does not substantially contribute to the high cost of US health care compared with other countries. Why?

The number (ie, "volume") of physicians in the United States is comparatively low, thereby offsetting the effect of high salaries. In the United States, there are 2.6 physicians per 1000 citizens, whereas in Germany the ratio is 4.1/1000 and in Sweden 4.2/1000. Thus, even though US physician salaries are high, the per capita costs attributable to paying physicians is almost identical to that in Germany and $176 per capita higher than in the Netherlands, accounting for just 4% of the difference in per capita total health care costs (**Table**).

If not physician salaries, then what accounts for the large cost differences? Drug prices are a major factor. Papanicolas et al report that total US pharmaceutical expenditures are $1443 per capita.[4] This finding is consistent with calculations by the US Department of Health and Human Services that included medications administered in hospitals, physician offices, and other facilities, and showed that 16.7% of total personal health care spending (an estimated $457 billion in 2015) was attributable to pharmaceuticals.[5] Conversely, in Germany total spending on drugs is $667 per capita, in the Netherlands $466 per capita, and in Sweden $566 per capita (Table). These differences are almost all a result of price—not volume. Drugs account for 18.4% of the difference in total per capita health care spending between the US and Germany, 23.2% of the difference with the Netherlands, and 33.8% with Sweden. No other category of spending accounts for as much of the cost difference as pharmaceuticals.

A second major driver of cost differences between the United States and other high-income countries is high-margin, high-volume procedures (Table). The cost difference in these procedures between countries is a combination of high prices and high volumes—not just high prices. For instance, the United States performs the second highest number of angioplasties worldwide, and total per capita costs for the procedure are $69.20, compared to the Netherlands' similar rate of angioplasties with per capita costs of $13.10.[3] Clearly, this difference is the result of prices, not volume. For knee replacements, however, the United States performs nearly twice as many of these operations as the Netherlands and at higher prices, leading to a per capita cost of $57.40 vs $14.90 in the Netherlands. The same is true for cesarean deliveries, of which the United States performs more than other countries—33 per 100 live births, or 1.31 million a year—and twice as many as the Netherlands, which performs 16 per 100 live births, or 27 680 per year. A cesarean delivery costs $61.80 per capita in the United States vs $8.90 per capita in the Netherlands. Similar pricing and volume differences likely extend to other procedures such as spine surgery, hysterectomies, and prostatectomies. Adding just 25 of these high-margin, high-volume procedures with cost differences of $20-$40 per capita explains approximately 20% of the per capita cost difference between the United States and other high-income countries.

A third area of difference is imaging, which accounts for about 7% of the cost difference between the United States and the Netherlands, and again is the result of both high prices and high volumes. The United States performs many more CT scans than any other country and is the second highest user of MRI worldwide. The high volume of CT scans in the United States—245 per 1000 population—combined with high prices ($896 for an abdominal scan) costs the United States $220 per capita for just one test vs $23 per capita in the Netherlands.

Administrative costs contribute significantly to the cost difference between the United States and other countries. The United States spends $544 more per capita on administration than the Netherlands, accounting for 12.9% of the per capita cost difference (Table). There is no debate that generating a bill and getting it paid is a major administrative problem in the

Table. Per Capita Costs Associated With Specific Health Care Categories of Spending[a]

	US$ per Capita			
Category of Spending	United States[b]	Germany	The Netherlands	Sweden
Total health care costs	9403	5182	5202	6808
Workforce salaries				
Total	712	693	536	397
Generalists	244	284	180	120
Specialists	468	409	356	277
Pharmaceutical spending	1443	667	466	566
Imaging				
Magnetic resonance imaging	135 (62.8)		24	
Computed tomography	220 (73.3)		23	
Knee replacement	57.4 (36.8)		14.9	
Hip replacement	54.0 (33.9)		24.9	
Coronary artery bypass graft surgery	59.5 (37.4)		10.9	
Angioplasty	69.2 (40.7)		13.1	
Cesarean deliveries	61.8 (43.2)		8.9	
Administration	752	232	208	136

[a] Figures for total health care costs, pharmaceutical spending, and administration taken from Papanicolas et al.[2] Other data were calculated by taking total volume, multiplying by prices, and dividing by population to obtain per capita costs. For instance, per capita costs of generalists are determined using data from Papanicolas et al Tables 1 and 4. There are 2.6 physicians/1000 Americans, of which 43% are generalists, at an average salary of $218 173. Multiplying, that comes to total pay per capita of $244. Prices were obtained from the International Federation of Health Plans,[3] which used average US commercial prices from 2013. Medicare and Medicaid prices are lower. An average price across the whole country is not available.

[b] Per capita costs in parentheses are based on commercial payments at the 25th percentile to approximate lower prices for procedures in Medicare and Medicaid. For example, the 25th percentile for MRI is $532 while the Medicare rate is $590.75.

United States, wasting billions of dollars each year.[6] This too is more than just a price difference.

Policies to Help Control High Costs

These 4 areas—pharmaceuticals; high-volume, high-margin procedures; CT and MRI imaging; and administration—account for just under two-thirds of the difference in health care costs between the United States and other developed countries. Accordingly, several focused policy interventions in these 4 areas could help control costs.

First, these data should energize the push for regulation of drug prices. The fundamental missing ingredient is political will. However, there will be no political will without increasing public pressure. These differences in health care costs should fuel more public pressure.

Second, 2 combined solutions can address the handful of high-volume, high-margin procedures and imaging. Many of these procedures are preference-sensitive. Governmental and commercial payers should insist that all surgeons and proceduralists prove that patients have engaged in shared decision making using decision aids with objective performance data as a requirement for being paid for the procedure.[7] Data suggest that shared decision making is likely to reduce the volume of preference-sensitive procedures by as much as one-third.[8] Simultaneously, payers should phase in reference pricing for all these procedures. The final price should be at least 25% lower than the current average commercial prices and modified based on objective quality metrics, such as the rate of surgical site infections or other complications. For instance, the comparative data suggest that prices for both CT and MRI scans, as well as cesarean deliveries, could be reduced by 33% if reference prices were implemented. Reducing average CT and MRI scan prices by 33% could reduce overall health care costs by an estimated $118 per capita.

Third, the administration of health care in the United States must be streamlined. This will require moving toward a more automated process based on electronic health record data. For instance, procedure times are recorded and these electronic data could be used to determine time, and thus payment, without the need for scores of billing clerks.

The Consequences of High Health Care Costs

Few individuals are concerned about spending for other goods, such as smartphones or cars. So why should high and increasing health care costs be a concern? Why should the United States not allow health care spending to increase to 25%, or even 30%, of the gross domestic product (GDP)?

The answer is simple—opportunity costs. High health care spending takes money away from spending on other worthy, and arguably more valuable, goods and services.

Individuals do not decide how much to spend on health care and largely do not weigh the costs and benefits of any health care intervention. Most health care decisions—such as orders for tests, treatments, hospital admissions, and consultations—are made by physicians. Well-intentioned as they may be, physicians do not know the prices of interventions, do not pay the costs, and sometimes benefit directly from higher prices and utilization. Moreover, the bill for health care products and services is largely not paid by the people receiving the care, but collectively by society through insurance and taxes. Thus,

the high spending on health care by one person takes away money from the rest of society. The same is not true when an individual decides to spend personal money on a new smartphone or luxury automobile.

In 2017, employer-sponsored family health insurance cost $18 764 per household.[9] In 2016 (the last year for which data are available), the US median income was $59 039. Thus, health insurance constitutes 31.8% of the median income.[10] Comparatively, in 2000, family health insurance cost just $6438 per household and constituted only 17.8% of median income. One direct consequence of this significant increase in premiums is that fewer people are covered by employer-sponsored insurance. In 2000, 64.1% of the total US population had employer-sponsored insurance for some portion of the year,[11] but that number declined to 55.7% by 2016.[12] As health care costs continue to rise, employers are driven out of the market, and the few workers that remain are giving up more and more of their income to premiums, leaving little left for everything else. Is it any wonder that US residents have a pessimistic view of the health care system?

As Papanicolas et al demonstrate, public spending on health care represents an estimated 8.3% of GDP, or a projected cost of $1.54 trillion. At the state level, where deficit financing is not possible, spending on Medicaid, state workers' health insurance, and other health programs crowds out spending on other worthy state initiatives, particularly education. As the National Association of State Budget Officers explains: "...Medicaid has risen as a percentage of total state spending, growing from 20.5 percent in fiscal 2008 to an estimated 29.0 percent in fiscal 2017. At the same time, elementary and secondary education has gone from representing 22.0 percent of total state spending in fiscal 2008 to an estimated 19.4 percent in fiscal 2017."[13] Medicaid's inflation rate is also higher than any other portion of state budgets,[13] ensuring its percentage will increase over time, forcing all other programs to get less.

Should the government raise taxes to pay more for other worthy projects? This seems unlikely in the current political climate. Moreover, ever higher health care costs for families through higher insurance premiums further reduces this possibility. Thus a vicious cycle develops, as more is spent on health care, robbing families and state budgets of their abilities to invest in other important services.

The magnitude of the problem can be illustrated by considering just the cost of imaging and 25 high-volume, high-margin procedures in the United States. If the United States lowered the prices and volumes to those of the Netherlands, savings of about $425 per capita, or a total of $137 billion, would accrue. Even lowering volumes to the level in the Netherlands and all prices to the 25th percentile in the United States could produce savings of $126 per capita, a total of $41 billion.

What could the United States do with $41 billion per year? Everyone has a wish list, but many people would start with early childhood interventions to give low-resource children an equal chance in life; others may want to invest in rebuilding the country's failing infrastructure. Regardless of what is done with the money, it would be more valuable than paying high prices for a large number of CT and MRI scans, up to a third of which may be deemed unnecessary and carry radiation risks, and many expensive but not necessary surgical procedures.

Can the United States reduce the cost of health care? Yes. But will the country do it? Answering that question is up to the medical profession, health systems, payers, and policy makers. The future of the US health care system is in their hands.

ARTICLE INFORMATION

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