



**YOUR PRICE
MAY VARY**

**Geographic Variation in
Hospital Charges in California**

A large white tag is positioned diagonally across the lower half of the page. It features a photograph of a newborn baby lying in a hospital bed, with a healthcare worker's hands in purple gloves using a stethoscope on the baby's chest. The tag has a hole on the left side with a white string passing through it.

Your Price May Vary

Geographic Variation
in Hospital Charges
in California

CALPIRG Education Fund

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Summer 2012

Acknowledgments

CALPIRG Education Fund thanks Micah Weinberg of the Bay Area Council and Jennifer Eames Huff of the Pacific Business Group on Health for their insightful review of this document. Thanks also to Tony Dutzik of Frontier Group for editorial assistance.

CALPIRG Education Fund thanks the California Wellness Foundation for making this report possible.

The authors bear responsibility for any factual errors. The views expressed in this report are those of the authors and do not necessarily reflect the views of our funders or those who provided review.

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Executive Summary

The cost of health care has increased faster than inflation for years, consuming a growing share of household, business and government spending. Research shows that not all increases in health care costs translate into better outcomes for patients. The price charged for common surgeries varies dramatically from one region to another within California. By examining why charges for surgeries vary from place to place, state officials, health insurers and advocates may be able to identify opportunities for cost savings that can benefit Californians statewide.

Since 2009, hospitals in California have provided information on how much they charge for common, elective, inpatient surgeries, revealing immense variation between different facilities. Hospitals in California's highest-priced hospital region charge 2.7 times as much for surgery as do hospitals in the lowest-priced region. These high hospital charges add to the financial burden of health care.

Health care costs are taking up an ever-growing percentage of California families' budgets.

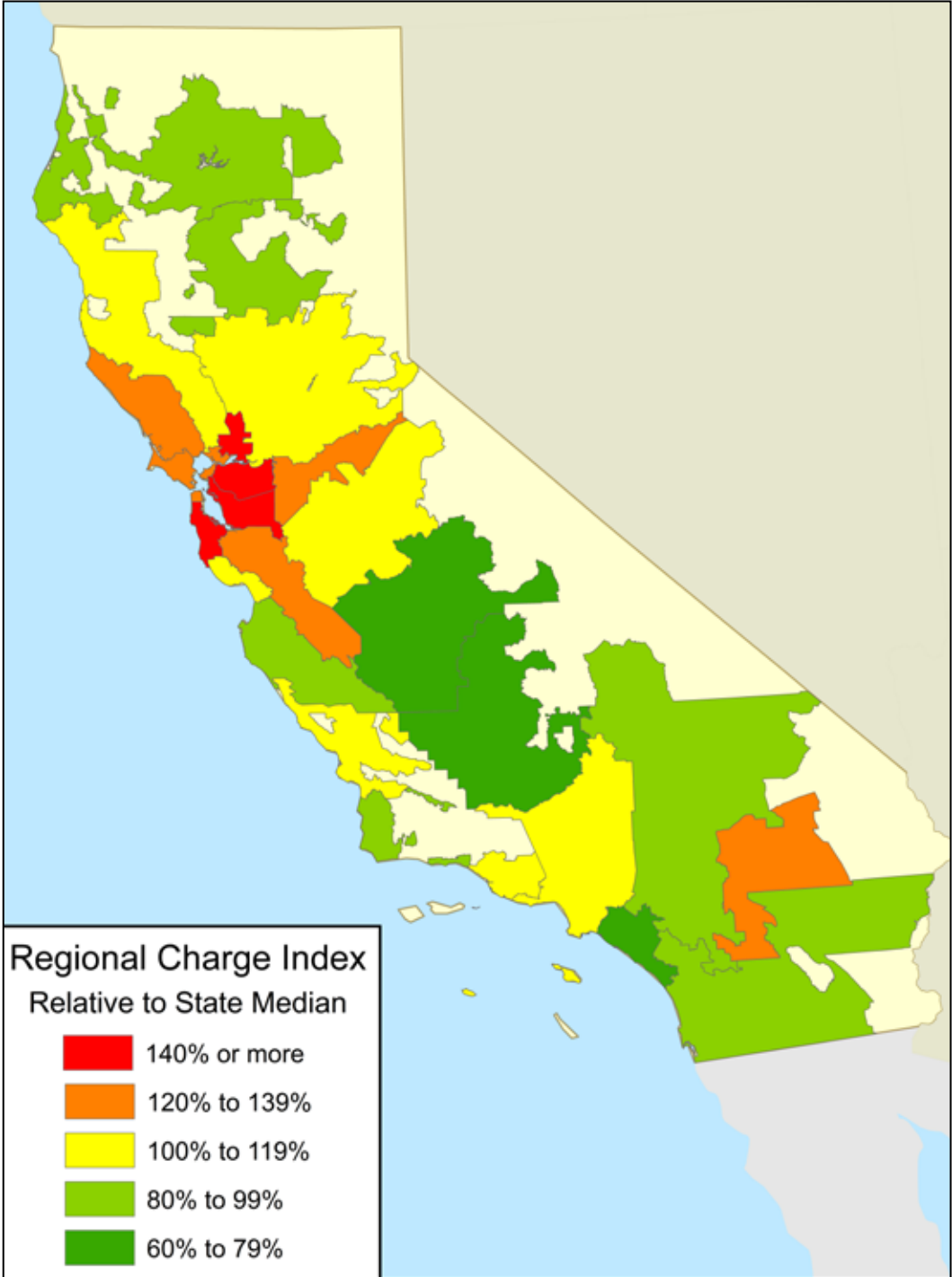
- In 2009, health care spending per Californian was \$6,238, 79 percent more than just 10 years earlier. Family insurance premiums rose by 113 percent from 2001 to 2009.
- Employers who provide insurance to their employees now spend 12 percent of employee compensation costs providing health insurance. Growing health care costs have added to the financial troubles of government: California spent 19 percent of its general fund monies on health care in 2009.

The prices charged for surgery in California vary from one geographic region to another. We analyzed hospital charge information provided in the California Common Surgeries and Charges Comparison database—a record of the prices charged for common, elective, inpatient surgeries performed at hospitals across the state—and created a charge index that can be used to compare charges for the 12 most common surgeries, such as Cesarean

births, knee replacements and angioplasty. Though the database includes information on how much hospitals *charged*, not

on how much they were ultimately *paid*, the observed variation in prices suggests important differences in surgery pricing.

Figure ES-1. Charge Index for Common Surgeries in California Hospital Regions



- Hospitals in the hospital region with the highest prices charged 2.7 times as much as hospitals in the lowest-priced region in 2010, according to our charge index. (See Figures ES-1 and ES-2.)
- Surgery charges were highest in the Alameda and San Mateo areas. The Fresno and Orange County regions charged the least.

Hospitals in some regions charge far more for specific surgeries than hospitals in other regions. (See Figure ES-3.)

- The typical patient in the San Mateo region was charged nearly \$48,000 for a Cesarean section. For the same

surgery, the typical patient in Fresno was charged less than \$13,000.

- The typical knee replacement surgery performed in a Fresno-area hospital in 2010 was charged at \$46,800, versus \$127,500 in an Alameda-region hospital.
- In the Sacramento area, the charge for a typical patient having a hysterectomy through the abdomen was \$47,500, compared to \$34,400 for a typical patient in the Orange County area.
- San Jose-area hospitals listed the charge for angioplasty for a typical patient at \$144,900, while hospitals in the Bakersfield region listed the charge at \$44,400.

Figure ES-2. Charge Index for Common Surgeries in California Hospital Regions

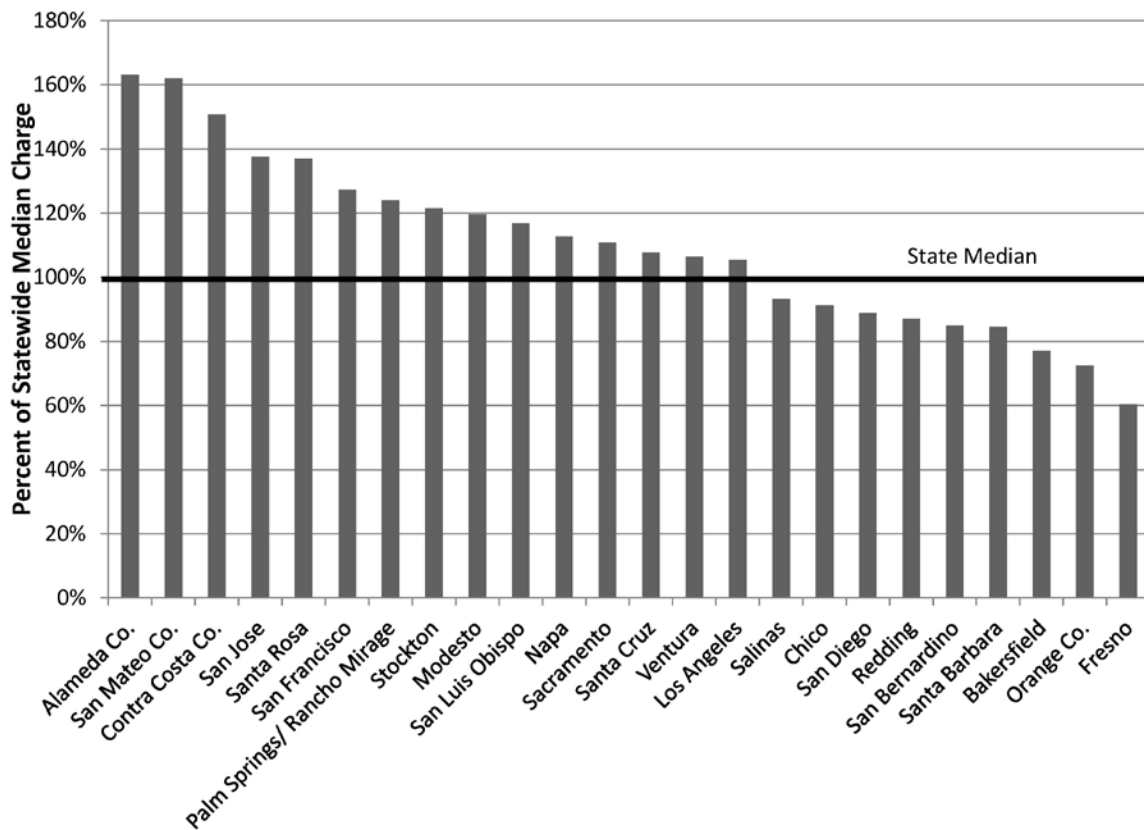
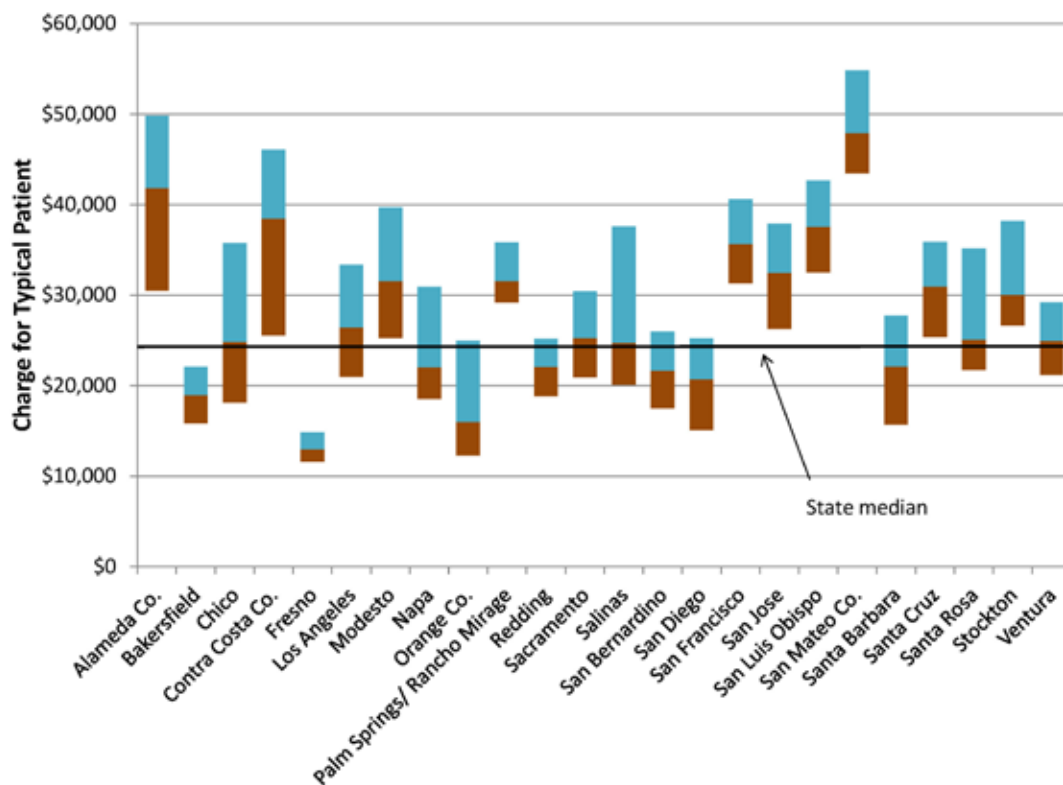


Figure ES-3. Charge for a Cesarean Section by California Hospital Referral Region, 2010



The median charge in each region is the point where the turquoise and brown portions of each bar meet. The turquoise portion of each bar represents the range of prices charged to the 25 percent of patients just above the median, while the brown portion of the bar is the range of prices charged to the 25 percent of patients just below the median. Information for the other half of the patients—the 25 percent with the highest and lowest charges—is not shown.

Even within regions, some hospitals charge far more for specific surgeries than others.

- In the Orange County region, which has relatively low surgery charges, the typical charge for a Cesarean section birth at the most expensive hospital, Saddleback Memorial Medical Center, was \$31,000 in 2010, whereas it was less than half that at Hoag Memorial Hospital Presbyterian.
- The typical charge for knee replacement surgery in the Alameda County area, which has high surgery charges,

ranged from \$59,800 at Alameda County Medical Center—Highland Campus to \$164,400 at Washington Hospital—Fremont.

General research into variations in health care costs can help shed light on the wide variation in charges for common surgeries in California, first by ruling out a number of potential explanations.

- Higher payments per patient are not necessarily driven by higher quality care, according to research in Massachusetts. A study of per-patient hospital payments by insurers concluded

that payment variation between Massachusetts hospitals had no correlation with the quality of care provided by those hospitals.

- Patient income and health status do not explain variations in price. In California, regional patterns of high spending do not follow regional income and health patterns.
- Regional differences in the cost of living only partially explain the regional variations in common surgery charges. Whereas the cost of living in the San Francisco–San Mateo–Redwood City area is 46 percent higher than in the Fresno region, hospitals in the San Mateo and San Francisco regions charge 2.1 to 2.7 times as much as in Fresno.

Research suggests that variation in charges for common surgeries in California

may have little to do with the quality of care or patient outcomes.

- Hospitals with greater market power can charge more. When dealing with insurers, for example, hospitals that serve the most patients and that are part of large hospital networks have more leverage when negotiating with health insurers on prices, who are willing to pay more to retain a key health care provider in their network.
- Within hospital regions, hospital nonprofit versus for-profit status may influence how much hospitals charge.
- Other factors not fully explored by researchers may also be influencing variations in charges.

The differences in common surgery charges around California suggest several

Creating a Charge Index of Common Surgeries

To compare the price charged for surgery in various areas of California, we created a charge index of common surgeries. We obtained the median price charged by all hospitals in a particular region for each type of surgery—the price point where half of the charges are less, and half are more. We compared the regional median to the statewide median for each type of surgery. We combined the regional medians into a charge index weighted by the frequency of each procedure in each region. This enables comparison of the charge for surgery in one region to another region. When we speak of a “typical” patient, we mean a patient who would be charged the median price for surgery.

The surgeries we included in compiling the charge index of common surgeries are, in declining frequency: Cesarean birth, assisted vaginal birth, knee replacement, spinal fusion, hip replacement, hysterectomy (abdominal), PTCA (percutaneous transluminal coronary angioplasty, non-invasive), gastric bypass (laparoscopic), disc removal, hysterectomy (vaginal, open), hysterectomy (vaginal, laparoscopic), and radical prostatectomy.

For more details, see the methodology section on page XX.

avenues for how to help control health care costs in the state.

- California needs better information about the reasons for charge variation. Several of the possible explanations identified in this report are worth further study to reveal the extent to which they affect prices and might be addressed to help control costs.
- Building upon the best practices of regions with lower charges could help lower charges in high-cost regions. Learning more about the reasons for charge discrepancies would enable hospitals and networks of health care providers to improve their practices, providing quality care at reasonable cost.
- Patients need information on the quality of care provided by different hospitals to help ensure the best outcomes. Reliable information about hospital quality will avoid a situation where patients use price as a proxy for quality and gravitate toward hospitals that charge more.
- Better transparency of hospital discounts and accepted payments would improve patients' ability to choose a facility based on price and would allow researchers and policymakers to better understand how California might control the cost of providing quality health care.

Introduction

Picture two pregnant women—each needing a planned Cesarean section to deliver her new child into the world. One woman lives in the San Mateo area; the other near Fresno.

If each woman is typical of those in her region, the hospital delivering the San Mateo woman's child will charge nearly \$48,000 for the procedure, while the hospital delivering the Fresno woman's child will charge only \$13,000.

There are many possible explanations for why hospitals in one region of California might charge more than three times as much for an extremely common surgical procedure than those in another region of the state. Perhaps patients in that region come with higher risks that require extra precautions. The quality of care may be three times better—justifying the higher price. The cost of providing hospital services—from wages and salaries to utilities and facility costs—may be dramatically higher in one region compared with another. Or the prices charged by the hospitals may have less relationship to what patients and their insurers actually pay in one region versus another.

Research into health care costs around the country suggests that, in many cases, health care costs vary for reasons that have little or nothing to do with the quality of care or patient outcomes. If that were true in the example above, the woman in San Mateo could easily afford to take a limousine ride to Fresno for her Cesarean section and still face a lower overall bill.

Exploring variations in the cost of providing health care is potentially one of the most effective ways to identify cost-saving strategies and put pressure on high-cost providers to do business in a way that is more economical for their patients and insurers.

As health care costs in California continue to eat up a greater share of household, business and government budgets, the state faces an urgent need to find ways to reduce health care costs without affecting patient health. The data in this report suggest an opportunity to use the best practices of regions with low costs but good health care results to guide reforms to curb health care costs for all Californians.

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

Spending in California on personal health care was \$6,238 per person in 2009.¹ That's 79 percent more than just 10 years earlier. The cost of health care has risen more quickly than inflation or incomes, placing a growing financial burden on individuals, businesses and government.

Individuals who buy insurance on their own are paying more, while employees who get their coverage on the job are being asked to contribute an increasing share of the cost.² Without insurance, or with inadequate insurance, individuals run the risk that unmanageable health costs may devastate their family's finances; overwhelming health care bills play a role in more than half of personal bankruptcies in the United States.³

Employers who provide insurance to their employees are also feeling the growing burden. In 2009, health insurance expenses for employers equaled 12 percent of employee compensation costs.⁴ Employers compensate for higher health care costs by reducing benefits, limiting wage increases, or hiring fewer employees.⁵ As a result, rising health care costs act as a drag on the economy and affect everyone.

Health care costs strain government budgets: California spent 19 percent of its general fund monies on health care in 2009.⁶

Total spending on health care in California reached \$230 billion—or 12 percent of the state's gross domestic product—in 2009.⁷ In 2009, hospital care was the biggest component in health care spending in the state (\$76.6 billion), followed by physician and clinical services (\$67.7 billion). Prescription drug costs were third (\$29.0 billion), followed by dental services (\$14.7 billion) and nursing home care (\$11.4 billion). All categories of health care spending are listed in Table 1.

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 27 percent from 2001 to 2009, while wages rose 34 percent. In contrast, health care spending grew faster, with family insurance premiums rising by 113 percent.⁹ Table 1 shows the increase in different types of health care expenses in California from 2001 to 2009, revealing significant increases in every category.

Table 1. 2009 Health Care Spending by Category in California⁸

Expense	2009 (millions)	Share of total spending (2009)	Percent change (2001-2009)
Hospital Care	\$76,628	33%	167%
Physician & Clinical Services	\$67,727	29%	173%
Prescription Drugs and Other Nondurable Medical Products	\$28,983	13%	186%
Dental Services	\$14,712	6%	155%
Nursing Home Care	\$11,360	5%	172%
Other Health, Residential and Personal Care	\$10,760	5%	211%
Home Health Care	\$9,113	4%	254%
Other Professional Services	\$7,975	3%	154%
Durable Medical Products	\$2,832	1%	142%
Total Personal Health Care	\$230,090	100%	173%

The rise in health care costs is projected to continue. The federal government predicts that national health care spending will increase from \$2.6 trillion in 2010 to \$4.6 trillion in 2020. That is an increase to nearly 20 percent of gross domestic product, up from 17.6 percent today.¹⁰

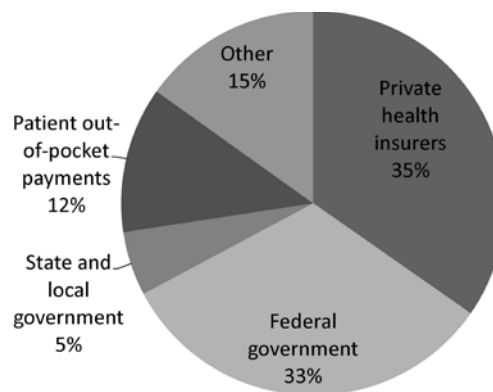
One way that California could begin to

address the high cost of health care is to identify the hospitals that provide quality care at a lower cost than others. Learning why those hospitals charge less could provide tools to help address the cost of hospital-based care, the largest component of health care costs.

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 the largest share of health care costs, followed closely by the federal government. Ultimately, however, consumers and citizens pay for these costs through health insurance premiums and taxes. See Figure 1.

Figure 1. Source of Funds for Health Care Spending in 2010, Nationally¹¹



Health Care Charge Variation in California

Hospitals in some regions of California charge much higher prices for surgery than hospitals in other regions. The variation occurs both between regions and within regions.

Understanding Variations in the Charge for Common Surgeries in California

The California Common Surgeries and Charges Comparison

Variations in the prices charged for hospital care are apparent in data from the California Common Surgeries and Charges Comparison (CCSCC) database, a state-wide database that includes information on common scheduled elective inpatient surgeries.

All hospitals across California, except for those operated by Kaiser Permanente or Shriners, report the prices they charge for surgeries performed in their hospitals each year. Hospitals are required to report information for common procedures involving

the digestive, reproductive, circulatory, endocrine, excretory and skeletal systems.¹² Surgeries are included only if they were scheduled at least 24 hours in advance.

To provide statistically meaningful comparisons, we included only the most frequently performed subset of procedures reported by hospitals, show in Table 2.

We divided the hospital level data in the CCSCC database into hospital referral regions (HRRs). Each region is a health care market for specialized medical care, in particular major cardiovascular surgery and neurosurgery.¹³ Researchers at the Dartmouth Atlas of Health Care defined each region as the hospitals and patients clustered around at least one major city where these major surgeries are available. The boundaries of each region are based on where patients go for these major surgeries.

There are 27 HRRs in California. Three of them cross state lines and are centered in other states. The California portion of these regions is small, meaning we were unable to obtain statistically significant volumes of data from them. Though patient data from these three regions—Phoenix, Arizona; Reno, Nevada;

Table 2. Common Surgical Procedures Considered in this Report

Procedure	Procedure Category	Instances in Database in 2010
C-Section Delivery	Obstetrical	61,286
Assisted Vaginal Delivery (all)	Obstetrical	52,923
Knee Replacement (total)	Skeletal	39,502
Spinal Fusions (any level)	Skeletal	25,734
Hip Replacement (total)	Skeletal	19,818
Hysterectomy—Abdominal (open)	Female System	14,492
PTCA (Coronary Angioplasty Noninvasive)	Heart and Circulatory	11,537
Gastric Bypass (laparoscopic)	Digestive	8,264
Disc Removal (any level)	Skeletal Procedures	6,918
Hysterectomy—Vaginal (open)	Female System	6,630
Hysterectomy—Abdominal (laparoscopic)	Female System	5,646
Radical Prostatectomy	Male System	5,185

and Medford, Oregon—are included in statewide data, we exclude them from discussions of charges by region.

Cost, Price and Payments Received

Though the CCSCC data include detailed information about how much each hospital *charged* for each surgery performed, the data reported by hospitals do not include how much the hospital was ultimately *paid* for the surgery. In addition, the price charged by the hospital does not necessarily indicate how much it *cost* the hospital to provide care. The distinction between charges, payments and costs is one that is easily lost in discussions of health care finance, but is important for readers to understand in interpreting the data presented in this report.

For patients with insurance, the payment hospitals receive depends on the rate negotiated between the insurer and each hospital. The negotiated amount may

provide a huge discount off the official “list price” charged by the hospital. Even patients without insurance may not pay the full price charged by the hospital because the hospital may negotiate a discount based on a patient’s ability to pay.

The link between how much it cost a hospital to provide a given service and the price the hospital charges is unclear. A hospital may charge more because it is spending more on care, or because it has capital costs to fund, wants to list a high price to provide more negotiating room with insurers, is trying to recover other expenses within the hospital (such as care for those who can’t pay), is training new doctors or for other reasons.

Other research in two California cities has shown that there is tremendous variation in the prices insurers pay to hospitals. The Center for Studying Health System Change, a research organization affiliated with Mathematica Policy Research, collected payment information from four health insurers active in San Francisco and

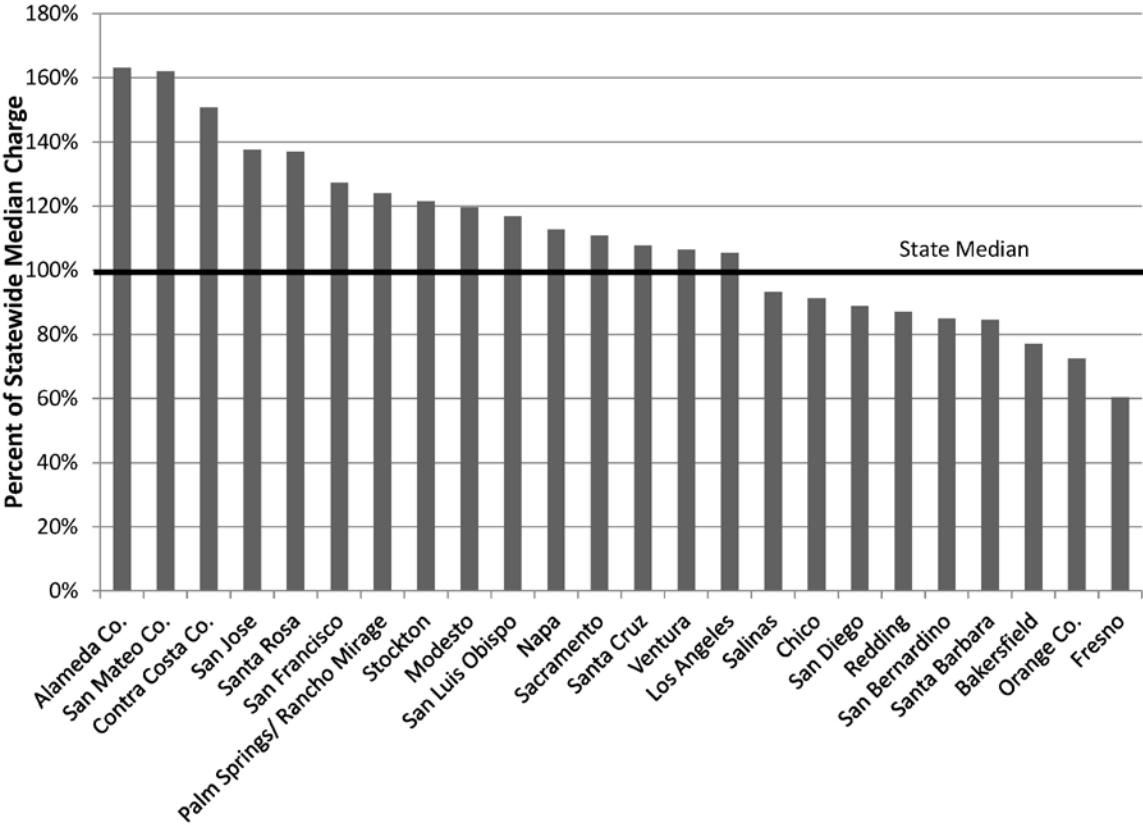
Los Angeles. The researchers compared the amount paid by the hospitals for inpatient services to how much Medicare pays. Insurers paid more, on average, in San Francisco than in Los Angeles.¹⁴ This same discrepancy appears in our data on hospital charges.

Analyzing the CCSCC database, therefore, provides us with only a very imperfect window into how health care prices and costs really vary from region to region and hospital to hospital within California. However, the variations in the prices charged by hospitals reported in the CCSCC database are frequently large, and suggest that further study could disclose opportunities to control costs.

Large Variations in the Price Charged for Common Surgeries

To compare the prices charged for surgery in various regions of California, we created a charge index of common surgeries. We obtained the median price charged by all hospitals in a particular region for each type of surgery—the point where half of the charges are less and half are more. By focusing on the median charge, we were able to minimize the influence of surgeries billed at unusually high or low amounts and to better represent the typical amount charged at each hospital. Weighting the

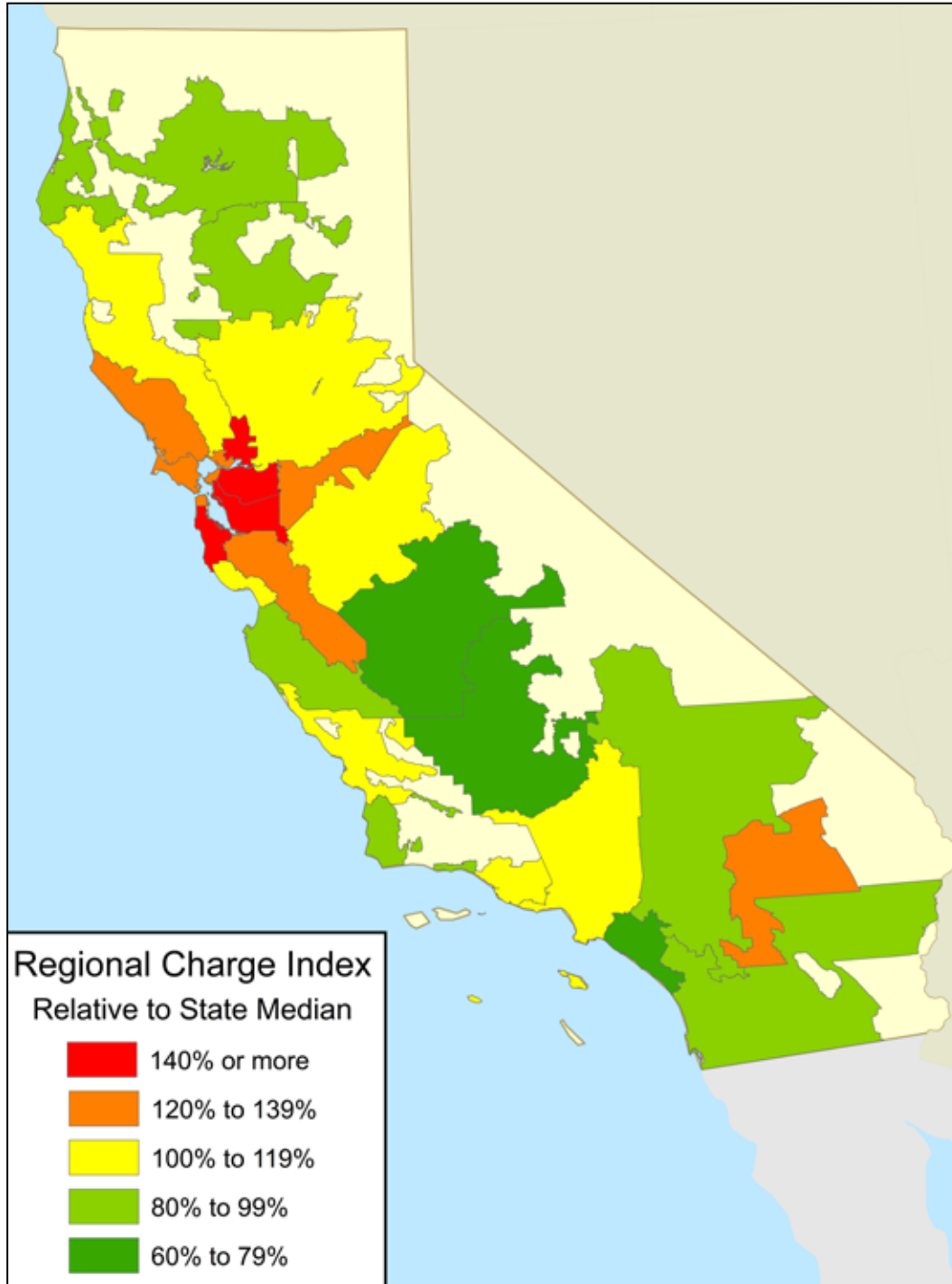
Figure 2. Charge Index for Common Surgeries in California Hospital Regions



frequency of each procedure, we calculated the median charge for surgery in each region and statewide. We compared the

regional median to the statewide median for each procedure. The charge index represents the average of these ratios across

Figure 3. Map of Charge Index for Common Surgeries in California Hospital Regions



Areas of California colored beige are uninhabited or are part of hospital referral regions centered in other states and without sufficient information for regional analysis.

all the different procedures weighted by their frequency within each region. (See methodology for complete details.)

The charge index reveals that a typical patient—one who is charged the median price for surgery—was charged 2.7 times as much in the highest-priced region as in the lowest-priced region in 2010. The Alameda County hospital region is the most expensive (according to prices charged), followed closely by San Mateo County. The least expensive region is Fresno, where the charge index is 40 percent lower than the statewide median. (See Figure 2.)

The most expensive regions are clustered around the San Francisco Bay area. The Alameda County, San Mateo County, Contra Costa County, San Jose, Santa Rosa and San Francisco regions are at the top of our charge index for common surgeries. The most expensive hospital region in

Southern California is Palm Springs/Rancho Mirage, which ranks on our charge index just below San Francisco. (See Figures 2 and 3 and Appendix A.)

The least expensive regions are in the southern Central Valley—in the Bakersfield and Fresno regions—and across a swath of Southern California that includes the Orange County and San Bernardino regions.

Large Variations between Regions in the Price Charged for Specific Surgeries

The extent of the regional variation in charges revealed by the charge index of common surgeries becomes more clear

Figure 4. Details of Charges for a Cesarean Section in the Fresno and San Mateo Hospital Regions, 2010

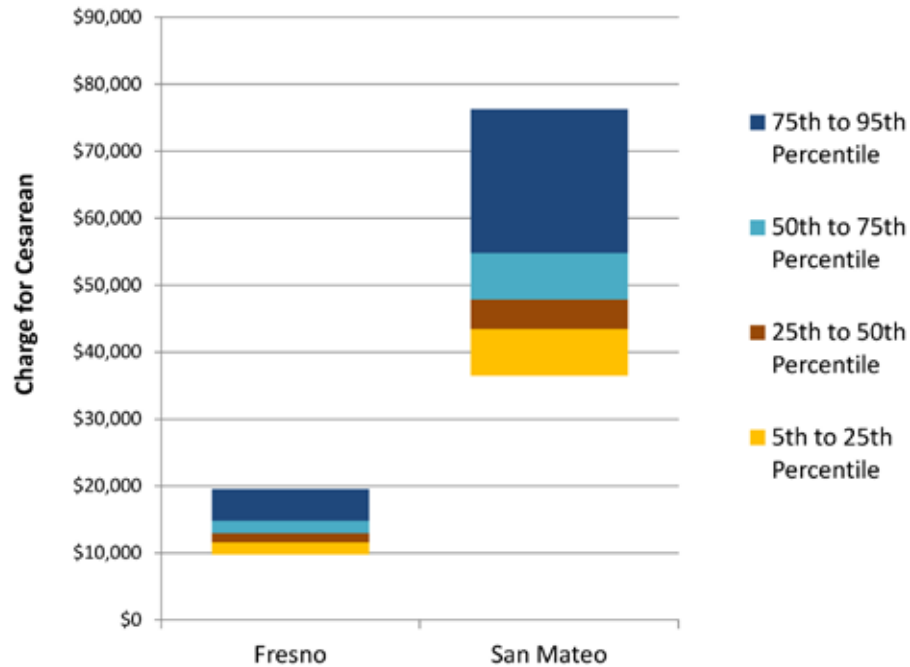
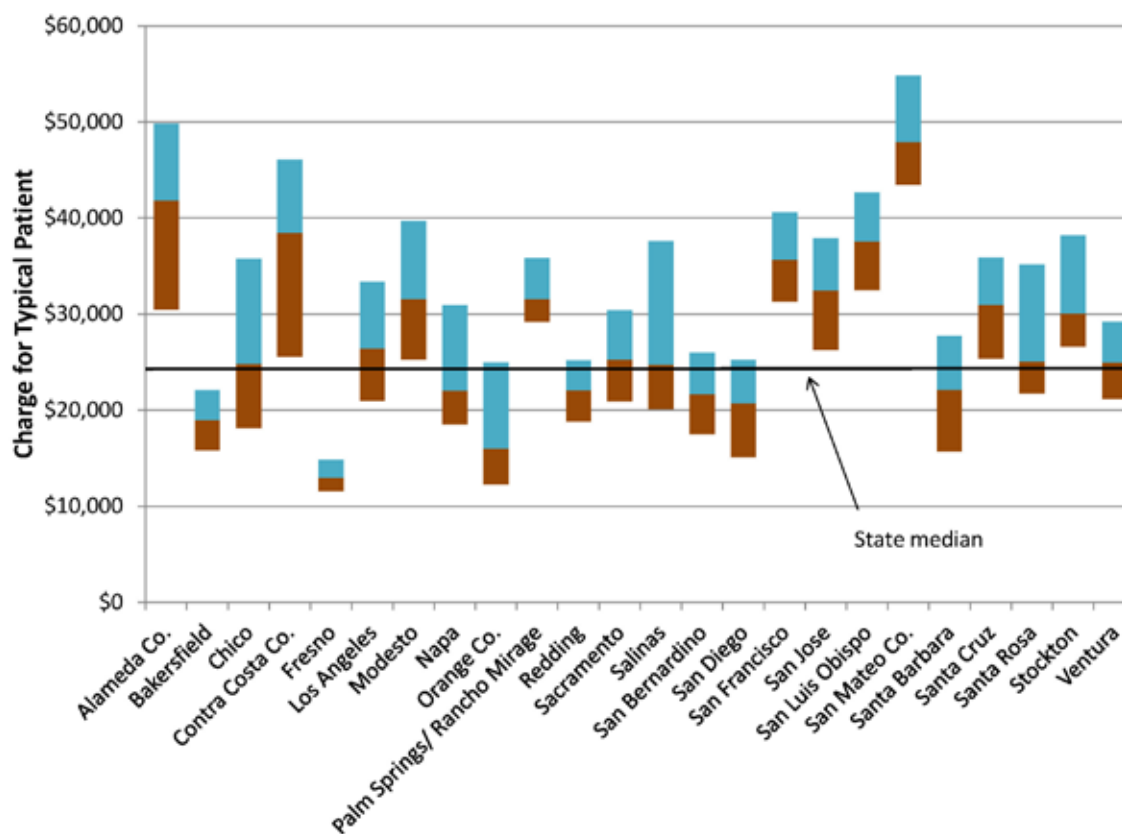


Figure 4 shows more detail than Figure 5 for the Fresno and San Mateo hospital regions. The median price in each region is the point where the turquoise and brown portions of each bar meet.

Figure 5. Charge for a Cesarean Section by California Hospital Referral Region, 2010



The median charge in each region is the point where the turquoise and brown portions of each bar meet. The turquoise portion of each bar represents the range of prices charged to the 25 percent of patients just above the median, while the brown portion of the bar is the range of prices charged to the 25 percent of patients just below the median. Information for the other half of the patients—the 25 percent with the highest and lowest charges—is not shown.

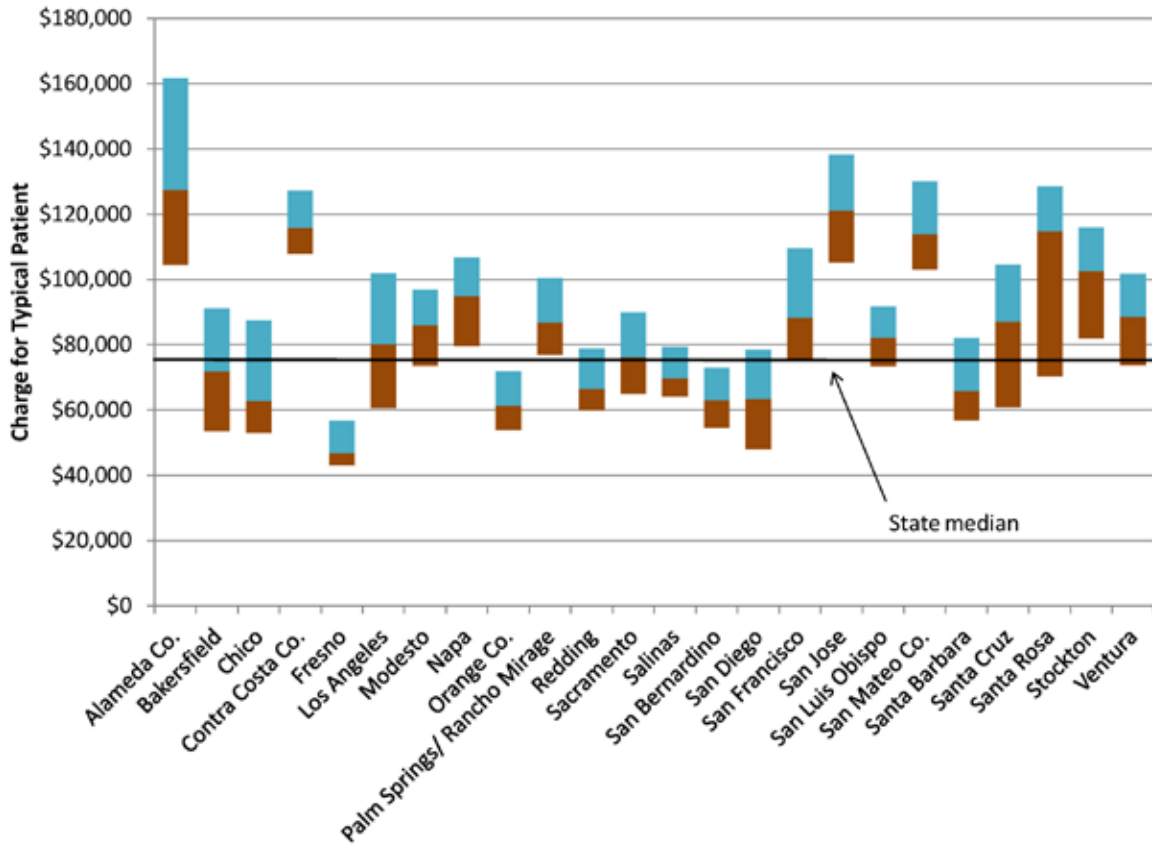
when comparing the amount charged for specific surgeries.

Births by Cesarean section are the most common surgery performed in the state, with more than 61,000 operations in 2010. The typical patient in the San Mateo region was charged nearly \$48,000 for a Cesarean section. For the same surgery, the typical patient in Fresno was charged less than \$13,000. Cesarean section charges in Fresno were consistently lower than in San Mateo. The 5 percent of patients who received the highest bills in Fresno still received lower bills than 95 percent of all patients in San Mateo (see Figure 4). San

Mateo’s median charge for a Cesarean section was \$6,000 higher than the next most expensive region, Alameda County, and \$23,551 higher than the state median. Figure 5 shows the median charge for a Cesarean section in each hospital region.

For knee replacements, hospitals in the Alameda County referral region charge the most: \$127,500 for a typical patient. In contrast, the median charge in Sacramento was \$76,300, only slightly higher than the state median. Hospitals in both regions performed more than 3,000 knee replacements each. Fresno-area hospitals charged a median of \$46,800. See Figure 6.

Figure 6. Charge for a Knee Replacement by California Hospital Referral Region, 2010



The charge for the most common heart surgery, a minimally invasive coronary angioplasty to open blocked arteries in the heart, is highest in the San Jose region, where the typical patient is charged nearly \$145,000, twice the statewide median. The San Jose region is \$21,000 more expensive than the next most costly region, Contra Costa.

Large Variations within Regions in the Price Charged for Specific Surgeries

Within regions with high charges, not all hospitals are equally expensive, and in regions with lower charges, some hospitals

charge far more than others. More so than with regional variations in charges, differences in patient health may drive part of the variation in hospital charges within a region as some hospitals are equipped to treat patients with more severe medical problems.

A comparison of the prices charged for two common surgeries illustrates the extent of the variation within individual hospital regions. For example, in the relatively low-priced Orange County hospital region, the charge for a Cesarean section for a typical patient ranged from \$12,200 at Hoag Memorial Hospital Presbyterian to \$31,000 at Saddleback Memorial Medical Center.¹⁵ The charge for knee replacement ranged from \$53,400 to \$96,100. See Table 3 for details on other hospitals in the region.

In the state's most expensive hospital region, Alameda County, the charge for a Cesarean section ranged from \$23,800 to \$49,400. The median charge of knee replacement surgery was \$59,800 at Alameda County Medical Center—High-

land Campus and, at the other end of the spectrum, \$164,400 at Washington Hospital—Fremont.

Appendix C contains data on charges by hospital within hospital regions.

Table 3. Charge for Surgery for Typical Patient at Hospitals in the Orange County Region

Hospital	Cesarean Section Median Charge	Number of Cesarean Sections in 2010	Knee Replacement Median Charge	Number of Knee Replacements in 2010
University of California Irvine Medical Center	\$51,739	47	\$124,793	9
Saddleback Memorial Medical Center	\$30,955	780	\$54,835	383
Western Medical Center—Santa Ana	\$26,796	491	\$69,373	12
AHMC Anaheim Regional Medical Center	\$26,426	153	\$96,072	105
Orange Coast Memorial Medical Center	\$25,177	299	\$54,924	243
Garden Grove Hospital and Medical Center	\$21,987	415	\$96,106	39
Fountain Valley Regional Hospital and Medical Center—Euclid	\$21,693	247	\$90,665	189
Coastal Communities Hospital	\$19,750	270	\$56,979	14
La Palma Intercommunity Hospital	\$19,678	13	\$0	0
Mission Hospital Regional Medical Center	\$16,831	373	\$67,226	197
Corona Regional Medical Center—Main	\$15,277	24	\$64,516	60
St. Jude Medical Center	\$15,034	12	\$67,782	384
St. Joseph Hospital—Orange	\$13,122	1784	\$65,128	687
Hoag Memorial Hospital Presbyterian	\$12,239	2141	\$53,373	855
Los Alamitos Medical Center	\$0	0	\$94,356	92

Table 4. Charge for Surgery for Typical Patient at Hospitals in the Alameda County Region

Hospital	Cesarean Section Median Charge	Number of Cesarean Sections in 2010	Knee Replacement Median Charge	Number of Knee Replacements in 2010
Washington Hospital—Fremont	\$49,354	628	\$164,366	657
Valleycare Medical Center	\$39,727	259	\$117,191	193
Eden Medical Center	\$28,668	220	\$ 82,769	128
St. Rose Hospital	\$26,804	166	\$120,761	83
Alameda County Medical Center—Highland Campus	\$23,809	76	\$ 59,824	28
Alta Bates Summit Medical Center—Alta Bates Campus	\$0	0	\$111,964	126

Exploring Possible Causes of Charge Variation

Health care charge variations, such as those among California hospital referral regions and California hospitals for common surgeries, have been observed across the nation. In Massachusetts, a typical patient needing a Cesarean section pays twice as much in the most expensive hospitals as in the least expensive hospitals.¹⁶ Detroit hospitals charge broadly varying amounts for a number of common surgeries, according to a 2011 analysis.¹⁷

The reasons for these variations are not clear. Higher prices generally do not indicate better outcomes for patients, the presence of sicker or higher-risk patient populations, or even the provision of important societal services such as training doctors or caring for the vulnerable. In health care, higher prices often do not reflect greater value.

Researchers looking at variation in health care charges in a variety of contexts and states have suggested several possible reasons for why some regions and hospitals charge more than others, but more research needs to be done to fully explain the variation.

Higher Prices Do Not Necessarily Indicate Higher Quality of Care

According to research conducted in other states, price is not an indicator of the quality of care provided by a health system or a hospital.

Total spending on health care is a function of both the price per unit of care and the quantity of care delivered. Despite spending more money per capita on health care than any other nation, the United States trails in many indicators of health and well-being.¹⁸ America ranks 44th in the world in average life expectancy and 41st in the world in infant mortality.¹⁹ The United States fares poorly on measures such as babies' birth weight and is only average in the percentage of children who receive immunizations.²⁰ 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.²¹

At the hospital level, higher prices

generally do not mean better care. A special commission on health care costs in Massachusetts, consisting of elected officials, doctors and representatives from hospitals and health insurers, concluded that variation in the amount paid by insurers to various Massachusetts hospitals had no correlation with the quality of care provided by those hospitals.²² A 2010 study by the Massachusetts Office of the Attorney General came to the same conclusion that quality of care was not correlated with price.²³

A separate study suggests that at the hospital level, payments per patient may actually be *negatively* correlated with quality. A recent study by researchers at the University of Michigan and Dartmouth concluded that hospitals with the highest complication rates received higher payments from Medicare per patient.²⁴ The national study of charges for four common surgeries—coronary artery bypass graft, total hip replacement, abdominal aortic aneurysm repair and colectomy procedures—for Medicare patients observed significant variations in the amount charged for surgery. Hospitals with the most postsurgical complications charged 11 to 15 percent more for the surgery and related care than hospitals with the lowest complication rates.

Patient Income and Health Status Do Not Explain Price

Patient income and health status explain, at best, only a small portion of the variation in hospital costs among regions or among hospitals within a given region.

The 2010 study on hospital price variation in Massachusetts found that “the sickness of the population served or complexity of the services provided” and the share of low-income patients served were not correlated with the price charged

by hospitals.²⁵ The Massachusetts special commission on prices came to largely the same conclusion, finding that patient health was only weakly correlated with hospital charges and for only one of the two health insurers it studied. Serving low-income patients was only weakly tied to higher hospital charges.²⁶

Even a study of the *amount* of care that patients receive, rather than the *cost* of care, suggests that poor patient health explains less than one-fifth of the difference in total spending in high-cost regions and low-cost regions.²⁷ Patient income level had an even smaller effect.

Within a Hospital Region, Higher Costs Do Not Explain Higher Prices

Hospitals set prices based on what they think their customers (for hospitals, this usually means insurance companies) will pay, not simply on how much it costs to provide care. Detailed investigation of hospital costs versus charges in Massachusetts found no correlation between what it actually cost for a hospital to provide care and how much the hospital charged to insurers.²⁸ At six academic medical centers in the same health care market, the cost of labor, supplies, medical education, overhead and capital outlays did not explain the wide price variation witnessed between the hospitals, even after researchers factored in the sickness of patients.

Factors Correlated with Higher Charges

There are several factors that may explain some of the variation in price charged

between different hospital referral regions and between hospitals within regions. None of these factors appear to fully explain the differences between hospital referral regions or between hospitals within regions.

Regional Cost of Living May Partially Explain Regional Charge Variations

Differences in the cost of living likely explain some of the variation in charges for common surgeries across California. Los Angeles is a more expensive place to live than Fresno, and the Bay Area is even more expensive than Los Angeles. It would make sense that the cost of surgery might be higher in the Bay Area than in Fresno simply because wages and rents are higher.

A cost of living index created by the Council on Community and Economic Research allows comparison of typical costs for a family in different metropolitan areas. According to the index, the cost of living in the San Francisco–San Mateo–Redwood City area is 23 percent higher than in the Los Angeles–Long Beach area and 46 percent higher than in the Fresno region.²⁹

While the variation in the cost of living follows the same rough pattern as the variation in charges for common surgeries, the charge difference between surgeries in the three regions is much bigger than the difference in the cost of living. Hospitals in the San Francisco and San Mateo hospital referral regions charge 2.1 to 2.7 times as much as hospitals in Fresno, and 21 to 54 percent more than hospitals in the Los Angeles referral region.

Market Influence Allows Hospitals to Charge More

Within hospital referral regions, hospital charges may be influenced by how much market power the hospital has—the ability

to ask for and receive a higher price.

Hospitals can acquire market power by merging with other hospitals and acquiring networks of facilities, by building their reputation to gain “must-have” status in the eyes of patients and thus insurers or by providing a large volume of care.³⁰

Multiple studies of hospital mergers and acquisitions have shown that consolidation among health care providers raises prices.³¹ A merger gives a hospital network more market power and the ability to charge more. In California, for example, Sutter Health has two dozen facilities in northern California, and it negotiates prices with insurers on an “all or none” basis. In a city where Sutter represents a large share of the market it can command a higher price from insurers, and then by negotiating a systemwide contract it can impose higher rates at all its hospitals.³² Local market consolidation also means that other hospitals in the region are able to charge more, because there is less competition.³³ Market consolidation can increase prices by 5 to 40 percent.³⁴

Hospitals that are perceived as especially prestigious or that provide specialized services can also charge more. Patients consider an insurance plan as inadequate if it doesn’t include these high-status hospitals, and therefore insurers consider them “must-have” hospitals.³⁵ This elevated status allows “must-have” hospitals to charge more.

Serving a large volume of patients can also boost market power.³⁶ In the Massachusetts analysis of price variation paid by insurers at different Massachusetts hospitals, the attorney general’s office concluded that “price variations *are correlated* to market leverage as measured by the relative market position of the hospital.”³⁷ (emphasis in the original) In other words, hospitals that serve the most patients and provide the most care have greater leverage when negotiating prices with health insurers, who are willing to pay more to retain that

key health care provider in their network.

An analysis of how much money insurers actually paid to hospitals in Los Angeles and San Francisco supports the theory that market power influences how much hospitals charge. The Center for Studying Health System Change asked four major insurers (Aetna, Anthem Blue Cross Blue Shield, CIGNA and UnitedHealth Group) how much they paid to hospitals for inpatient services, compared to how much Medicare pays. Insurers paid more in San Francisco, which the researchers identified as having a “high degree of hospital concentration and must-have hospitals.”³⁸ Payments were lower in Los Angeles, which has a more fragmented market and fewer must-have hospitals. The median payment in Los Angeles was 118 percent of what Medicare pays, and in San Francisco was 210 percent of Medicare. The most expensive hospital in San Francisco was also more expensive than the most expensive hospital in Los Angeles. In a separate paper, researchers from the Center for Studying Health System Change note that Fresno—the least expensive hospital region for hospital charges—has not experienced hospital or provider consolidation and thus

has a less distorted market.³⁹

While the data we examined from the Office of Statewide Health Planning & Development reflects what hospitals billed rather than what they were paid (by insurers or patients), a similar effect may be at work. Hospitals with market power may be able to charge more for their services, and perhaps to subsequently collect a greater share of what they charge.

For-Profit Hospitals May Charge More

Another potential explanation for the variation between hospitals within the same region is that community and nonprofit hospitals may charge less than for-profit hospitals. A 2012 study of charges for treating uncomplicated appendicitis cases at California hospitals found that the amount charged varied by the profit-making status of the hospital. For-profit hospitals charged 83 percent more than county hospitals and 16 percent more than nonprofit hospitals.⁴⁰ If this variation in charges holds true for other types of surgeries, hospital profit status may explain some hospital-to-hospital charge variation.

Conclusion

California health care leaders and elected officials need to better understand the causes of charge variation between hospital referral regions and among hospitals within those regions. Improved understanding of the drivers of hospital charge variation is just the first step for a discussion about how to address the rising cost of care.

Several of the possible explanations identified in this report are worth further study to reveal the extent to which they affect prices and might be addressed to help control costs. If for-profit hospitals or hospitals with greater market influence charge more than other hospitals, would different regulatory oversight correct problems in the marketplace? Maryland, for example, uses a rate-setting oversight process that has helped to limit price variation and hospital cost growth in that state, keeping it below the national average.⁴¹ Or, if the problem is market consolidation, then other measures such as price caps may be needed to help control costs.⁴²

At the same time, if further research reveals that there are no differences in how patients are cared for at high-cost versus

low-cost hospitals, part of the solution to controlling the cost of health care might be to share best practices from lower-cost facilities and introduce them into higher-cost facilities.

Greater transparency regarding hospital charges, payments and quality would help patients, insurers and researchers.

- Patients need information on the quality of care provided by different hospitals to help ensure the best outcomes. Currently, data on hospital charges are publicly available, though not very user-friendly. As consumers become more aware of the data and if it is presented in a more accessible format, consumers should also have access to data on hospital quality. Reliable information about hospital quality will avoid a situation in which patients use price as a proxy for quality and gravitate toward hospitals that charge more.⁴³ To avoid price transparency from having the opposite effect of what was intended, patients need to be provided with accessible, meaningful data on the quality of care at different facilities.

- Patients would benefit from greater clarity regarding not only how much hospitals charge in general for scheduled procedures, but how much payment hospitals will accept as payment in full. Often, listed charges bear little relationship to how much payment a hospital will accept, making it very difficult for patients to compare the cost of treatment at different facilities.
- Information about how much money hospitals are actually paid would allow researchers and policymakers to better understand how California might control the cost of providing quality health care.

Methodology

To examine how hospital charges in California vary from one geographic region to another, we analyzed charge information provided in hospital discharge records collected and maintained by the Office of Statewide Health Planning & Development. We aggregated these data within 24 “hospital referral regions” and by hospital, identified the charges for a typical patient in these regions and statewide for a set of 12 common scheduled procedures, developed a charge index to enable comparisons and confirmed that the differences we discuss in this report are statistically significant with 95 percent confidence or greater.

Source of Data on Hospital Charges

We obtained information about the costs charged by hospitals for selected procedures from the California Office of Statewide Health Planning & Development, *2010 Public Patient Discharge Data*.⁴⁴ The database contains a record for every inpatient

discharged in 2010 from a hospital facility licensed by the state of California.

Within the database, we focused on total charges reported by the hospital for services rendered when:

- 1) admissions were scheduled with a hospital at least 24 hours in advance;
- 2) charges were greater than \$1, excluding charity care or instances in which cost was incorrectly reported; and
- 3) the principal procedure performed was one of the top 12 most common scheduled elective inpatient procedures among common procedures as defined by the Office of Statewide Health Planning and Development.⁴⁵ (See Table 5.)

Charges in the database represent all charges for services rendered during the entire length of patient stay at the facility, based on the hospital’s full established rates, before any contractual adjustments with insurance providers. Charges can include, but are not limited to, daily hospital services, ancillary services and any patient

care services. Charges in the database do not include physician fees.

Aggregating Data by Geographic Region

We aggregated data based on the location of hospital facilities within “hospital referral regions” as defined in the *Dartmouth Atlas of Health Care*, available at www.dartmouthatlas.org. Hospital referral regions represent regional health care markets for tertiary medical care that generally requires the services of a major referral center for specialized cardiovascular or neurological surgery. Therefore, each hospital referral region contains at least one city where such surgeries are performed.

There are 24 hospital referral regions in California. We obtained the boundaries

of these regions in a format usable within Geographic Information System (GIS) software from the *Dartmouth Atlas of Health Care*.⁴⁶

We obtained the geographic coordinates of all licensed California health care facilities from the state Office of Statewide Health Planning & Development.⁴⁷ Using GIS software, we assigned each facility to its corresponding hospital referral region. The resulting data table enabled us to compile information about charges for all procedures of interest within each hospital referral region in California.

Due to very small numbers of relevant procedures, we do not independently analyze procedures performed at facilities located in the parts of California that are in the hospital referral regions centered around Phoenix, AZ; Reno, NV; or Medford, OR. However, procedures carried out in these regions are included in statewide calculations.

Table 5. Common Surgical Procedures Considered in this Report

Procedure	Procedure Category	ICD-9-CM Classification Codes	Instances in Database in 2010
C-Section Delivery	Obstetrical	741	61,286
Assisted Vaginal Delivery (all)	Obstetrical	7359	52,923
Knee Replacement (total)	Skeletal	8154	39,502
Spinal Fusions (any level)	Skeletal	8100-8108	25,734
Hip Replacement (total)	Skeletal	8151	19,818
Hysterectomy—Abdominal (open)	Female System	6839, 6849, 6869	14,492
PTCA (Coronary Angioplasty Noninvasive)	Heart and Circulatory	0066	11,537
Gastric Bypass (laparoscopic)	Digestive	4438	8,264
Disc Removal (any level)	Skeletal Procedures	8051	6,918
Hysterectomy—Vaginal (open)	Female System	6859, 6879	6,630
Hysterectomy—Abdominal (laparoscopic)	Female System	6831, 6841, 6861	5,646
Radical Prostatectomy	Male System	605	5,185

Identifying the Charge for a Typical Patient

When we speak of a “typical” patient in this report, we mean a patient who would be charged the median charge for surgery—in other words, 50 percent of patients would be charged more, and 50 percent of patients would be charged less. We identified the median charge within each region and statewide for each of the procedures listed in Table 5.

To examine how variable those charges were, we also identified the interquartile range of charges for each procedure in each region and statewide. (See Figure 5 on page 15, for example.) The interquartile range shows the range of charges between the 25th percentile patient (the point where 25 percent of patients were charged less) and the 75th percentile patient (the point where 25 percent of patients were charged more). Wider interquartile ranges indicate more variability.

Developing a Charge Index for Common Surgeries

To compare the prices charged for common surgeries across regions, we created a charge index. Briefly put, the charge index is a weighted average of the median charge for a particular procedure within a region divided by the median charge statewide, for each of the procedures listed in Table 5.

Step by step, we developed the price index by:

- 1) calculating the median charge for each surgery within each region, and statewide (Median Charge);
- 2) calculating the ratio of the median charge of each surgery to the statewide median (Charge Ratio);

- 3) calculating a weighting factor, which is the number of times a particular surgery was performed within a given region in 2010 divided by the total number of procedures under consideration within the given region (Weighting Factor);
- 4) multiplying the Charge Ratio by the Weighting Factor for each procedure; and
- 5) summing the weighted charge ratios for each surgery type for each region.

The result was a single figure representative of the charges for a typical patient undergoing a common procedure within a particular region that could be compared to a typical patient statewide. The weighting factor enables comparison between regions with very different profiles of common surgeries, and reduces the influence of differences in the frequency of different surgery types.

Confirming Statistical Significance

We used IBM SPSS statistics software (version 20, trial) to ensure that any differences we discuss in this report in the median charges of surgeries—between regions or between hospitals—are statistically significant at the 95 percent confidence interval or greater. In other words, we confirmed that we can be highly confident that the trends we found in this research are not a mathematical fluke, but very likely represent actual differences in prices charged by hospitals in different regions of the state. We used nonparametric independent sample statistical tests because the data is not normally distributed and because we assumed that charges for each

patient were determined independently of other patients. We checked differences in median using a median test, and differences in the distribution of charges around the median using a Kruskal–Wallis 1-way ANOVA test.

Comparing Our Results to Other Studies

Our findings on variation in prices charged by hospitals in the Los Angeles and San Francisco regions match the variation in prices paid by insurers to hospitals for the Los Angeles and San Francisco regions in an analysis of payment rates by the Center for Studying Health System Change. An analysis of how much insurers paid to hospitals in those two regions shows a higher payment in San Francisco and a higher payment to the most expensive facility.⁴⁸

The regional pattern of charge variation for common surgeries found in our data is quite different from the regional variation in the total cost of care for Medicare patients noted by multiple researchers, most notably those with the *Dartmouth Atlas of Healthcare*. They have found that total Medicare spending for patients with chronic illness in their last six months of life is much higher in Southern California hospital referral regions than in Northern California hospital referral regions. They attributed this higher total cost to greater use of health care in Southern California, where patients saw a greater number of doctors and spent more days in the hospital.⁴⁹

There are several reasons for our very different finding about regional charge differences. First, we looked at the charge for

a particular kind of care, not the total cost of care—a matter of price per unit versus unit supplied times price per unit. Second, our data includes patients of all ages, not just those over 65, who use both public and private insurance. Other researchers have confirmed that health care price and use patterns for younger populations with private insurance are not directly comparable to results from Medicare.⁵⁰

Limitations of Our Analysis

The data collected by the Office of State-wide Health Planning & Development does not include any information from the Kaiser Permanente health system or from the two children’s hospitals operated by the Shriners. In the regions where the Kaiser network is especially strong, the lack of data on Kaiser prices may imperfectly represent the region’s median charges. Earlier research on the Kaiser system has shown that its hospitals do perform differently than other hospitals; for example, there is less variation in the total cost of caring for Medicare patients at the end of life at Kaiser hospitals than hospitals outside the Kaiser network.⁵¹ If the Kaiser data were included in the OSHPD data, therefore, some regions might show a different median price.

Our analysis is of the price charged by hospitals for surgeries, but does not include information on how much hospitals were ultimately paid. The gap between the billed price and the amount collected can be very large, because of discounts negotiated with insurers and lack of payment by uninsured patients who are unable to fully pay their bills.

Appendix A: Charge Index for Common Surgeries, by Region

Hospital Referral Region	Percent of Statewide Median
Alameda Co.	163%
San Mateo Co.	162%
Contra Costa Co.	151%
San Jose	138%
Santa Rosa	137%
San Francisco	127%
Palm Springs/Rancho Mir.	124%
Stockton	121%
Modesto	120%
San Luis Obispo	117%
Napa	113%
Sacramento	111%
Santa Cruz	108%
Ventura	106%
Los Angeles	105%
Salinas	93%
Chico	91%
San Diego	89%
Redding	87%
San Bernardino	85%
Santa Barbara	85%
Bakersfield	77%
Orange Co.	73%
Fresno	60%

Appendix B: Median Charge for Surgery, by Region*

Table B-1

Region Name	Cesarean Section Birth		Assisted Vaginal Birth		Knee Replacement (total)	
	Median	Compared to State Median	Median	Compared to State Median	Median	Compared to State Median
Alameda Co.	\$41,833	172%	\$24,738	174%	\$127,478	169%
Bakersfield	\$18,961	78%	\$8,979	63%	\$71,881	95%
Chico	\$24,840	102%	\$13,558	95%	\$62,768	83%
Contra Costa Co.	\$38,474	158%	\$17,420	122%	\$115,854	153%
Fresno	\$12,972	53%	\$5,890	41%	\$46,801	62%
Los Angeles	\$26,434	109%	\$15,925	112%	\$80,222	106%
Modesto	\$31,556	130%	\$15,980	112%	\$85,991	114%
Napa	\$22,057	91%	\$14,014	98%	\$94,863	126%
Orange Co.	\$16,007	66%	\$8,153	57%	\$61,431	81%
Palm Springs/ Rancho Mirage	\$31,539	129%	\$16,346	115%	\$86,767	115%
Redding	\$22,083	91%	\$9,580	67%	\$66,534	88%
Sacramento	\$25,257	104%	\$16,846	118%	\$76,300	101%
Salinas	\$24,745	102%	\$14,155	99%	\$69,762	92%
San Bernardino	\$21,669	89%	\$11,817	83%	\$63,031	83%
San Diego	\$20,700	85%	\$12,040	85%	\$63,398	84%
San Francisco	\$35,692	147%	\$25,853	182%	\$88,398	117%
San Jose	\$32,459	133%	\$20,062	141%	\$121,180	160%
San Luis Obispo	\$37,542	154%	\$16,528	116%	\$82,211	109%
San Mateo Co.	\$47,910	197%	\$23,010	162%	\$113,846	151%
Santa Barbara	\$22,142	91%	\$10,095	71%	\$65,906	87%
Santa Cruz	\$30,951	127%	\$11,896	84%	\$87,097	115%
Santa Rosa	\$25,076	103%	\$14,451	102%	\$114,829	152%
Stockton	\$30,039	123%	\$18,188	128%	\$102,627	136%
Ventura	\$24,980	103%	\$14,381	101%	\$88,615	117%

* "N/A" indicates that too few procedures of a particular surgery were performed in a region to provide robust statistics.

Table B-2

Region Name	Spinal Fusion (any level)		Hip Replacement (total)		Hysterectomy- Abdominal (all)	
	Median	Compared to State Median	Median	Compared to State Median	Median	Compared to State Median
Alameda Co.	\$151,254	123%	\$133,587	170%	\$52,467	144%
Bakersfield	\$98,811	81%	\$81,259	103%	\$30,367	83%
Chico	\$79,948	65%	\$83,424	106%	\$30,360	83%
Contra Costa Co.	\$169,792	139%	\$113,715	145%	\$60,333	165%
Fresno	\$81,504	67%	\$52,902	67%	\$25,222	69%
Los Angeles	\$127,784	104%	\$77,996	99%	\$36,076	99%
Modesto	\$157,888	129%	\$102,411	130%	\$45,000	123%
Napa	\$112,288	92%	\$89,661	114%	\$34,082	93%
Orange Co.	\$114,632	94%	\$57,810	74%	\$34,435	94%
Palm Springs/ Rancho Mirage	\$148,711	121%	\$94,335	120%	\$53,591	147%
Redding	\$95,704	78%	\$66,242	84%	\$32,991	90%
Sacramento	\$138,495	113%	\$85,338	109%	\$47,529	130%
Salinas	\$90,499	74%	\$75,384	96%	\$39,077	107%
San Bernardino	\$95,784	78%	\$68,601	87%	\$31,216	85%
San Diego	\$113,472	93%	\$64,480	82%	\$31,516	86%
San Francisco	\$157,695	129%	\$85,576	109%	\$51,459	141%
San Jose	\$144,319	118%	\$130,995	167%	\$45,064	123%
San Luis Obispo	\$99,570	81%	\$84,728	108%	\$57,237	157%
San Mateo Co.	\$181,498	148%	\$117,460	149%	\$55,800	153%
Santa Barbara	\$130,344	106%	\$63,659	81%	\$26,075	71%
Santa Cruz	\$184,240	150%	\$89,487	114%	\$54,646	150%
Santa Rosa	\$190,836	156%	\$122,642	156%	\$42,313	116%
Stockton	\$128,062	104%	\$107,301	136%	\$39,008	107%
Ventura	\$119,502	98%	\$88,105	112%	\$44,297	121%

Table B-3

Region Name	PTCA (Coronary Angioplasty Non-invasive)		Gastric Bypass (laparoscopic)		Disc Removal (any level)	
	Median	Compared to State Median	Median	Compared to State Median	Median	Compared to State Median
Alameda Co.	\$96,885	135%	\$89,157	149%	\$59,547	138%
Bakersfield	\$44,438	62%	\$69,187	116%	\$32,041	74%
Chico	\$78,284	109%	\$54,520	91%	\$33,623	78%
Contra Costa Co.	\$123,656	172%	\$84,698	142%	\$74,918	173%
Fresno	\$50,036	70%	\$28,676	48%	\$30,370	70%
Los Angeles	\$74,664	104%	\$62,798	105%	\$47,851	111%
Modesto	\$111,551	155%	\$57,324	96%	\$51,129	118%
Napa	\$75,826	105%	N/A	N/A	\$44,213	102%
Orange Co.	\$66,567	93%	\$50,229	84%	\$32,165	74%
Palm Springs/ Rancho Mirage	\$86,687	121%	\$131,954	221%	\$57,454	133%
Redding	\$87,860	122%	\$74,772	125%	\$36,171	84%
Sacramento	\$85,520	119%	\$67,066	112%	\$47,169	109%
Salinas	\$72,484	101%	\$32,014	54%	\$39,983	92%
San Bernardino	\$55,623	77%	\$56,786	95%	\$34,213	79%
San Diego	\$78,584	109%	\$62,478	105%	\$35,766	83%
San Francisco	\$90,383	126%	\$81,564	137%	\$55,659	129%
San Jose	\$144,922	202%	\$77,888	130%	\$47,771	110%
San Luis Obispo	\$108,504	151%	N/A	N/A	\$41,200	95%
San Mateo Co.	\$118,793	165%	\$89,126	149%	\$57,631	133%
Santa Barbara	\$64,961	90%	\$42,729	72%	\$19,340	45%
Santa Cruz	\$74,960	104%	N/A	N/A	\$38,135	88%
Santa Rosa	\$78,147	109%	\$87,434	146%	\$98,406	227%
Stockton	\$72,004	100%	N/A	N/A	\$51,862	120%
Ventura	\$73,673	102%	\$66,906	112%	\$39,042	90%

Table B-4

Region Name	Hysterectomy-Vaginal (open)		Hysterectomy-Abdominal (laparoscopic)		Radical Prostatectomy	
	Median	Compared to State Median	Median	Compared to State Median	Median	Compared to State Median
Alameda Co.	\$44,870	141%	\$78,741	167%	\$116,266	194%
Bakersfield	\$29,398	92%	\$39,492	84%	\$41,051	69%
Chico	\$23,661	74%	\$47,447	101%	\$60,530	101%
Contra Costa Co.	\$69,885	219%	\$83,172	177%	\$92,801	155%
Fresno	\$22,530	71%	\$34,082	72%	\$54,820	91%
Los Angeles	\$29,970	94%	\$43,025	91%	\$47,000	78%
Modesto	\$40,215	126%	\$54,979	117%	\$61,676	103%
Napa	\$22,658	71%	\$67,239	143%	\$121,143	202%
Orange Co.	\$35,390	111%	\$38,515	82%	\$64,146	107%
Palm Springs/ Rancho Mirage	\$51,562	162%	\$57,202	122%	\$83,168	139%
Redding	\$31,252	98%	\$37,476	80%	\$48,222	80%
Sacramento	\$39,769	125%	\$54,147	115%	\$72,206	121%
Salinas	\$32,891	103%	\$49,217	105%	\$110,798	185%
San Bernardino	\$25,199	79%	\$50,421	107%	\$71,088	119%
San Diego	\$29,686	93%	\$43,613	93%	\$55,588	93%
San Francisco	\$42,034	132%	\$59,594	127%	\$54,000	90%
San Jose	\$34,492	108%	\$65,154	138%	\$63,339	106%
San Luis Obispo	\$49,919	157%	\$56,147	119%	\$49,290	82%
San Mateo Co.	\$53,711	168%	\$62,574	133%	\$98,468	164%
Santa Barbara	\$35,825	112%	\$34,188	73%	\$53,908	90%
Santa Cruz	\$39,596	124%	\$42,272	90%	\$69,311	116%
Santa Rosa	\$40,417	127%	\$46,423	99%	N/A	N/A
Stockton	\$28,545	90%	\$52,295	111%	\$68,149	114%
Ventura	\$40,907	128%	\$58,292	124%	\$57,510	96%

Appendix C: Median Charge for Selected Surgeries at Specific Hospitals, within Regions

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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Alameda County Region

Alameda Co. Medical Center— Highland Campus	Oakland	\$23,809	76	\$59,824	28
Alta Bates Summit Medical Center— Alta Bates Campus	Berkeley	\$0	0	\$111,964	126
Eden Medical Center	Castro Valley	\$28,668	220	\$82,769	128
St. Rose Hospital	Hayward	\$26,804	166	\$120,761	83
Valleycare Medical Center	Pleasanton	\$39,727	259	\$117,191	193
Washington Hospital—Fremont	Fremont	\$49,354	628	\$164,366	657

Bakersfield Region

Bakersfield Memorial Hospital— 34th Street	Bakersfield	\$19,616	15	\$62,423	304
Delano Regional Medical Center	Delano	\$10,409	31	\$51,479	30
Kaweah Delta Medical Center	Visalia	\$14,467	15	\$46,007	238
Kern Medical Center	Bakersfield	\$13,016	459	\$38,338	24
Mercy Hospital—Bakersfield	Bakersfield	\$22,659	287	\$80,102	143
San Joaquin Community Hospital	Bakersfield	\$18,313	98	\$90,071	345
Sierra View District Hospital	Porterville	\$19,690	654	\$112,675	82
Tulare District Hospital	Tulare	\$19,464	420	\$60,265	31

Chico Region

Enloe Medical Center— Esplanade Campus	Chico	\$17,224	179	\$57,132	192
Feather River Hospital	Paradise	\$36,297	225	\$94,351	138
Oroville Hospital	Oroville	\$20,400	74	\$65,415	95
St. Elizabeth Community Hospital	Red Bluff	\$20,689	20	\$50,685	164

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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Contra Costa County Region

Contra Costa Regional Medical Center	Martinez	\$24,015	167	\$0	0
John Muir Medical Center—Walnut Creek Campus	Walnut Creek	\$53,920	29	\$118,327	585
North Bay Medical Center	Fairfield	\$41,783	42	\$0	0
San Ramon Regional Medical Center	San Ramon	\$32,860	3	\$101,559	55
Sutter Delta Medical Center	Antioch	\$43,573	230	\$80,309	38

Fresno Region

Adventist Medical Center—Hanford	Hanford	\$18,341	5	\$42,213	18
Central Valley General Hospital	Hanford	\$14,353	231	\$0	0
Clovis Community Medical Center	Clovis	\$12,940	409	\$55,770	90
Community Regional Medical Center—Fresno	Fresno	\$13,533	364	\$48,370	194
Hanford Community Medical Center	Hanford	\$15,114	134	\$48,386	186
Madera Community Hospital	Madera	\$10,625	349	\$44,011	29
Sierra Kings District Hospital	Reedley	\$12,754	172	\$0	0
St. Agnes Medical Center	Fresno	\$14,527	25	\$62,467	360

Los Angeles Region

Antelope Valley Hospital	Lancaster	\$13,471	492	\$63,674	192
Bellflower Medical Center	Bellflower	\$32,065	165	\$0	0
Beverly Hospital	Montebello	\$8,525	324	\$37,904	78
California Hospital Medical Center—Los Angeles	Los Angeles	\$29,038	38	\$77,345	38
Cedars Sinai Medical Center	Los Angeles	\$34,945	138	\$98,663	721
Centinela Hospital Medical Center	Inglewood	\$28,176	357	\$238,071	30
Citrus Valley Medical Center—QV Campus	West Covina	\$14,759	627	\$63,963	108
Downey Regional Medical Center	Downey	\$22,888	194	\$84,908	211
Earl and Lorraine Miller Children's Hospital	Long Beach	\$30,579	420	\$0	0
East Los Angeles Doctors Hospital	Los Angeles	\$19,852	362	\$0	0
East Valley Hospital Medical Center	Glendora	\$29,068	87	\$0	0
Foothill Presbyterian Hospital—Johnston Memorial	Glendora	\$13,660	208	\$55,395	24
Garfield Medical Center	Monterey Park	\$43,209	1,110	\$151,069	14
Glendale Adventist Medical Center—Wilson Terrace	Glendale	\$24,724	401	\$98,960	245

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
Los Angeles Region (cont'd.)					
Glendale Memorial Hospital and Health Center	Glendale	\$24,557	599	\$74,122	161
Good Samaritan Hospital—Los Angeles	Los Angeles	\$21,914	1,448	\$73,152	201
Greater El Monte Community Hospital	South El Monte	\$27,506	99	\$0	0
Henry Mayo Newhall Memorial Hospital	Valencia	\$33,381	387	\$89,365	73
Hollywood Presbyterian Medical Center	Los Angeles	\$19,831	172	\$105,281	10
Huntington Memorial Hospital	Pasadena	\$22,226	747	\$88,117	385
LAC + USC Medical Center	Los Angeles	\$17,367	89	\$0	0
LAC/Harbor—UCLA Medical Center	Torrance	\$94,542	2	\$36,596	25
Long Beach Memorial Medical Center	Long Beach	\$61,406	2	\$55,778	326
Los Angeles Community Hospital	Los Angeles	\$20,859	105	\$49,632	5
Los Angeles County Olive View—UCLA Medical Center	Los Angeles	\$18,291	84	\$0	0
Los Angeles Metropolitan Medical Center	Los Angeles	\$33,227	121	\$0	0
Memorial Hospital of Gardena	Gardena	\$21,825	400	\$63,622	6
Methodist Hospital of Southern California	Arcadia	\$20,597	346	\$62,652	307
Montclair Hospital Medical Center	Montclair	\$35,283	104	\$0	0
Monterey Park Hospital	Monterey Park	\$36,696	125	\$150,976	35
Northridge Hospital Medical Center	Northridge	\$27,070	228	\$107,594	179
Pacific Alliance Medical Center, Inc.	Los Angeles	\$0	0	\$40,986	16
Pacific Hospital of Long Beach	Long Beach	\$34,921	197	\$130,929	65
Pacifica Hospital of the Valley	Sun Valley	\$13,678	215	\$42,328	7
Pomona Valley Hospital Medical Center	Pomona	\$27,851	1,067	\$103,465	175
Presbyterian Intercommunity Hospital	Whittier	\$27,564	448	\$106,312	320
Providence Holy Cross Medical Center	Mission Hills	\$35,911	305	\$97,863	211
Providence Little Company of Mary Medical Center—San Pedro	San Pedro	\$25,062	83	\$93,910	48
Providence Little Company of Mary Medical Center—Torrance	Torrance	\$27,527	493	\$82,721	192
Providence Saint Joseph Medical Center	Burbank	\$42,880	421	\$107,098	197
Providence Tarzana Medical Center	Tarzana	\$34,154	537	\$114,302	17
Ronald Reagan UCLA Medical Center	Los Angeles	\$33,709	11	\$69,920	3
San Dimas Community Hospital	San Dimas	\$28,852	109	\$118,838	115

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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Los Angeles Region (cont'd.)

San Gabriel Valley Medical Center	San Gabriel	\$32,887	326	\$122,490	45
Santa Monica—UCLA Medical Center & Orthopaedic Hospital	Santa Monica	\$0	0	\$60,181	248
St. Francis Medical Center	Lynwood	\$16,682	171	\$61,559	29
St. John's Health Center	Santa Monica	\$25,856	72	\$46,783	804
St. Mary Medical Center	Long Beach	\$26,847	628	\$80,377	47
Torrance Memorial Medical Center	Torrance	\$0	0	\$66,795	421
Valley Presbyterian Hospital	Van Nuys	\$23,615	1,633	\$65,890	379
Verdugo Hills Hospital	Glendale	\$16,866	324	\$56,522	143
West Hills Hospital and Medical Center	Canoga Park	\$33,334	335	\$102,492	112
White Memorial Medical Center	Los Angeles	\$28,804	232	\$95,365	135
Whittier Hospital Medical Center	Whittier	\$31,784	259	\$112,135	19

Medford Region

Fairchild Medical Center	Yreka	\$16,848	29	\$71,504	32
Sutter Coast Hospital	Crescent City	\$20,087	50	\$58,191	11

Modesto Region

Doctors Medical Center	Modesto	\$45,874	347	\$98,854	110
Emanuel Medical Center, Inc	Turlock	\$26,428	190	\$92,804	98
Memorial Hospital Los Banos	Los Banos	\$25,168	78	\$71,813	6
Memorial Hospital Medical Center—Modesto	Modesto	\$26,359	459	\$90,477	328
Mercy Medical Center—Merced	Merced	\$32,129	775	\$65,553	121
Oak Valley District Hospital	Oakdale	\$22,591	80	\$74,876	9
Sonora Regional Medical Center—Greenley	Sonora	\$35,616	132	\$99,775	138

Napa Region

Mendocino Coast District Hospital	Fort Bragg	\$12,416	14	\$53,217	58
St. Helena Hospital	St. Helena	\$0	0	\$103,385	651
St. Helena Hospital—Clearlake	Clearlake	\$34,672	31	\$0	0
Sutter Lakeside Hospital	Lakeport	\$19,919	54	\$57,592	84
Ukiah Valley Medical Center	Ukiah	\$21,401	110	\$89,380	37

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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Orange County Region

AHMC Anaheim Regional Medical Center	Anaheim	\$26,426	153	\$96,072	105
Coastal Communities Hospital	Santa Ana	\$19,750	270	\$56,979	14
Corona Regional Medical Center—Main	Corona	\$15,277	24	\$64,516	60
Fountain Valley Regional Hospital and Medical Center—Euclid	Fountain Valley	\$21,693	247	\$90,665	189
Garden Grove Hospital and Medical Center	Garden Grove	\$21,987	415	\$96,106	39
Hoag Memorial Hospital Presbyterian	Newport Beach	\$12,239	2,141	\$53,373	855
La Palma Intercommunity Hospital	La Palma	\$19,678	13	\$0	0
Los Alamitos Medical Center	Los Alamitos	\$0	0	\$94,356	92
Mission Hospital Regional Medical Center	Mission Viejo	\$16,831	373	\$67,226	197
Orange Coast Memorial Medical Center	Fountain Valley	\$25,177	299	\$54,924	243
Saddleback Memorial Medical Center	Laguna Hills	\$30,955	780	\$54,835	383
St. Joseph Hospital—Orange	Orange	\$13,122	1,784	\$65,128	687
St. Jude Medical Center	Fullerton	\$15,034	12	\$67,782	384
University of California Irvine Medical Center	Orange	\$51,739	47	\$124,793	9
Western Medical Center—Santa Ana	Santa Ana	\$26,796	491	\$69,373	12

Palm Springs/Rancho Mirage Region

Desert Regional Medical Center	Palm Springs	\$31,811	122	\$81,282	174
Hi-Desert Medical Center	Joshua Tree	\$17,796	7	\$32,286	40

Phoenix Region

Verde Hospital	Blythe	\$20,984	26	\$0	0
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Redding Region

Mad River Community Hospital	Arcata	\$17,137	63	\$0	0
Mercy Medical Center Mt. Shasta	Mount Shasta	\$20,009	5	\$43,375	65
Mercy Medical Center—Redding	Redding	\$22,450	190	\$65,173	437
Redwood Memorial Hospital	Fortuna	\$31,334	3	\$63,166	48
St. Joseph Hospital—Eureka	Eureka	\$27,867	33	\$72,780	111

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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Reno Region

Banner Lassen Medical Center	Susanville	\$0	0	\$72,017	3
Mammoth Hospital	Mammoth Lakes	\$27,669	27	\$82,175	36
Northern Inyo Hospital	Bishop	\$28,471	30	\$65,591	19
Plumas District Hospital	Quincy	\$21,387	31	\$0	0
Tahoe Forest Hospital	Truckee	\$23,689	81	\$76,328	65

Sacramento Region

Barton Memorial Hospital	South Lake Tahoe	\$22,291	117	\$60,559	85
Colusa Regional Medical Center	Colusa	\$18,269	12	\$0	0
Lodi Memorial Hospital	Lodi	\$31,907	244	\$159,571	74
Marshall Medical Center	Placerville	\$40,167	140	\$142,722	94
Mercy General Hospital	Sacramento	\$24,692	514	\$72,860	239
Mercy Hospital—Folsom	Folsom	\$24,349	146	\$75,469	96
Mercy San Juan Hospital	Carmichael	\$25,163	390	\$80,799	298
Methodist Hospital of Sacramento	Sacramento	\$25,942	112	\$59,453	473
Rideout Memorial Hospital	Marysville	\$17,094	304	\$48,507	23
Sierra Nevada Memorial Hospital	Grass Valley	\$21,918	50	\$72,332	163
Sutter Amador Hospital	Jackson	\$25,483	42	\$65,055	48
Sutter Auburn Faith Hospital	Auburn	\$20,262	113	\$67,921	148
Sutter General Hospital	Sacramento	\$0	0	\$86,002	575
Sutter Memorial Hospital	Sacramento	\$27,849	916	\$0	0
Sutter Roseville Medical Center	Roseville	\$17,560	374	\$76,701	274
University of California Davis Medical Center	Sacramento	\$32,124	141	\$126,292	172
Woodland Memorial Hospital	Woodland	\$21,222	84	\$75,152	108

Salinas Region

Community Hospital Monterey Peninsula	Monterey	\$21,346	216	\$70,292	248
George L Mee Memorial Hospital	King City	\$30,313	52	\$87,119	5
Natividad Medical Center	Salinas	\$41,109	191	\$127,886	26
Salinas Valley Memorial Hospital	Salinas	\$21,424	208	\$68,925	235

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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San Bernardino Region

Arrowhead Regional Medical Center	Colton	\$20,244	398	\$86,601	29
Barstow Community Hospital	Barstow	\$41,231	41	\$96,730	4
Community Hospital of San Bernardino	San Bernardino	\$25,318	12	\$63,561	4
Desert Valley Hospital	Victorville	\$45,270	145	\$96,445	42
Hemet Valley Medical Center	Hemet	\$18,030	105	\$52,807	56
Loma Linda University Medical Center	Loma Linda	\$23,495	620	\$68,578	336
Parkview Community Hospital Medical Center	Riverside	\$17,890	725	\$69,101	221
Redlands Community Hospital	Redlands	\$12,323	646	\$55,520	352
Ridgecrest Regional Hospital	Ridgecrest	\$17,058	68	\$0	0
Riverside Community Hospital	Riverside	\$24,332	703	\$72,348	220
Riverside County Regional Medical Center	Sun City	\$0	0	\$71,397	69
San Antonio Community Hospital	Upland	\$23,703	485	\$60,738	223
San Geronio Memorial Hospital	Banning	\$27,219	25	\$0	0
St. Bernardine Medical Center	San Bernardino	\$24,423	502	\$52,317	548
St. Mary Regional Medical Center	Apple Valley	\$22,536	231	\$75,107	97
Victor Valley Community Hospital	Victorville	\$17,783	190	\$61,759	76

San Diego Region

El Centro Regional Medical Center	El Centro	\$14,869	581	\$43,681	90
Fallbrook Hospital District	Fallbrook	\$26,170	116	\$87,575	144
Grossmont Hospital	La Mesa	\$24,658	983	\$61,767	279
John F Kennedy Memorial Hospital	Indio	\$32,445	287	\$92,906	254
Palomar Medical Center	Escondido	\$17,333	478	\$47,197	353
Paradise Valley Hospital	National City	\$11,536	57	\$0	0
Pioneers Memorial Hospital	Brawley	\$11,936	195	\$48,946	27
Pomerado Hospital	Poway	\$16,619	248	\$45,823	226
Scripps Memorial Hospital—Encinitas	Encinitas	\$13,194	211	\$75,791	119
Scripps Memorial Hospital—La Jolla	La Jolla	\$14,254	1,042	\$75,167	306
Scripps Mercy Hospital	San Diego	\$13,985	24	\$71,708	362
Sharp Chula Vista Medical Center	Chula Vista	\$21,895	798	\$69,837	119
Sharp Memorial Hospital	San Diego	\$24,026	2,383	\$65,668	334
Southwest Healthcare System—Murrieta	Murrieta	\$14,663	20	\$42,183	184
Tri-City Medical Center	Oceanside	\$9,860	429	\$71,426	187
University of California San Diego Medical Center	San Diego	\$16,278	304	\$46,119	139

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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San Francisco Region

California Pacific Medical Center—Pacific Campus	San Francisco	\$35,811	443	\$76,107	376
California Pacific Medical Center—St. Luke's Campus	San Francisco	\$33,796	81	\$95,494	48
Marin General Hospital	Greenbrae	\$42,317	163	\$83,188	108
San Francisco General Hospital	San Francisco	\$24,775	87	\$104,744	47
Sutter Solano Medical Center	Vallejo	\$22,981	94	\$75,283	105
UCSF Medical Center	San Francisco	\$46,678	4	\$85,019	215

San Jose Region

El Camino Hospital	Mountain View	\$33,855	1,185	\$124,448	291
Good Samaritan Hospital—San Jose	San Jose	\$28,088	1,262	\$129,535	314
Hazel Hawkins Memorial Hospital	Hollister	\$29,673	89	\$68,124	18
O'Connor Hospital—San Jose	San Jose	\$39,079	478	\$107,595	193
Regional Medical Center of San Jose	San Jose	\$31,737	33	\$165,200	56
Santa Clara Valley Medical Center	San Jose	\$21,498	467	\$76,281	28
St. Louise Regional Hospital	Gilroy	\$38,843	71	\$119,518	63

San Luis Obispo Region

French Hospital Medical Center	San Luis Obispo	\$31,376	93	\$83,732	214
Sierra Vista Regional Medical Center	San Luis Obispo	\$40,834	123	\$97,974	85
Twin Cities Community Hospital	Templeton	\$42,347	22	\$87,891	52

San Mateo County Region

Lucile Salter Packard Children's Hospital at Stanford	Palo Alto	\$49,228	603	\$0	0
Peninsula Medical Center	Burlingame	\$45,621	532	\$89,967	162
Sequoia Hospital	Redwood City	\$43,095	17	\$121,657	147
Seton Medical Center	Daly City	\$54,866	194	\$124,803	85
Stanford Hospital	Palo Alto	\$0	0	\$114,710	539

Santa Barbara Region

Lompoc Valley Medical Center	Lompoc	\$7,404	66	\$32,857	32
Marian Medical Center	Santa Maria	\$27,691	498	\$102,545	140
Santa Barbara Cottage Hospital	Santa Barbara	\$16,439	530	\$67,262	338

Hospital Name	City	Charge for Cesarean Section	Number of Cesarean Sections	Charge for Knee Replacement	Number of Knee Replacements
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Santa Cruz Region

Dominican Hospital— Santa Cruz/Soquel	Santa Cruz	\$31,963	121	\$94,481	127
Sutter Maternity and Surgery Center of Santa Cruz	Santa Cruz	\$25,578	215	\$58,604	120
Watsonville Community Hospital	Watsonville	\$37,055	119	\$108,506	73

Santa Rosa Region

Petaluma Valley Hospital	Sonoma	\$41,937	38	\$109,679	45
Sonoma Valley Hospital	Sonoma	\$22,124	37	\$64,290	25
Sutter Medical Center of Santa Rosa	Santa Rosa	\$24,382	191	\$66,594	69

Stockton Region

Dameron Hospital	Stockton	\$30,126	240	\$110,218	309
Doctors Hospital of Manteca	Manteca	\$57,374	77	\$141,893	15
San Joaquin General Hospital	French Camp	\$28,981	269	\$39,964	16
St. Joseph's Medical Center of Stockton	Stockton	\$28,561	324	\$80,594	44
Sutter Tracy Community Hospital	Tracy	\$39,812	115	\$76,557	56

Ventura Region

Community Memorial Hospital— San Buenaventura	Ventura	\$27,715	510	\$103,360	313
Los Robles Hospital and Medical Center	Thousand Oaks	\$21,564	449	\$75,972	249
Simi Valley Hospital and Health Care Services—Sycamore	Simi Valley	\$19,193	72	\$77,413	55
St. John's Pleasant Valley Hospital	Camarillo	\$32,030	29	\$93,240	79
St. John's Regional Medical Center	Oxnard	\$33,745	57	\$88,393	123
Ventura County Medical Center	Ventura	\$21,690	11	\$55,201	2

Statewide

**Median Charge
for Cesarean
Section
\$24,360**

**Median Charge
for Knee
Replacement
\$75,512**

Notes

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37 See note 23. Emphasis in the original.

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