



Diagnosing the High Cost of Health Care

How Spending on Unnecessary Treatments, Administrative Waste, and Overpriced Drugs Inflates the Cost of Health Care in California

CALPIRG
Education Fund

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June 2008

Acknowledgments

The CALPIRG Education Fund thanks the following individuals for their review and insightful comments on this report: Leif Haase, Director of the New America Foundation's California Program, and Anthony Wright, Executive Director of Health Access California. Thanks also to Tony Dutzik, Susan Rakov and Timothy Telleen-Lawton of Frontier Group for technical and editorial assistance.

This report is made possible with funding from the California Wellness Foundation.

The opinions expressed in this report are those of the authors and do not necessarily reflect the views of our funders or those who provided editorial review. Any factual errors are strictly the responsibility of the authors.

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Executive Summary

California spends billions of health care dollars on unnecessary treatments and services, administrative waste, and overpriced, sometimes harmful, medications. By finding ways to cut waste in its health care system and to reform an incentive structure that encourages overspending, California can reduce the burden that health care costs impose on our economy.

The high cost of health care in California imposes an increasing burden on households, businesses, government, and the state's economy.

- In 2004, insurance companies, the state and federal government, individuals and other payers spent \$167 billion on health care in California, equal to 11 percent of the state's gross domestic product.
- Health care spending rose 56 percent from 2000 to 2006, versus an inflation rate of just 18 percent and wage increases of 20 percent, forcing employers to choose between reducing benefits, limiting wage increases, and hiring fewer employees.

Researchers, pundits and health care professionals have suggested possible causes for rising health care costs, from the cost of caring for an aging population to the price of malpractice insurance. These factors play a very small role in the cost of health care, and addressing them would not substantially change the price of care. Nor would imposing "cost containment" or rationing of care be an acceptable solution. Rather, it requires reducing health care spending that fails to improve patient health.

This report focuses on three major categories of unproductive spending: overuse of invasive treatments, intensive services, and hospitalization; excessive administrative costs; and prescription drug marketing that encourages the use of more drugs, more expensive drugs, and drugs with a less established record of safety.

Oversupply of Medical Resources Results in Ineffective, Costly Treatment

A major cause of high health care costs is treatment that does not result in better outcomes for patients. No matter who pays for this care, it does not help patients live better or longer, and thereby drives

up health care costs without providing any corresponding benefit. In some parts of the state, patients are, on average, hospitalized too often and for too long, leading to unnecessary tests, procedures and specialist visits.

- Unnecessary care does not result in better health: patients who live in regions with above-average spending are not any healthier as a result and are less satisfied with the care they receive.
- Ineffective, costly care is driven, in part, by Medicare and private insurance payment policies that encourage doctors to order more tests and procedures. The greater availability of specialists and hospital beds also leads doctors to send patients to specialists or to the hospital more frequently than provides any value for patient health.

Per-patient spending on health care in some regions of California is far higher than elsewhere, but this extra spending leads to no improvement in patient health or satisfaction. Eliminating these excess costs just for Medicare patients would save at least \$700 million annually. Improving care for other patients with chronic illness would yield much greater savings.

- Medicare patients in their last two years of life who lived in Los Angeles from 1999 to 2003 had 2.3 times more visits to specialists than did comparable patients in Sacramento. They also spent twice as many days in intensive care and were hospitalized 1.6 times longer. Discrepancies exist in other areas of the state as well.
- Despite the fact that Los Angeles has a greater number of specialists and hospital beds per capita than most

regions of the state, from 1999 to 2003, hospitals in Los Angeles were less likely to provide proper care for patients suffering from heart disease, congestive heart failure, or pneumonia than were hospitals in the far less expensive Sacramento region. Los Angeles-region hospitals also ranked lower on patient satisfaction surveys.

- Were Medicare patients in Los Angeles and other high-spending regions to receive the same amount of care as patients in Sacramento, health care spending would decline by at least \$700 million annually. Eliminating unnecessary care would cut spending despite the higher cost per unit of care in Los Angeles.

Excessive Administrative Expenses Drive Up Costs

Many administrative costs within California's health care system are the result of efforts to shift costs from one payer to another—from the insurance company to a hospital, or from a physician to a patient. This paperwork increases total costs without improving outcomes for patients.

- Complex billing and insurance requirements raise administrative costs. For example, the process by which physicians have to demonstrate to insurance companies and others that they are capable of providing high-quality care is time intensive and duplicative. On average, physicians submit 17 credentialing applications annually to insurance companies, hospitals, and other health care facilities. Completing each application requires nearly 90 minutes of staff time.
- Researchers have estimated that billing and insurance-related activities consume at least 5 percent of health care dollars in California, or more

than \$9 billion annually. This estimate excludes costs related to oversight and management that directly improve patient care.

Prescription Drug Marketing

Californians spend millions of dollars annually on prescription drugs that are no better than cheaper alternatives or that may have dangerous or unrecognized side-effects. Heavy marketing to consumers and to physicians by pharmaceutical companies is a key reason that these lucrative, if not always beneficial drugs, get prescribed.

- Drug advertising generally encourages the use of newer, more expensive medications, even if they are no more effective than existing ones, because new drugs are under patent protection and produce strong profits for pharmaceutical companies. The side effects of new drugs are less well understood and therefore patients who take them are exposed to greater risk.
- For example, Merck heavily promoted Vioxx as a superior alternative to other anti-inflammatory medications, despite a lack of evidence that it was more effective. Roughly 25 million Americans took Vioxx, bringing huge profits to Merck, before it was discovered that Vioxx causes heart attacks and may have killed 50,000 Americans.

Pharmaceutical companies increased prescription drug advertising by more than 80 percent from 1997 to 2005. Their marketing includes direct-to-consumer ads and myriad outreach efforts to physicians,

such as meeting with doctors and paying for meals. The pharmaceutical industry spends an estimated \$2.5 billion on prescription drug advertising in California each year. In response, physicians prescribe and consumers purchase billions of dollars of potentially risky and unnecessary medicine each year.

- After seeing direct-to-consumer ads, patients ask their physicians for prescriptions, and doctors comply. An estimated 2 to 7 percent of consumers who see drug ads eventually get a prescription for the advertised drug.
- Direct marketing to physicians, which often includes misleading information, boosts the total number of prescriptions and increases the number of prescriptions for newer and more expensive drugs that are no better than old ones.

Any health care reform plan must address the high cost of health care in order to ensure that health care is affordable. Some of these reforms could happen fairly quickly; others will take years. But it is critical that we reform the elements of our health care system that promote spending that does not deliver results. Besides limiting costs, these changes will help, not hinder, doctors as they work to deliver the best care to their patients. The billions of wasted dollars currently spent by California's health care system suggest that we can bring down the cost of health care, while at the same time ensuring high-quality care and allowing more Californians to have access to care.

Introduction

When policy-makers talk about cutting health care costs, Californians get nervous.

Californians understand that health care costs are on the rise—consuming an increasing share of the state’s resources and undermining the financial health of businesses, individuals and government. Getting health care costs under control is essential to meeting the goal of making quality health care affordable for all Californians.

But for many consumers, health care “cost containment” has become synonymous with efforts to deny coverage for necessary but expensive treatments, or to force consumers to shoulder a greater share of health care costs. Consumers have legitimate concerns that reining in health care costs will result in the rationing of care—preventing them from getting the treatment they need when they need it.

Even a cursory review of California’s health care system, however, reveals instances in which large sums of money are expended, but cause little or no positive impact on health. Medical errors, excessive hospital stays, unnecessary procedures, and uncoordinated care all drive up the cost of

health care without providing any benefit to patients—and often subject them to new dangers. Billions more dollars are lost in complex and redundant “red tape” that frustrates doctors and consumers alike. And excessive use of new and expensive prescription drugs—driven by pharmaceutical industry marketing practices directed at physicians and consumers—drives up spending even further, often while providing minimal benefit or exposing consumers to drugs whose safety has not been sufficiently well established.

This paper identifies billions of dollars in overspending that could be eradicated from California’s health care system without negatively affecting the quality of health care Californians receive. Indeed, by providing care that is better coordinated and more efficient, and that incorporates patients in the process of informed decision-making, California could cut costs while actually improving the quality of the state’s health care system.

There are no simple solutions to what ails California’s health care system, and some of the problems identified in this report will require years to solve. But this report identifies an opportunity for

California—an opportunity to reduce the burden of rising health care costs on the state. Our intention is for this report to spark a conversation among policy-makers, physicians, the health care industry and

ordinary Californians about how to reform the state’s health care system in ways that not only cut costs, but that also provide the high-quality health care Californians deserve.

The High Cost of Health Care

The High Cost of Health Care Imposes a Heavy Burden on California

The United States spent more than \$7,000 on health care per person in 2006.¹ That is approximately one-quarter more per capita than the next highest-spending country, and approximately twice as much as nations such as Canada, Australia, Sweden and the United Kingdom.² High health care costs are a burden on businesses, individuals and government, and don't buy the quality of care that they ought to.

The rising cost of health care places a growing burden on employers who provide insurance to their employees. In 2005, health insurance accounted for more than 10 percent of payroll costs in half of small businesses.³ Employers compensate for higher health care costs by reducing benefits, limiting wage increases, or hiring fewer employees.⁴ As a result, rising health care costs act as a drag on the economy and affect everyone.

Further, employees who get their coverage on the job are being asked to contribute

an increasing share of the cost. Unmanageable health costs also can devastate a family: overwhelming health care bills cause an estimated 17 percent of personal bankruptcies in the United States.⁵

Health care costs strain government budgets. In 2000, 17 percent of federal revenues were spent on health care, compared to 28 percent in 2006.⁶ The average state spent 20 percent of its revenue on health care in 2000, compared to 24 percent in 2006.⁷

Total spending on health care in California reached \$167 billion—or 11 percent of the state's gross domestic product—in 2004.⁸ Per capita health care spending in California is 12 percent below the national average, but still well above levels in other countries.⁹

In 2004, hospital care was the biggest component in health care spending in the state (\$58.2 billion), followed by physician and clinical services (\$49.9 billion). Prescription drug costs were third (\$17.2 billion), followed by dental services (\$11.7 billion) and nursing home care (\$8.4 billion). All categories of health care spending are listed in Table 1.

Table 1. 2004 Health Care Spending by Category in California¹⁰

Expense	Billions	Percentage of Health Care Costs
Hospital Care	\$58.2	35%
Physician and Clinical Services	\$49.9	30%
Prescription Drugs	\$17.2	10%
Dental Services	\$11.7	7%
Nursing Home Care	\$8.4	5%
Other Professional Services	\$6.2	4%
Home Health Care	\$5.5	3%
Other Personal Health Care	\$3.9	2%

Not only does the United States spend an enormous amount of resources on health care, but the rate of growth in health care spending is greater than inflation or wage growth. Nationally, inflation rose 18 percent from 2000 to 2006, while wages rose 20 percent. In contrast, health care spending grew by 56 percent.¹¹ Table 2 shows the increase in different types of health care expenses in California from

2000 to 2004, revealing significant increases in nearly every category.

The rise in health care costs is projected to continue. The federal government predicts that national health care spending will increase from \$2.1 trillion in 2006 to more than \$4.1 trillion in 2016. That is an increase from 16 percent of gross domestic product to 19.6 percent of gross domestic product.¹³

Table 2. Percentage Increase in Different Types of Health Expenses from 2000 to 2004 in California (millions of 2004 dollars)¹²

Expense	2000	2004	Increase from 2000 to 2004
Home Health Care	\$3.4	\$5.5	62%
Prescription Drugs	\$11.6	\$17.2	47%
Other Personal Health Care	\$2.7	\$3.9	44%
Hospital Care	\$46.4	\$58.2	26%
Other Professional Services	\$5.0	\$6.2	24%
Physician and Clinical Services	\$41.2	\$49.9	21%
Dental Services	\$10.1	\$11.7	16%
Durable Medical Products	\$2.3	\$2.6	10%

High Spending Is Failing to Deliver Quality Care

All this spending does not deliver the quality of health care that it should, as the United States trails in many indicators of health and well-being. America ranks 44th in the world in average life expectancy and 41st in the world in infant mortality.¹⁵ The United States fares poorly on measures such as babies' birth-weight and is only average in the percentage of children who receive immunizations.¹⁶

Age-adjusted mortality from several chronic diseases is worse in the United States than in Canada, France, Germany, Greece, Japan and Britain because care of those with chronic diseases falls short. For example, nationwide, less than half of diabetics receive three basic tests for diabetes

that provide an assessment of how well the disease is being controlled and offer early warning of possible complications.¹⁷

The performance of California's health care system is average compared to other states, though the state does slightly better than average in providing care for chronic conditions and worse in providing preventive care and treating acute conditions.¹⁸

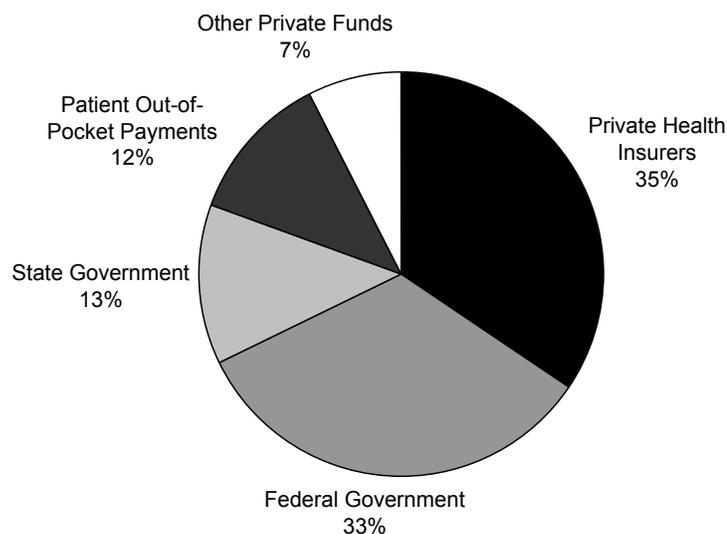
Researchers at Dartmouth's Institute for Health Policy and Clinical Practice estimate that as much as one-third of health care spending in the United States does not improve patient health. In California, that equals as much as \$55 billion each year, or \$10 billion more than the state spends on K-12 education annually.¹⁹

Researchers, pundits and health care professionals have identified a lengthy list of possible causes for rising health care

Who Pays for Health Care?

The economic impact of costly health care is felt by individuals, employers, and government. Nationally, private health insurance plans pay for the largest share of health care costs, followed closely by the federal government. State governments and consumers pay much smaller but nearly equal amounts. See Figure 1.

Figure 1. Source of Funds for Health Care Spending in 2006, Nationally¹⁴



costs, including an aging population that requires more care, new technologies and drugs that improve health but are expensive, medical malpractice insurance that raises costs and causes doctors to practice costly defensive medicine, use of emergency rooms instead of visits to the doctor, and low fees for consumers that cause them to demand too much health care (see the text box on “Myths of Rising Health Care Costs” for a discussion of the impact of each of these factors).

This report focuses on three areas in

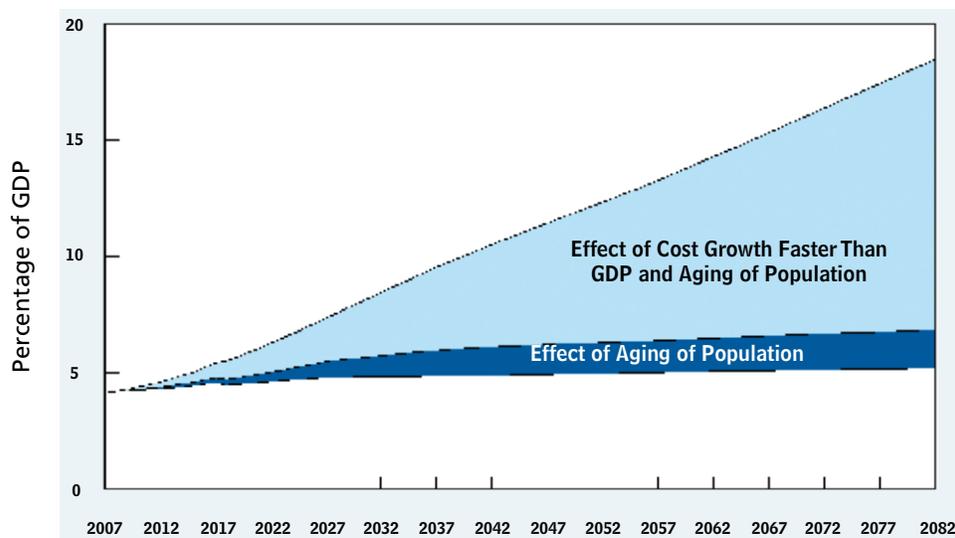
which California can realize significant savings. First, an oversupply of medical infrastructure and resources in some parts of the state results in ineffective, unnecessary treatment that inflates costs. Next, excessive administrative costs, such as billing and credentialing expenses, drive up the price of health care without providing any benefit to patients. Finally, marketing of prescription drugs to consumers and to doctors leads to overprescribing of the newest, most expensive, least-tested medicines.

Myths of Rising Health Care Costs

Rising health care costs have been attributed to many different factors, often mistakenly. Some of the most common are addressed below.

Aging population. *The argument:* As the U.S. population ages, Americans require more health care, on average, to maintain their health. *In reality:* While older patients do indeed require more care, data from the federal government on why costs for Medicaid and Medicare (which serves older Americans) are rising shows that the aging population is only a small factor in the rising cost of health care.²⁰ (See Figure 2.)

Figure 2. Effect of an Aging Population Versus Other Factors in Projected Federal Spending on Medicare and Medicaid (Percentage of GDP)²¹



Malpractice insurance. *The argument:* The cost of malpractice insurance has been rising rapidly, driving up health care costs as doctors charge more to cover the cost of insurance and practice “defensive medicine” to avoid lawsuits.

In reality: Rates have been on the rise, but, as of 2002, malpractice insurance amounted to less than 2 percent of U.S. health care spending.²² Furthermore, one study of malpractice awards suggests that claims have been steady for years and are not a major cause of increases in malpractice insurance premiums.²³ Thus, changes in malpractice insurance costs play a relatively small role in overall health care costs. The Congressional Budget Office also studied the extent to which doctors practice defensive medicine and concluded that defensive medicine has only a small effect on health care costs.²⁴

Emergency room use. *The argument:* Patients seek non-emergency care in the emergency room, raising costs. *In reality:* Per-capita visits to emergency rooms are increasing, but it is not clear how much this raises costs. The National Academy of Sciences’ Institute of Medicine (IOM) evaluated the cost of treating patients suffering from non-urgent conditions in emergency rooms and concluded that it “may be less cost-effective than care provided in other settings” but could not be certain.²⁵ The reason is that hospitals keep emergency rooms staffed and equipped at all times. Having non-urgent patients use the emergency room has a very low marginal cost, at least during times of low demand. The care that patients receive in emergency rooms may, however, be of lower quality and clearly results in worse continuity of care.

Consumers pay for too little of their own care. *The argument:* Consumers pay for such a small amount of their health care that they demand too much of it, thus raising costs for insurers. *In reality:* Research is not clear on the impact of requiring consumers to pay for a larger share of their health care. Economic modeling of health care plans with high deductibles suggests they may reduce overall health care spending by 4 to 15 percent.²⁶ However, such plans achieve savings in part because patients avoid both necessary and unnecessary care in equal measure. Thus, the long-term impacts on health care costs are unknown. Also, the finding that cost-sharing can save costs without harming patient health is based on a study conducted in the 1970s in which participants who faced large medical bills likely dropped out of the study before incurring those costs.²⁷

New drugs and better technology. *The argument:* Health care costs are rising because we’re spending more money on research and development of new technologies and drugs. These higher costs are acceptable because they make us healthier. *In reality:* Improvements in technology definitely can improve health, but spending on new drugs and technologies is imperfectly correlated to better health. For example, the breast cancer drug Herceptin offers a powerful treatment for women whose tumors include a particular genetic mutation. For women without that gene, which physicians can reliably test for, the drug offers nothing. Nonetheless, approximately 12 to 20 percent of Herceptin prescriptions are for women who clearly will not benefit from it.²⁸

Oversupply of Medical Resources Results in Ineffective, Costly Treatment

Estimated cost in California: at least \$700 million annually just for chronically ill Medicare patients, and significantly higher if all patients were included.

A comparison of treatment data from different regions of California shows that in some areas, patients spend more days in the hospital, spend more days in intensive care, and have far more visits to specialists, but are ultimately no healthier than patients in other regions.²⁹ A major driving factor behind the regional treatment variations is the availability of medical resources, including hospital beds, intensive care beds, and specialists rather than primary care physicians. This oversupply, reinforced by skewed payment incentives from insurance companies and Medicare, measurably alters the way that physicians practice medicine, encouraging them to order more tests and hospitalize patients more often even though evidence shows that the additional treatment does not improve patient health.

The cost of these treatments that provide no benefit to patients totals at least \$700 million per year in California.

“If You Build it, They Will Come”: Supply-Driven Demand

Since the 1960s, researchers have recognized that increasing the supply of hospital beds means that more people will be hospitalized.³⁰ If more hospital beds are available in a community, then per capita rates of hospitalization will rise—though patients in that community are no sicker than elsewhere. This pattern of supply-driven demand holds true regarding the availability and use of specialists.

If increased hospitalization led to healthier patients, buying more beds might be a sound investment. Unfortunately, however, patients in communities with higher hospitalization rates and more visits to specialists are ultimately no healthier, and as a result, residents in some regions of California are hospitalized more often than is medically warranted, increasing the cost of care.

More Isn't Always Better: Higher Spending Regions Have Worse Outcomes

More spending on health care does not necessarily result in better outcomes. In fact, patients who live in regions with above-average spending appear to receive worse care.

In areas of the country with high per capita health care spending, patients have more appointments with physicians and see a larger number of doctors—yet, on average, the quality of their care is worse, not better. Because patients see more doctors, no single physician is clearly in charge of their care and as a result some basic elements of good care are overlooked. Researchers at the Dartmouth Institute for Health Policy and Clinical Practice have found that patients in high-spending regions receive less of the care that has been proven to be valuable—such as treatment for high blood pressure, medication to reduce the risk of death for heart attack patients, and screening for colorectal cancer—than patients in low-spending regions.³¹

Length of life studies provide another indicator that high-spending regions are not improving health outcomes. Dartmouth researchers who study the variation in medical spending and outcomes around the nation examined the health of patients in high-cost areas. They found that patients who fractured a hip, had surgery for colon cancer, or suffered a heart attack in regions with more health care resources and spending were more likely to die in the five years after the onset of their problem.³² For patients treated at academic hospitals in high-spending regions, those who had fractured a hip were 1.9 percent more likely to die than their counterparts in low-spending regions, and colon cancer and heart attack patients were both 5.2 percent more likely to die.³³ The data are adjusted for differences in patient health.³⁴ By focusing

on patients with discrete conditions at the end of life and by correcting for differences in patient health, the researchers were able to avoid systematic biases such as variation in the sickness of patients in one region versus another.

One explanation for this phenomenon is that patients who are hospitalized for longer, treated by more specialists, and receive more tests are also exposed to more medical mishaps. These mishaps, which include prescribing mistakes and hospital-acquired infections, can be fatal. Americans suffer through approximately 1.5 million preventable adverse drug events each year, and between 44,000 and 98,000 Americans die from medical errors annually.³⁵

This high-cost care can't even be justified as increasing patient satisfaction. Patients in high-spending regions aren't any happier with their care than patients in low-cost regions. In fact, the fragmented care that patients in high-cost areas receive often leaves them less satisfied.³⁶

The Extent of Supply-Driven Demand

Despite the fact that patients are no healthier in communities where they spend more days in the hospital and make more trips to the doctor, supply-driven demand is common in the United States.

Treatment protocols for some ailments—such as a broken hip—are well established (though not always followed precisely), but in treating many diseases, especially chronic diseases such as congestive heart failure and chronic lung disease, doctors have a wide range of treatment options and limited evidence as to which is the best option. The United States spends relatively little on research to determine the efficacy of various courses of medical treatment. As a result, there are no hard and fast guidelines as to when these patients should be hospitalized, see a specialist, or return for a follow-up visit. When specialists and hospital beds are readily available,

a physician is more likely to order extra testing or more days in the hospital even if this won't improve the patient's health.

The extent of supply-driven demand is apparent through regional differences in medical spending, hospitalization rates, and doctor visits. Medicare spends \$40,000 on health care in the last two years of life for the average patient with chronic illness living in New Jersey, compared with just \$27,000 for a similar patient in Minnesota.³⁷ Within California, Medicare pays some hospitals four times more than others for treatment of chronically ill individuals in the last two years of life.³⁸ This difference in total spending is driven more by the amount of care provided to patients than by the cost of each unit of care. The cost for a single visit to the doctor or a day in the hospital is higher in some regions than in others, but total spending is influenced more by how many doctor appointments patients have and how many days they spend in the hospital.

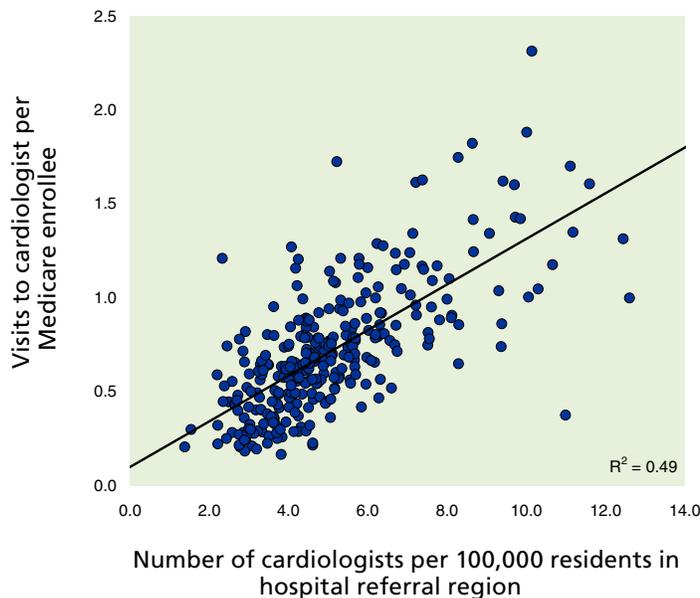
High-spending regions have 32 percent more hospital beds and, as a result, patients are more often hospitalized for

chronic conditions.³⁹ John Wennberg, Elliott Fisher and other researchers at Dartmouth's Institute for Health Policy and Clinical Practice have studied regional variations in the delivery of medical care since the 1970s and conclude that "more than half of the variation in hospitalization rates for medical (non-surgical) conditions is associated with bed capacity."⁴⁰

The regions where Medicare spends the most money not only have more hospital beds but also 31 percent more doctors.⁴¹ Many of those additional doctors are specialists who are able to charge more per visit than primary care physicians, raising the overall cost of care.⁴²

Patients in regions with higher spending see more doctors: they go to primary care physicians three times as frequently and visit specialists six times as often.⁴³ The availability of appointments with a cardiologist, for example, often determines how frequently a patient with congestive heart failure will have follow-up appointments, rather than following from established best-practices. Doctors typically fill their appointment books, so if a doctor has fewer

Figure 3. Relationship Between the Number of Cardiologists and Number of Visits per Medicare Patient to Cardiologists for 306 Hospital Referral Regions⁴⁵



patients because there is a high supply of cardiologists in a region, each patient will see the doctor more often.⁴⁴ (See Figure 3.)

In total, Medicare patients in their last six months of life who live in high-spending regions have an average of 41 more doctor visits over this period than patients in the lowest spending regions.⁴⁶ Despite this additional care, neither patient health nor satisfaction is greater in high-spending and high-treatment regions.

Skewed Incentives: Forces Behind Supply-Driven Demand

There are three key forces that allow supply to drive demand. First, in the absence of good data about what helps and what doesn't, well-intentioned doctors order extra tests and procedures and more time in the hospital, even when there is no evidence that indicates it will improve patient health. Second, fee-for-service payments to physicians and hospitals encourage more treatment, in contrast to payment based on providing effective care. Finally, payment rates disproportionately reward doctors for performing more invasive procedures. Adding to the problem, these factors are mutually reinforcing.

Well-meaning physicians often want to offer all the care at their disposal to ailing patients. If hospital beds are widely available, physicians are more likely to hospitalize a patient. Once the patient is in the hospital, it becomes easier for specialists to order extra tests and procedures, exposing the patient to more risks and potential errors, such as hospital-acquired infections and allergic reactions to drugs.⁴⁷ And as more doctors become involved, the patient's care becomes more fragmented, with no single person in charge of the patient's overall well-being. Different physicians may prescribe drugs that should not be taken at the same time, poor communication may result in the patient having the same test performed twice, or the patient may be less likely to receive

preventive care.

The second factor is the "fee-for-service" payment system that Medicare and many private health insurance companies use, in which health care providers receive payment for each visit with a patient, each test ordered, and each procedure performed. Payment is not based on whether a given service is needed or how well the patient is cared for overall, but on how much care the patient receives. Thus, the fee-for-service payment structure reinforces physicians' well-intended inclination to provide more care.

A separate problem is that the reimbursement schedule established by Medicare and followed by many insurance companies places a higher value on procedures than on consultation, even if consultation is more useful to patient health. Patient education is crucial to helping patients avoid later complications, especially for patients with diabetes or other chronic conditions, and primary care physicians are in the best position to inform patients. However, primary care physicians receive a lower reimbursement for the time they spend with a patient than do specialists.⁴⁸

In response to the incentives created by fee-for-service payment and by the higher reimbursement rate provided to some types of care, hospitals and physician groups have made capital investments that allow them to earn the most money. These investments lock hospitals and physician groups into certain treatment patterns and reduce their ability to change their behavior. For example, hospitals have added large numbers of beds with the understanding that Medicare and private insurance companies will pay for extensive hospitalizations. To ensure that their revenue remains high enough to cover the cost of this new capacity, hospitals must attract enough patients for adequately long stays, even if they recognize that reducing hospitalizations would improve patient health.⁴⁹

Medical school students also respond to the skewed incentives created by the current fee-for-service system. Because specialists are better paid than primary care physicians, more doctors-in-training are choosing to enter a specialty rather than general practice.⁵⁰ Rising educational debt among medical school graduates also pushes them to enter specialties. This ultimately increases the supply of physicians who provide more expensive care.

Examples of Supply-Driven Demand in California

California is not immune to the effects of supply-driven demand. These effects are visible in the treatment of a variety of patient populations. In California, spending varies widely for Medicare patients in their last two years of life, as well as for patients who might need to be admitted to an intensive-care unit, depending on where in the state they live. However, patients treated in high-spending regions and facilities do not live longer or have better outcomes.

Medicare Patients in Their Final Years of Life

Medicare spends far more money to treat patients in some regions of California than in others. Dr. John Wennberg, Dr. Elliott Fisher and their colleagues at Dartmouth's Institute for Health Policy and Clinical Practice examined the health treatment records of California Medicare patients who suffered from at least one chronic illness during their last two years of life.

Dr. Wennberg and his collaborators found that:

- Medicare spent 67 percent more for inpatient hospital care for patients in the Los Angeles region than for

patients in Sacramento and 20 percent more than in San Francisco, the next highest spending region from 1999 to 2003 (see Table 3).⁵¹

- Medicare spent \$90,000 per patient at some hospitals, but less than \$20,000 per patient at others.⁵²
- The high spending regions were also the areas with the most hospitals, most specialists, and most intensive care beds.⁵³

Because the Dartmouth researchers included only those hospitals in which at least 400 patients died during the 1999 to 2003 study period, the variation in spending by region and by hospital is not the result of a few exceptionally sick patients. Nor is it fully explained by the higher cost for a day in the hospital or a physician's visit in some areas. For example, two-thirds of the spending difference between individual hospitals is due to variations in the number of days that patients were hospitalized.⁵⁴

Table 3. Medicare Hospital Spending per California Patient in Last Two Years of Life⁵⁵

Selected Hospital Regions	Medicare Hospital Spending per Patient
Los Angeles	\$43,506
San Francisco	\$36,279
San Jose	\$34,174
Orange County	\$31,900
San Diego	\$30,227
Sacramento	\$26,048
State average	\$33,404

The Dartmouth researchers concluded that the biggest factor driving up spending in high-cost regions is the delivery of more medical care to patients. Dr. Wennberg's

analysis of the data shows that, in their last six months of life, patients in high-cost regions such as Los Angeles:

- had 2.3 times more visits to doctors than did patients in Sacramento,
- spent more than twice as long in intensive care, and
- were hospitalized 1.6 times longer (see Figure 4).⁵⁶

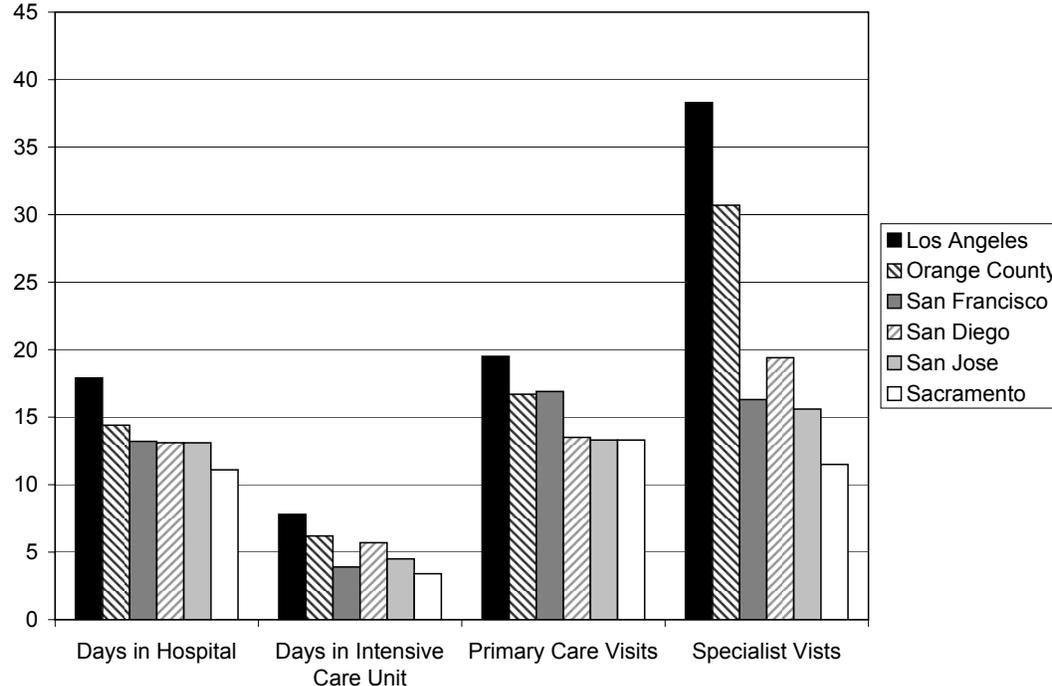
Higher daily or per-visit charges in high-cost regions played only a small role in raising costs.⁵⁷

This increased spending does not necessarily improve outcomes. Hospitals in the high-spending Los Angeles region perform worse on measures of care for chronic conditions: they are less likely to provide recommended care for patients suffering from heart disease, congestive

heart failure, or pneumonia than are hospitals in the far less expensive Sacramento region.⁵⁹ These simple, recommended measures—such as giving aspirin to heart attack patients, treating pneumonia patients with antibiotics within six hours of arriving at the hospital, and offering smoking cessation counseling—are inexpensive, proven ways to improve patient outcomes.⁶⁰ High-spending hospitals provide plenty of expensive care, but too often fail to give patients the less costly care that is known to improve health.

Furthermore, patients treated in high-cost hospitals were less satisfied with their care. Patients who were surveyed about their hospitalization experience rated 57 percent of Los Angeles area hospitals as below the state average and only 7 percent as above average. In Sacramento, patients rated just 13 percent of hospitals as below average and 25 percent as above average.⁶¹

Figure 4. Amount of Health Care for Medicare Patients in Their Last Six Months of Life, by California Hospital Region, 1999-2003⁵⁸



All Patients in Their Last Two Years of Life

The variation in the treatment of chronically ill Medicare patients revealed by Dr. Wennberg and his Dartmouth colleagues holds true for other patient groups. Regardless of a patient's age or insurance type, some hospitals in California admit patients with chronic illness more readily even when there is no clear evidence that hospitalization results in a better outcome.

Dr. Laurence Baker, a professor at Stanford, collaborated with Dr. Wennberg and Dr. Fisher at Dartmouth to compare the care and treatment of Medicare patients to chronically ill patients who were younger and had different insurance.⁶² Dr. Baker found that hospitals treated each group similarly in terms of admissions: hospitals that most frequently admitted Medicare fee-for-service (FFS) patients even when admission was not medically necessary had high admission rates for other patient groups.⁶³ Dr. Baker and his co-authors identify the number of hospital beds as a likely explanation for why some regions spend far more money caring for patients than others.

The implication of Dr. Baker's findings is that the widespread variation in care observed for Medicare patients holds true for other patient populations. Thus, there are opportunities for savings by changing how high-cost hospitals treat all patients, beyond just those with Medicare.

Patients in Intensive Care

Just as having more hospital beds in a region results in more and longer hospitalizations with no improvement in outcome, a greater supply of intensive-care beds may increase the rate at which patients are placed in intensive care. An analysis by the California Health Care Foundation of intensive care use in California hospitals shows no relationship between how long patients are in the critical care unit and how sick they are to begin with.⁶⁴

Reducing unwarranted use of intensive care beds would save millions of dollars in California.

The variation in intensive care use for Medicare patients at the end of life prompted the California Health Care Foundation to ask about variation in critical care use for other patients. Researchers calculated how long patients should remain in intensive care for a variety of illnesses and estimated, on average, that physicians and hospitals keep patients in intensive care 24 percent longer than likely is needed.⁶⁵ The average length of stay in critical care was four days, but that figure masks the variation between hospitals. One hospital in the study kept patients in intensive care for an average of 13 days in 2004, while another averaged just one day.

If all hospitals were to reduce their use of the critical care unit and drop the state average length of stay from 3.9 days to 3.5 days, California hospitals would save \$356 million in capital costs by reducing the need to build new critical care beds and \$159 million in annual operating cost savings from moving patients to lower-cost beds within the hospital.⁶⁶ Such a move would also free up nursing staff hours because patients in intensive care require more nursing attention than do patients in other beds.

Estimate of Total Supply-Driven Spending

Data compiled by researchers at Dartmouth's Institute for Health Policy and Clinical Practice can be analyzed to create an estimate of how much money would be saved by improving the performance of higher-spending hospitals across California so that they provide the same efficiency of care to chronically ill Medicare patients as hospitals in Sacramento. If

all such patients in their last two years of life received the same level of hospital and physician care as patients in Sacramento, the state would save more than \$700 million per year, even after factoring in higher costs per physician visit or day in the hospital in some parts of the state.⁶⁷

The true potential savings in California are far higher than \$700 million, however, because all patients, not just those who are chronically ill and on Medicare, suffer from supply-driven spending. The study by Dr. Baker shows that care for chronically ill younger patients may be improved by reducing hospitalizations and thus potential cost savings can be obtained by improving care for patients other than Medicare patients. The research by the California Health Care Foundation on the use of intensive care beds further indicates the potential for obtaining cost savings from other areas of health care.⁶⁸ A statewide change for all patients to reduce spending on health care that does not improve patient health would produce savings well beyond \$700 million.

Discussion: Reducing Supply-Driven Spending Without “Rationing”

Supply-driven demand is a problem that is deeply ingrained in California’s health care system, and solving this problem will not happen quickly. Californians may not relish invasive procedures, time spent in the intensive care unit or visits with dozens of specialists. But, they want to know that their doctors have the freedom to be innovative when necessary and that needed resources will be available to them. Reforms are necessary to keep rising costs under control—and improve Californians’ health.

Reducing overtreatment will require California to consider reforms that go beyond simple “cost-containment.” Specifically, some of the changes to the health care system that the state needs to pursue include:

- **Studying what works and what doesn’t:** The United States spends few resources on evaluating which courses of treatment provide the best results. States such as Oregon have launched initiatives to review prescription drugs for their effectiveness; similar initiatives should be launched to evaluate the efficacy of other types of medical treatment, particularly for chronic disease.
- **Ensuring that patients receive basic care:** There are a host of low-cost, high-benefit treatments that, despite their effectiveness, are not made universally available to Californians with chronic disease, such as basic tests to monitor how well a patient’s diabetes is controlled or weight-management counseling for obese patients. Health care reform should ensure that patients receive basic, tested methods of care.
- **Educating patients to help them make the right decisions:** Patients often have limited access to reliable, verifiable information allowing them to evaluate the costs and benefits of various medical treatments—and even less information about which physicians and hospitals are likely to deliver the most effective care. California should expand the amount of information provided to patients to evaluate doctors and hospitals and consider promotion of “shared decision-making,” in which patients are given detailed information about treatment options and empowered

to make decisions about their medical care. Typically, when patients are more involved in treatment decisions and better understand the benefit and risks of their options, they prefer less intensive care, thus reducing costs.⁶⁹ Patients tend to be more satisfied with their care when they have a greater decision-making role.

- **Providing the right incentives:** Health care reforms should reward doctors and hospitals for providing the type of care that improves

patients' health—not simply for providing more medical care. Incentives can be revised by adjusting reimbursement rates within existing fee-for-service systems or by moving away from fee-for-service altogether.

These are not the only steps that California will need to pursue, but they are among the first the state should undertake as it begins to pursue the long-term reforms that will address the problem of supply-driven demand.

Excessive Administrative Expenses Drive Up Costs

Estimated cost in California: \$9 billion annually, or more than 5 percent of total health care costs.

Some administrative spending is essential to the delivery of health care, but a large portion of administrative costs pays for billing and other insurance-related activities that have little bearing on the quality of health care that a patient receives.

Types of Administrative Costs

Useful and valuable administrative costs include keeping patient records and analyzing the care that patients receive to assess its quality and uncover medical errors that could harm patients. They also can include general management activities such as hiring and supervising staff who keep a medical practice operating smoothly, collect payments, and maintain technology.

Greater spending on this type of administrative expense can improve patient

care. For example, investing in better computer systems can allow a hospital to keep all patient records electronically, limiting medical errors and allowing for easier evaluation of patient care. While this may raise administrative costs, it has the potential to improve patient health.

Too often, however, higher administrative costs do not result in better care.

Billing Complexity

For doctors to be paid, doctors' offices need to send a bill to an insurance company and to record when reimbursement comes through; unfortunately, the complexity of billing and insurance requirements can turn this relatively simple task into an expensive maze. A single insurance company may offer dozens of insurance plans that cover different procedures at different reimbursement levels and require different co-payments from patients. To receive payment, the physician's office must correctly code the service provided to the patient and bill the appropriate level of insurance. Complex billing systems do not add to the quality of care that the patient receives, but increase costs as physicians, hospitals and insurers have to hire more billing specialists.

Duplicative Credentialing and Complex Contracts

Other administrative requirements have the potential to be helpful in delivering quality health care, but poor design inflates their cost. Insurance companies want to ensure that doctors covered by an insurance plan are capable of provide high-quality care. To this end, insurance companies require physicians to submit information on their credentials before the insurance plan will cover their services. With few exceptions, every insurance plan asks for slightly different information, requires physicians to submit their credentials in a different format, and requests updated information every few years. Similarly, hospitals want to ensure that only physicians of skill and good training have admission privileges and thus require physicians to submit hospital-specific credential-review applications.

The Medical Group Management Association, an organization that helps physicians deal with the administrative complexities of practicing medicine, surveyed physicians' group practices to learn more about credentialing demands. The survey found that, on average, each physician had to submit 17 credentialing applications annually to insurance companies, hospitals, and other health care facilities, and that completing each application required nearly 90 minutes of staff time.⁷⁰

The organization estimated that the United States spends \$2.15 billion every year as every hospital and health insurance company verifies the credentials of the physicians it works with, even if those physicians' credentials have been verified by the hospital next door. If this duplicative credentialing were eliminated, the United States would save \$1.95 billion annually.⁷¹

Similarly, standardizing contracts between physicians and health insurance companies would save \$620 million per year nationally.⁷²

Estimate of Total Administrative Waste

Dr. James Kahn at the University of California, San Francisco, and three colleagues conducted a detailed study of the elements of administrative costs for insurers, hospitals, and doctors' offices in California.

They analyzed the portion of administrative costs dedicated to billing and insurance-related activities rather than to oversight and management, which can directly improve patient care. The researchers studied hospitals, public and private insurance carriers, and physicians' offices of different sizes and specialties to determine the amount of time spent on administrative tasks that do not improve care. At insurance companies, for example, billing and insurance-related costs included all claims payment processing, sales, marketing, finance and underwriting. The costs incurred in reviewing the credentials of doctors, providing customer service, maintaining computer systems, and reviewing cases were counted partially as billing and insurance-related and partially as quality of care issues.

All health care providers and insurance companies spend a substantial amount of time and money on insurance and billing-related functions.

- At physician offices, more than half of administrative costs are for billing and insurance-related costs, or 14 percent of offices' total revenues.
- Hospitals spent the smallest percent of revenues on billing and insurance-related activities. Estimates for hospitals ranged from 7 to 11 percent of total revenues.
- Billing and insurance-related activities comprise 85 percent of internal administrative costs for commercial insurance plans, equal to 8 percent of total health care premiums.

Dr. Kahn and his co-authors concluded that billing and insurance-related costs represent 20 to 22 percent of privately insured spending in hospitals and for physician care in California (see Figure 5).⁷³

The authors of this study did not translate their estimates to actual dollar amounts. Using national figures on spending by private insurance and total California spending in hospitals and physicians' offices reveals that billing and insurance-related functions consume \$9 billion to \$9.9 billion in California.⁷⁵ That is 5.4 to 5.9 percent of total health care spending in California.

Not all this billing and insurance-related administrative spending can be eliminated. However, administrative spending that does not improve patient health clearly can be reduced far below current levels.

Discussion: Reducing Administrative Expenses

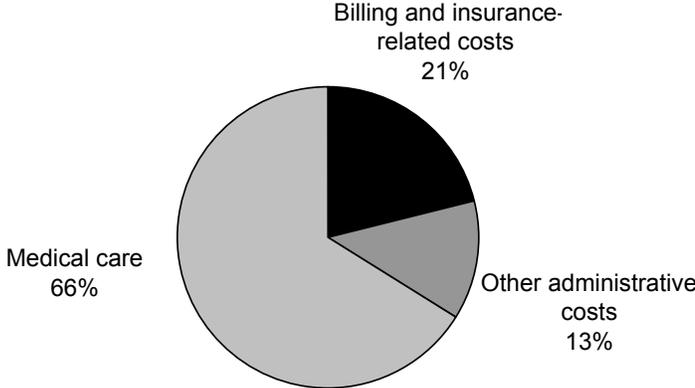
California should take several immediate steps to reduce administrative expenses.

- Health insurers should develop standardized systems for billing and

insurance payment that reduce administrative burdens on both insurers and physicians. The state could offer financial incentives to health care providers who participate in a standard system, could make participation a requirement for insurers who provide health care coverage to state employees, or could simply mandate adoption of a system.

- Widespread adoption of electronic medical record systems, especially if they are compatible between different hospitals and physicians' offices, can simplify billing and facilitate information sharing among providers. Easier sharing of information can help doctors to make better-informed diagnoses and recommendations, and reduce duplicative efforts.
- California should also cap insurers' administrative expenditures to a certain percentage of premium dollars, to ensure that Californians' premium payments are going to health care, not administrative waste. Limiting how much money insurers can spend on administration would create an incentive for them to become more efficient and simplify their interactions with physicians and hospitals.

Figure 5. Spending by Private Insurers in California on Billing and Insurance-Related Costs Compared to Total Hospital and Physician Care⁷⁴



A Growing Administrative Expense: Advertising by Physicians and Hospitals

For decades, neither hospitals nor physicians advertised their services. The American Medical Association banned advertising by its members for most of the 20th century. After the AMA lifted its ban in the 1980s and the Federal Trade Commission encouraged advertising by health care providers, doctors began to advertise their services. While in 1982, fewer than 5 percent of doctors who weren't employed by the federal government advertised, just five years later 20 percent did so.⁷⁶

Researchers at the time predicted that advertising would continue to grow as physicians faced increasing competitive pressures as the supply of doctors grew faster than population. A recent article provides anecdotal evidence to support this. A 2006 article in the *Journal of the American College of Radiology* notes that “radiology professionals are facing unprecedented competition, turf battles, and other pressures” and suggests that for “help in meeting this onslaught” doctors should improve their marketing efforts.⁷⁷ None of the reasons laid out in the article for why radiologists should advertise have anything to do with improving patient health, but rather focus on boosting physicians' revenue.

Detailed analysis of advertising by doctors has not revealed a clear improvement in patient health. Researchers who examined advertising by physicians in the 1980s studied how that changed the price of health care. They concluded that increased advertising was correlated with higher prices: doctors who advertised charged more for their services.⁷⁸

Hospitals were slower than physicians to begin advertising, but when they did, it was to increase revenue, not improve patient care.

An article titled “Marketing's Promise for Hospitals,” written in 1986, before advertising by hospitals was common, explained to hospital administrators why they should consider a marketing campaign for their facility.⁷⁹ The first three “typical problems of hospital marketing” that the article suggested could be addressed “through adoption of a comprehensive marketing strategy” were all problems that result in lower revenues for the hospital. They included a “falling number of patient admissions, shorter hospital stays, [and] underutilization of certain medical departments (for example, maternity).” Correcting them with a marketing campaign as suggested by the article would increase the number of paying patients, but not inherently improve health care.

Hospital advertising accelerated in the 1990s. In 1995, 36 percent of the 5,000 acute care hospitals in the United States advertised.⁸⁰ By 1998, 50 percent of hospitals advertised. Average spending also increased, rising from \$79,000 in 1995 to \$123,000 in 1998. The trend has continued. Over a five-year period in the 2000s, hospitals, clinics and medical centers nearly doubled their advertising.⁸¹

Prescription Drug Marketing Is Misleading and Increases the Cost of Drugs

Estimated cost in California: at least \$2.5 billion annually.

Heavy marketing of prescription drugs raises health care costs and fails to improve patient health. Pharmaceutical marketing encourages patients to take drugs that cost them more and that often are riskier than alternative medications. In some cases, it encourages use of drugs that patients just don't need.

Spending on prescription drugs rose faster from 1997 to 2005 than any other component of health care spending in the United States.⁸² Much of the increase in prescription drug spending is driven by just a few drugs. In 2000, half of the national increase in drug spending was the result of purchases of just 34 drugs (0.3 percent of the 9,482 drugs on the market).⁸³

Pharmaceutical companies spent more than three times as much money marketing drugs to consumers in 2005 as they did just eight years earlier. The amount of marketing to physicians rose more slowly—though still increasing more than 50 percent—but the total cost of promoting drugs to physicians was nearly twice that of direct-to-consumer advertising (see Table 4).⁸⁴

Table 4. Drug Company Spending (billions of 2005 dollars)⁸⁵

	1997	2005	Increase
Direct to consumer ads	\$1.34	\$4.20	213%
Promotion to physicians	\$4.75	\$7.20	52%
Retail value of free samples	\$7.30	\$15.90	118%
R+D	\$18.86	\$31.40	66%

Marketing to Consumers

Pharmaceutical companies advertise drugs on TV, in magazines and in newspapers, but there is no evidence that direct-to-consumer (DTC) ads improve health outcomes.⁸⁶

Increased Drug Sales Can Harm Patients' Health

Increased spending on prescription drugs might not be a problem if it reliably improved patient health, but it does not. Direct-to-consumer drug advertising can encourage the wrong treatment, can lead to overuse of medication that raises risk but provides no benefit, and promotes the use of newer and unproven medications.

DTC Ads Can Lead to the Wrong Treatment

Physicians strive to respond to patient requests and ensure that the patient is in charge of his or her health care. However, doctors often have misgivings about writing a prescription requested by patients.

Consumers are not very well informed by whatever they learn from pharmaceutical marketing. Drug ads—from brief TV commercials to glossy magazine ads to the fine print of those ads—are not designed to allow consumers to understand the risks of drugs and to thoughtfully evaluate their options.

Kimberly Kaphingst at the Harvard School of Public Health and William DeJong at the Boston University School of Health looked at a sample of DTC ads to evaluate how well they communicated the risk of drugs. They found that DTC ads on television glossed over risks: the ads blazed through the dangers of the advertised drug, presenting them 30 percent more quickly than the benefits.⁸⁷ For patients to understand printed material with details about drugs—such as the densely printed fine print that appears on the second page of drug ads in magazines—Kaphingst and DeJong concluded that consumers would need a college-level reading ability rather than the eighth-grade reading level that is recommended for documents targeting the general public.⁸⁸

Doctors recognize that DTC ads leave consumers ill-informed and as a result are often uncomfortable writing prescriptions

requested by patients. In a study published in the *Canadian Medical Association Journal*, Dr. Barbara Mintzes and colleagues reported the results of a survey that asked doctors about their confidence that each new prescription they wrote for patients was the right choice. When physicians wrote a prescription in response to a patient request, the doctor was reluctant about it being the right choice in 50 percent of cases.⁸⁹ In contrast, when the physician initiated the prescription, the doctor expressed hesitation about the prescription only 12 percent of the time.

Even the pharmaceutical industry recognizes that DTC ads may lead to inappropriate treatment. In the 1980s, pharmaceutical companies opposed the use of DTC ads because they raised “a very real possibility of causing harm to patients who may respond to advertisements by pressuring physicians to prescribe medications that may not be required.”⁹⁰

DTC Ads Can Cause Overprescribing

Ads aimed at consumers can easily lead to patients taking prescription medications that are not appropriate for their condition or that carry excessive, poorly understood risks.

The problem of overprescribing is twofold. First, prescribing a drug that offers no benefit to the patient fails to improve patient health but raises health care costs. Second, all drugs have side effects. Giving a prescription to a patient who does not clearly need it exposes the patient to the potential negative effects of the drug—from sexual dysfunction to an increased risk of suicide, in the case of antidepressants—without offering any benefit.⁹¹ Because the drawbacks of medication are not well explained in DTC ads, the treatment of minor conditions with medication may expose patients to potential harms of which they are not aware and that are far out of proportion to the potential benefit.

Dr. Richard Kravitz at the University of

California, Davis, and colleagues crafted a randomized controlled trial to better understand how DTC ads affect treatment.⁹² Using a standard research technique, the researchers hired actors and trained them to play the part of either a depressed patient or a patient with adjustment disorder, which is less pronounced than depression and for which medication is not a recommended treatment. The actors made appointments with doctors who had agreed to participate in the study and, after explaining their symptoms, either requested medication, asked for a specific drug, or made no request at all.

Dr. Kravitz and his co-authors found that physicians' prescribing behavior was heavily influenced by patient requests, frequently leading to inappropriate treatment.

- Patients who mimicked symptoms of adjustment disorder often received a prescription, even though there is no evidence to suggest that antidepressants are appropriate for patients with adjustment disorder.⁹³
- Fifty-five percent of these patients who requested an antidepressant by name received a prescription, versus 39 percent of those who asked for medication in general and 10 percent of those who didn't ask for medication.⁹⁴

For patients presenting symptoms of depression, asking for medication improved their care. Ninety percent of these patients who requested medication by brand name received minimally acceptable care, compared to 98 percent of patients with depression who made a generic request for medication, suggesting that an educational campaign urging viewers to seek treatment for depression could very well be more effective than pharmaceutical-driven ads. Fifty-six percent of patients who did

not request medication at all received a prescription.⁹⁵

While requests made by depressed patients in this study resulted in better care, this improved care was obtained at the expense of increased prescribing for patients who don't need medication.⁹⁶ There are other ways of improving care for depressed patients that do not hold the same dangers of overprescribing—such as educational campaigns about depression that do not mention any particular prescription drug or greater outreach to physicians to improve their diagnosis and treatment of depressed patients.

DTC Ads Promote the Use of Newer, More Expensive, Less-Tested Drugs

Pharmaceutical companies undertake multi-million dollar marketing campaigns with extensive DTC advertising for new drugs to promote rapid and widespread prescribing, and to maximize profits before the company's patent expires. Often, these new drugs provide no additional benefit but impose greater risks on patients. Unlike medications that have been on the market for years and used by many patients, new drugs have been tested on only a few hundred or a few thousand patients, in controlled studies that might have been only a few months long.⁹⁷ As a result, the complete side effects of the drug are not known when millions of patients begin taking the medication.

Numerous drugs have rapidly achieved widespread use shortly after their introduction, thanks to heavy marketing, only to be withdrawn later because of side effects that became apparent once more patients took the drug.

In the late 1990s, five drugs were withdrawn from the market because of side effects.⁹⁸ The drugs—including the allergy medicine Seldane, the anti-inflammatory Duract, and the diet drug combination fenphen—offered modest benefits for non-life-threatening problems but included

horrific side effects. Duract caused liver failure, Seldane caused cardiac problems, and the drugs in fen-phen damaged heart valves. Yet, by the time that these drugs were withdrawn from the market, nearly 10 percent of the U.S. population had been exposed to one of them.⁹⁹ Duract and Seldane had been heavily marketed directly to consumers.

More recently, the pain medicines Vioxx and Celebrex were heavily promoted and rapidly achieved widespread use before fatal cardiac problems were revealed. Celebrex and Vioxx are no better at reducing pain and inflammation than are over-the-counter drugs, yet millions of patients were prescribed these medicines, thanks to heavy marketing. (Sales were also helped by the fact that Merck suppressed early clinical data about the increased risk of heart attacks in patients taking Vioxx.¹⁰⁰) In 2000, nearly 10 percent of the increase in national prescription drug costs stemmed from sales of Vioxx and Celebrex.¹⁰¹ Over a five year period, 25 million Americans took Vioxx—roughly 10 percent of the population—and more than 50,000 may have died from it.¹⁰² Slower introduction of these new drugs could have spared thousands of patients' lives. Direct-to-consumer marketing of Vioxx and Celebrex helped to drive their rapid and widespread use.

Direct-to-Consumer Marketing Is Common

Though it does not improve patient health, direct-to-consumer marketing of prescription drugs is widespread in the United States. A survey of patients in Sacramento in 2001 showed that 69 percent recalled having seen DTC ads for six or more medicines.¹⁰³ The most commonly recalled ads were for Viagra, Claritin, Prozac, Zyban (a pill to help smokers quit smoking) and Propecia (which treats male pattern hair loss).

Most direct-to-consumer drug advertising promotes just a few medicines: 50

percent of DTC advertising dollars in 2005 were spent on just 20 drugs. Those drugs generally were for the treatment of chronic conditions—high cholesterol, asthma, and allergies—that require patients to take medication every day for months, if not years.¹⁰⁴ Long-term prescriptions mean greater profits for pharmaceutical companies.

Consumers and, in turn, their physicians, are responsive to this advertising. DTC ads change patient and doctor behavior and lead to billions more in spending on prescription drugs.

DTC Advertising Increases Drug Sales

Marketing drugs to consumers is a direct path to increasing drug sales.

In response to ads, patients regularly ask their doctors for a specific drug or for a prescription to treat a problem they learned about through ads. The extent of this is apparent in data collected on patients in the United States versus in Canada, where DTC advertising is not allowed. Barbara Mintzes at the University of British Columbia, Vancouver, worked with other researchers to survey patients in Sacramento and Vancouver, Canada. The researchers found that patients in Sacramento asked their doctor for medication twice as often as patients in Vancouver.¹⁰⁵

Physicians are responsive to patient requests for medication: patients who request a drug typically receive a prescription, either for the medicine they sought or for another. For example, doctors in Sacramento wrote prescriptions for 80 percent of patients who requested medication.¹⁰⁶ In that same study, patients who requested a drug advertised directly to consumers were nearly 17 times more likely to receive a prescription for some medication than were patients who did not request a prescription at all.¹⁰⁷ Overall, the Government Accountability Office, in a study of DTC ads, estimates that “between 2 and 7

percent of consumers who saw DTC advertising requested and ultimately received a prescription for the advertised drug.”¹⁰⁸

The end result of how consumers respond to DTC ads and how physicians respond to patient requests is that pharmaceutical companies earn an additional \$2.20 in sales for every \$1 spent on DTC ads.¹⁰⁹ From the perspective of a drug manufacturer, DTC ads are effective at increasing sales and profits. However, from a broader perspective, DTC ads raise health care costs without improving patient health.

Marketing to Physicians

As significant as the effects of direct-to-consumer marketing are, studies have shown that physicians’ prescribing habits appear to change more in response to visits from drug company representatives, ads in medical journals, and other approaches that directly target doctors than from patient requests motivated by DTC advertising.¹¹⁰

In 2005, pharmaceutical companies spent 70 percent more money marketing their drugs to doctors than to consumers.¹¹¹ Including the retail value of free samples that companies provide to doctors places the cost of marketing to physicians at 5.5 times more than the industry’s spending on DTC advertising.¹¹² Overall, drug companies spend \$8,000 to \$15,000 on marketing for every doctor in the United States.¹¹³

Drug companies market their products to doctors by providing free meals to doctors and their staff, paying for doctors to attend conferences or continuing medical education events, paying speaking fees to doctors, placing ads in medical journals, and hiring thousands of marketing staff to visit physicians’ offices to meet with doctors and deliver drug samples. The number of marketing staff who make these “detail”

calls to physicians grew dramatically in the late 1990s, from 42,000 in 1996 to 90,000 in 2001.¹¹⁴ That means that by 2001 pharmaceutical companies employed more than one detailing staffer for every five physicians.¹¹⁵ Drug makers also sponsor a tremendous number of other events that allow them to promote new drugs: over the course of just one year, the makers of Celebrex hosted 9,000 events for Celebrex, while Merck, which manufactured Vioxx, held 7,600 events.¹¹⁶

Dr. Ashley Wazana at McGill University in Quebec analyzed the results of 29 rigorous studies of how physicians respond to the influence of pharmaceutical advertising and found numerous negative effects. The studies revealed that different marketing approaches allow pharmaceutical companies to influence different aspects of physician behavior.¹¹⁷ Gifts to physicians cause them to look favorably on drug company sales staff; such familiarity can make it easier for sales staff to convincingly deliver their sales pitch. Free samples, which capitalize on physicians’ instinct to help patients reduce the cost of buying medicine, increase physicians’ awareness of new drugs and the speed at which they prescribe that new drug. Manufacturer-paid travel to conferences prompts doctors to request that the hospitals where they work make the sponsor’s drug available, which then alters prescribing patterns by doctors throughout the hospital.

Overall, Dr. Wazana concluded that doctors with the most interaction with drug companies:

- wrote more prescriptions overall;
- wrote fewer prescriptions for generic drugs and more prescriptions for newer, more expensive drugs that were no better;
- were less likely to be able to identify false claims about drugs;

- had increased “awareness, preference and rapid prescribing of new drugs;” and
- were more likely to ask that hospitals make available drugs with no real advantage over those already available.¹¹⁸

As a result, pharmaceutical companies earn a significant return on money they spend marketing drugs directly to physicians, and that return increased steadily during the 1990s. Professor Dick Wittink at Yale has estimated that every dollar that pharmaceutical companies spent on staff who visited physicians’ offices earned the company \$11.60 in additional sales.¹¹⁹ Journal ads increased sales by \$12.20 for every dollar spent.

This high return on investment creates a tremendous financial incentive for companies to push their products, raising health care spending without improving patient health.

Marketing Drugs to Physicians Does Not Improve Patient Outcomes

Information Provided by Drug Companies Is Often Wrong

Information provided by drug companies misleads doctors about the value and risk of various products, harming physicians’ ability to select the best drug for a patient.

An examination of the statements made by drug company marketing staff when talking to doctors revealed that 10 percent of statements were wrong and that every mistake placed the company’s drug in a more favorable light.¹²⁰ Dr. Michael Sernyak and Dr. Robert Rosenheck of the Department of Veterans Affairs and Yale University surveyed psychiatrists who work at Veterans Affairs medical centers about the accuracy of statements made by drug company representatives. After analyzing the survey results, Dr. Sernyak

and Dr. Rosenheck concluded that “many assertions made by drug company representatives are inconsistent with prescribing information approved by the U.S. Food and Drug Administration.”¹²¹

Unfortunately, physicians rely on information provided by pharmaceutical marketing staff. A national survey of physicians revealed that 74 percent thought that the information provided by marketing staff of pharmaceutical companies was “very” or “somewhat” useful.¹²² An even higher percentage (81 percent) rated the information as “very” or “somewhat” accurate.

Drug Samples Encourage Physicians to Prescribe the Wrong Drugs

Free drug samples provided to doctors by pharmaceutical companies often prompt physicians to prescribe a drug other than the one they think would be best for treating the patient, and ultimately increase the amount of money that patients pay for medication.

Dr. Lisa Chew and colleagues at the University of Washington surveyed physicians about their prescription drug choices in several scenarios. They concluded that when doctors have free drug samples available to give to patients, physicians hand out those samples and “subsequently prescribe drugs that differ from their preferred drug choice.”¹²³ The researchers discovered that this occurred even when the doctor knew that the patient was insured and therefore the cost of the prescription was less of a concern.¹²⁴ When physicians were asked why they chose to give out free samples, the fourth most common reason given—not the first reason—was their knowledge that the free medicine was effective.¹²⁵

While free samples may save patients from paying for the first few doses of a medication, in the long run, research by Dr. G. Caleb Alexander at the University of Chicago shows that free samples increase the amount of money that patients spend

on medication.¹²⁶ Doctors typically write a prescription for the same drug as the sample drug, even though an older and cheaper drug often would be fine. When the samples run out, the patient has to buy a prescription for the more expensive drug.

Drug Marketing Encourages Overprescribing

Dr. Wazana at McGill University found that marketing prescription drugs to physicians causes doctors to write more prescriptions. One study in particular has found that doctors who have frequent contact with drug company representatives are less satisfied in appointments that end only with advice to the patient and no prescription.¹²⁷ However, for some conditions, such as a viral infection, advice may be the appropriate treatment and writing a prescription is not the best choice.

Marketing Promotes New Drugs, Which Are Riskier

As discussed in the section on drug marketing to consumers, the risks of new drugs are not fully known when they are introduced to the market. Heavy promotion by the pharmaceutical industry, especially to physicians, leads to widespread prescribing. As a result, consumers have been exposed to multiple drugs that later have been revealed to be deadly.

Estimate of Pharmaceutical Spending That Does Not Improve Care

Nationally, pharmaceutical companies spent \$27.7 billion marketing prescription drugs to consumers and physicians and on drug samples in 2004.¹²⁸ Based on California's share of national prescription drug spending, the drug industry spends

approximately \$2.5 billion promoting prescription medications in California each year.¹²⁹ More than \$1 billion of that is spent on marketing to consumers and physicians; the rest is in the form of free drug samples.

But the true amount of overspending on prescription drugs is higher. It includes not only the amount of money spent promoting drugs to consumers and physicians, but also the additional costs incurred in response to advertisements, such as the cost of drugs that do nothing to help a patient's condition, the cost of using a newer drug when an older one would suffice, and the adverse effects of using new, less-tested drugs. Those costs have not been quantified here.

Discussion: Reducing Prescription Drug Costs

Though California cannot ban the marketing of prescription drugs, the state can take steps to limit the influence of pharmaceutical company marketing.

- California should undertake a publicly funded effort to publicize the benefits and prices of drugs to counter the information provided by pharmaceutical companies. Pennsylvania operates an Independent Drug Information Service in which physicians and researchers at Harvard Medical School evaluate drugs and create accurate, unbiased summaries. A staff of pharmacists and nurses in Pennsylvania visits selected doctors and provides impartial education about different prescription drugs.¹³⁰
- For any prescriptions that the state pays for directly, California should

establish an approved list of medications based on scientific studies of the effectiveness of various drugs.

- The state should establish a limit on gifts to physicians and require drug

companies to disclose more information about their marketing to physicians, including gifts, free meals, speaking fees, and paid consulting arrangements.

Conclusion

Every day, in hospitals and physicians' offices, on insurance company desks, and through television commercials and promotional meals, billions of dollars are spent in California's health care system without making patients healthier. Efforts at health care reform in California must address this overspending. Maintaining coverage for currently insured Californians will become increasingly difficult if the cost of care continues to rise at its historic rate. Providing care to more Californians through expanded coverage or closing gaps in insurance for patients with inadequate coverage will be even more difficult if the state does not rein in this ineffective spending.

A Tally of Unproductive Health Care Spending in California

Based on an estimate by researchers at Dartmouth's Institute for Health Policy

and Clinical Practice that as much as one-third of health care spending in the United States does not improve patient health, California may spend up to \$55 billion each year on health care that does not help patients. For context, \$55 billion is slightly less than the amount that Californians pay in state personal income tax every year and is \$10 billion more than the state spends on K-12 education annually.¹³¹

In this report, we quantified how much the state spends with no benefit in three narrow areas of health care.

- Providing the same effective level of care offered in Sacramento to all chronically ill Medicare patients at the end of life statewide would save at least \$700 million annually.
- Administrative overspending on billing and insurance-related functions totals at least \$9 billion. While not all this expense can be eliminated, a significant amount can be cut without affecting patient health.
- The true cost of overspending on

prescription drugs includes the money spent marketing drugs to consumers and physicians, the cost of extra prescriptions, the selection of newer drugs when an older one would suffice, and the adverse effects of inappropriately prescribed or untested drugs. In this report, we estimate that the cost of advertising prescription drugs in California totals \$2.5 billion, and it triggers billions more in spending on unnecessary prescriptions.¹³²

These estimates of how much California spends without improving patient health are conservative. More research into these areas, into the care of all patients in

California rather than simply those whose care is covered by Medicare, and into other medical services would help to quantify the savings California could achieve while improving the delivery of health care.

Reducing overspending in all its forms is the first step California should take to rein in escalating health care costs and to begin to reform its health care system. Consumers who pay for their own medical care should find health care more affordable. For businesses that pay for their employees' health care, reducing overspending should lessen the competitive disadvantage of offering this benefit and encourage employers not to end it. And patients should reap the benefit of improved quality of care.

Endnotes

1. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, *National Health Care Expenditure Data: Historical*, downloaded from www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp, 18 March 2008.
2. Henry J. Kaiser Family Foundation, *Health Care Spending in the United States and Other OECD Countries*, January 2007.
3. Christine Eibner, *The Economic Burden of Providing Health Insurance: How Much Worse Off Are Small Firms?*, 2008.
4. National Coalition on Health Care, *The Impacts of Rising Health Costs on the Economy: Effects on Business Operations*, 20 March 2007.
5. David Dranove and Michael Millenson, "Medical Bankruptcy: Myth Versus Fact," *Health Affairs*, web exclusive, 28 February 2006.
6. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, *Sponsors of Health Care Costs: Businesses, Households and Governments, 1987-2006*, no date. Increased prescription drug coverage through Medicare Part D explains some of this increase.
7. See note 6.
8. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, *Health Expenditures by State of Provider: State-Specific Tables, 1980-2004*, February 2007.
9. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, *2004 State Estimates—State Estimates by State of Residence—All Payers—Per Capita Personal Health Care*, September 2007.
10. See note 8.
11. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, *National Health Expenditures by Type of Service and Source of Funds: Calendar Years 2006-1990*, no date.
12. See note 8.
13. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Office of the Actuary, National Health Statistics Group, *National Health Expenditures Projections, 2006-2016*, no date.
14. U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services, Office of the Actuary, National

- Health Statistics Group, *National Health Expenditures Data: Historical*, February 2007. "Other private funds" includes health care provided directly by employers, philanthropic funds, and other sources.
15. United Health Foundation, *America's Health Rankings: A Call to Action for People & Their Communities: Comparisons to Other Nations*, downloaded from www.unitedhealthfoundation.org/ahr2007/comparisons.html, 20 March 2008.
 16. Ibid.
 17. U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, *National Healthcare Quality Report 2007*, February 2008.
 18. U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, *California Dashboard on Health Care Quality Compared to All States*, downloaded from statesnapshots.ahrq.gov/snaps07/dashboard.jsp?menuId=4&state=CA&level=0, 28 March 2008.
 19. *Governor's Budget 2008-2009, Summary Charts*, downloaded from www.ebudget.ca.gov/BudgetSummary/SUM/1249561.html, 28 February 2008.
 20. Congressional Budget Office, *The Long-Term Outlook for Health Care Spending*, November 2007.
 21. Ibid.
 22. Congressional Budget Office, *Economic and Budget Issue Brief: Limiting Tort Liability for Medical Malpractice*, 8 January 2004.
 23. Ceci Connolly, "Malpractice Situation Not Dire, Study Finds," *Washington Post*, 10 March 2005.
 24. See note 22.
 25. National Academy of Sciences, Institute of Medicine, *Hospital-Based Care: At the Breaking Point* (Washington, D.C.: National Academies Press, 2007).
 26. RAND, for the California Health Care Foundation, "Consumer Directed" Health Plans: Implications for Health Care Quality and Cost, June 2005.
 27. John Nyman, "Health Plan Switching and Attrition Bias in the RAND Health Insurance Experiment," *Journal of Health Politics, Policy and Law*, 33(2):309-317, April 2008.
 28. Barbara Culliton, "Insurers and 'Targeted Biologics' for Cancer: A Conversation with Lee N. Newcomer," *Health Affairs*, web exclusive, 27 November 2007.
 29. John E. Wennberg et al., "Evaluating the Efficiency of California Providers in Caring for Patients with Chronic Illness," *Health Affairs*, web exclusive, 16 November 2005.
 30. Dartmouth Center for the Evaluative Clinical Sciences, *Supply-Sensitive Care: A Dartmouth Atlas Project Topic Brief*, 15 January 2007.
 31. Dartmouth Center for the Evaluative Clinical Sciences, *Effective Care: A Dartmouth Atlas Project Topic Brief*, 15 January 2007.
 32. See note 30.
 33. Dartmouth Center for the Evaluative Clinical Sciences, *The Dartmouth Atlas of Health Care 2006: Care of Patients with Severe Chronic Illness*, 2006.
 34. Elliott Fisher et al., "Variations in the Longitudinal Efficiency of Academic Medical Centers," *Health Affairs*, web exclusive, 7 October 2004.
 35. Adverse drug effects: National Academy of Sciences, Institute of Medicine, *Report Brief: Preventing Medication Errors*, July 2006. Medical errors: National Academy of Sciences, Institute of Medicine, Committee on Quality of Health Care in America, *To Err Is Human: Building a Safer Health System* (Washington, D.C.: National Academies Press, 2000), 1.
 36. Maggie Mahar, "The State of the Nation's Health," *Dartmouth Medicine*, Spring 2007.
 37. John E. Wennberg et al., Dartmouth Center for the Evaluative Clinical Sciences, *The Care of Patients with Severe Chronic Illness: An Online Report on the Medicare Program by the Dartmouth Atlas Project*, 2006.
 38. See note 29.
 39. 32 percent: see note 36; more often hospitalized: see note 30.
 40. See note 30.
 41. See note 36.

42. Ibid.
43. See note 30.
44. See note 36.
45. See note 30.
46. Ibid.
47. Extra tests and procedures: see note 36. For a detailed discussion of the risks and potential errors involved in medical procedures and hospitalization, see Shannon Brownlee, *Overtreated: Why Too Much Medicine Is Making Us Sicker and Poorer* (New York, NY: Bloomsbury, 2007), 43-71.
48. Thomas Bodenheimer et al., "The Primary Care-Specialty Income Gap: Why It Matters," *Annals of Internal Medicine*, 146:301-306, 20 February 2007.
49. See note 36.
50. Government Accountability Office, *Primary Care Professionals: Recent Supply Trends, Projections, and Valuation of Services, Testimony Before the Committee on Health, Education, Labor, and Pensions, U.S. Senate, Statement of A. Bruce Steinwald*, 12 February 2008. See also note 48.
51. Dartmouth Medical School, *In California, More Health Care Is Not Necessarily Better Health Care* (press release), 16 November 2005.
52. See note 29.
53. Ibid.
54. Ibid.
55. Dartmouth Medical School, *In California, More Health Care Is Not Necessarily Better Health Care* (charts accompanying press release), 16 November 2005.
56. John Wennberg et al., "Evaluating the Efficiency of California Providers in Caring for Patients With Chronic Illnesses," *Health Affairs*, web exclusive, 16 November 2005.
57. See note 51.
58. Ibid.
59. California Health Care Foundation, *Graphic Summary from "Evaluating the Efficiency of California Providers in Caring for Patients with Chronic Illness,"* November 2005.
60. U.S. Department of Health and Human Services, Hospital Compare, *Quality Measures*, downloaded from www.hospitalcompare.hhs.gov/Hospital/Static/About-HospQuality.asp?dest=NAV|Home|About|QualityMeasure#TabTop, 2 April 2008.
61. See note 29.
62. Laurence Baker et al., "Variations in Hospital Resource Use for Medicare and Privately Insured Populations in California," *Health Affairs*, 27(2):w123-w134, 12 February 2008.
63. Ibid.
64. California Health Care Foundation, *Issue Brief: Rethinking the Use of Intensive Care Beds in California Hospitals*, March 2007.
65. Ibid.
66. Ibid.
67. \$714 million calculated as the result of lowering the number of days in the hospital and the number of physician visits to current use levels in Sacramento for each hospital referral region in California that currently exceeds Sacramento levels of care. The amount of care was multiplied by the appropriate reimbursement rate for each region, and by the number of patients treated in each region. The data include chronically ill Medicare patients in their last two years of life. All data from Dartmouth Institute for Health Policy and Clinical Practice, *Dartmouth Atlas of Health Care*, medical care cost equation tables, 10 April 2008.
68. See notes 62 and 64.
69. Dartmouth Center for the Evaluative Clinical Sciences, *Preference-Sensitive Care: A Dartmouth Atlas Project Topic Brief*, 15 January 2007.
70. Medical Group Management Association, Group Practice Research Network, *Analyzing the Cost of Administrative Complexity in Group Practice*, September 2004.
71. William Jessee, "Keep It Simple, Stupid: Administrative Complexity Raises Costs, Frustrates Patients and Hampers Care," *Connexion*, Medical Group Management Association, March 2004.
72. Ibid.

73. James Kahn et al., "The Cost of Health Insurance Administration in California: Estimates for Insurers, Physicians, and Hospitals," *Health Affairs*, 24(6):1629-1639, 2005.
74. Ibid.
75. Nationally, private insurance paid for 36 percent of hospital care and 49 percent of physician care in 2006, per U.S. Department of Health and Human Services, Centers for Medicare and Medicaid, Office of the Actuary, National Health Statistics Group, *National Health Expenditures by Type of Service and Source of Funds: Calendar Years 1960-2006*, 7 January 2008. In California in 2004, total spending on hospital and physician care was \$108 billion, per U.S. Department of Health and Human Services, Centers for Medicare and Medicaid, Office of the Actuary, National Health Statistics Group, *Health Expenditures by State of Provider: State-Specific Tables, 1980-2004*, February 2007. Kahn et al. estimate that 19.7 to 21.8 percent of private insurance spending for hospital and physician care is consumed by billing and insurance-related costs.
76. John Rizzo and Richard Zeckhauser, "Advertising and the Price, Quantity, and Quality of Primary Care Physician Services," *The Journal of Human Resources*, 27(3):381-421, Summer 1992.
77. Frank James Lexa and Jonathan Berlin, "Strategic Marketing, Part 2: The 4 P's of Marketing," *Journal of the American College of Radiology*, 3(4):274-277, April 2006.
78. See note 76.
79. S. Tamer Cavusgil, "Marketing's Promise for Hospitals," *Business Horizons*, September-October 1986.
80. Jason Barro and Michael Chu, National Bureau of Economic Research, *HMO Penetration, Ownership Status, and the Rise of Hospital Advertising*, Working Paper 8899, April 2002.
81. American Medical Association, "Hospital Ad Spending Rising," *amednews.com*, 27 February 2006.
82. Government Accountability Office, *Prescription Drugs: Improvements Needed in FDA's Oversight of Direct-to-Consumer Advertising*, November 2006.
83. Michael Millenson, BlueCross BlueShield Association, *Getting Doctors to Say Yes to Drugs: The Cost and Quality Impact of Drug Company Marketing to Physicians*, no date.
84. See note 82.
85. Ibid.
86. S. Gilbody et al., "Benefits and Harms of Direct-to-Consumer Advertising: A Systematic Review," *Quality & Safety in Health Care*, 14:246-250, 2005. Others, such as Frank Lichtenberg, have made the case that increased use of new drugs reduces overall health care spending, without reference to the role of direct-to-consumer advertising. Frank Lichtenberg, "Effects of New Drugs on Overall Health Spending: Frank Lichtenberg Responds," *Health Affairs*, 26(3):887-890, May/June 2007.
87. Kimberly Kaphingst and William DeJong, "Market Watch: The Educational Potential of Direct-to-Consumer Prescription Drug Advertising: Many Consumers Would Have Difficulty Learning Risk Information from DTC Television Ads and Supplemental Materials," *Health Affairs*, 23(4):143-150, July/August 2004.
88. Ibid.
89. Barbara Mintzes et al., "How Does Direct-to-Consumer Advertising (DTCA) Affect Prescribing? A Survey in Primary Care Environments With and Without Legal DTCA," *Canadian Medical Association Journal*, 169(5):405-412, 2 September 2003.
90. The chairman of Abbott Laboratories, as quoted in Shannon Brownlee, *Overtreated: Why Too Much Medicine Is Making Us Sicker and Poorer* (New York, NY: Bloomsbury, 2007), 183.
91. Richard Kravitz et al., "Influence of Patients' Requests for Direct-to-Consumer Advertised Antidepressants: A Randomized Controlled Trial," *Journal of the American Medical Association*, 293(16):1995-2002, 27 April 2005.
92. Ibid.
93. Ibid.

94. Ibid.
95. Ibid.
96. Ibid.
97. The Food and Drug Administration is willing to approve new medicines based on evidence from brief and poorly designed studies, facilitating the entry of relatively untested drugs into the market. Committee on the Assessment of the U.S. Drug Safety System, Institute of Medicine, *The Future of Drug Safety: Promoting and Protecting the Health of the Public* (Washington, D.C.: The National Academies Press, 2007).
98. Alastair Wood, "The Safety of New Medicines: The Importance of Asking the Right Questions," *Journal of the American Medical Association*, 281(18):1753-1754, 12 May 1999.
99. Ibid.
100. David Brown, "Maker of Vioxx Is Accused of Deception," *Washington Post*, 16 April 2008.
101. See note 83.
102. 25 million: Alex Berenson, "Evidence in Vioxx Suits Shows Intervention by Merck Officials," *New York Times*, 24 April 2005; 50,000: Union of Concerned Scientists, *Scientific Integrity at Risk: The Food and Drug Administration*, downloaded from www.ucsusa.org/assets/documents/scientific_integrity/Scientific-Integrity-at-Risk-FDA.pdf, 27 March 2008.
103. See note 89.
104. See note 82.
105. See note 89.
106. Ibid.
107. Ibid.
108. See note 82.
109. Ibid.
110. Ibid.
111. Ibid.
112. Ibid.
113. David Blumenthal, "Doctors and Drug Companies," *New England Journal of Medicine*, 351(18):1885-1890, 28 October 2004.
114. See note 83.
115. See note 113.
116. See note 83.
117. Ashley Wazana, "Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?" *Journal of the American Medical Association*, 283(3):373-380, 19 January 2000.
118. Ibid.
119. Dick Wittink, Yale School of Management, *Analysis of Return on Investment (ROI) of Pharmaceutical Promotion (ARPP): A Second Independent Study*, downloaded from www.rxpromoroi.org/arpp/index.html, 27 March 2008. \$11.60 in additional sales for every dollar spent applies to drugs that earned revenues of \$500 million or more and that were released from 1998 to 2000.
120. Michael Ziegler et al., "The Accuracy of Drug Information from Pharmaceutical Sales Representatives," *Journal of the American Medical Association*, 273(16), 26 April 1995, as cited in Michael Millenson, for BlueCross BlueShield Association, *Getting Doctors to Say Yes to Drugs: The Cost and Quality Impact of Drug Company Marketing to Physicians*, no date. A more recent report by NJPIRG Law & Policy Center elaborates on the content of misleading information presented by drug companies. Abigail Caplovitz, NJPIRG Law & Policy Center, *Turning Medicine Into Snake Oil: How Pharmaceutical Marketers Put Patients at Risk*, May 2006.
121. Michael Sernyak and Robert Rosenheck, "Experience of VA Psychiatrists with Pharmaceutical Detailing of Antipsychotic Medications," *Psychiatric Services*, 58(10):1292-1296, October 2007.
122. Kaiser Family Foundation, *National Survey of Physicians*, May 2002, as cited in Michael Millenson, for BlueCross BlueShield Association, *Getting Doctors to Say Yes to Drugs: The Cost and Quality Impact of Drug Company Marketing to Physicians*, no date.
123. Lisa Chew et al., "A Physician Survey of the Effect of Drug Sample Availability on Physicians' Behavior," *Journal of General Internal Medicine*, 15:478-483, July 2000.
124. Ibid.

125. M. Morgan et al., "Interactions of Doctors with the Pharmaceutical Industry," *Journal of Medical Ethics*, 32:559-563, 2006.
126. G. Caleb Alexander et al., "Characteristics of Patients Receiving Pharmaceutical Samples and Association Between Sample Receipt and Out-of-Pocket Prescription Costs," *Medical Care*, 46(4):394-402, April 2008.
127. Chris Watkins et al., "Characteristics of General Practitioners Who Frequently See Drug Industry Representatives: National Cross Sectional Study," *British Medical Journal*, 326:1178-1179, 31 May 2003.
128. See note 82.
129. Spending on prescription drugs in

California is equal to 9 percent of national spending on prescription drugs. We assume that this same ratio applies to prescription drug advertising costs. See notes 1 and 8.

130. PACE Program of the Pennsylvania Department of Aging, *Independent Drug Information Service*, downloaded from www.rxfacts.org/home.html, 16 April 2008.

131. See note 19.

132. Spending on prescription drugs in California is equal to 9 percent of national spending on prescription drugs. We assume that this same ratio applies to prescription drug advertising costs. Data on prescription drug spending: see notes 1 and 8. Data on prescription drug advertising: see note 82.

