

A PRIMARY CARE PERSPECTIVE ON U.S. HEALTH CARE: PART 1: THE GOOD, THE BAD, AND THE UGLY



Gates



Fogleman



O'Gurek

Thomas Gates, MD, Corey Fogleman, MD, and David O'Gurek, MD

Lancaster General Health Family and Community Medicine

INTRODUCTION:

It has become commonplace for observers of healthcare in the U.S. to declare that “the system is broken.” Indeed, this seems to be the one sentiment on which virtually all can agree. As family physicians involved not only in the delivery of primary health care in the Lancaster General system, but also with the training of the next generation of generalist physicians, our perspective on these issues may be quite different from that of some of our colleagues.

In this series of articles, we propose to take a “big picture” look at some important trends in the U.S. healthcare system, specifically from our perspective of primary care. Because the system cannot be improved unless we first understand our current condition, this first article consists of a frank assessment of the current status of U.S. healthcare, with special attention to sub-optimal outcomes and high costs. Future articles in the series will address current and future prospects for meaningful reform.

THE GOOD

Any consideration of the shortcomings of the U.S. healthcare system should begin with recognition of its remarkable successes over the past 100 years.

In 1900, the life expectancy in the U.S. was 47 years. One hundred years later, in 2000, it had increased to approximately 77 years (74.2 in men and 79.9 in women).¹ Most of this remarkable improvement can be attributed to progress in controlling infectious diseases. In 1900, the three most common causes of death were all infectious (pneumonia, tuberculosis, and gastroenteritis). Causes of morbidity and mortality that were common in 1900 but rare now include tuberculosis (the leading cause of death as late as 1909), scarlet fever, diphtheria (the tenth leading cause of death in 1900), pertussis, puerperal fever,

tetanus, measles, dysentery (the leading cause of death in Civil War soldiers), typhus, rheumatic heart disease, syphilis, and many more.

Some of this progress was the result of specific immunizations (beginning with the discovery of diphtheria antitoxin in the 1890s) and antibiotics (beginning with sulfonamides in the 1930s). But most was due to the overall improvement in living conditions. For example, mortality rates from tuberculosis peaked in about 1840, but had fallen over 50% by 1900, and 90% by 1949, when streptomycin and INH were first introduced. Death rates from measles fell over a hundred-fold from 1900 to the 1960s, even before a successful vaccine was introduced. It has been estimated that of the 30-year increase in life expectancy during the 20th century, only about 5 years can be attributed to specific innovations in medical care. The rest was due to “improvements in nutrition, housing, education, sanitation, working conditions, immunizations, and other social conditions.”²

Early in this era of remarkable progress (specifically, on January 22, 1922) chronic disease entered the picture as an important concern. That was the day that Banting and Best first gave their newly-discovered insulin to a patient, thereby transforming type 1 diabetes from an acute and rapidly fatal disease into a treatable (but incurable) chronic disease. Within a year there were over 1000 patients on insulin, including a 5 year old who lived another 70 years. Although every society has always had the blind, infirm, and lame, insulin introduced the concept of taking medicine for the rest of one’s life *in order to stay alive*. This was a new type of disease—chronic, treatable yet incurable, with life-long dependency on the medical care system.³

As infectious and acute diseases continued to recede throughout the 20th century, they were increasingly replaced by chronic diseases like diabetes, cancer, and heart disease as the major causes of morbidity and

mortality. In 1900, 24% of deaths were attributed to chronic diseases, but by 1940, that proportion had risen to 61%. (Then as now, heart disease, cancer, and cerebrovascular disease were the leading causes of mortality.) Despite this development, we have been slow to recognize the new reality. For most of the twentieth century, the health care system has been entrenched in the earlier paradigm, focusing on hospital-based treatment of acute disease, as well as—increasingly—acute exacerbations of chronic disease. It is perhaps this failure to adapt to the new reality of chronic disease that underlies many of the current shortcomings of U.S. health care, to which we now turn.⁴

THE BAD

Since at least 2000, many commentators have been calling attention to the relatively poor performance of the U.S. healthcare system compared with those in other developed countries. Part of the concern has been about medical errors, and the realization that if *iatrogenic illness* were officially registered, it would be the third most common cause of death in the U.S., behind only heart disease and cancer.^{5,6}

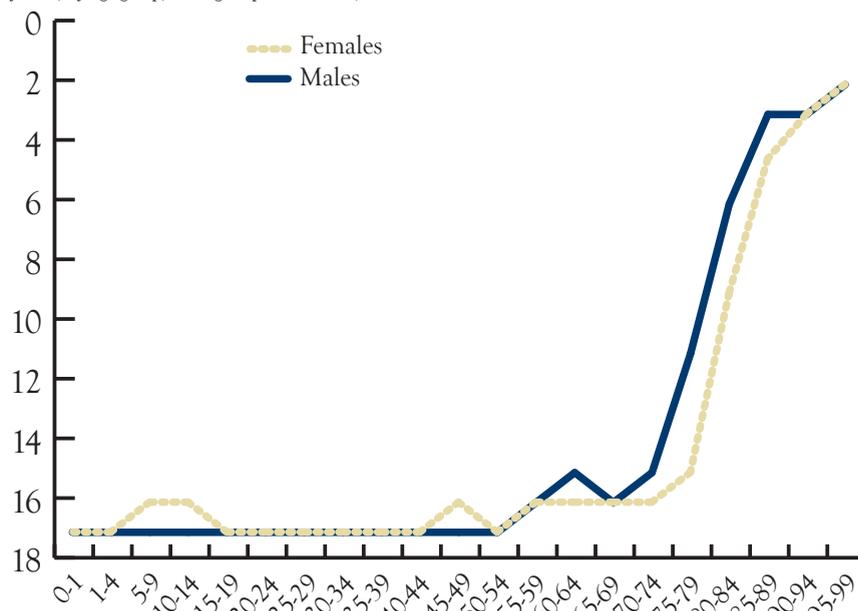
Shorter Lives, Poorer Health is a 2013 report from the Institute of Medicine that exhaustively documents these international health disparities.⁷ The report identifies “a growing body of research that suggests that the health of the U.S. population is not keeping pace with

the health of people in other economically-advanced, high income countries.”

In comparison with 17 peer countries, the U.S. ranks at or near the bottom in most measures of health and longevity: life expectancy is lowest for U.S. males, and second lowest for U.S. females; U.S. death rates are fourth highest for communicable diseases, and second highest for non-communicable diseases. Although the mortality rate for ischemic heart disease has declined substantially in the U.S., it has declined more in our peer countries, leaving the U.S. with higher cardiovascular mortality than every peer country except Finland. Likewise, infant mortality has dramatically declined in the U.S. over the last 50 years, but remains higher than in any other peer country.

Although some of what the IOM report calls “the U.S. health disadvantage” of shorter life expectancy is due to higher rates of injuries, accidents, and homicides (but not suicides) in young people, most of the shortfall can be attributed to lower life expectancy at age 50 (which reflects worse outcomes from chronic diseases), where the U.S. again ranks at the bottom. In fact, for every age group up to 75, U.S. life expectancy ranks either last or next-to-last. By contrast, U.S. life expectancy at age 80 and beyond is near the top of the rankings: it appears that if one survives to age 80, the U.S. health care system does an exceptionally good job of keeping us alive (see fig. 1).

Fig. 1. Ranking of U.S. mortality rates, by age group, among 17 peer countries, 2006-2008



The top rank is number 1, indicating the lowest death rate, and the bottom rank is number 17, indicating the highest death rate. Rankings are based on the all-cause mortality rates for 2006-2008.¹

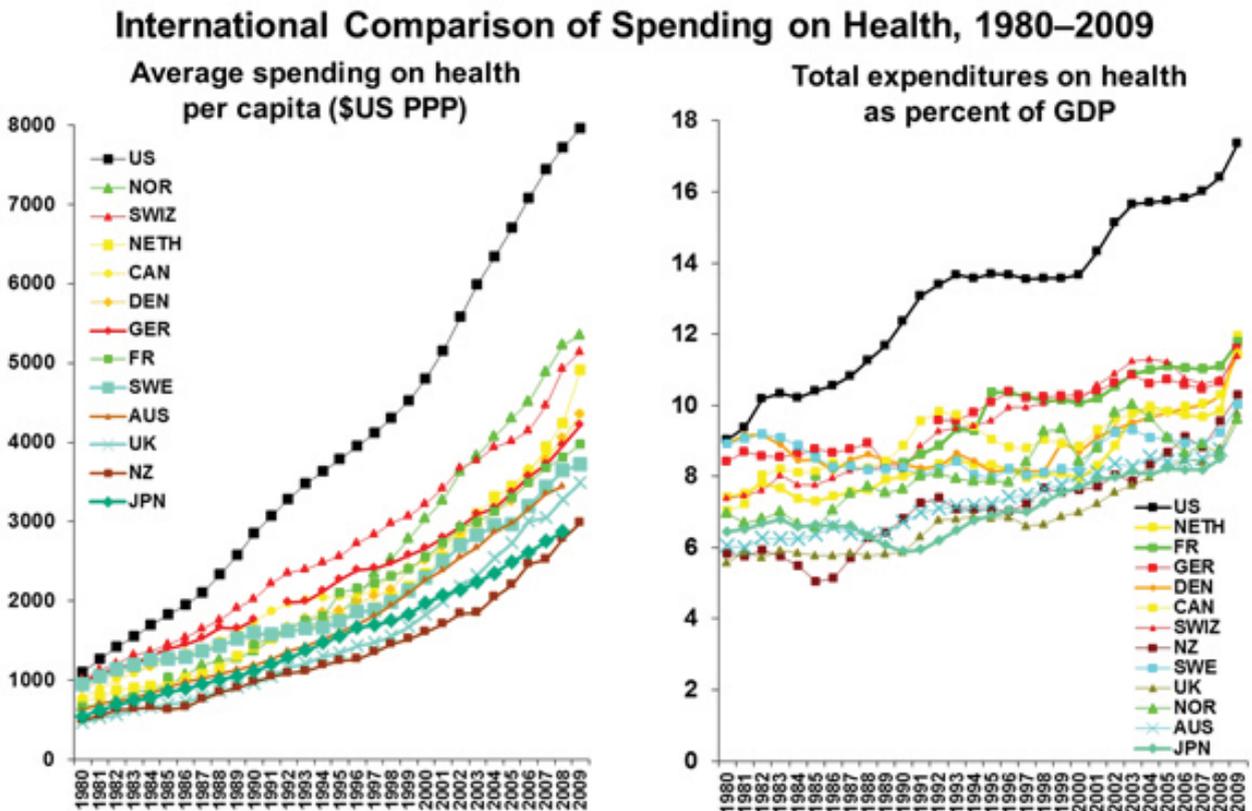
There is no single explanation for the poor performance of the U.S. in international comparisons. Some have speculated that the U.S. health disadvantage is attributable to our racial diversity and relatively high poverty rate, but this is not borne out by the data. Although the disadvantage is most striking in socioeconomically or racially disadvantaged groups, it is not confined to those groups; even the most economically advantaged Americans compare unfavorably to advantaged groups in peer countries. Poor rankings for the U.S. do not change appreciably even when the comparison is confined to the non-Hispanic white population of the U.S.⁷

Among wealthy countries, there is no correlation between health outcomes and national wealth (as measured by per capita GDP), but several health outcomes are highly correlated with income *distribution*. Compared with our peer countries, the U.S. has a high degree of income inequality, and the gap between

rich and poor has been growing since about 1980. Wilkinson and Pickett have documented that high levels of income inequality (over and above poverty rates) are directly correlated with poor health outcomes not just for poor people, but for the entire population.^{8,9} Life expectancy, infant mortality, prevalence of mental health disorders, teen birth rates, illegal drug use, and obesity, as well as rates of incarceration and homicide, all show this correlation with income inequality. The U.S., with its high and increasing degree of income inequality, is an outlier among its peer countries in most of these measures. It is hard to escape the conclusion that 35 years of economic policy, which has exacerbated income inequality, is now having adverse health effects.¹⁰

There is also considerable evidence that the structure of the U.S. health care system itself contributes to poor outcomes, most notably the fact that our system leaves 50 million people uninsured. Even for those

Fig. 2. International Comparison of Spending on Health, 1980-2009



Note: PPP = Purchasing power parity—an estimate of the exchange rate required to equalize the purchasing power of different currencies, given the prices of goods and services in the countries concerned.
Source: OECD Health Data 2011 (Nov. 2011).



with insurance, the U.S. system is marked by high out-of-pocket costs, which create significant barriers to access. On a “commodification index” that measures these financial barriers, the U.S. ranks last among 15 peer countries.⁷

Finally, and what concerns us most in this article, is the increasing evidence that a lack of emphasis on primary care is a major cause for “the U.S. health disadvantage.” Since it is ultimately impossible to randomize patients (or nations) to alternative health care systems, such evidence can never prove causation. Nevertheless, the associations are strong and consistent: in comparative studies, health care systems characterized by a stronger primary care component have better outcomes and lower costs. Internationally, among peer countries the U.S. ranks last in the proportion of generalists to total doctors, and the IOM report cites this is a major cause of poor U.S. outcomes.⁷ In a comprehensive comparison among 18 peer OECD countries, the U.S. system had the lowest score for ten primary care attributes in 1975 and 1985, and third lowest in 1995. The study found a high degree of correlation between strong primary care and lower all-cause mortality, premature mortality, and mortality from several specific conditions.¹¹

Comparative studies between states also point to the importance of primary care. Medicare spending per beneficiary varies widely among states; states with a stronger primary care workforce have lower spending as well as higher quality measures and better outcomes.²² Analysis at the county level also shows that the supply of primary care physicians (but not specialty physicians) correlates with lower all-cause and disease-specific mortality.¹² Overall, “access to primary care is associated with improved outcomes, more complete immunization, better blood pressure control, reduced mortality, and improved quality of life.”¹³

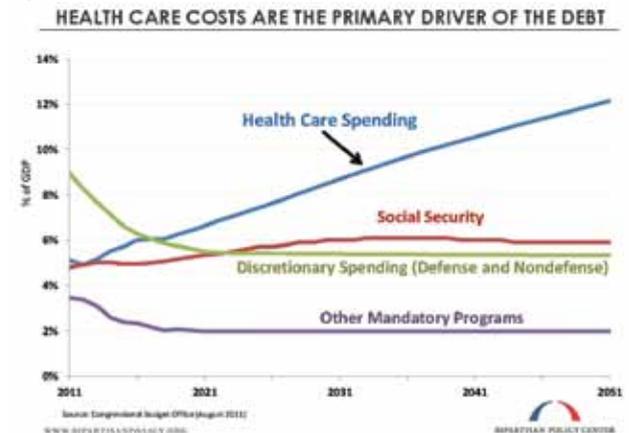
In a systematic review citing over 150 primary studies, Starfield and colleagues have summarized comparative studies at the international, state, county, and metropolitan levels, showing at all these levels a strong correlation between robust primary care and improved health outcomes.¹¹ Although these “ecological” studies cannot prove causation, the strength and consistency of the correlations, as well as the demonstrated weakness of the U.S. system in primary care, argues strongly that our lack of emphasis on primary care is a major cause of the U.S. health disadvantage, and that addressing this deficit may well be the key to future progress in achieving outcomes comparable to our peer countries.

THE UGLY

Beyond these measures of poor outcomes, the most striking aspect of U.S. health care is its spectacularly high cost. Here again, international comparisons are enlightening. In 2010, the per capita expenditures on health care in the U.S. were \$8,402—48% higher than Switzerland, the next highest spending country, and well over twice the OECD (Organization for Economic Cooperation and Development) average.¹² U.S. health care expenditures as a percentage of GDP are also high: 17.9% in 2009, compared to 12% or less for all other developed countries.¹⁶ Figure 2 illustrates that health care costs have been rising steadily in all developed countries, but the U.S. increase, measured by both per capita costs and percent GDP, has been much faster than in any other country. Total cost of health care in the U.S. currently stands at \$2.7 trillion, and under current policies is projected to double over the next 10 years, reaching \$5.5 trillion by 2023.¹⁷ It is increasingly clear that such high expenditures incur an “opportunity cost,” crowding out investment in other areas such as education or infrastructure, to the long-term detriment of our economy.

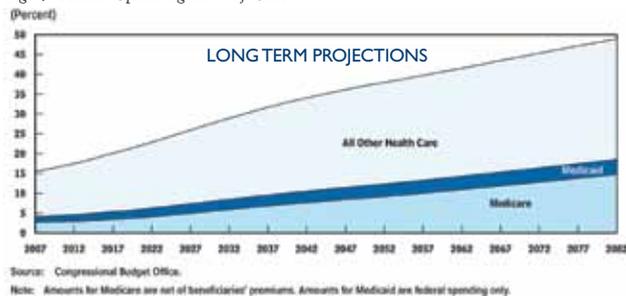
Since 1970, U.S. health care spending has increased by an average of 8.2% per year, which is 2.4% higher than the growth in GDP, and accounts for the ever-increasing share of GDP devoted to health care. That share rose from 7.2% in 1970, to 17.9% in 2010,¹⁵ with projected increases to 20% of GDP by 2020.¹⁸ Since the federal government pays for nearly 50% of health care (through Medicare, the federal portion of Medicaid, the VA, and health care for government employees including active military), this increase has huge fiscal consequences for the federal government. The ever-increasing federal expenditures on health programs are the single biggest driver of projected

Fig. 3. Healthcare Costs are the Primary Driver of Debt



government deficits and debt (Fig. 3). However, what is not widely acknowledged is that increases in Medicare and Medicaid spending have historically been lower than increases in the private sector. From the perspective of the overall economy, growth in the deficit is not due just to projected increases in Medicare, but to increases in overall health expenditures (Figure 4). Thus, the current focus on Medicare spending may be misguided: as Daniel Callahan has observed, “Medicare and Medicaid cannot be successful in holding down costs over the long run if healthcare spending in general is escalating.”¹⁹

Fig. 4. Health Spending as % of GDP



As per capita GDP increases, expenditures for health care can also be expected to increase. Even so, in comparison with other OECD countries, the U.S. overspends by around 35%, compared to what it “should” spend based on per capita income (figure 5).²⁰ Here again, there is not a single reason for high U.S. health expenditures.

The aging population clearly drives some of the increase, yet the percentage of our population over age 65 is well under the OECD average. According to the Congressional Budget Office, the aging of the population has accounted for only about 2% of the historical rise in health care costs.²¹ The CBO report identified technological innovation as by far the biggest factor driving increased costs, accounting for over half of the increase. Unlike in other areas of the economy, technological innovation in health care usually leads to *increased* rather than *decreased* costs. One example is the increased use of coronary artery angioplasty and stents in the 1990’s, which led to a modest decline in coronary artery bypass surgery—but an explosion in angioplasty and stents, which more than offset the savings. And though this increased use of a new technology coincided with a decrease in cardiovascular mortality, it was a much smaller decline than in peer countries where this new technology is used far less aggressively.²²

A further clue to high costs comes from studies of geographical variations in health care expenditures. The best data comes from Dartmouth Atlas Project, which has shown that Medicare costs per beneficiary vary almost two-fold between high-cost and low-cost states.^{23,24} Furthermore, there is an *inverse* relation between spending and a number of quality measures: i.e., states with higher spending had worse quality of care and worse outcomes. These counterintuitive results can be explained at least in part by the composition of the physician workforce: states with a higher proportion of generalist physicians, relative to specialists, have lower costs and better outcomes.²⁵ As previously mentioned, international comparative studies have reached the same conclusion: health care systems characterized by strong primary care consistently demonstrate both lower costs and better outcomes.¹⁴

Attention has also turned recently toward the US health care system’s propensity for waste, defined as expenses that produce nothing of value. In a widely quoted 2012 article, former head of the Centers for Medicare and Medicaid Services Donald Berwick, using mid-point estimates for six different categories of wasteful expenditures, concludes that waste accounts for at least 30% of U.S. health care expenditures.²⁶ He advocates aggressive reduction of waste, with the goal of stabilizing U.S. health care expenditures at the current level of 17.9% of GDP—with an estimated cumulative saving of over \$2 trillion dollars by 2020.

Using a different methodology, a 2012 Institute of Medicine report came up with a similar estimate of \$750 billion in “excess costs,” also amounting to 30% of total expenditures. To put this number in perspective, the IOM report points out that just the *waste* in health care exceeds the entire budget of the Department of Defense by over \$100 billion; and that redirecting these wasted funds could provide health insurance coverage for 150 million Americans—three times the current number of uninsured.²⁷

The recent report of the National Commission on Physician Payment Reform (March 2013) has pointed to the physician reimbursement system as a major factor in the high cost of U.S. health care. Current financial incentives systematically reward increased volume rather than quality of care, with the predictable result of relentlessly increasing expenditures. The Commission concludes, “Our nation cannot control runaway medical spending without fundamentally changing the way physicians are paid,” and proposes a rapid transition away from fee-for-service reimbursement over the next

five years. The report also points to a high proportion of specialists and disproportionate reimbursement for procedures as a major factor in high costs.²⁸

Finally, the recent article in *Time* by Stephen Brill has focused attention on prices as a fundamental reason for the high cost of health care in the U.S.²⁹ International comparisons indicate that Americans are not hospitalized and do not see their doctors more frequently than citizens of other countries, but we do pay higher prices for virtually everything the health care system does.¹⁶ Brill cites many vivid examples of how prices in the health care system often bear little or no relation to actual costs, and seem immune to the normal laws of supply and demand. High prices are routinely hidden in incomprehensible statements from insurance companies, and both patients and physicians are largely unaware of prices. We have seen numerous examples of this in our local practice. For example, in July 2012 the cost of a commonly ordered urine toxicology screen increased from \$102 to \$512, with no explanation other than a vague reference to a “complicated formula.”

These fiscal considerations illustrate a fundamental characteristic about the “system” of modern health care. In nature, systems always demonstrate an intricate interplay between positive and negative feedback functions. By contrast, health care appears to be a system with no internal capacity for negative feedback.³ Fifty years ago, Jacque Ellul warned that technological

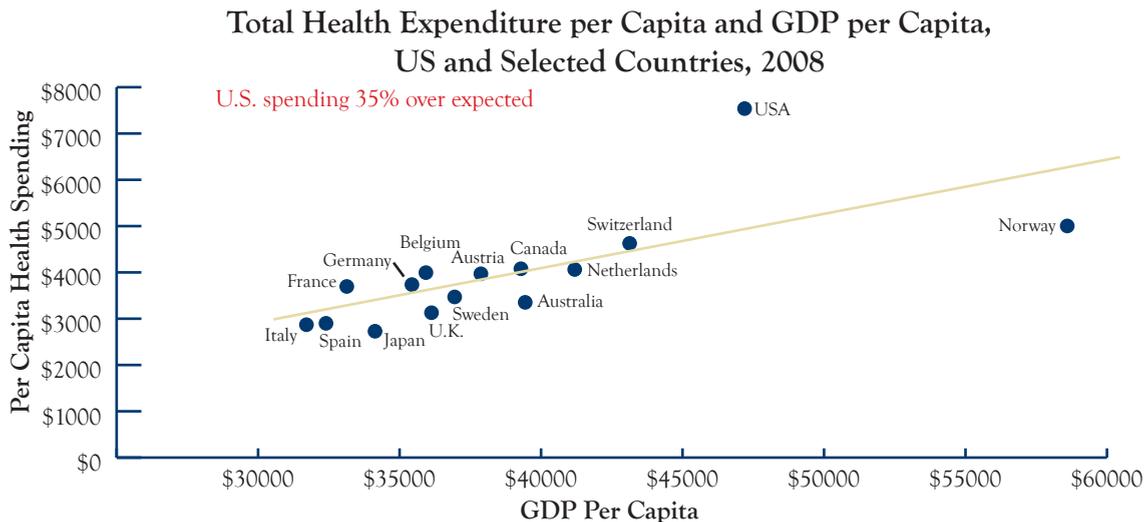
systems characteristically lack these negative feedback mechanisms, and thus “are given to pure growth.”³⁰ After 50 years of unrestrained growth, it now appears that the larger economy will by necessity start to impose that negative feedback: we can no longer afford a health care system that, as Berwick describes it, is “addicted to doing more and more.”²⁶

CONCLUSION

Before we can begin to address the shortcomings of our current health care system, it is necessary to have a clear picture of its current condition. Despite unprecedented medical progress over the last one hundred years, all is not well in U.S. health care. Our outcomes do not compare favorably with peer countries, and the ever-increasing cost of health care is clearly unsustainable. The amount of waste in the U.S. health care system has become a major factor impeding economic growth. There is now ample evidence that the lack of primary care emphasis, compared to our peer countries, is a major contributor to many of the problems of U.S. health care—both its high cost and its poor outcomes.

In future articles in this series, we will look at the prospects for reform: specifically at proposals to rebuild the role of primary care; at changing financial incentives; and at the changing culture of medicine, which is slowly beginning to recognize that “more is not better.”

Fig. 5. Healthcare Costs are the Primary Driver of Debt



Source: Organisation for Economic Co-operation and Development (2010), “OECD Health Data”, OECD Health Statistics (database). doi: 10.1787/data-00350-en (Accessed on 14 February 2011).

Notes: Data from Australia and Japan are 2007 data. Figures for Belgium, Canada, Netherlands, Norway and Switzerland, are OECD estimates.

REFERENCES AND NOTES

1. Fukuyama F. *Our Posthuman Future: Consequences of the Biotechnology Revolution* (New York: Picador, 2002).
 2. Bunker JP, Frazier HS, Mosteller F. Improving health: measuring effects of medical care. *Milbank Q*, 1994; 72(2):225-58.
 3. Downing R. *Biohealth: Beyond Medicalization, Imposing Health*. Eugene, Oregon: Pickwick Publications.
 4. Fox DM. *Power and Illness: The Failure and Future of American Health Policy* (Berkeley: University of California Press, 1993).
 5. Starfield B. Is US Health Really the Best in the World? *JAMA* 2000; 284 (4):483-485.
 6. Institute of Medicine. *To Err is Human: Building a Safer Health System*.(2000) Washington, D.C.: National Academies Press. www.nap.edu/catalog.php?record_id=9728 (accessed 4/19/13)
 7. Institute of Medicine. *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. Washington, D.C.: The National Academies Press (2013). www.nap.edu/catalog.php?record_id=13497 (accessed 4/16/13)
 8. Wilkinson R, Pickett K. *The Spirit Level: Why Greater Equality Makes Societies Stronger*. New York: Bloomsbury Press, 2010.
 9. Wilkinson RG, Pickett KE. Income Inequality and Population Health: A Review and Explanation of the Evidence. *Social Science and Medicine* 62 (2006): 1768-1784
 10. Stiglitz JE. *The Price of Inequality: How Today's Divided Society Endangers Our Future* (New York: W.W. Norton, 2012)
 11. Macinko J, Starfield B, Shi L. The Contribution of Primary Care Systems to Health Outcomes Within OECD Countries, 1970-1998. *Health Services Research* (2003). 38 (3): 831-865.
 12. Starfield B, Shi L, Grover A, Macinko J. The Effects of Specialist Supply on Populations' Health: Assessing the Evidence. *Health Affairs* (2005) content.healthaffairs.org/content/early/2005/03/15/hlthaff.w5.97.long (accessed May 9,2013)
 13. Phillips RL, Bazemore AW. Primary Care and Why It Matters For U.S. Health System Reform. *Health Affairs* (2010); 29 (5): 806-810.
 14. Starfield, B., Shi, L., and Macinko, J. Contribution of primary care to health systems and health. *Milbank Quarterly* (2005). 83(3), 457-502.
 15. Kaiser Family Foundation. *Health Care Costs: A Primer*. May 2012. www.kff.org/insurance/upload/7670-03.pdf (accessed 4/16/13)
 16. Squires D. Explaining High Health care Spending in the United States: An International Comparison of Supply, Utilization, Prices, and Quality. Commonwealth Fund Publication, Volume 10, number 1595 (May 2012). www.commonwealthfund.org/~media/Files/Publications/Issue%20Brief/2012/May/1595_Squires_explaining_high_hlt_care_spending_intl_brief.pdf (accessed 4/16/13)
 17. Commonwealth Fund Commission on a High Performance Health System, *Confronting Costs: Stabilizing U.S. Health Spending While Moving Toward a High Performance Health Care System*. Commonwealth Fund Publication number 1653 (January 2013). www.commonwealthfund.org/~media/Files/Publications/Fund%20Report/2013/Jan/1653_Commission_confronting_costs_web_FINAL.pdf (accessed 4/16/13)
 18. Keehan SP, Sisko AM, Truffer CJ, et al. National health spending projections through 2020: economic recovery and reform drive faster spending growth. *Health Aff (Millwood)*. 2011; 30(8):1594-1605.
 19. Callahan D. *Taming the Beloved Beast*.
 20. Kaiser Family Foundation. www.kff.org/insurance/snapshot/OECD042111.cfm. Based on OECD data. Accessed April 2, 2013.
 21. Congressional Budget Office, *Technological Change and the Growth of Health Care Spending* (January 2008), p.8. www.cbo.gov/sites/default/files/cbofiles/ftpdocs/89xx/doc8947/01-31-techhealth.pdf (accessed 4/16/13)
 22. Nolte E, McKee CM. Measuring the Health of Nations: Updating an Earlier Analysis. *Health Affairs* 2008; 27(1): 58-71.
 23. Skinner JS, Gottlieb DJ, Carmichael D. A New Series of Medicare Expenditure Measures by Hospital Referral Region: 2003-2008. Dartmouth Atlas Project Report. 2011. www.dartmouthatlas.org/downloads/reports/PA_Spending_Report_0611.pdf. Accessed April 13, 2013.
 24. Fisher ES, Wennberg DE, et.al. The Implications of Regional Variations in Medicare Spending. *Ann Intern Med* 2003; 138: 273-287.
 25. Balkerk, Chandra A. Medicare Spending, the Physician Workforce, and Beneficiaries Quality of Care. *Health Affairs* 2004. content.healthaffairs.org/content/early/2004/04/07/hlthaff.w4.184.full.pdf+html
 26. Berwick DM, Hackbarth AD. Eliminating Waste in U.S. Health Care. *JAMA* 2012; 307 (14): 1513-1516.
 27. Institute of Medicine Committee on the Learning Health Care System in America. *Better Care at Lower Cost: The Path to Continuously Learning Health Care in America*. Washington, D.C.: National Academies Press, 2012. www.nap.edu/catalog.php?record_id=13444 (accessed 4/16/13)
 28. Report of the National Commission on Physician Payment Reform (March 2013). physicianpaymentcommission.org/wp-content/uploads/2012/02/physician_payment_report.pdf (accessed 4/16/13)
 29. Brill, Steven. Bitter Pill: Why Medical Bills are Killing Us. *Time Magazine*, March 4, 2013. www.time.com/time/magazine/article/0,9171,2136864,00.html (accessed 4/16/13)
 30. Ellul J. *The Technological System* New York: Continuum (1980).
- i. Data for this figure was drawn from (1) the Human Mortality Database, 2011, University of California, Berkely (USA), and Max Planck Institute for Demographic Research (Germany), available at www.mortality.org or www.humanmortality.de (data downloaded July 18, 2011) and (2) Arias, Elizabeth, 2011 United States Life Tables, 2007. National Vital Statistics Reports, 59(9), Hyattsville, MD: National Center for Health Statistics. Source: Ho and Preson (2011, Figure 1).

Thomas J. Gates, M.D.
Associate Director, Family & Community Medicine
717-544-4940
tjgates@lghealth.org

Corey D. Fogleman, M.D.
Associate Director, LGH Family & Community
Medicine Residency Program
717-544-4940
cfoogleman2@lghealth.org

David O'Gurek, M.D.
Associate Director, Family & Community Medicine
717-544-4940
dogurek2@lghealth.org