

# Factors Contributing to Higher Health Care Spending in the United States Compared With Other High-Income Countries

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**In this issue of JAMA**, Papanicolas and colleagues<sup>1</sup> provide a fresh perspective on an old US health policy narrative. Based on a comparison of health care spending (with data primarily from 2013-2016) in the United States compared with 10 selected high-income countries (United Kingdom, Canada, Germany, Australia, Japan, Sweden, France, the Netherlands,

Switzerland, and Denmark), the authors report that the United States spends twice as much per capita on health care but performs less well on many health outcomes. In short, the claim from many scholars, think tanks, and policy makers is that the US citizen is not getting good care for the money spent on health care.<sup>2-5</sup> The authors approach this claim with a much more focused analysis than in the past that seeks to identify more tangible root causes and provide insights for strategic and perhaps even tactical policy options for the United States to maximize its health dollar. While Papanicolas et al have taken care and scholarship in addressing this complex topic, they have not fully mapped out all the important factors that drive this issue.

Proposed ideas for market-based health reform<sup>6</sup> and how the United States could try to address and improve the performance of its health economy have been previously suggested. With respect to international comparisons, the differences between the United States and the rest of the developed world are driven by 2 major factors. First, some of the producers in the US medical community are effective monopolists. Second, the United States is generous only to a fiscal fault with resources devoted to the beginning and end of life compared with many other nations.<sup>7</sup> The end-of-life issue is complicated further by the incredibly successful mobility of the modern US family (in general) and the relative lack of multigenerational families within cohesive regions, a characteristic more common in other high-income nations to ease the burdens of caring for the aging population.

The monopoly factor in the US health economy is powerful. Papanicolas et al found that even though utilization of many common procedures in the United States was comparable with that in other nations, the prices of these services are far higher in the United States as measured by take-home pay comparisons. For example, the authors note that the mean specialist physician salary in the United States was \$316 000, whereas the German equivalent salary was

\$181 243. Several nations have addressed this directly. The Swiss, for example, have the entire nation follow one fee schedule, like a nationwide all-payer Medicare Health Care Procedure Code System. No network negotiation is required by insurers in that country. Furthermore, previously, Swiss health policy experts have argued that finance (at least pre-recession) was the career path to wealth, not medicine. This is in part because medical education is subsidized in Switzerland by the state, as it is in most other countries included in the study by Papanicolas et al. With student loans for US medical students commonly approaching \$300 000 to \$400 000 before earning only a modest salary as a resident, it is understandable that US physicians feel compelled to be rewarded financially. Once the physician is practicing, the cost of malpractice premiums in the United States could easily make up the difference in take-home salary associated with some if not all higher-earning medical specialties.

Another notable monopolistic factor that drives higher US health costs is the relative price of brand-name drugs in the United States compared with other nations. For example, Papanicolas et al found that pharmaceutical expenditures per capita were far higher in the United States (\$1443) than the mean of all 11 countries (\$749). United States law protects pharmaceutical companies to price as monopolists. Ideally, these companies will price perfectly as monopolists, whereby they can gauge each country's relative willingness to pay and maximize profit where resources are allocated so that consumers can be made better off unless someone is made worse off. In the absence of perfect information, however, drug prices are based on the relative per capita wealth of the population served. Thus, by law, pricing for Medicaid, the Military Health System, and the Veterans Administration is regulated at a low negotiated rate because of the lower income of the beneficiaries served.<sup>8</sup> Drug prices for those insured through large corporations are considerably higher because either the consumer's or their employer's wealth reflects greater generosity.

The report by Papanicolas et al found that one of the virtues of the US system is that its citizens have access to breakthrough brand-name drugs sooner than other nations. The study reported that the United States accounted for 57% of new chemical entities (111 vs 26 for Switzerland, the next leading country). The social cost is the increased financial burden on US firms and workers, who are collectively and disproportionately financing pharmaceutical innovation compared with other nations. Policy makers in the United States



Editorial pages 983, 986, and 990



Related article page 1024

can alter this with changes to patent law or more aggressive regulation of drug pricing outside of Medicaid and the VA government-negotiated drug prices. However, caution is required given the high-risk/high-reward nature of drug innovation and future changes in biologic and genomic therapy that could either reduce or accelerate the inequity in brand pricing between the United States and other wealthy nations. The Trump Administration's advocacy of Right to Try policies may have an effect by providing additional US resources for experimental medications.<sup>9</sup> If successful, this policy could get new drugs to market faster and reduce the overall drug development pipeline cost used as justification for higher US prices for brand-name drugs. Again, these issues are germane to monopoly rights and the stewardship and regulation of those rights.

Another factor that drives US costs higher, generosity at the beginning and end of life, requires a more thorough accounting and perhaps better consideration of comparison data from other wealthy nations. Previous research has shown how subtle changes in accounting for factors reported by different nations can reorder international health performance lists considerably. For example, at the beginning of life, the United States has more neonatal resources than other countries (and generally provides more care for very premature infants). For example, in 1999, the United States had 33.7 neonate intensive care unit beds per 10 000 births, whereas in 2002, Canada reported 16 beds per 10 000 births.<sup>10</sup> This likely reflected that the United States had a higher share of preterm births (<37 weeks' gestation). In 2004, the preterm birth rate in the United States was 12.3% compared with 8.0% in Canada. These differences have persisted. Infant mortality is nearly 30 times greater for very low-birth-weight births (500-999 g) compared with normal-birth-weight births (>2500 g).<sup>10</sup> Furthermore, a successful neonatal delivery does not guarantee an equivalent health trajectory to that of infants born at full term. In other wealthy nations, when neonatal unit beds are less prevalent per capita, choices may be more limited and result in healthier surviving infants.

The findings of Papanicolas et al indicating better US cancer screenings and some outcome measures compared with other wealthy nations may translate to good intermediate-term outcomes but increase health care costs over time. Nevertheless, life expectancy is limited, and virtually all people develop illnesses and morbidities with age. For example, individuals who survive cancer will, as they age, have eventual multisystem failures either from cancer recurrence or

from other diseases. The larger social cost of a fee-for-service system may not be unneeded tests but lack of incentive for truly coordinated care as a person ages. Compounding the cost of end-of-life care is the heterogeneity of states' customary medical treatment combined with the disconnect of potential family caregivers across a vast nation. Put another way, in the study by Papanicolas et al, the comparison country with the second largest population is Japan. That nation is substantially more compact than the United States, and family caregivers are not thousands of miles distant from an aging family member. Furthermore, there may be cultural expectations of caregiving across families in many of the wealthy nations examined in the article. For example, 44.2% of unpaid care in Germany is directed to care for parents compared with a wealthy-nation Organisation for Economic Co-operation and Development average of 36.1%.<sup>11</sup>

The report by Papanicolas et al also demonstrates how the heterogeneity of the United States contributes to its lower performance in some international comparisons of health metrics. For instance, the authors report that life expectancy in Minnesota is comparable with that in Sweden. Perhaps this similarity between Minnesota and Sweden is due at least in part to the dominance of large integrated and multispecialty delivery systems focused on population health in Minnesota and the comprehensive national health care system in Sweden. The great strength and weakness of the US health economy involve the heterogeneity that produces inequity in innovation, outcomes, and costs. Although some states and regions throughout the United States serve as excellent laboratories for best practices, these best parts of the US system need to be shared with greater equity so that underperforming US regions can and will demand better care and could determine tactically best solutions for their needs and budget.

The study by Papanicolas et al provides compelling data on the key factors affecting the differences in US health spending compared with spending in other wealthy nations. Namely, wages of clinicians and costs of brand-name drugs contribute to much of the difference from other countries. The policy challenge ahead is the recognition that addressing these US root causes requires tinkering with an intricate mix of legal monopoly rights in technology, education, and care delivery. The United States did not suddenly arrive at this point of much higher cost. But the study by Papanicolas et al provides stronger data to start the conversation to frame policy options to change course.

#### ARTICLE INFORMATION

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**Conflict of Interest Disclosures:** The author has completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Parente reports board membership for the Health Care Cost Institute, Academy Health,

Emeriti, and Fortel Analytics LLC and being a managing partner of HSI Network LLC, a shareholder of Starting Block Capital LLC and Cyclone Medical, and a beneficial owner of Terramedica International Ltd.

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# Health Care Spending in the United States Compared With 10 Other High-Income Countries What Uwe Reinhardt Might Have Said

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**In this issue of JAMA**, Papanicolas and colleagues<sup>1</sup> compared health care spending in the United States with health care spending in a select group of 10 of the highest-income countries (United Kingdom, Canada, Germany, Australia, Japan, Sweden, France, the Netherlands, Switzerland, and Denmark). The authors examined drivers of spending across multiple dimensions, including general health system expenditures, population behaviors and health, labor costs and structural capacity, administrative costs, utilization, access and quality, cost of pharmaceuticals, and distribution and equity.

The principal findings in the report by Papanicolas et al are that in 2016, the United States spent 17.8% of its gross domestic product on health care, compared with a range of 9.6%-12.4% for the other countries studied and had almost double the health care spending per capita of US \$9403 compared with a range of \$3377-\$6808 in the other countries. Although the United States spent more, the percentage of the US population with health insurance was 90%, compared with 99%-100% in the other countries. Most health care utilization rates in the United States, such as for hospital discharges and some common surgical procedures, were similar or slightly higher than in the other countries, but the prices of health care labor and goods, including pharmaceuticals and administrative costs, appeared to be the major drivers of the difference in overall spending between the United States and other high-income countries.

However, despite higher health care spending, the authors also report that the United States performed less well than the 10 other high-income countries on several important population health indicators. For example, life expectancy in the United States was the lowest of the countries studied at 78.8 years (range for the other countries, 80.7-83.9), and infant mor-

tality was the highest (5.8 deaths per 1000 live births in the United States vs a range of 2.1-5.1 per 1000 for the other countries). The report also includes more details than in previous reports, including, for instance, health care expenditures by site and function of care; major determinants of health, including smoking, alcohol consumption, and obesity or overweight; physician workforce and workforce remuneration; utilization, including number of hip and knee replacements; and details about pharmaceutical costs.

The study by Papanicolas et al is similar to previous landmark investigations by Uwe Reinhardt and colleagues that compared health spending in the United States with spending in other countries.<sup>2-4</sup> Uwe died in November 2017. He was one of the longest tenured members of the JAMA editorial board—25 years—and has been widely recognized as one of the leading authorities in health care economics for more than 4 decades. For instance, since 1975, Uwe published 32 articles in JAMA on various aspects related to health care, including 2 articles in 2017,<sup>5,6</sup> one of which was published 2 weeks before his death.<sup>5</sup>

Undoubtedly, Reinhardt would have written a thoughtful and most likely provocative editorial to accompany the study by Papanicolas et al. What might Reinhardt have said about the findings in this report? It is difficult to imagine that anyone could capture his insight and wit, but some of the comments may have been similar to the following.

First, Reinhardt may have pointed out that the main findings related to health care spending are not new or surprising, ie, that health care spending in the United States is the highest in the world, and questions about value permeate virtually every sector of the health care system. In a series of studies by Reinhardt and colleagues that compared health care spending in the United States with spending in 29 Organisation for Economic Co-operation and Development (OECD) countries from 1990 to 2001, the main findings were that “the United States spends more on health

Editorial pages 983, 986, and 988

Related article page 1024