

The Perfect Storm of Overutilization

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A “PERFECT STORM” OCCURS WHEN A CONFLUENCE OF many factors or events—no one of which alone is particularly devastating—creates a catastrophic force. Such confluence is rare and devastating. Over time and through disconnected events, US health care has evolved into a “perfect storm” that drives overutilization and increases the cost of health care.

Higher Costs in the United States

The United States spends substantially more per person on health care than any other country, and yet US health outcomes are the same as or worse than those in other countries.^{1,2} In 2005, the last year for which comparative statistics are available, the United States spent \$6401 per person, whereas the next highest spending was in Norway and Switzerland, \$4364 and \$4177, respectively (TABLE).^{3,4} Overall, US health care expenditures are 2.4 times the average of those of all developed countries (\$2759 per person), yet health outcomes for US patients, whether measured by life expectancy, disease-specific mortality rates, or other variables, are unimpressive (Table).^{1,3,4}

There are many explanations for the higher costs of US health care. Because health insurance must be underwritten and sold to individual employers and self-insured individuals, administrative costs exceed \$145 billion. This does not include employers' costs for purchasing and managing employees' health insurance. One estimate suggests that the private employer insurance market wastes more than \$50 billion in administrative costs.⁵

A second factor is higher prices in the United States for important inputs to health care, such as physicians' services, prescription drugs, and diagnostic testing. US physicians earn double the income of their peers in other industrialized countries (Table). Similarly, prices to the public for drugs in the United States are 10% to 30% higher than in other developed countries.⁶ Disparities in prices of inputs to health care account for at least \$100 billion annually of higher spending in the United States.⁵

A third contributor to US costs is the abundance of amenities. Hospital rooms in the United States offer more privacy, comfort, and auxiliary services than do hospital rooms in most other countries. US physicians' offices are typically more conveniently located and have parking nearby and more attractive waiting rooms.

Overutilization of Health Care

The most important contributor to the high cost of US health care, however, is overutilization. Overutilization can take 2 forms: higher volumes, such as more office visits, hospitalizations, tests, procedures, and prescriptions than are appropriate or more costly specialists, tests, procedures, and prescriptions than are appropriate.

It is more costly care, rather than high volume, that accounts for higher expenditures in the United States. The volume of services is not extreme. A hospitalization rate of 121 per 1000 US patients is higher than that of Japan (106) but considerably lower than the rate in Switzerland (157), Norway (173), and France (268) and lower than the Organisation for Economic Co-operation and Development (OECD) average (163) (Table).^{3,4} The US hospitalization rate is 21st of 30 OECD countries. Similarly, US patients have 3.8 physician visits annually per capita, fewer than the OECD average of 6.8.^{3,4,6}

In contrast with volume, in which the United States is not the leader, there are almost 3 times as many magnetic resonance imaging scanners in the United States as the OECD average, higher only in Japan.^{3,4} US patients receive considerably more cardiac revascularization procedures (579 per 100 000 population)—coronary artery bypass grafts, angioplasties, and stents—45% more than patients in Norway, the country with the next highest number (Table).^{3,4} The United States has the fourth highest per capita consumption of pharmaceuticals.⁶ US patients utilize many more “new drugs”—those on the market 5 years or fewer—than patients in other countries.⁶ For instance, ezetimibe, which decreases low-density lipoprotein cholesterol level and was approved in October 2002, is not recommended by major guidelines⁷ as first-line therapy. Nevertheless, the use of ezetimibe in the United States is about 5 times higher than it is in Canada, constituting more than 15% of prescriptions for lipid-lowering agents.⁸ Greater use of new, more expensive pharmaceuticals, as well as higher prices both for older and newer drugs, helps explain why the United States spent \$752 per capita (2005) on drugs, whereas France, with the next highest expenditure, spent \$559 and Japan just \$425.^{3,4,6}

The Ingredients of the Perfect Health Care Storm

At least 7 factors drive overuse, 4 related to physicians and 3 related to patients. First, there is the matter of physician cul-

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ture. Medical school education and postgraduate training emphasize thoroughness. When evaluating a patient, students, interns, and residents are trained to identify and praised for and graded on enumerating all possible diagnoses and tests that would confirm or exclude them. The thought is that the more thorough the evaluation, the more intelligent the student or house officer. Trainees who ignore the improbable “zebra” diagnoses are not deemed insightful. In medical training, meticulousness, not effectiveness, is rewarded.

This mentality carries over into practice. Peer recognition goes to the most thorough and aggressive physicians. The prudent physician is not deemed particularly competent, but rather inadequate. This culture is further reinforced by a unique understanding of professional obligations, specifically, the Hippocratic Oath’s admonition to “use my power to help the sick to the best of my ability and judgment” as an imperative to do everything for the patient regardless of cost or effect on others.

Second, fee-for-service payment misaligns incentives; it creates a big incentive for overutilization. Although most physicians are not income maximizers, they know that it is better to be paid to do something, and the higher the payment the better. Paying for doing more adds a strong financial motivation to what is often a slim clinical rationale for an intervention. Furthermore, the current system’s bias toward paying significantly more for procedures rather than for evaluation and management reduces physicians’ inclination to watch, wait, and communicate and increases their propensity to order a test.

This financial incentive for physicians to order and perform more expensive procedures is compounded by marketing. Physicians face a paradoxical situation. They are flooded with information; each month there are hundreds of publications on cancer alone. Simultaneously, there is a paucity of

data comparing different treatments and interventions. It is time consuming and difficult for physicians to judiciously incorporate new data into their practices. This creates a powerful role for physician-directed pharmaceutical marketing, which expends more than \$7 billion annually—about \$10 000 per physician.⁹ Companies can selectively highlight favorable studies from the mass of research, confident that there are few comparative effectiveness data for physicians to put the marketers’ desired conclusions into a proper context.

Medical malpractice laws and the resultant defensive medicine also contribute to overutilization. There is controversy about whether malpractice litigation and concomitant real cost of premiums are increasing or decreasing. There is no doubt, however, about the increase in physicians’ concern about malpractice suits and their inclination to do more.

Then there is the patient side. US patients prefer high technology over high touch. As the energy crisis highlights, Americans tend to embrace technologic fixes for problems. US culture emphasizes the new and the fancy; old and plain is equated with deprivation.² In the medical sphere, this cultural value informs a patient perception that doing more tests and receiving more treatments and interventions is receiving better care. This helps to explain inappropriate prescribing of antibiotics for viral infections.

A sixth contributor is direct-to-consumer marketing. Pharmaceutical companies spend more than an estimated \$4 billion annually advertising prescription drugs, with the concluding advice of “talk to your doctor about. . . .”⁹ These ads drive patients’ requests for new and more costly medications.

In normal markets, demand is modulated by cost. But third-party payment for patients attenuates this control. Although patients experience deductibles, co-payments, and other out-of-pocket expenses, health insurance and gov-

Table. International Comparisons of Health Care Costs, Quality, and Outcomes^a

Indicator ^b	United States	Norway	Switzerland	France	Japan	OECD Average
Health care expenditures per capita (2005), US \$	6401	4364	4177	3374	2249	2560
Infant mortality, per 1000 births (2005)	6.8	3.1	4.2	3.6	2.8	5.4
Cancer mortality, per 100 000 population (2004)	203	201	186	244	208	227
Ischemic heart disease mortality, per 100 000 male patients (2004)	170.3	120.7	95.2	64.2	42.0	141.6
Life expectancy at age 65, female patients (2005), years	20.0	20.1	21.0	21.4	23.2	19.6
Hospital discharges, per 1000 population (2005)	121	173	157	268	106	163
Annual physician office visits per capita (2004)	3.8	NA	3.4	6.6	13.8	6.8
Physician salaries, specialists/general practitioners, US \$	230 000/161 000	77 000/NA	130 000/116 000	149 000/92 000	NA	113 000/83 000
Pharmaceutical spending per capita (2005), US \$	752	375	424	559	425	383
Use of new pharmaceuticals (No. of drugs released in last 5 y relative to US per capita) (2005)	100	NA	NA	65	40	NA
Coronary revascularization procedures (bypass, percutaneous transluminal coronary angioplasty, stenting) per 100 000 population	579	320	134	196	NA	245
Cesarean deliveries, % of births (2004)	29	15	26	18	NA	28

Abbreviations: NA, not available; OECD, Organisation for Economic Co-operation and Development.

^aAll dollar figures adjusted for US dollar purchasing power parity.

^bSources: OECD,³ Congressional Research Service,⁴ and Danzon and Furukawa.⁵

ernment programs significantly shield patients' decisions from the true costs of health care.

Alone, each of these factors would induce some overutilization. When they coincide, however, they amplify and reinforce each other to create a perfect storm of "more": more referrals to specialists, expensive tests, procedures, and treatments. For instance, patients' desires for "peace of mind," physicians' training to be thorough, and worries about malpractice suits coalesce to induce more testing and treatments. When physicians make money on interventions and patients pay little for them, cost becomes largely irrelevant. The relative cost-unconscious environment augments the incentive for drug, device, and other manufacturers to develop more new expensive tests and treatments, even when they provide small marginal benefits to patients.

Policy Implications of the Perfect Storm

Some elements in the perfect storm are difficult or impossible to change; some, arguably, should not change. Changing Americans' affinity for new technology is somewhere between difficult, impossible, and undesirable.²

Calls for changing physician training and culture are perennial and usually ignored. However, the progression in end-of-life care mentality from "do everything" to more palliative care shows that change in physician norms and practices is possible. The escalation in health care costs poses a great challenge to the leaders of US medicine to recognize the gravity of the situation and to move toward more socially sustainable, cost-effective care. Rapid reforms of medical education and training, even when widely acknowledged as essential, are uncommon.

Another potential policy change is to curb aggressive marketing to physicians and consumers. After recent problems with new, heavily promoted pharmaceuticals, there is increasing pressure to reduce or eliminate direct-to-consumer advertising. Simultaneously, there are credible calls for restricting the access of "pharmaceutical" representatives to physicians.¹⁰ Although laudable, such changes alone are unlikely to have a large effect on overutilization. Similarly, changes in malpractice law could help: Some experts estimate defensive medicine adds 5% to 9% to health care expenditures,¹¹ but reform would affect only some defensive practices.

Realistically, the most effective policy change would be to alter how insurance pays for medical services. One step is for more value-based co-payments, modeled on current tiered pharmaceutical benefits, that link the amount patients pay to effectiveness and cost of alternatives.¹² For instance, men with early stage prostate cancer who choose radiation therapy might have no co-payment for 3-dimensional conformal radiation but might have to cover the marginal cost if they want more expensive intensity-modulated radiation therapy. Value-based co-payments would promote high-value interventions and discourage use of marginal medicine. It would help if patients were financially sensitive to the cost of care, but not if out-of-pocket costs inhibit use of needed services, resulting in higher costs later. This is not an all-or-nothing rationing

scheme, but rather an ethical way to have patients experience costs but not at the expense of important outcomes.¹²

Finally, private and public payers for health care must work on developing better financial incentives for physicians and hospitals to provide more cost-effective care. Many more experiments are needed with pay for performance, bundled payments, partial capitation, value-based payment, or other payment methods that promote prudent use of resources. Such experiments with different ways of paying for health care services must be combined with careful monitoring of utilization, cost, and quality.

Conclusion

The United States has created the perfect storm for overutilization of health care. Costs cannot be controlled unless overutilization is substantially reduced. Many physician and patient factors—ingrained values, physician culture, advertising, payment—drive and synergistically intensify overutilization. The best hope for reining in costs is to devise financial incentives for physicians and patients that result in greater health care value.

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REFERENCES

1. American College of Physicians. Achieving a high performance health care system with universal access: what the United States can learn from other countries. *Ann Intern Med.* 2008;148(1):55-75.
2. Emanuel EJ. What cannot be said on television about health care. *JAMA.* 2007;297(19):2131-2133.
3. Organisation for Economic Co-operation and Development. Health at a glance 2007: OECD indicators. <http://oberon.sourceoecd.org/vl=1643589/cl=22/nw=1/rpsv/health2007/index.htm>. Accessed May 30, 2008.
4. Congressional Research Service. US health care spending: comparison with other OECD countries. September 17, 2007. http://assets.opencrs.com/rpts/RL34175_20070917.pdf. Accessed May 30, 2008.
5. Angrisano C, Farrell D, Kocher B, Laboissiere M, Parker S. *Accounting for the Cost of Health Care in the United States*. San Francisco, CA: McKinsey Global Institute; 2007. http://www.mckinsey.com/mgi/rp/healthcare/accounting-cost_healthcare.asp. Accessed May 30, 2008.
6. Danzon PM, Furukawa MF. International prices and availability of pharmaceuticals in 2005. *Health Aff (Millwood).* 2008;27(1):221-233.
7. Grundy SM, Cleeman JI, Merz CN, et al. Implications of recent clinical trials for the National Cholesterol Education Program Adult Treatment Panel III guidelines [published correction appears in *Circulation*. 2004;110:763]. *Circulation.* 2004;110(2):227-239.
8. Jackevicius CA, Tu JV, Ross JS, Ko DT, Krumholz HM. Use of ezetimibe in the United States and Canada. *N Engl J Med.* 2008;358(17):1819-1828.
9. General Accountability Office. *Prescription Drugs: Improvements Needed in FDA's Oversight of Direct-to-Consumer Advertising*. Washington, DC: US Government Printing Office; 2006. <http://www.gao.gov/htext/d0754.html>. Accessed May 30, 2008.
10. Association of American Medical Colleges. *Report of the AAMC Task Force on Industry Funding of Medical Education to the AAMC Executive Council*. Washington, DC: AAMC; 2008. <http://www.aamc.org/research/coi/industryfunding.pdf>. Accessed May 30, 2008.
11. Kessler D, McClellan M. Do doctors practice defensive medicine? *Q J Econ.* 1996;111:353-390.
12. Denny CC, Emanuel EJ, Pearson SD. Why well-insured patients should demand value-based insurance benefits. *JAMA.* 2007;297(22):2515-2518.