

How Can the United States Spend Its Health Care Dollars Better?

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In 2015, the United States spent roughly **\$3.2 trillion on health care.**¹ That is a staggering, almost unimaginable amount. Indeed, this level of spending **makes the US health care system the fifth largest economy in the world,** behind only the US, Chinese, Japanese, and German national economies.



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By 2020, health care spending in the United States is expected to surpass the national economy of Germany, at which point the US health care system will be the fourth largest economy in the world. To put this into another context, in **2015, the entire US Department of Defense budget was just under \$600 billion. In addition, the entire worldwide information technology sector (including hardware, software, data analytics, and customer-facing initiatives) accounted for \$2.46 trillion,** with the United States and Canada together contributing less than \$1 trillion.^{2,3}

Where does all this money spent on health care go? The article by Dieleman and colleagues⁴ in this issue of *JAMA* confirms several spending patterns that are well known to health economists and policy experts.⁵ **First, older people are sicker and consume significantly more health care resources.** After 1 year of age, health care spending per person increases with each subsequent age cohort, with the **highest per-person spending for US women 85 years and older at approximately \$30 000.** Conversely, the lowest per-person spending is among girls aged 1 to 4 years at approximately \$2000, whereas **per-person spending is about \$4700 for women aged 25 to 29 years,** \$8500 for women aged 60 to 64 years, and \$16 000 for women aged 70 to 74 years.

Second, the largest proportion of health care expenditures is for chronic conditions. Of the 14 costliest aggregate conditions identified by Dieleman et al (Table 2 in their article), at least 10 are for chronic conditions, such as diabetes, cardiovascular diseases, chronic respiratory diseases, cancer, cirrhosis, and risk factor reduction. This reemphasizes the need for a health care system focused not on acute problems, but rather on the management of chronic, lifelong conditions.

A third finding by Dieleman et al is the presence of a reverse gender gap in health care. Women live, on average, nearly 5 years longer than men (respective life expectancies of 81.2 years vs 76.4 years at birth and 20.5 years vs 18.0 years at age 65 years), and per-person health care spending for women is higher in almost every age cohort.⁶ The 2 notable exceptions to the reverse gender gap are spending on boys aged 10 to 14 years, among whom spending on attention-deficit/hyperactivity disorder is high, and spending among men aged

65 to 74 years, which is mainly due to spending on ischemic heart disease. As Dieleman et al point out, even excluding spending on family planning, pregnancy, and postpartum care—which are all categorized as spending for females but have inextricable male contributions and benefits—**“females spent 24.6% (UI [uncertainty interval], 21.9%-27.3%) more overall than males in 2013.”**⁴ This percentage is almost the exact inverse of the male-female wage gap, whereby women are paid about 80% of what men receive.⁷

In addition to detailing well-known spending patterns, the article by Dieleman et al offers new insights into 5 aspects of US health care expenditures, including spending for behavioral health, physical pain, public health and prevention, nursing care facilities, and pharmaceuticals. These insights suggest several important policy responses.

Behavioral Health

The US medical community often underemphasizes the importance, toll, and cost of behavioral health and substance abuse. Cumulatively, Dieleman et al **found behavioral health to be the fourth most expensive sector of health care spending,** accounting for \$187.8 billion, with at least 6 different conditions in the top 53 most expensive health problems (Tables 2 and 3 in their article). Depression is the sixth most expensive condition, with expenditures of \$71.1 billion, followed by spending on anxiety disorders (an additional \$29.7 billion), and more severe and costly mental health problems of schizophrenia (\$17.6 billion) and bipolar disorders (\$13.1 billion). Add to this the \$13.5 billion spent on substance abuse and the \$9.3 billion on alcohol abuse, and it becomes clear how costly behavioral health truly is. In addition, domestic violence such as sexual assault (which the authors classify as an injury, not a behavioral health problem) adds another \$5.2 billion in health care spending to the already high costs of depression, anxiety, and other distresses.

When chronic illnesses such as diabetes or congestive heart failure are complicated by behavioral conditions, the challenge and costs of managing chronic conditions increase.⁸ For instance, **monthly costs for an adult patient with a chronic disease and depression are \$560 more than for a person with the same chronic disease without depression.**⁹ Comorbid anxiety can increase these health costs up to \$615 more per patient per month.⁹

Despite a substantial amount of health care spending for patients with behavioral disorders, the United States does a relatively poor job of actually treating patients with these

conditions. In the past, depression and anxiety disorders were simply undiagnosed in many individuals. Today, physicians are more routinely screening for depression and anxiety disorders, but treating these conditions is often a haphazard process. Patients are usually referred to psychiatrists but the wait for care is often months. Proven pharmacological and cognitive-behavioral therapies are not standardly provided to patients. Patients with serious mental illnesses who can be a danger to themselves and others are treated either as outpatients or in the criminal justice system rather than at more appropriate inpatient facilities. The long-standing siloing of behavioral health,¹⁰ coupled with shortages of psychiatrists and mental health facilities, has translated to long delays in getting treatments to patients and poor coordination of care.¹¹ Consequently, the Centers for Disease Control and Prevention estimated that only about one-third of all patients diagnosed with severe depression have seen a mental health professional in the last year, and only 20% of patients with moderate depression have seen a mental health professional in the last year.¹²

Physician practices and health systems that have taken behavioral health problems seriously are experimenting with collaborative care arrangements and colocating behavioral health professionals in primary care practices.¹³ While this improves care and lowers costs, it is still not routine for most physician practices.^{14,15} The data by Dieleman et al indicate that the United States needs to make addressing behavioral health problems and systematically increasing accessibility to relevant therapeutic interventions greater priorities. Not only are such efforts important for patients, but they are also likely to reduce health care costs.

Physical Pain

The United States also has high health care expenditures for physical pain, especially lower back pain. According to Dieleman et al, low back and neck pain constitutes the third highest cost health condition, at \$87.6 billion (Table 3 in their article). An additional \$47.9 billion is spent on osteoarthritis, while \$44.9 billion goes to other joint, muscular, and connective tissue conditions. As the authors report, the increase in spending for low back and neck pain between 1996 and 2013 was larger than that for almost all other areas of health care.

Despite spending so much on these conditions—a current combined spending rate of more than \$150 billion per year—rates of pain-associated health problems are actually increasing,¹⁶ rather than decreasing, and few people would rate the US performance on these conditions as exemplary. Patients who want pain relief often undergo surgery, even when rest, physical therapy, and nonsurgical interventions would be equally effective. These decisions are also rarely well informed, as operations for back pain, knee and hip replacements, and other types of pain relief have significant variation in both cost and outcomes. Therefore, surgery for back, hip, and knee pain is another area in which physicians and health systems need to develop more standardized, lower-cost treatment approaches. Payment reform—such as bundled payments with 90-day guarantees—and shared decision mak-

ing are likely to incentivize increased focus on improving quality, increasing patient satisfaction, and reducing costs.¹⁷

Public Health and Prevention

Spending priorities for public health remain rooted in a time when infections were the primary health threat. Today, the top 5 conditions for public health spending are all communicable diseases (Table 4 in the article by Dieleman et al). The single largest proportion of public health spending is for HIV/AIDS, at \$3.52 billion, even though HIV/AIDS ranks 75th on the list of health spending (\$4.8 billion) and was the cause of death for only 6721 US residents in 2014 (although 13700 people with HIV/AIDS died)—about 0.25% of all deaths in the United States in 2014. In 2013, HIV/AIDS was far down the list of common causes of death—well below suicides, motor vehicle crashes, and smoking. Even among 25- to 34-year-olds, HIV/AIDS was only the eighth leading cause of death, ranking behind even diabetes for this age group.¹⁸ Conversely, few public health dollars focus on lifestyle conditions that ultimately contribute to the majority of chronic illnesses seen today. Tobacco control, for example, receives the eighth most public health dollars at \$340 million, accounting for only 1/10 000th of total health care spending. Similarly, low back pain receives a mere \$140 million in public health spending, and suicide (described as “self-harm” by Dieleman et al) receives only \$140 million.

The disconnect between public health spending and health care costs needs to be systematically reevaluated. More public health dollars should be directed toward changing lifestyle conditions by emphasizing tobacco control, nutrition, exercise, suicide prevention, and substance abuse.

If public health funding priorities are changed, another pressing concern should be injuries and motor vehicle crashes. While daily life in the United States has become immeasurably safer during the last century, the health care system expenditures are still high for injuries. Falls account for \$76.3 billion; exposure to mechanical forces, being struck by falling objects, or being crushed accounts for \$30.0 billion; overexertion (activities such as snow shoveling) accounts for \$25.6 billion; and motor vehicle crashes consume \$20.0 billion. Yet according to Dieleman et al, injuries do not rank among the top 20 public health spending areas (Table 4 in their article). A focus on injury prevention could be enormously beneficial.

The United States currently addresses lifestyle problems by spending large amounts on secondary and tertiary prevention in the health care setting. According to Dieleman et al, the United States spends \$51.8 billion on medication to control hyperlipidemia and \$83.9 billion to control hypertension. While these medical interventions are critical and typically cost-effective, such enormous later-stage spending suggests that investing more in primary prevention, perhaps through better nutrition and exercise programs, would be of great value. For example, 150 minutes per week of moderate exercise lowers the risk for cardiovascular disease, stroke, and diabetes, and 7 hours of exercise per week reduces risk of premature death by 40%.¹⁹ While primary prevention is a much longer-term investment, these are huge payoffs.

Nursing Care Facilities

Dieleman et al report that 21.7% of health care spending by those aged 65 years and older (about \$175 billion) was accounted for by care in nursing facilities. Again, despite spending such huge sums, care in some skilled nursing facilities and nursing homes is suboptimal and at times may be inhumane. Given the increasing population of those older than 75 years, the United States needs to adopt a more comprehensive national approach to nursing home care. By doing so, even if costs are not significantly reduced, the quality of such care can be improved.

Pharmaceuticals

The disaggregated spending for diabetes is indicative of the enormous amount of money devoted to pharmaceuticals each year (Figure 4 in the article by Dieleman et al). For patients with diabetes, nearly 60% of health care costs are for pharmaceuticals, with that percentage increasing much more quickly than for other categories of care. Similar and equally troubling trends are seen for medications to treat hyperlipidemia. For many diseases with limited inpatient or surgical interventions, pharmaceuticals have become a dominant part of care, ensuring that costs have significantly increased in the last decade.

Conclusions

In many walks of life—such as government, business, and even crime—it is always a good idea to “follow the money,” although “pursuing the money” may not be optimal. Dieleman et al have “followed” the health care money, and the trail has led to important findings that could ultimately compel the United States to change how it spends its trillions of dollars in health care. At the very least, the data suggest that the United States needs to pay more attention to and provide higher-quality care for behavioral health and management of physical pain (such as low back, hip, and knee pain). There should also be an increased public health focus on lifestyle interventions and injury prevention. Finally, the findings by Dieleman et al suggest that the United States needs better strategies for nursing home care and for control of pharmaceutical costs. Initiatives in all of these areas are both necessary and timely. As the nation engages the quadrennial reexamination of national priorities that occurs with every new administration, these important suggestions will hopefully have the chance to both be considered and, ultimately, influence national policies and practices.

ARTICLE INFORMATION

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REFERENCES

- Centers for Medicare & Medicaid Services. National Health Expenditures data. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsProjected.html>. Accessed November 2, 2016.
- National Priorities Project. Military spending in the United States. <https://www.nationalpriorities.org/campaigns/military-spending-united-states/>. Accessed November 3, 2016.
- IDC Research Inc. Worldwide IT spending will reach \$2.8 trillion in 2019 with the strongest growth coming from the healthcare industry, according to IDC. <https://www.idc.com/getdoc.jsp?containerId=prUS41006516>. Published February 4, 2016. Accessed November 2, 2016.
- Dieleman JL, Baral R, Birger M, et al. US spending on personal health care and public health, 1996-2013. *JAMA*. doi:10.1001/jama.2016.16885
- Alemayehu B, Warner KE. The lifetime distribution of health care costs. *Health Serv Res*. 2004;39(3):627-642.
- National Center for Health Statistics. *Health, United States, 2015: With Special Feature on Racial and Ethnic Health Disparities*. Hyattsville, MD: National Center for Health Statistics; 2016. <http://www.cdc.gov/nchs/data/abus/abus15.pdf>. Accessed November 2, 2016.
- Institute for Women's Policy Research. Pay equity and discrimination. <http://www.iwpr.org/initiatives/pay-equity-and-discrimination>. Accessed November 2, 2016.
- Druss BG, Walker ER; Robert Wood Johnson Foundation. *Mental Disorders and Medical Comorbidity: Research Synthesis Report No. 21*. Princeton, NJ: Robert Wood Johnson Foundation; 2011. http://www.integration.samhsa.gov/workforce/mental_disorders_and_medical_comorbidity.pdf. Accessed November 2, 2016.
- Melek S, Norris D. *Chronic Conditions and Comorbid Psychological Disorders*. Seattle, WA: Milliman; 2008.
- Horvitz-Lennon M, Kilbourne AM, Pincus HA. From silos to bridges: meeting the general health care needs of adults with severe mental illnesses. *Health Aff (Millwood)*. 2006;25(3):659-669.
- Fields G, Dooren JC. For the mentally ill, finding treatment grows harder. *Wall Street Journal*. January 16, 2014. <http://www.wsj.com/articles/SB10001424052702304281004579218204163263142>. Accessed November 2, 2016.
- Pratt LA, Brody DJ. *Depression in the US Household Population, 2009-2012: NCHS Data Brief No. 172*. Hyattsville, MD: National Center for Health Statistics; 2014. <http://www.cdc.gov/nchs/data/databriefs/db172.pdf>. Accessed November 2, 2016.
- Katon WJ, Lin EH, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med*. 2010;363(27):2611-2620.
- Pirraglia PA, Rowland E, Wu WC, et al. Benefits of a primary care clinic co-located and integrated in a mental health setting for veterans with serious mental illness. *Prev Chronic Dis*. 2012;9:E51.
- Miller BF, Petterson S, Burke BT, Phillips RL Jr, Green LA. Proximity of providers: colocating behavioral health and primary care and the prospects for an integrated workforce. *Am Psychol*. 2014;69(4):443-451.
- Institute of Medicine. Pain as a public health challenge. In: *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington, DC: National Academies Press; 2011.
- Arterburn D, Wellman R, Westbrook E, et al. Introducing decision aids at Group Health was linked to sharply lower hip and knee surgery rates and costs. *Health Aff (Millwood)*. 2012;31(9):2094-2104.
- National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. 10 leading causes of death by age group, United States—2013. https://www.cdc.gov/injury/wisqars/pdf/leading_causes_of_death_by_age_group_2013-a.pdf. Accessed November 2, 2016.
- Centers for Disease Control and Prevention. *State Indicator Report on Physical Activity, 2014*. Atlanta, GA: US Dept of Health & Human Services; 2014. http://www.cdc.gov/physicalactivity/downloads/pa_state_indicator_report_2014.pdf. Accessed November 2, 2016.