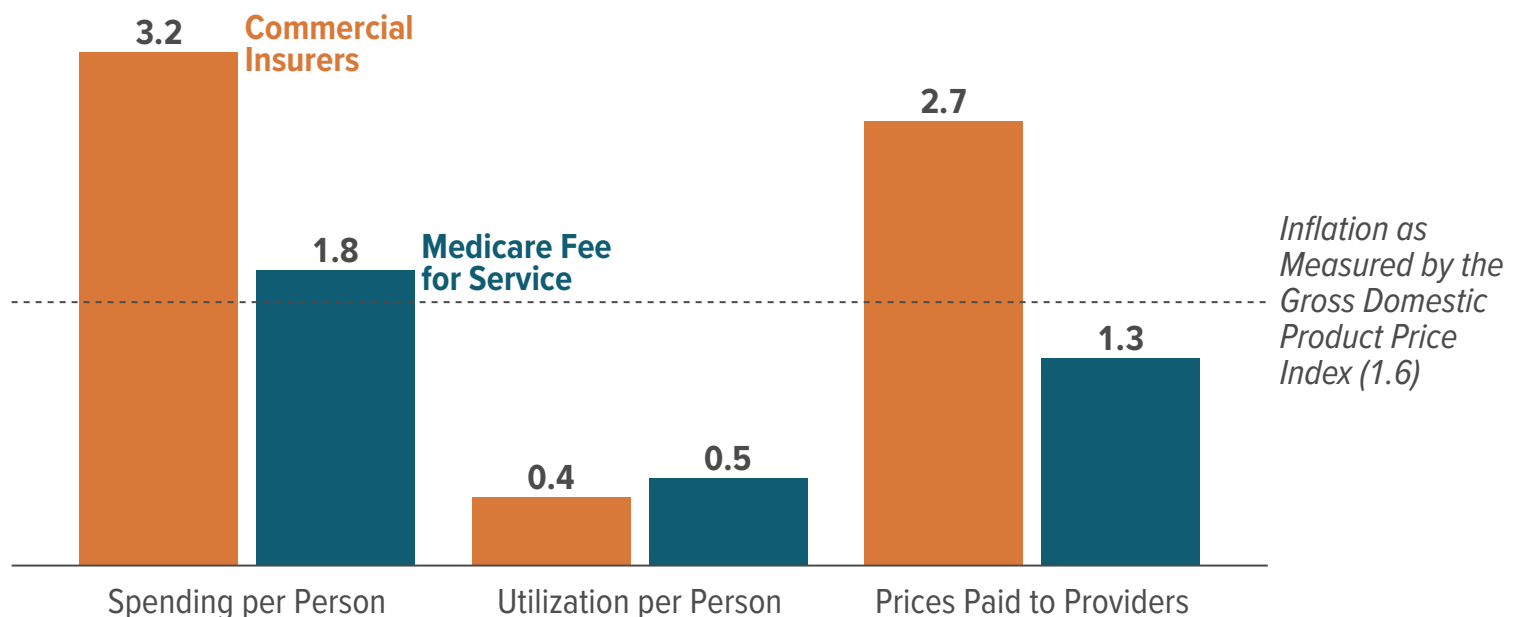




The Prices That Commercial Health Insurers and Medicare Pay for Hospitals' and Physicians' Services

Average Annual Growth Rates of Spending, Utilization, and Prices for Hospitals' and Physicians' Services, 2013 to 2018

Percent



At a Glance

Just over half of the total U.S. population receives health insurance through commercial plans that are offered by employers or purchased by individuals. In recent years, commercial health insurers' per-person spending on hospitals' and physicians' services has grown more quickly than analogous spending by the Medicare fee-for-service (FFS) program, according to analysis by the Congressional Budget Office. The main reason for the growth of per-person spending by commercial insurers—and for the difference from the growth of per-person spending by Medicare FFS—has been rapid increases in the prices that commercial insurers pay for hospitals' and physicians' services.

Prices paid by commercial insurers and Medicare FFS differ, and rise at different rates over time, in part because of differences in how the two sets of prices are determined. The prices that commercial insurers pay for services from in-network health care providers result from negotiations between the insurers and providers. Commercial insurers may try to obtain lower prices by excluding providers from their networks, but in many cases, their ability to do that is limited. The prices that Medicare FFS pays providers are set administratively through laws and regulations, and providers can either take them or leave them.

CBO's analysis and a review of the research literature found that commercial insurers pay much higher prices for hospitals' and physicians' services than Medicare FFS does. In addition, the prices that commercial insurers pay hospitals are much higher than hospitals' costs. Paying higher prices to providers can have several effects. First, it can increase insurers' spending on claims, which may lead to higher premiums, greater cost-sharing requirements for patients, reductions in the scope of benefits, or other adjustments to plans. Second, it can increase the federal government's subsidies for health care (that is, the government's spending on health care plus forgone revenues from federal tax preferences for health benefits). And third, it can slow the growth of wages.

Compared with the prices paid by Medicare FFS, the prices paid by commercial insurers also vary much more among and within geographic areas. Large variation in prices for similar services can be evidence that markets are not operating efficiently.

CBO examined potential explanations for why the prices paid by commercial insurers are higher and more variable than those paid by Medicare FFS. CBO's analysis and literature review suggest the following conclusions:

- Greater market power among providers consistently leads to prices for commercial insurers that are higher than Medicare FFS's prices and that vary more widely, both among and within areas. Hospitals and physicians' groups may have market power because they have a dominant share of the market in an area or because an insurer sees them as essential to its network of providers.
- Some of the variation in the prices that commercial insurers pay for hospitals' and physicians' services is explained by differences in the prices of inputs needed to deliver those services.
- Higher hospital quality is associated with higher prices paid by commercial insurers, although whether there is a causal link between quality and prices, and the direction of any such link, is not clear.
- The share of providers' patients who are covered by Medicare and Medicaid is not related to higher prices paid by commercial insurers. That finding suggests that providers do not raise the prices they negotiate with commercial insurers to offset lower prices paid by government programs (a concept known as cost shifting).

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Notes

To produce this report, the Congressional Budget Office adapted data and figures from a wide variety of sources. Brief citations for the figures are included in the figures' captions; full citations are listed in Appendix A.

The Medicare data used in this report reflect spending, utilization, and prices in the fee-for-service (FFS) program. They do not include data from the Medicare Advantage (MA) program, except where noted. Although MA data are not as widely available as FFS data, published research suggests that MA plans and the FFS program generally pay very similar prices for hospitals' and physicians' services. See Jared Lane K. Maeda and Lyle Nelson, "How Do the Hospital Prices Paid by Medicare Advantage Plans and Commercial Plans Compare With Medicare Fee-for-Service Prices?" *Inquiry*, vol. 55 (June 11, 2018), pp. 1–8, <https://doi.org/10.1177/0046958018779654>.

The prices paid by commercial insurers reflect the actual amounts paid to providers, not providers' billed charges ("list prices"). Depending on the data source, the prices paid by Medicare and commercial insurers may or may not include cost-sharing amounts paid by patients. In most of the data sources used in this report, spending and prices for physicians' services also reflect services provided by other health care professionals, such as nurse practitioners and physician assistants.

Chapter 1: Levels of and Trends in Spending and Prices

This chapter describes the growth of spending by commercial health insurers and Medicare’s fee-for-service (FFS) program on hospitals’ and physicians’ services in recent years. It illustrates the role of price increases in fueling the growth of spending by commercial insurers and describes how prices are determined for those insurers and for Medicare. This chapter also discusses sources of upward and downward pressure on prices, compares prices for Medicare and commercial insurers, and compares payments to hospitals with hospitals’ costs.

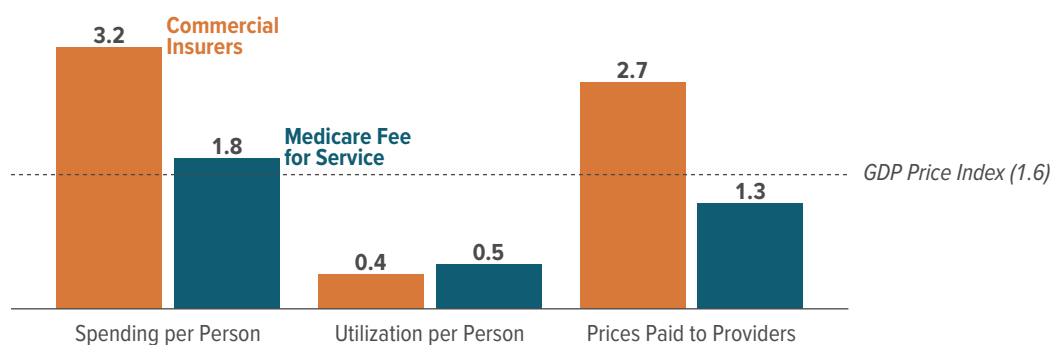
Factors Driving the Growth of Per-Person Health Care Spending

From 2013 to 2018, commercial insurers’ spending per person on inpatient and outpatient hospital care and physicians’ services grew by an average of 3.2 percent a year, the Congressional Budget Office estimates. That spending growth was driven by increases in the prices that commercial insurers paid for such services. Prices rose by an average of 2.7 percent a year—about 1 percentage point faster than average inflation during that period, as measured by the change in the gross domestic product (GDP) price index.¹ CBO estimated the increase in the prices paid by commercial insurers per unit of service (visits, procedures, and admissions) from the growth of per-person spending and the quantity of services. That quantity—“utilization” in the figure—was measured as the number of services provided, adjusted for their intensity (the amount of resources or physicians’ effort used to provide them). Utilization grew by less than 0.5 percent per year, on average, during the 2013–2018 period.

Per-person spending grew more slowly for the Medicare FFS program than for commercial insurers—by 1.8 percent a year, on average—from 2013 to 2018. That spending growth also stemmed mostly from price increases. The FFS program’s prices for hospitals’ and physicians’ services, which are updated regularly by statute and regulation, rose by an average of 1.3 percent a year. The quantity and intensity of services provided per person (which CBO estimated from the growth of per-person spending and from price updates) increased by an average of 0.5 percent a year during the 2013–2018 period.

Average Annual Growth Rates of Spending, Utilization, and Prices for Hospitals’ and Physicians’ Services, 2013 to 2018

Percent



Increases in the prices paid by commercial insurers and Medicare FFS were the major reason for growth in their per-person spending on hospitals’ and physicians’ services. Price increases were larger for commercial insurers, exceeding the rate of inflation. (Source: CBO’s analysis of data from MedPAC, the Medicare trustees, and the Health Care Cost Institute.)

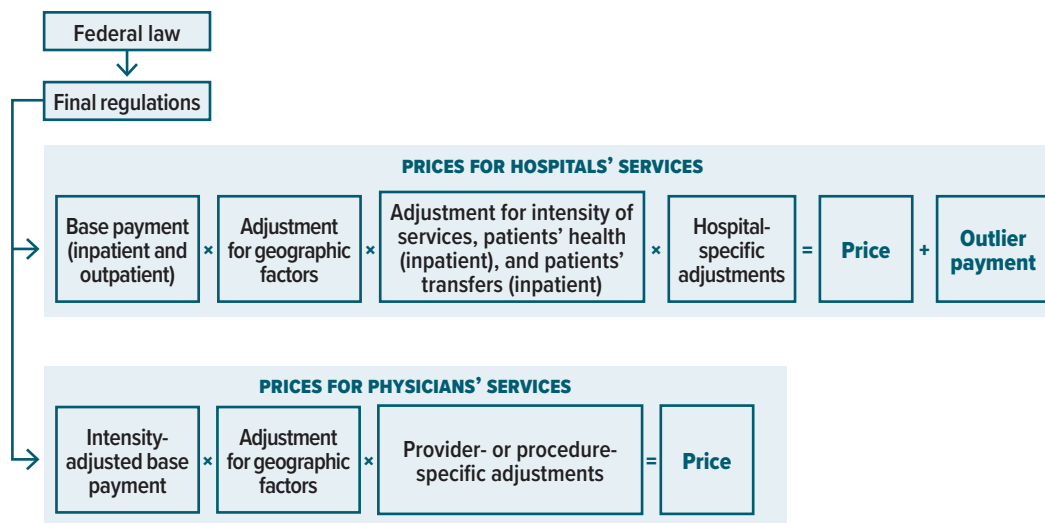
How Medicare's Prices Are Determined

The prices that the Medicare FFS program pays providers are set administratively through laws and regulations. The program uses various payment schedules for different kinds of services. For hospitals' services that are covered by the inpatient or outpatient prospective payment systems, the amount that Medicare pays hospitals is predetermined. That amount is based on a flat base-payment rate, which Medicare adjusts to account for geographic differences in input costs, for the intensity of services, and for patients' health (in the case of inpatient services). Rates are also adjusted for patients who are transferred to another hospital paid under the inpatient prospective payment system or who are discharged to a post-acute care setting (for certain diagnoses).

In addition, Medicare makes hospital-specific adjustments for inpatient services at hospitals that operate residency training programs or that treat a disproportionate share of low-income patients. Medicare also makes "outlier payments"—additional payments for cases that are extraordinarily costly—for inpatient or outpatient services. (Some hospitals, such as certain small hospitals that Medicare considers "critical access hospitals," are not paid under Medicare's prospective payment systems.)

For services covered by Medicare's physician fee schedule, Medicare pays a fixed amount per service, with adjustments for the relative amount of resources (physicians' effort, practice expenses, and liability insurance) typically used to provide a given service and for geographic differences in the costs of delivering care. Payments are further adjusted if multiple similar services are furnished by the same provider on the same day or for certain characteristics of providers. For example, Medicare reduces prices if a service is provided by a nonphysician professional, such as a nurse practitioner or social worker, or if a physician is serving as an assistant during a surgery.

Stylized Illustration of How the Medicare FFS Program Determines Prices for Hospitals' and Physicians' Services



The Medicare FFS program's prices for inpatient, outpatient, and physicians' services are set administratively by the federal government. Base-payment rates are adjusted for specifics of the provider, patient, or service.

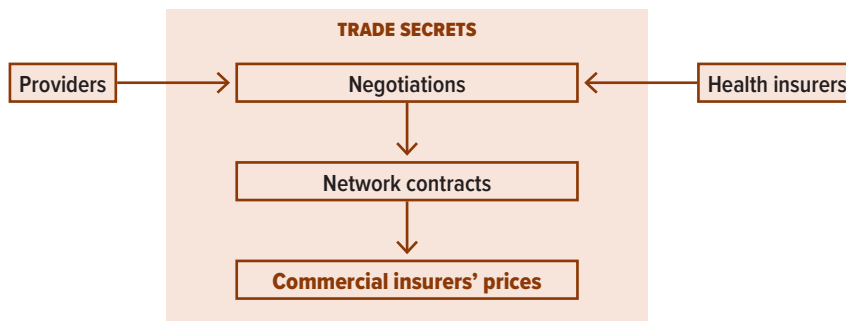
How Commercial Insurers' Prices Are Determined

The prices that commercial health insurers pay in-network providers result from negotiations between individual providers or provider groups and insurers. Providers agree to accept lower in-network prices in exchange for having insurers steer patients to them and pay claims promptly. In some instances, providers can negotiate higher prices by threatening to stay out of an insurer's network. That threat is more credible for providers that have a large market share, provide high-quality services, or provide services that cannot be planned for in advance. Such negotiations—and the contracts and prices that result from them—are often considered trade secrets by both insurers and providers.

Insurers and providers also negotiate about the basis of payments. How hospitals are paid for inpatient care can differ for each insurer and hospital. Methods include a flat rate per stay that varies by patients' primary diagnosis and other health conditions (and may be set as a percentage of the amount paid by Medicare for that service), a specified rate per day (known as a per diem), or a specific discount from a hospital's listed charges. Payments for hospitals' outpatient care are frequently based on such discounts. Hospitals often prefer discounted charges or per diems because a flat rate can leave them at financial risk for high-cost cases or long stays. According to a recent study, hospitals with greater market power were more likely to be paid on the basis of discounted charges.²

Physicians are often paid by commercial insurers using the same structure as the Medicare FFS program, but provider groups negotiate a multiplier that is applied to Medicare's prices. Some evidence suggests that physician groups with greater market power can negotiate increases to that multiplier or have more ability to deviate from the Medicare FFS payment structure.³

Stylized Illustration of How Commercial Insurers Determine Payments for Hospitals' and Physicians' Services



The prices paid by commercial insurers are determined through confidential negotiations between individual insurers and individual providers or groups of providers.

Sources of Upward and Downward Pressure on Prices

The prices that commercial insurers pay for hospitals' and physicians' services are much higher, and have grown much more rapidly in recent years, than the Medicare FFS program's prices. Those outcomes are the net result of competing factors that put upward or downward pressure on prices. For commercial insurers, the upward pressures on prices are stronger than the downward pressures. For Medicare FFS, prices do not rise as fast as commercial insurers' prices because of factors that restrain their increases.

Compared with Medicare, commercial insurers are subject to fewer constraints on the prices they pay. Private health insurance is mostly provided through employers, and private insurers negotiate prices on employers' behalf. Employers and insurers mainly try to negotiate lower prices by threatening to exclude providers from their networks. Their ability to do that is often limited, however, for several reasons: Providers' market power is much greater than employers' in many markets; enrollees in employment-based plans tend to value having access to broad networks; certain providers may be essential to a network in a given area; and large insurers or employers may have enrollees in many locations with diverse medical needs, making narrow-network plans hard to implement.⁴ Employers have been slow to adopt other methods to restrain price increases, such as reference pricing or other changes to the design of insurance benefits, because such designs are complex and could put enrollees at financial risk.⁵

In addition, the incentives for any one insurer or employer to push for lower prices are limited because the benefits of doing so may not accrue directly to them. For example, insurers have less incentive to negotiate lower prices because they can pass providers' price increases on to employers. A dominant insurer may even limit the discounts that a provider can offer to other insurers, which can raise the prices paid by those other insurers and their premiums.⁶ Negotiating lower prices may also involve trade-offs for employers. For instance, employers may be reluctant to reduce prices by adopting a plan with a narrower network or by reducing health care benefits if they use those benefits to compete for high-value employees.

Conversely, one factor putting downward pressure on the prices paid by commercial insurers is that employers may have to finance higher provider prices by raising premiums, limiting wage increases, or reducing their plans' benefits. The strength of that downward pressure is dampened, however, because premium contributions are generally excluded from federal taxes and because the link between higher provider prices and lower wages or narrower benefits is indirect, so most employees do not see it.

For Medicare FFS, price increases have been limited in part because annual updates to prices are set through statute and regulation and have been modest in recent years. Prices for hospitals' inpatient and outpatient services are updated using a measure of changes in the prices of hospitals' key inputs, minus the increase in economywide productivity.⁷ Price updates for physicians' services are set by law; those prices have risen by less than 0.5 percent a year since 2015. In addition, Medicare offers payment rates to providers on a take-it-or-leave-it basis. Providers that do not want to accept those rates can decline to participate. But because Medicare accounts for a large share of U.S. health care spending, providers may have limited financial ability to opt out of the program.

Another source of downward pressure on Medicare's prices is that, because Medicare is a federal program, proposals that would raise its spending must be financed through higher taxes or premiums, increases in federal debt, or cuts in Medicare benefits or other spending. The strength of that downward pressure is partly reduced, however, by concerns about providers' financial stability and Medicare beneficiaries' access to care.

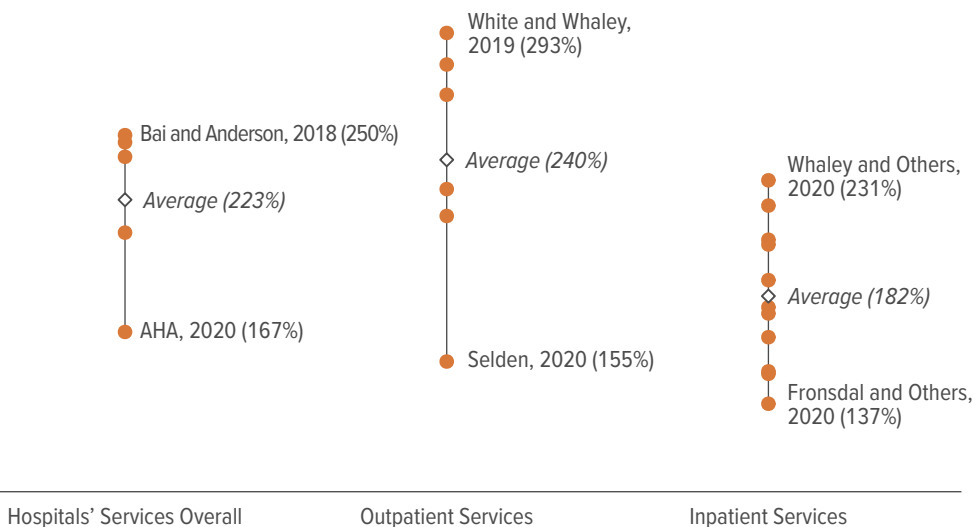
Average Prices for Hospitals' Services

CBO reviewed a range of studies published between 2010 and 2020 that compared commercial insurers' and the Medicare FFS program's prices for hospitals' services. On average, the five studies that looked at overall prices for hospitals' services suggest that the prices paid by commercial insurers were more than twice those paid by Medicare FFS.⁸ (The combined average price ratio for inpatient and outpatient services reported by those studies ranged from 167 percent of Medicare FFS's prices to 250 percent.) Those studies also generally reported substantial variation in prices for the same service in different areas, in different hospitals, and within the same hospital.

The ratio of commercial insurers' prices to Medicare FFS's prices was generally much higher for outpatient services than for inpatient services. Averaged across the 6 studies on outpatient services and 11 studies on inpatient services that CBO reviewed, commercial insurers' prices were 240 percent of Medicare FFS's prices for outpatient services and 182 percent of Medicare FFS's prices for inpatient services. The reasons for the higher price ratio for outpatient services are not fully understood. Those reasons could include contracting practices: Contracts based on discounted charges are more common for hospitals' outpatient services than for inpatient services, and that type of contract may encourage higher prices.

In its literature review, CBO included studies that compared commercial insurers' prices with Medicare FFS's prices or that reported payment-to-cost ratios both for private sources (including uninsured people) and for Medicare. CBO then calculated a simple average of the studies' results. Those studies' estimates may have differed because of differences in the locations, time periods, or types of data used in the studies. For instance, estimates can differ depending on whether a data source includes patients' total cost-sharing responsibilities or the amounts that were actually collected from patients.

Studies' Estimates of Commercial Insurers' Prices for Hospitals' Services as a Percentage of Medicare FFS's Prices



For hospitals' services as a whole, the prices paid by commercial insurers were more than double the prices paid by Medicare FFS, on average, in recent years. (Source: CBO's review of published literature; see Appendix B.)

Average Prices for Physicians' Services

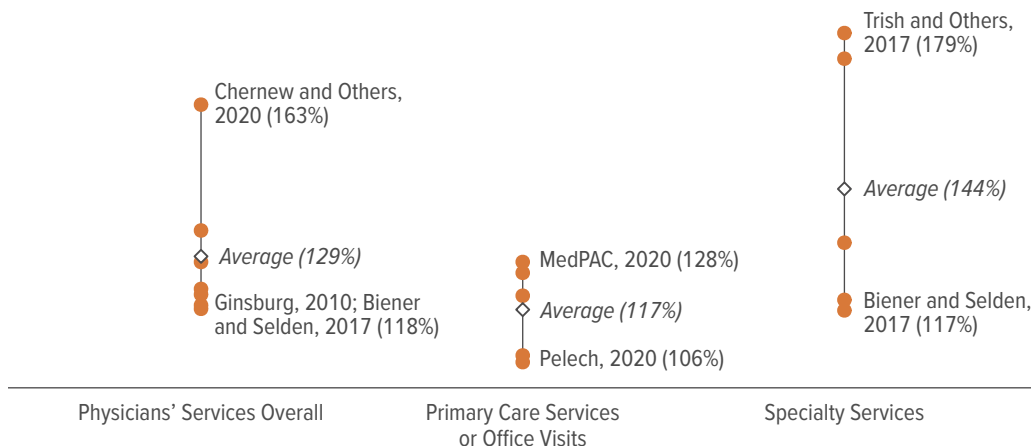
For physicians' services overall, commercial insurers paid 129 percent of Medicare FFS's prices, on average, according to studies published between 2010 and 2020. (CBO reviewed seven studies that looked at physicians' services as a whole; their average price ratio ranged from 118 percent of Medicare FFS's prices to 163 percent.) Those studies also generally reported substantial variation in prices for the same service among geographic areas, physician practices, and physician specialties.

Relative to Medicare FFS's prices, the prices paid by commercial insurers for primary care services and office visits were generally lower than the prices paid for specialty services. Among the five studies of primary care services or office visits and five studies of specialty services that CBO reviewed, commercial insurers' prices were 117 percent of Medicare FFS's prices for primary care services or office visits, on average, and 144 percent of Medicare FFS's prices for specialty services.

Higher prices for specialty services could stem from three factors: Fewer doctors provide any one of those services; many doctors who do are employed in larger, multispecialty practices; and more of those practices are affiliated with hospitals. (In this analysis, average prices for specialty services do not include emergency services or physicians' services provided only in inpatient settings.) Some of the variation in estimates among studies comes from differences in the types of physicians' services included.

In its literature review, CBO looked only at studies that compared prices paid by commercial insurers and Medicare FFS. CBO then calculated a simple average of the studies' results. For studies that reported prices separately for specific services or markets (such as employer-sponsored plans versus individually purchased plans), CBO averaged those prices, weighting them by the frequency of services or by estimates of premiums for different segments of the market from CBO's baseline budget projections. The studies' estimates of relative prices for physicians' services may differ because of differences in data sources, time periods, settings of service (such as hospitals' outpatient departments versus physicians' offices), or the specific services or markets included in the studies.

Studies' Estimates of Commercial Insurers' Prices for Physicians' Services as a Percentage of Medicare FFS's Prices



On average, the prices paid by commercial insurers for physicians' services as a whole were about one-quarter higher than the prices paid by Medicare FFS in recent years. (Source: CBO's review of published literature; see Appendix B.)



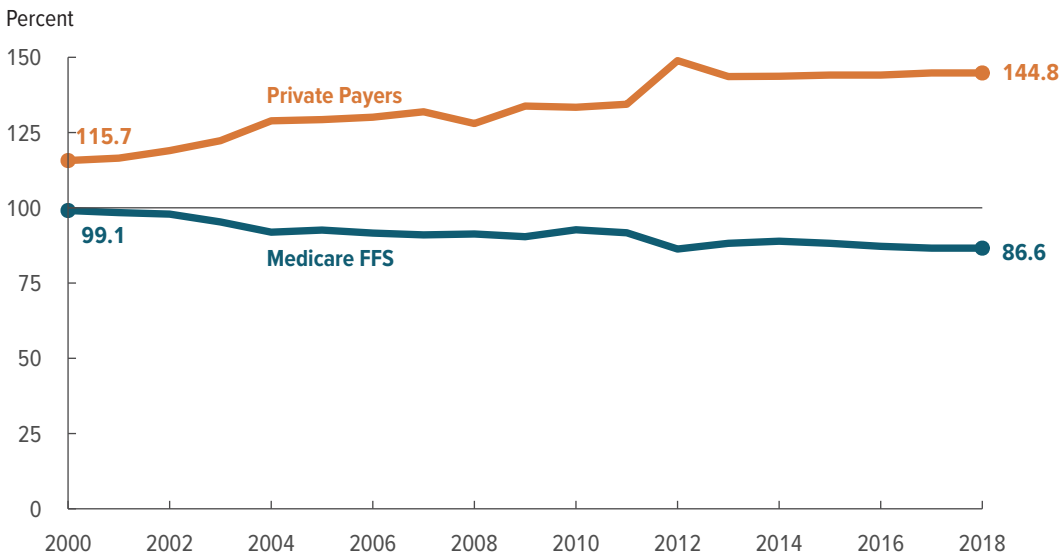
How Payments to Hospitals Compare With Hospitals' Costs

According to data from the American Hospital Association (AHA), Medicare's total payments for inpatient and outpatient services are lower than hospitals' costs to provide those services. Private payers' payments, by contrast, are much higher than hospitals' costs. Between 2000 and 2018, private payers' payments rose from 116 percent to 145 percent of hospitals' costs, whereas Medicare's payments fell from 99 percent to 87 percent of hospitals' costs. (In the AHA data, Medicare includes both the FFS program and Medicare Advantage plans, and private payers consist of all nongovernment payment sources.)

The payment-to-cost ratios in the AHA data reflect hospitals' total costs for delivering care, including staffs' salaries and the costs of buildings and equipment. Those total costs vary because of external factors, such as local wages and utilities, and internal factors related to hospitals' behavior, such as how efficiently they can manage their resources. Although payments by Medicare are lower than hospitals' costs, on average, research suggests that hospitals have some control over their cost structure and can adjust their expenses on the basis of the financial resources they have available.⁹ The Medicare Payment Advisory Commission (MedPAC) has identified a subset of hospitals as "efficient," meaning that they perform well in the areas of cost and quality. Such hospitals had positive Medicare margins from 2010 until about 2015, although they have had slightly negative Medicare margins since 2016.¹⁰

Payments for hospitals' services in the AHA data reflect all payments made for care, not just the prices negotiated by a subset of payers. Private payments, in particular, reflect a wide variety of sources—from uninsured people, who typically pay less than commercial payers, to automobile liability insurance and workers' compensation, which tend to pay more. Private payments also reflect patients' unpaid debts, which tends to reduce private payers' prices in the AHA data relative to the prices reported in other studies. (CBO does not know of any regularly updated source of data about costs or payment-to-cost ratios for physicians' services.)

Payment-to-Cost Ratios for Hospitals, 2000 to 2018



Total payments for hospitals' services, as a percentage of hospitals' costs to deliver those services, have increased for private payers and decreased for Medicare since 2000. (Source: CBO's analysis of national-level data from the AHA.)

1. CBO analyzed changes in per-person spending because they are not affected by growth in the number of people with health insurance. Rather, changes in per-person spending among people with insurance result from changes in utilization (including the amount and intensity of services), in prices, or in patients' characteristics, such as age or sex (though the effect of those types of demographic changes is thought to be limited). For information about the effects of demographic changes on Medicare spending, see Laura M. Keohane, Lucas Stewart, and Melinda B. Buntin, *The Slowdown in Medicare Spending Growth for Baby Boomers and Older Beneficiaries: Changes in Medicare Spending Levels and Growth by Age Group, 2007–2015* (Commonwealth Fund, December 27, 2019), <https://doi.org/10.26099/sy0d-xs78>; and Michael Levine and Melinda Buntin, *Why Has Growth in Spending for Fee-for-Service Medicare Slowed?* Working Paper 2013-06 (Congressional Budget Office, August 2013), www.cbo.gov/publication/44513. The data from the Health Care Cost Institute that CBO analyzed were weighted to be representative of the population with employment-based insurance plans; thus, the effects of age and sex on those plans' per-person spending should be minimal.
2. See Zack Cooper and others, "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured," *Quarterly Journal of Economics*, vol. 134, no. 1 (February 2019), pp. 51–107, <https://doi.org/10.1093/qje/qjy020>.
3. See Jeffrey Clemens, Joshua D. Gottlieb, and Tímea Laura Molnár, *The Anatomy of Physician Payments: Contracting Subject to Complexity*, Working Paper 21642 (National Bureau of Economic Research, October 2015), www.nber.org/papers/w21642.
4. For comparisons of employers' and providers' market power, see Matthew D. Eisenberg and others, "Large Self-Insured Employers Lack Power to Effectively Negotiate Hospital Prices," *American Journal of Managed Care*, vol. 27, no. 7 (July 2021), pp. 290–296, <https://doi.org/10.37765/ajmc.2021.88702>.
5. Reference pricing sets a benchmark price for certain services, and enrollees are responsible for the difference between providers' negotiated price and the reference price. See Anna D. Sinaiko, Shehnaz Alidina, and Ateev Mehrotra, "Why Aren't More Employers Implementing Reference-Based Pricing Benefit Design?" *American Journal of Managed Care*, vol. 25, no. 2 (February 2019), pp. 85–88, <https://tinyurl.com/ps7t2w93>.
6. Those limits on the prices paid by rival insurers are the result of "most-favored nation" clauses in contracts. See David Cutler and Leemore Dafny, "Designing Transparency Systems for Medical Care Prices," *New England Journal of Medicine*, vol. 364, no. 10 (March 10, 2011), pp. 894–895, <https://doi.org/10.1056/NEJMp1100540>.
7. The Medicare FFS program's adjustment for productivity reflects the change in economywide multifactor productivity in the private, nonfarm business sector. (Multifactor productivity measures the amount of goods and services produced relative to the amount of inputs used to produce those goods and services.)
8. The estimate based on data from the AHA compared commercial insurers' prices for hospitals' services with the prices paid by both the Medicare FFS program and Medicare Advantage (MA) plans. In CBO's assessment, the AHA's estimate would be nearly unchanged if it only included FFS prices because MA plans' prices for hospitals' services are roughly equal to those paid by the Medicare FFS program, on average, according to published research.
9. See Chapin White and Vivian Yaling Wu, "How Do Hospitals Cope With Sustained Slow Growth in Medicare Prices?" *Health Services Research*, vol. 49, no. 1 (February 2014), pp. 11–31, <https://doi.org/10.1111/1475-6773.12101>.
10. Medicare margins were calculated as total Medicare revenues minus total Medicare-allowable costs, divided by revenues. Of the 1,878 hospitals that met MedPAC's screening criteria over the 2015–2017 period, about 14 percent were found to be relatively efficient. See Medicare Payment Advisory Commission, "Hospital Inpatient and Outpatient Services," Chapter 3 in *Report to the Congress: Medicare Payment Policy* (March 2020), p. 92, <https://tinyurl.com/yckkxfuy>.

Chapter 2: The Implications of Price Increases

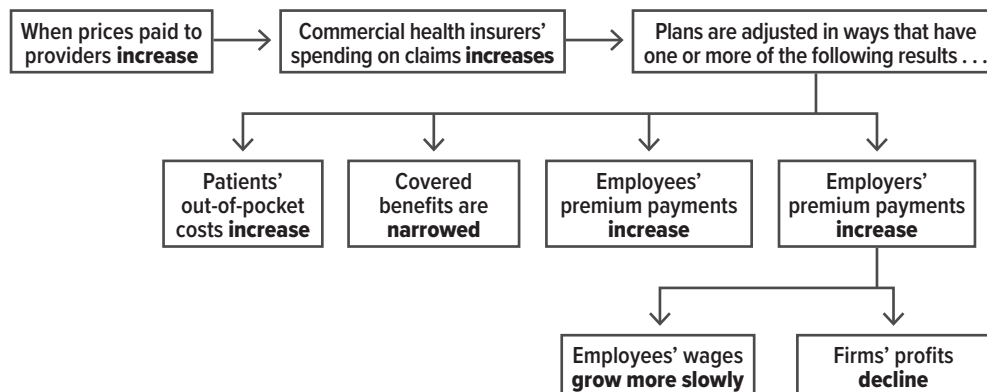
This chapter describes how the high and rising prices that commercial insurers pay for hospitals' and physicians' services affect people with private health insurance and the federal budget.

How Price Increases Affect People With Employment-Based Insurance

A rise in providers' prices would increase health insurers' spending on claims, all else being equal. Insurers could respond to such spending increases by raising premiums, increasing cost-sharing requirements for patients, reducing the scope of benefits, or making other adjustments. In general, insurers' greater spending would be passed on to employers that purchase coverage on behalf of their employees.¹ Employers' spending on health insurance represents a large part of their employees' nonwage compensation, so employers generally take actions to offset increases in health insurance spending in order to maintain their profits.

A recent study found that price increases for hospitals' services were associated with a rise in employees' out-of-pocket costs, an increase in the use of high-deductible health plans, and slower wage growth for employees.² In addition, the Congressional Budget Office analyzed data from the Kaiser Family Foundation's Employer Health Benefits Survey and information from the Bureau of Labor Statistics and found that between 2010 and 2020, average total premiums rose by 55 percent for a family plan (from \$13,770 to \$21,342) and by 48 percent for an individual plan (from \$5,049 to \$7,470), whereas median wages grew by only 32 percent over that period.

Effects of Higher Prices on Health Insurance Premiums and Benefits, Out-of-Pocket Costs, and Wages



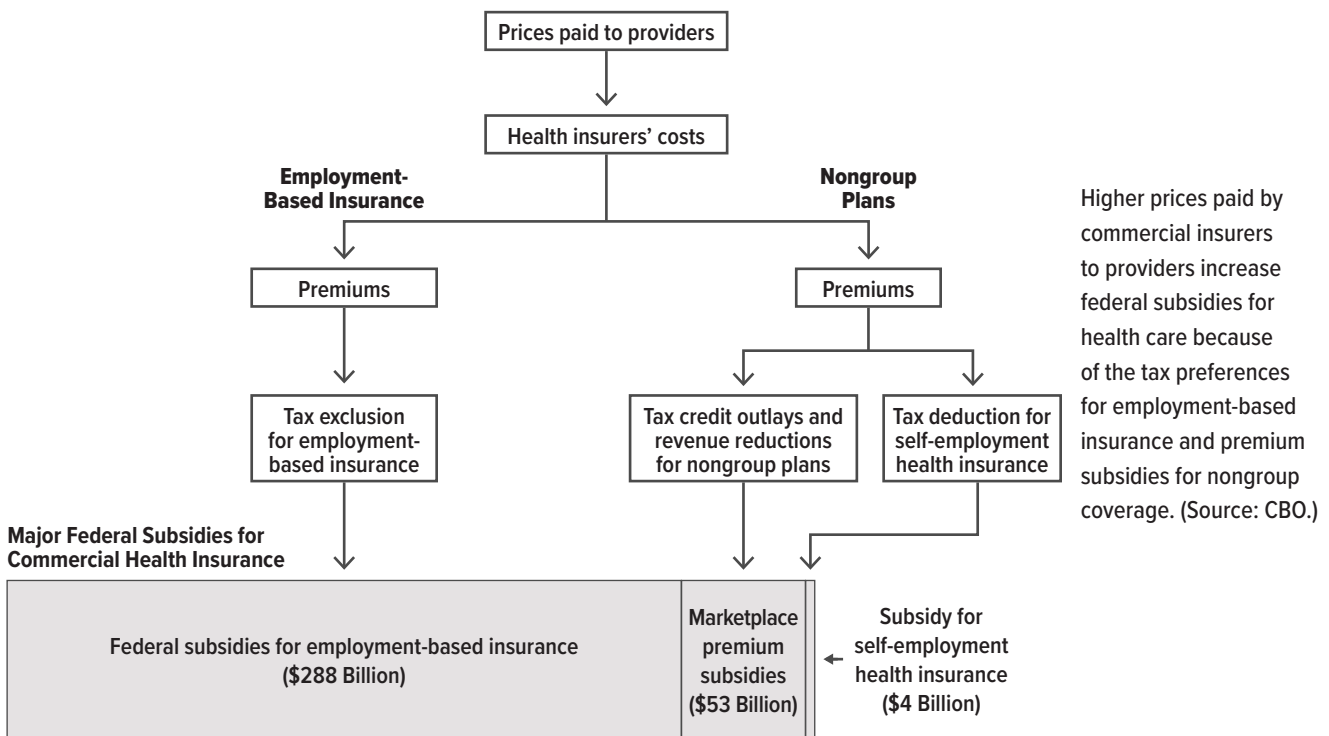
All else being equal, increases in the prices that commercial insurers pay providers are associated with increases in premiums for employers or employees, increases in out-of-pocket costs for enrollees, reductions in covered benefits, slowdowns in wage growth for employees, or declines in firms' profits.

How Price Increases Affect Federal Subsidies for Commercial Health Insurance

The federal tax code contains various provisions that subsidize commercial health insurance—both employment-based insurance and nongroup (individually purchased) plans. For example, premiums for people with employment-based insurance are generally excluded from federal income and payroll taxes. In addition, some out-of-pocket medical costs and premium payments are subsidized through the tax deduction for itemized medical expenses. The federal government also provides people who qualify with tax credits to reduce premiums for nongroup health insurance purchased through the marketplaces established under the Affordable Care Act. And the tax code allows some self-employed people who buy nongroup insurance to deduct up to 100 percent of their premiums from their income. Because of such provisions, increases in the prices that plans pay to providers affect federal subsidies for commercial health insurance.

Insurers pass higher costs on to employers through premium increases or changes to plans' benefits. Since the tax code generally lets employers and employees contribute to the cost of premiums with pretax dollars, higher premiums reduce taxable wages and increase federal subsidies for employment-based insurance. Likewise, when premiums rise for the benchmark plans offered in the federal or state health insurance marketplaces, tax credits for people who buy insurance through those marketplaces rise as well.

Relationships Between Prices for Providers and Major Federal Subsidies for Commercial Health Insurance in 2020



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1. For people with nongroup insurance, increases in premiums or reductions in benefits mainly affect the covered individuals. The degree to which people with nongroup plans are affected by premium increases depends on the size of the subsidies they receive from the federal government. Those who receive little or no subsidy bear most of the cost of higher provider prices, whereas those who receive more subsidies are largely shielded from price increases.
 2. See Daniel Arnold and Christopher M. Whaley, *Who Pays for Health Care Costs? The Effects of Health Care Prices on Wages*, Working Paper WR-A621-2 (RAND, July 2020), <https://doi.org/10.7249/WRA621-2>.

Chapter 3: Variation in Prices Among and Within Geographic Areas

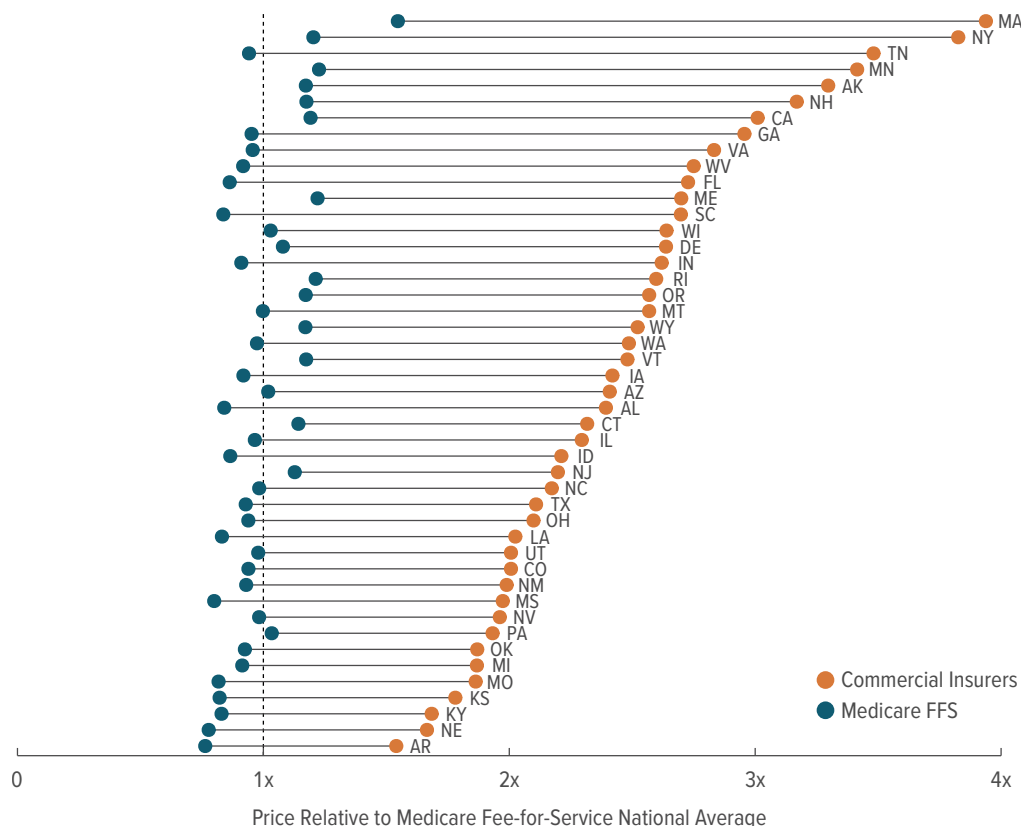
This chapter describes how prices for hospitals' and physicians' services vary among different areas, among hospitals or provider groups in the same area, and within hospitals for the same or similar services. Prices can vary for many reasons, but large variation in prices for similar services can be evidence of market inefficiencies.

Prices for Hospitals' Services: Variation Among States

The average prices that Medicare's fee-for-service program and commercial employment-based plans paid for hospitals' inpatient services in 2018—relative to the national average price paid by Medicare FFS—varied widely by state. The statewide average Medicare FFS price ranged from 24 percent lower than the program's national average price in Arkansas to 55 percent higher than the national average in Massachusetts. Prices for Medicare services differed among states because of the location- and hospital-specific adjustments Medicare makes (see Chapter 1).¹

The degree of price variation was much greater for commercial insurers. The average state-level price paid by commercial employment-based plans ranged from 54 percent higher than the national average Medicare FFS price in Arkansas to 294 percent higher than that price in Massachusetts. (The Congressional Budget Office limited this analysis to employment-based plans because price data are not as widely available for other types of commercial plans. Prices for inpatient services are allowed amounts per stay, with stays adjusted to reflect the intensity of the service.)

Average Prices for Hospitals' Inpatient Services, by State, 2018



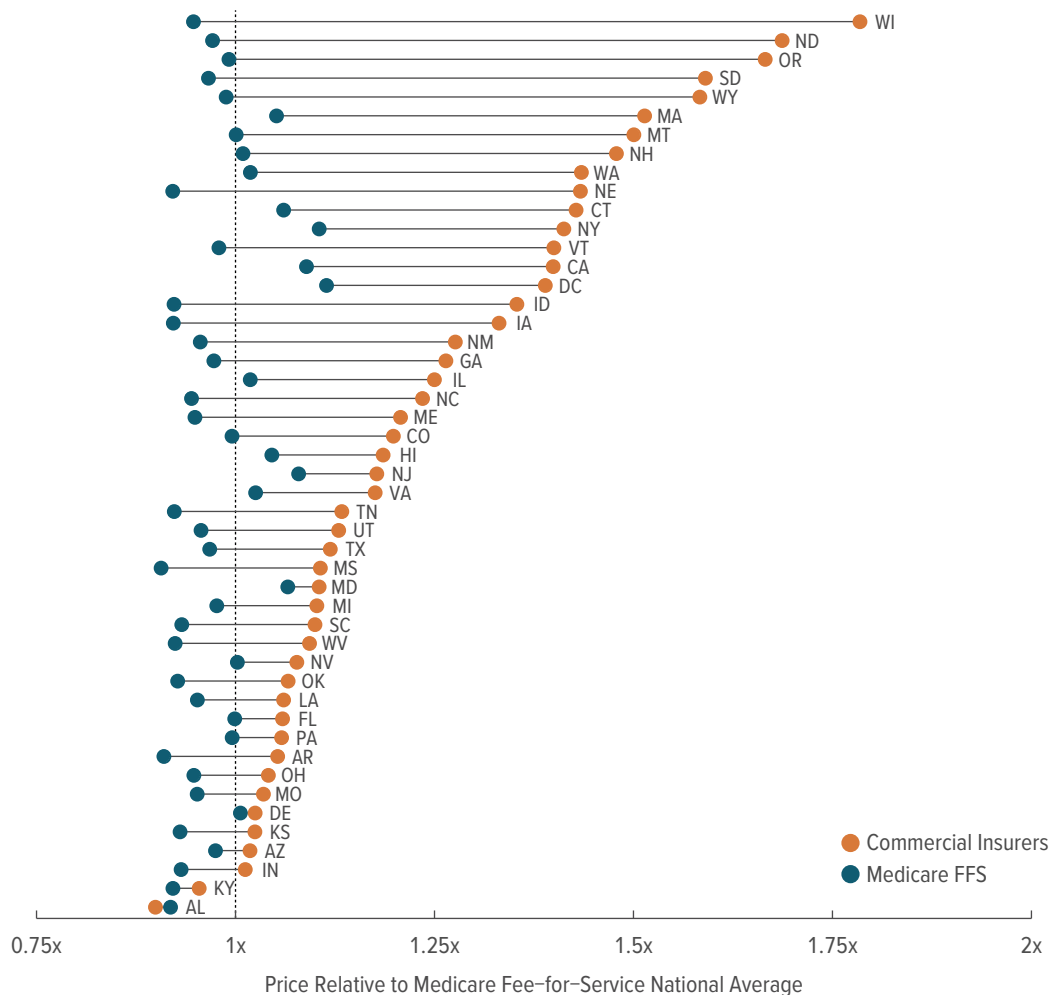
Commercial insurers' prices for hospitals' inpatient services varied substantially among states in 2018, as did the gap between commercial insurers' and Medicare's prices. Commercial insurers' prices were highest, relative to Medicare's, in Massachusetts, New York, and Tennessee. (Source: CBO's analysis of data from Whaley and others, 2020.)

Prices for Physicians' Services: Variation Among States

Relative to the national average Medicare FFS price for physicians' services, the average price paid by Medicare FFS and commercial insurers for a set of 500 common services in 2017 varied among states. (Those 500 services reflect the service codes that appeared most often in aggregate data drawn from employment-based plans in the claims database of the Health Care Cost Institute, or HCCI. They include services such as office visits and knee replacements.) The statewide average Medicare FFS price ranged from 9 percent lower than the program's national average price in Mississippi to 11 percent higher than the national average in Washington, DC. In this analysis, average Medicare prices differed primarily because of Medicare's geographic adjustments for input prices.

The magnitude of the price variation was much larger for commercial insurers than for Medicare FFS. The average state-level price paid by commercial insurers ranged from about 10 percent lower than the national average Medicare FFS price in Alabama to 78 percent higher than that price in Wisconsin. Commercial insurers' average price exceeded the average state Medicare FFS price in every state except Alabama.

Average Prices for Physicians' Services, by State, 2017



Commercial insurers' prices for physicians' services varied substantially among states in 2017. They were highest, relative to Medicare's prices, in Wisconsin, North Dakota, and Oregon. (Source: CBO's analysis of data from Johnson and others, 2020.)



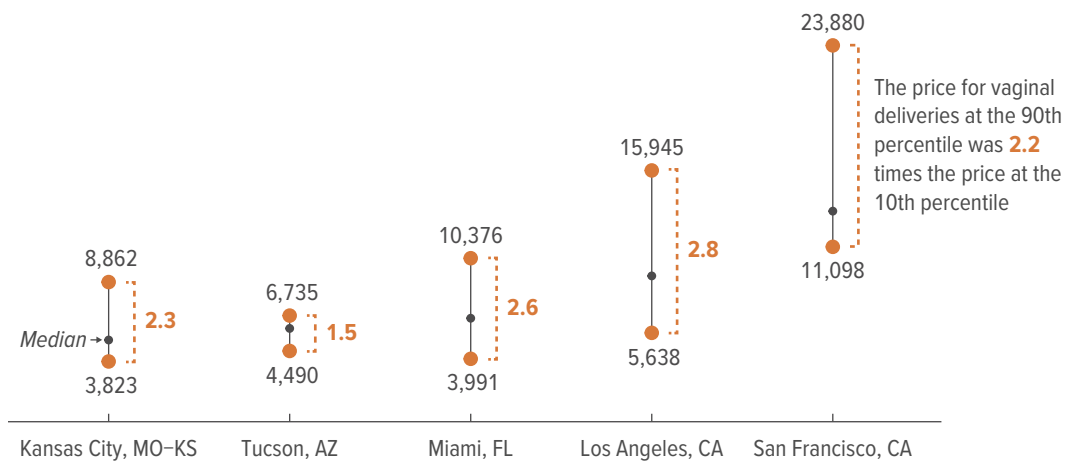
Prices for Hospitals' Services: Variation Within Metropolitan Areas

Commercial insurers' prices for hospitals' services vary widely not only by state but also within a given metropolitan statistical area, or MSA (a geographic area that generally consists of one or more cities and the surrounding population). For example, the median price that commercial insurers paid for a vaginal delivery of a baby—a well-defined and fairly standardized service—in San Francisco in 2016 was \$13,363. But the range of prices around that median in the San Francisco area was quite broad: The price at the 90th percentile of the distribution of prices (\$23,880) was more than twice as high as the price at the 10th percentile (\$11,098). In Tucson, Arizona, the median price for a vaginal delivery was much lower, \$5,920, and the range of prices was much narrower: The price at the 90th percentile (\$6,735) was only 50 percent higher than the price at the 10th percentile (\$4,490).

Price variation within an MSA reflects price differences among hospitals in that area as well as price differences within the same hospital. The latter largely reflect differences in the amounts that different commercial insurers pay for the same service at a particular hospital. Price variation within and among hospitals could also reflect differences in patients' health or in the intensity of a service. However, most studies that examine price variation either control for patients' health or focus on variation for a relatively standardized service, such as magnetic resonance imaging (MRI) scans.²

Commercial Insurers' Prices for Vaginal Deliveries at Hospitals in Selected MSAs, 2016

Dollars



Commercial insurers' prices for the same hospital service, such as a vaginal birth, varied substantially in 2016 within the same geographic area. The extent of the range of prices varied among areas. (Source: CBO's analysis of data from Kennedy and others, 2019.)

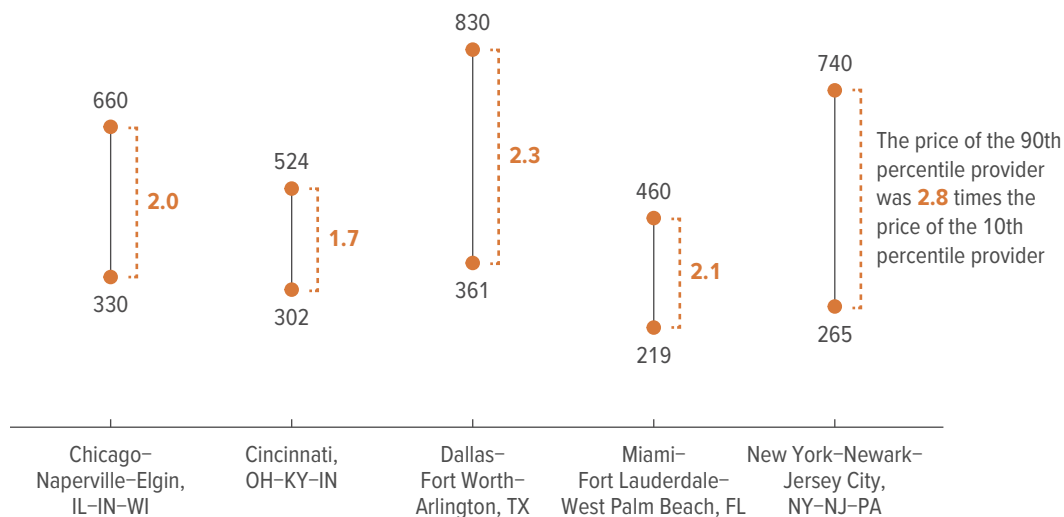
Prices for Physicians' Services: Variation Within Metropolitan Areas

Recent analyses have found that commercial insurers' prices for a given physicians' service varied widely among providers in the same metropolitan statistical area. For instance, CBO's analysis of data about a specific type of colonoscopy (Current Procedural Terminology code 45385) found a roughly twofold variation in commercial insurers' prices for that service within five MSAs in 2014.³ In the Chicago-Naperville-Elgin area of Illinois, for example, the price for that procedure for the provider at the 90th percentile of the distribution of providers by price (\$660) was twice as high as the price for the provider at the 10th percentile (\$330).

CBO found similar variation in prices within MSAs for all 20 of the physicians' services that it examined—including fairly standardized and narrowly defined services, such as echocardiograms and MRIs. For instance, in more than 85 percent of the 218 MSAs included in CBO's analysis, the price for a cranial MRI for the provider at the 90th percentile was more than 1.5 times the price for the provider at the 10th percentile.

Commercial Insurers' Prices for Colonoscopies Performed by Providers in Selected MSAs, 2014

Dollars



Commercial insurers' prices for the same physicians' service, such as a colonoscopy, varied substantially among different providers in the same geographic area in 2014. (Source: CBO's analysis of data from Pelech, 2018.)

1. Those adjustments include changes to Medicare's base-payment rates for such things as an area's wages and other input prices as well as certain hospitals' spending on graduate medical education or their share of patient days that are for low-income patients.
2. See Daria Pelech, *An Analysis of Private-Sector Prices for Physicians' Services*, Working Paper 2018-01 (Congressional Budget Office, January 2018), www.cbo.gov/publication/53441; and Zack Cooper and others, "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured," *Quarterly Journal of Economics*, vol. 134, no. 1 (February 2019), pp. 51–107, <https://doi.org/10.1093/qje/qjy020>.
3. To ease interpretation, CBO converted the ratios of commercial insurers' prices to Medicare FFS's prices from that analysis to prices in dollars by multiplying those ratios by the national median price for a given service.

Chapter 4: Factors Affecting the Prices Paid by Commercial Insurers

This chapter describes possible reasons that commercial insurers' prices for hospitals' and physicians' services are higher and more variable than the prices paid by Medicare's fee-for-service program. Potential explanations include market concentration for hospitals and physicians, the prices of various inputs for care, the quality of care, providers' administrative spending, and their possible cost shifting from public to private payers.

Market Power and Commercial Insurers' Prices

Market power is the ability of firms to raise prices above the level that would exist in a perfectly competitive market. It occurs for many reasons. Hospitals and physicians' groups may have market power because they have a dominant share of a particular market or because an insurer sees them as essential to its network of providers. Being seen as essential can give providers substantial leverage in price negotiations with insurers. Thus, prices may vary among areas because of differences in the relative market power of providers and insurers in each area.

Differences in market power can also contribute to price variation within a geographic area. Prices may vary among providers because of differences in providers' and insurers' relative bargaining power, or they may vary within a hospital or physicians' group because of differences in insurers' bargaining power. One study found that, within the same provider group, negotiated prices for physicians' office visits were 21 percent lower, on average, for insurers with a market share of at least 15 percent than for insurers with a market share of 5 percent or less.¹

Market concentration (the extent to which only a few firms provide a large share of the goods or services in a market) can confer market power to firms with larger market shares. Evidence suggests that concentration in the markets for hospitals' and physicians' services has been growing and that, in many areas, those markets are now moderately or highly concentrated. The percentage of physicians' practices that are owned by or affiliated with hospitals has also increased. Such vertical integration can increase concentration in the market for physicians' services (by consolidating physicians into larger groups) and can increase hospitals' market power (by steering physicians' referrals to the acquiring hospital). In addition, evidence suggests that a growing number of health care providers have been acquired by private equity firms, which may leverage providers' market power to raise prices.

Most of the studies that the Congressional Budget Office reviewed (see Appendix C) suggest that consolidation increases prices in the markets for both hospitals and physicians, as does vertical integration among hospitals and physicians' groups. There is also a well-documented correlation, across many areas, between concentration in the provider market and prices, suggesting that some of the difference in prices in different areas is attributable to providers' market power.² Most studies focus on market share as a measure of providers' market power, but there is growing evidence that providers can also derive market power from providing specialized services, high-quality services, or services that a patient cannot shop for in advance.³

Concentration in Hospital Markets and Commercial Insurers' Prices

CBO analyzed data from the Health Care Cost Institute for hospital markets in 42 states and found that the percentage of metropolitan statistical areas with hospital markets that were considered highly or very highly concentrated rose between 2010 and 2017. In 2010, 63 percent of the 124 MSAs in the HCCI data had highly or very highly concentrated hospital markets. By 2017, that share had risen to 70 percent. (The MSAs that HCCI included in that sample were selected on the basis of population, insurance coverage, and number of hospitals.) Over that period, the average Herfindahl-Hirschman index (HHI) for the MSAs in that sample rose from 3,032, already in the “highly concentrated” range, to 3,338. (The HHI is a common measure of market concentration; it indicates the extent to which a market is dominated by one or a few participants.)

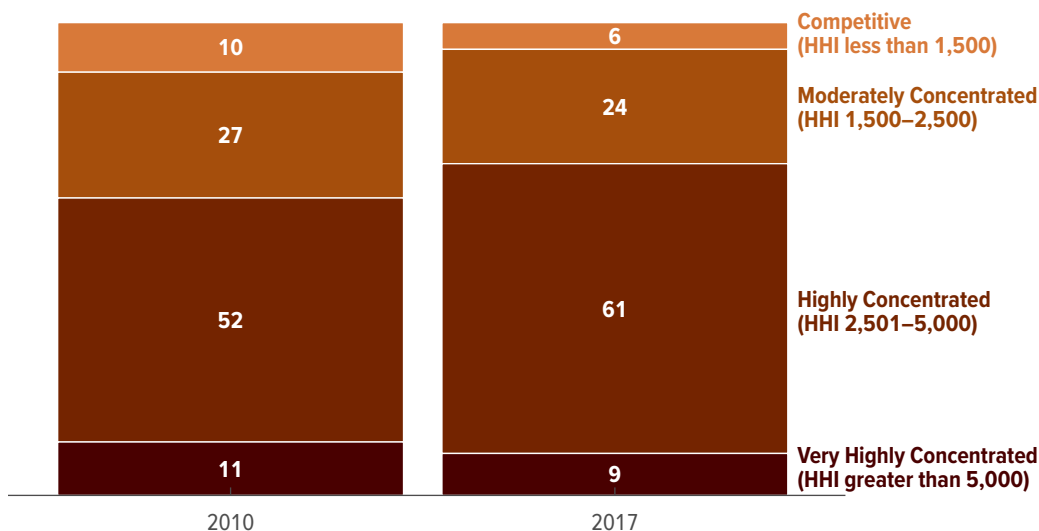
Greater market concentration has been linked to less price competition. CBO reviewed 13 studies published since 2010 on the relationship between hospital market concentration and prices for hospitals' services (see Table C-1 in Appendix C). Of the four studies that tested for correlations, three found a positive association between market concentration and hospitals' prices. Mergers between hospitals have also increased concentration and typically led to higher prices. Of the five studies that examined hospital mergers within a market, three concluded that prices rose for insurers. (The other two studies showed price increases for some insurers and decreases for others.) There is also some recent evidence that mergers of hospitals in different markets may result in price increases.

CBO focused on the research literature since 2010 because high-quality data on prices have become more readily available since then. But a review of older studies also found a positive association between market concentration and prices for hospitals' services.⁴ It also found some evidence that growth in those prices is related to market concentration and that hospital mergers in concentrated markets typically result in much higher prices.

CBO also reviewed studies on the relationship between mergers and efficiency gains for hospitals.⁵ The evidence about the relationship between mergers and hospitals' costs is inconsistent; some studies found that acquired hospitals have lower costs after their merger. But lower costs do not necessarily translate into lower prices for hospitals' services if hospitals do not pass those efficiency gains on to consumers.

Hospital Market Concentration, 2010 and 2017

Percentage of MSAs



The percentage of metropolitan areas with hospital markets that were highly or very highly concentrated (as measured by a Herfindahl-Hirschman Index of more than 2,500) increased from 2010 to 2017. (Source: CBO's analysis of data from HCCI.)

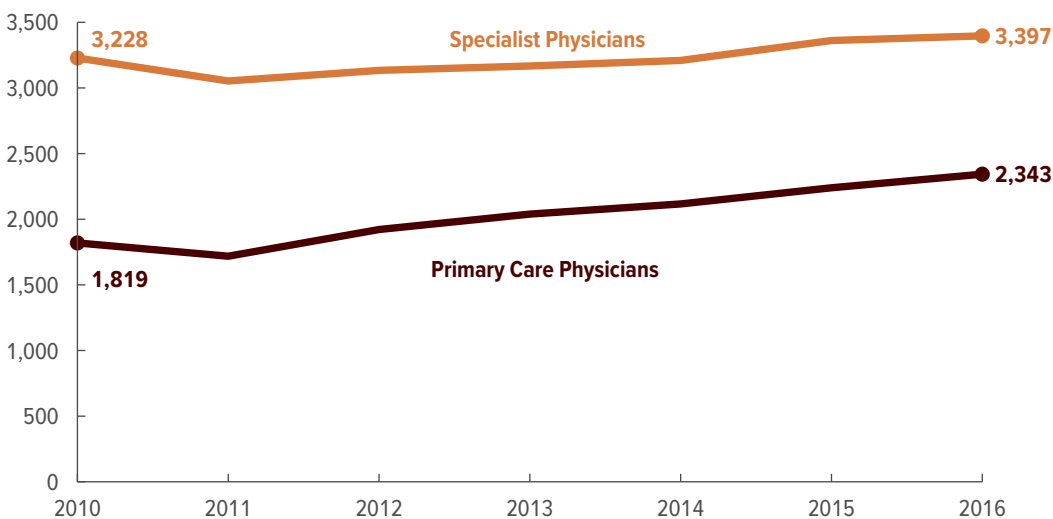


Concentration in Physician Markets and Commercial Insurers' Prices

Market concentration for physicians increased between 2010 and 2016, as measured by the average of the Herfindahl-Hirschman indexes for more than 370 metropolitan statistical areas. During that period, the average HHI rose by nearly 29 percent for primary care physicians and by about 5 percent for four common types of specialist physicians (cardiologists, oncologists or hematologists, radiologists, and orthopedists).⁶ In addition, the percentage of MSAs whose markets for primary care physicians were considered highly or very highly concentrated (an HHI of more than 2,500) increased from 20 percent in 2010 to 39 percent in 2016. Increases in market concentration were at least partly attributable to a rise in the share of physicians employed by hospitals or hospital systems.

CBO reviewed eight studies on the relationship between market concentration for physicians and prices for physicians' services; all of the studies found that prices were related to market structure in some way (see Table C-2 in Appendix C). Prices for most services were generally higher in areas with more-concentrated physician markets, or increased more in areas with higher initial levels of market concentration, or rose after mergers or acquisitions of physicians' practices. In addition, one of the studies found that an increase in the enforceability of noncompete agreements for physicians (which make it harder for physicians to find new employment after leaving a practice) led to greater concentration among physicians' groups and higher prices.

Average Herfindahl-Hirschman Indexes for Primary Care and Specialist Physicians in Metropolitan Statistical Areas, 2010 to 2016



Concentration in the markets for specialist and primary care physicians has grown since 2010. An HHI of 1,500 to 2,500 is considered moderately concentrated, and an HHI of 2,501 to 5,000 is considered highly concentrated. (Source: CBO based on Exhibit 1 in Fulton, 2017.)

Employment of Physicians by Health Care Systems

Over the 2010–2016 period, the share of primary care physicians employed by a hospital or health care system rose by 16 percentage points, from 28 percent to 44 percent.⁷ At the same time, the share of primary care physicians who were in a solo practice or were part of a medical group declined. The trend of hospitals' employing physicians may stem in part from the fact that Medicare and many commercial insurers have tended to pay higher prices when a service is billed in a hospital's outpatient department rather than in a physician's office.⁸ Physicians may also want to join larger, integrated practices to have more flexible work schedules, lower practice expenses per physician, access to expensive information technology systems, or discounts on drugs they purchase for outpatient care.

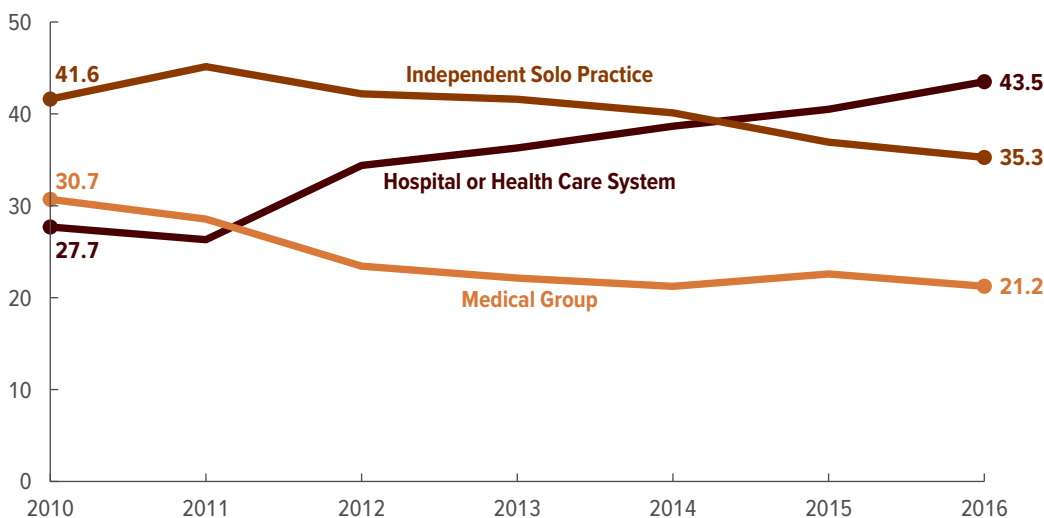
Hospitals' acquisitions of physicians' practices have been found to result in greater use of electronic health records and care management processes. Such acquisitions can also increase hospitals' market power in at least two ways. First, they increase the amount of care billed in facilities owned by hospitals and reduce the amount billed in physicians' offices. Second, they lessen the ability of rival hospitals to refer patients to the acquired physicians' practices and increase the frequency of referrals within systems.⁹ Such acquisitions can also increase market concentration among physicians by consolidating them into larger groups.

CBO reviewed seven studies about whether vertical integration of providers relates to prices for their services (see Table C-3 in Appendix C). Four of the studies looked at the relationship between hospital-physician integration and prices for physicians' services. All four found that prices increased more in areas where vertical integration increased or that prices rose after physicians' practices were acquired by hospitals. (According to one of the studies, almost half of those price increases were potentially attributable to the services' being billed as services provided in a facility and thus incurring a higher total fee.)¹⁰ Another study looked at integration between physicians of different specialties and found that prices for physicians' services rose more in areas where that type of integration increased.

Three of the studies in CBO's review examined the relationship between hospital-physician integration and prices for hospitals' services. Two found a significant positive association between increases in integration and hospitals' prices. The other study's findings were inconclusive. (Although two of those studies used similar data sources, the three differed in their time periods, measures of vertical integration, and methods.)

Share of Primary Care Physicians, by Ownership of Their Practice, 2010 to 2016

Percent



The percentage of primary care physicians working in a practice owned by a hospital or health care system rose during the 2010–2016 period. (Source: CBO based on Exhibit 4 in Fulton, 2017.)

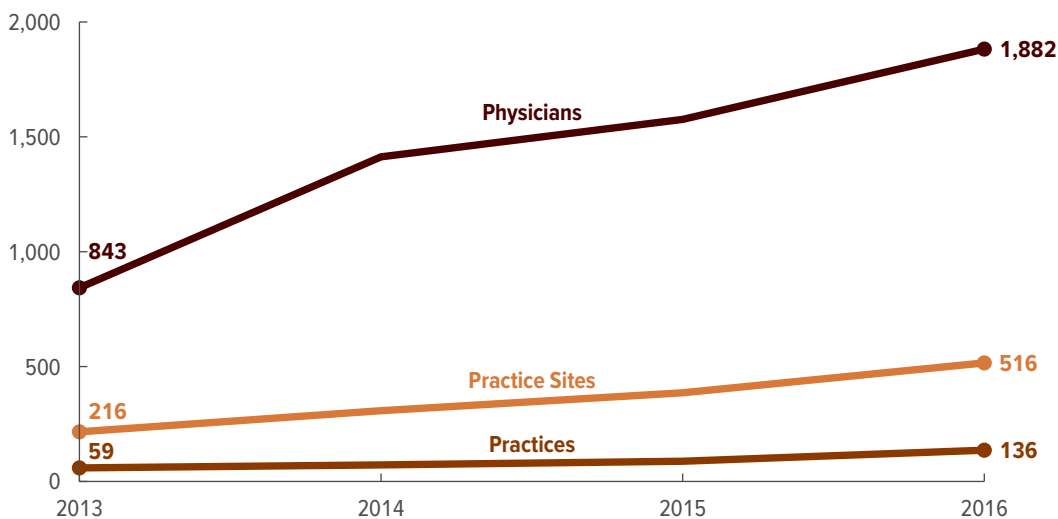
Acquisition of Health Care Providers by Private Equity Firms

In recent decades, some physicians' practices and hospitals have been bought by private equity firms (companies that purchase and take over other companies to generate short-term profits for their investors). Several recent studies have documented the volume of such acquisitions. According to one study, only about 2 percent of physicians' practices were acquired by private equity firms between 2013 and 2016, but such acquisitions more than doubled in frequency during that period.¹¹ Anesthesiologists, emergency medicine specialists, family practitioners, and dermatologists were the most common types of physicians in acquired practices. Another study found that roughly 7 percent of short-term acute care hospitals, responsible for 11 percent of total patient discharges, were acquired by private-equity-backed ventures between 2003 and 2017.¹² More than half of those acquisitions (161) occurred in 2006, when Bain Capital purchased Hospital Corporation of America. (HCA became publicly traded again in 2011.)

Evidence about the effects on prices when private equity firms acquire medical providers has been mostly anecdotal, until recently. A recent study found that after private equity firms acquired hospitals, the ratio of those hospitals' charges to costs rose by 7 percent overall, and by 16 percent in emergency rooms, relative to otherwise-similar hospitals not bought by private equity firms.¹³ (Hospitals' charges differ from the negotiated prices paid by commercial insurers. But they are often correlated with those prices because, in some contracts, negotiated prices are defined as a percentage of a hospital's charges.)

For physicians and other providers, another study found that after a private equity firm that employed emergency physicians entered into contracts with hospitals, the percentage of emergency care billed out of network at those hospitals rose by 83 percentage points, and the prices paid to those emergency physicians rose by 114 percent.¹⁴ A recent study of dermatologists found that among practices acquired by private equity firms, prices for a few common services rose by 3 percent to 5 percent relative to prices at nonacquired practices, although prices for other services were not significantly affected.¹⁵ In addition, a study found that air ambulance companies owned by private equity firms charged 68 percent more in 2017 than other air ambulance companies did.¹⁶

Number of Physicians' Practices Acquired Each Year by Private Equity Firms, 2013 to 2016



Private equity firms' acquisitions of physicians' practices grew each year between 2013 and 2016. (Source: CBO based on data from Zhu and others, 2020.)

The Relationship Between Input Prices and Prices Paid to Providers

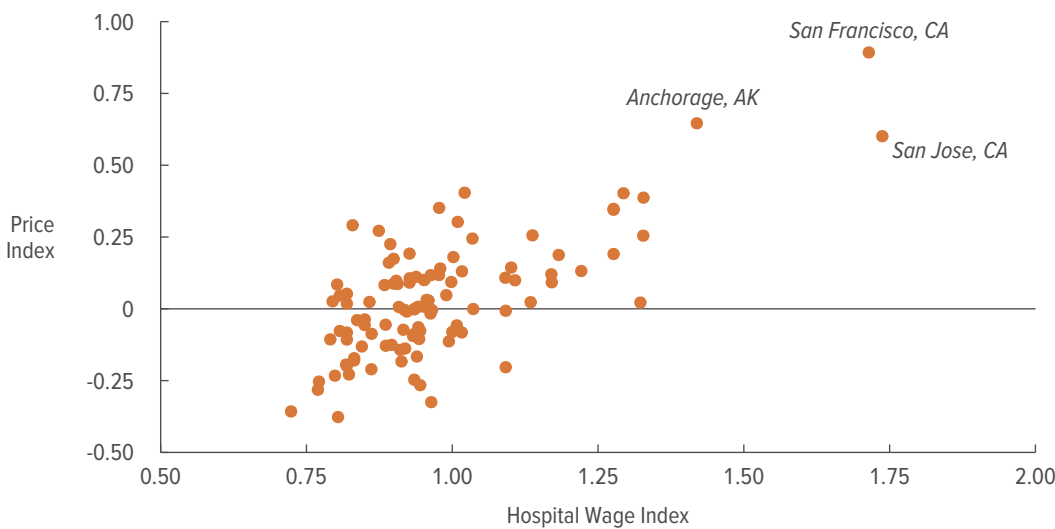
Commercial insurers' prices for hospitals' and physicians' services are correlated with various measures of the prices of inputs needed to deliver those services (such as providers' wages, rent, and malpractice insurance premiums). The strength of those relationships, however, is sensitive to the inclusion of a few areas with particularly high measures of input prices.

Hospitals' Wages and Commercial Insurers' Prices

Plotting an index of commercial insurers' prices for hospitals' inpatient services in a given area against an index of hospitals' wages in that area in 2017 shows a positive relationship between wages and prices across 105 geographic areas. Of the variation in average prices among those areas, 51 percent is explained by wages. That share falls to 33 percent if the three outlier areas (Anchorage, Alaska; and San Francisco and San Jose, California) are removed.

In this analysis, the geographic areas are a subset of the nation's core-based statistical areas (CBSAs), which consist of metropolitan statistical areas and other areas with smaller populations, known as micropolitan statistical areas. Commercial insurers' prices for inpatient services are measured by a commercial price index, which represents the average price for a basket of common services if people in each CBSA used services in the same proportions seen at the national level. That index captures the percentage deviation from the national median price paid by commercial insurers. Hospitals' wages are measured by Medicare's hospital wage index. Medicare uses that index to adjust its prices for inpatient services to account for geographic differences in the wages that hospitals face in their local labor markets. Although wages are a large part of hospitals' input costs, Medicare adjusts its prices for other characteristics of hospitals as well, such as whether they operate medical education programs or serve a disproportionate share of low-income patients.

Relationship Between Hospitals' Wages and Commercial Insurers' Prices for Inpatient Services, 2017



Variation in the prices that commercial insurers pay for hospitals' inpatient services is associated with variation in hospitals' wages. (Source: CBO's analysis of aggregate data from HCCI and the Centers for Medicare & Medicaid Services.)



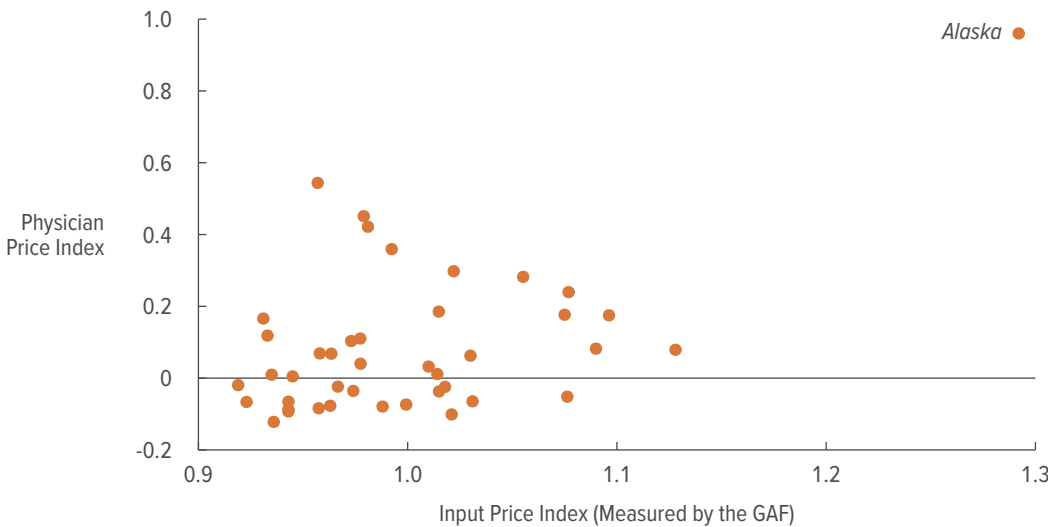
Physicians' Input Prices and Commercial Insurers' Prices

Plotting an index of commercial insurers' average prices for physicians' services in each of 42 states in 2017 against an index of average input prices for physicians' services in those states shows a positive relationship between input prices and the prices that commercial insurers pay for physicians' services. Differences in input prices explain 27 percent of the variation in commercial insurers' prices among those states (the states for which the price index that CBO used was available). However, that relationship is sensitive to the inclusion of Alaska, which has high input prices. With Alaska excluded, only 3 percent of the variation in commercial insurers' prices is explained by differences in input prices.

In this analysis, commercial insurers' prices for physicians' services are measured as the state-level average commercial price index for a basket of 500 common physicians' services in 2017. As in the earlier discussion of how prices for physicians' services vary by state, the 500 services included in that index reflect the service codes most often seen in aggregate data from HCCI's database of claims by employment-based plans.

To measure input prices for physicians' services, CBO used Medicare's geographic adjustment factor (GAF) as a proxy index for a state's average input price for such services. That adjustment factor accounts for geographic differences in the prices of three inputs necessary for delivering medical services: physicians' wages (based on geographic differences in the wages of other professionals, such as architects, pharmacists, and computer scientists), practice expenses (such as wages for administrative and clinical staff and rent), and malpractice insurance premiums. For states with multiple geographic adjustment factors, CBO created a state-level GAF by calculating a population-weighted average of the state's factors. In addition, the Centers for Medicare & Medicaid Services (CMS) makes a number of legislatively determined adjustments to the parts of the GAF that deal with physicians' wages and practice expenses, which affect the relationship between that measure and relative input prices.

Relationship Between Physicians' Input Prices and Commercial Insurers' Prices for Physicians' Services, 2017



Variation in the prices that commercial insurers pay for physicians' services is associated with variation in physicians' estimated input prices. (Source: CBO's analysis of aggregate data from Johnson and others, 2020, and CMS.)

Quality of Care and Commercial Insurers' Prices

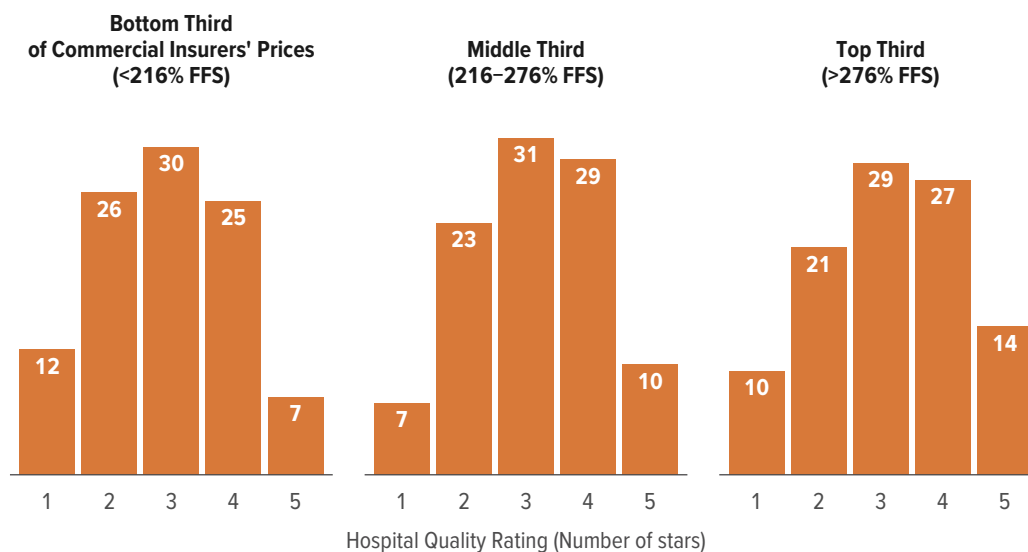
Analyzing 2016–2018 pricing data from RAND and 2018 quality information from CMS for more than 1,500 hospitals, CBO found a small positive correlation between the average prices that commercial insurers paid for hospitals' inpatient and outpatient services, relative to Medicare FFS's prices, and a summary measure of hospitals' quality. In addition, when hospitals were ranked by commercial insurers' prices as a percentage of Medicare's prices, 41 percent of hospitals in the top third of that ranking (those with commercial prices greater than 276 percent of Medicare FFS's prices) received four or five stars on CMS's overall quality rating, compared with 32 percent of hospitals in the bottom third of the price ranking (those with commercial prices less than 216 percent of Medicare FFS's prices). Even among hospitals in the bottom third, however, more than 60 percent received a quality rating of three or more stars.

It is unclear whether hospitals with higher quality can command higher prices from commercial insurers or whether hospitals with more market power, and thus higher prices, can spend more to improve their quality. In addition, correlations between prices and quality scores could both be associated with some other, unmeasured factor—such as a hospital's size or the health of its patients—that causes the observed correlations.

In the case of physicians' services, commercial insurers' prices were not found to be associated with measures of quality for those services, according to a recent research study.¹⁷

Quality Ratings for Hospitals, by Price Group, 2018

Percentage of Hospitals



Hospitals in the top third when ranked by commercial insurers' average prices for inpatient and outpatient services, relative to Medicare FFS's prices, were twice as likely to receive the highest (five-star) quality rating from CMS in 2018 as hospitals in the bottom third. (Source: CBO's analysis of hospital-level data from Whaley and others, 2020.)

Providers' Administrative Spending and Commercial Insurers' Prices

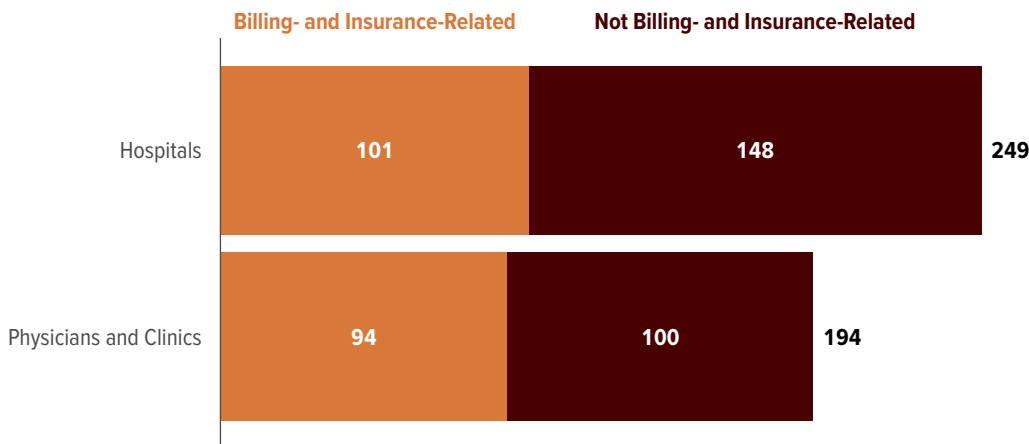
Many studies have documented the significant costs of providers' administrative activities, which might contribute to higher prices for their services. Administrative spending can be divided into spending on billing- and insurance-related (BIR) activities (such as processing claims, updating patients' medical records, and getting prior authorization from insurers) and spending on non-BIR activities (such as general overhead, marketing, and efforts to monitor and improve the quality of care).

In 2018, hospitals spent a total of \$101 billion on BIR activities and \$148 billion on non-BIR activities, while physicians and clinics spent \$94 billion on BIR activities and \$100 billion on non-BIR activities. A study of BIR spending at a major academic medical center found that providers' administrative spending per encounter with a patient ranged from \$20 for a primary care visit to \$215 for inpatient surgery.¹⁸

Despite providers' substantial administrative burden, the effect of that burden on prices for providers' services is unclear. Providers may pass the costs of their administrative activities on to commercial insurers, but the relationship between administrative spending and prices has not been documented by research studies.

Estimates of Providers' Administrative Spending, 2018

Billions of Dollars



Hospitals, physicians, and clinics together spent more than \$440 billion on administrative activities in 2018. But the effect of that spending on prices paid by commercial insurers is unclear. (Source: CBO based on Box Figure 1 from Cutler, 2020.)

Cost Shifting and Commercial Insurers' Prices

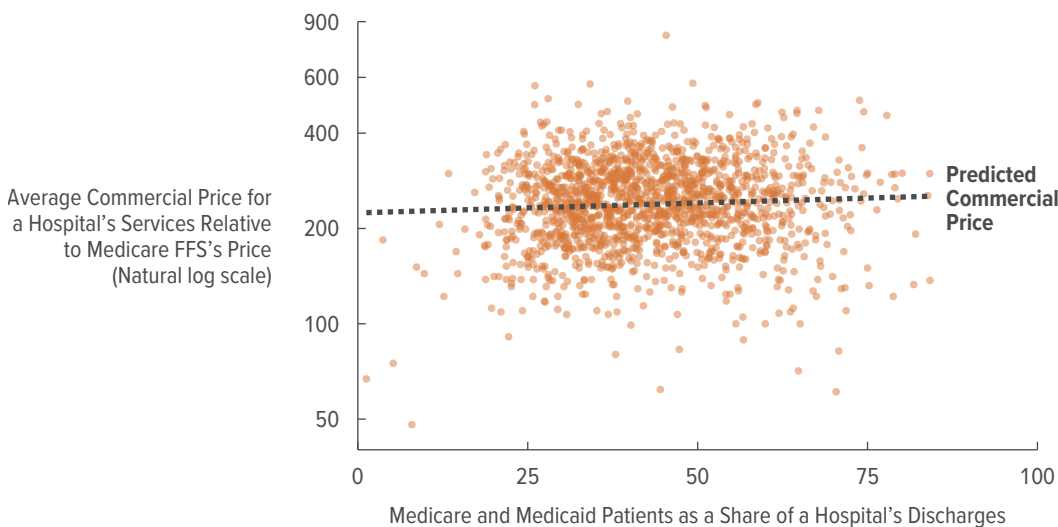
Some observers assert that hospitals' costs are inflexible and that hospitals have to negotiate higher prices with commercial insurers to offset smaller payments made by Medicare and Medicaid—a concept known as cost shifting. There is some evidence to support that assertion in specific circumstances.¹⁹ But the preponderance of the evidence suggests that hospitals do not engage in cost shifting. Moreover, the idea of cost shifting is inconsistent with economic theory: If hospitals could charge private payers more, it is unclear why they would do so only after payment cuts from public payers.

If hospitals were able to cost shift, then hospitals with larger shares of Medicare and Medicaid patients (for whom prices are relatively low) would be paid relatively high prices by commercial insurers. However, CBO's analysis of data for more than 1,500 hospitals indicates a weak cross-sectional relationship between commercial insurers' average prices for a hospital's inpatient and outpatient services during the 2016–2018 period and the percentage of Medicare and Medicaid patients among the hospital's discharges. (In this analysis, the average commercial price reflects the sum of commercial insurers' allowed amounts for inpatient and outpatient services relative to the simulated amount that Medicare would have paid for the same services.) Each 1 percentage-point increase in a hospital's share of Medicare and Medicaid discharges is associated with only a 0.1 percent increase in commercial insurers' prices relative to Medicare's prices. A hospital's share of discharges paid for by Medicare or Medicaid explains just 0.4 percent of the variation among hospitals in commercial insurers' prices.

CBO's analysis is descriptive, however, and does not control for the many other factors that affect hospitals' costs. In addition, recent evidence suggests that hospitals with larger shares of Medicare patients are more likely to close or be acquired over time, which could increase concentration in their market and thus lead to higher prices for commercial insurers.²⁰

Relationship Between a Hospital's Share of Medicare and Medicaid Patients and Commercial Insurers' Average Price for Its Services Over the 2016–2018 Period

Percent



The average price paid by commercial insurers for a hospital's inpatient and outpatient services combined was weakly associated with the hospital's share of discharged patients covered by Medicare or Medicaid. (Source: CBO's analysis of hospital-level data from Whaley and others, 2020, and White, 2018.)

1. See Eric T. Roberts, Michael E. Chernew, and J. Michael McWilliams, “Market Share Matters: Evidence of Insurer and Provider Bargaining Over Prices,” *Health Affairs*, vol. 36, no. 1 (January 2017), pp. 141–148, <https://doi.org/10.1377/hlthaff.2016.0479>. Prices can also vary because of a patient’s health or the intensity of services. However, most studies either adjust for variation in health status or focus on narrowly defined and fairly standardized services, such as MRIs.
2. A study published in 2019 found that hospital market concentration was the strongest predictor of variation in prices among hospitals, after controlling for patients’ health, measures of hospitals’ quality, the Medicare base-payment rate (which reflects some variation in hospitals’ input costs), and other characteristics of hospitals, insurers, and counties. See Zack Cooper and others, “The Price Ain’t Right? Hospital Prices and Health Spending on the Privately Insured,” *Quarterly Journal of Economics*, vol. 134, no. 1 (February 2019), pp. 51–107, <https://doi.org/10.1093/qje/qjy020>.
3. For instance, hospitals with strong reputations have been shown to command high prices in competitive markets, as do providers that insurers cannot credibly threaten to exclude from their networks, such as anesthesiologists, emergency room physicians, and ambulance services.
4. See Martin Gaynor and Robert Town, *The Impact of Hospital Consolidation—Update* (Robert Wood Johnson Foundation, June 2012), <https://tinyurl.com/n8k8kft>. That report updated an earlier study: William B. Vogt and Robert Town, *How Has Hospital Consolidation Affected the Price and Quality of Hospital Care?* Research Synthesis Report No. 9 (Robert Wood Johnson Foundation, February 2006), <https://tinyurl.com/y4xjnuue>.
5. For a review of that literature, see Hannah T. Neprash and J. Michael McWilliams, “Provider Consolidation and Potential Efficiency Gains: A Review of Theory and Evidence,” *Antitrust Law Journal*, vol. 82, no. 2 (April 2019), pp. 551–578, <https://tinyurl.com/dp4zs9jp>.
6. See Brent D. Fulton, “Health Care Market Concentration Trends in the United States: Evidence and Policy Responses,” *Health Affairs*, vol. 36, no. 9 (September 2017), pp. 1530–1538, <https://doi.org/10.1377/hlthaff.2017.0556>.
7. *Ibid.*
8. See David Dranove and Christopher Ody, “Employed for Higher Pay? How Medicare Payment Rules Affect Hospital Employment of Physicians,” *American Economic Journal: Economic Policy*, vol. 11, no. 4 (November 2019), pp. 249–271, <https://tinyurl.com/22j9r2y9>; and Brady Post and others, “Hospital-Physician Integration and Medicare’s Site-Based Outpatient Payments,” *Health Services Research*, vol. 56, no. 1 (February 2021), pp. 7–15, <https://doi.org/10.1111/1475-6773.13613>.
9. See Brent D. Fulton, “Health Care Market Concentration Trends in the United States: Evidence and Policy Responses,” *Health Affairs*, vol. 36, no. 9 (September 2017), pp. 1530–1538, <https://doi.org/10.1377/hlthaff.2017.0556>.
10. See Cory Capps, David Dranove, and Christopher Ody, “The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending,” *Journal of Health Economics*, vol. 59 (May 2018), pp. 139–152, <https://doi.org/10.1016/j.jhealeco.2018.04.001>.
11. See Jane M. Zhu, Lynn M. Hua, and Daniel Polsky, “Private Equity Acquisitions of Physician Medical Groups Across Specialties, 2013–2016,” *JAMA*, vol. 323, no. 7 (February 18, 2020), pp. 663–665, <https://doi.org/10.1001/jama.2019.21844>.
12. See Anaeze C. Offodile II and others, “Private Equity Investments in Health Care: An Overview of Hospital and Health System Leveraged Buyouts, 2003–17,” *Health Affairs*, vol. 40, no. 5 (May 2021), pp. 719–726, <https://doi.org/10.1377/hlthaff.2020.01535>.
13. See Joseph D. Bruch, Suhas Gondi, and Zirui Song, “Changes in Hospital Income, Use, and Quality Associated With Private Equity Acquisition,” *JAMA Internal Medicine*, vol. 180, no. 11 (August 2020), pp. 1428–1435, <https://doi.org/10.1001/jamainternmed.2020.3552>.
14. See Zack Cooper, Fiona Scott Morton, and Nathan Shekita, “Surprise! Out-of-Network Billing for Emergency Care in the United States,” *Journal of Political Economy*, vol. 128, no. 9 (September 2020), pp. 3626–3677, <https://doi.org/10.1086/708819>.

15. See Robert Tyler Braun and others, "Private Equity in Dermatology: Effect on Price, Utilization, and Spending," *Health Affairs*, vol. 40, no. 5 (May 2021), pp. 727–735, <https://doi.org/10.1377/hlthaff.2020.02062>.
16. See Loren Adler, Kathleen Hannick, and Sobin Lee, "High Air Ambulance Charges Concentrated in Private Equity-Owned Carriers" (USC-Brookings Schaeffer Initiative for Health Policy, October 13, 2020), <https://tinyurl.com/yhd6vuzu>.
17. See Mark A. Unruh and others, "Physician Prices and the Cost and Quality of Care for Commercially Insured Patients," *Health Affairs*, vol. 39, no. 5 (May 2020), pp. 800–808, <https://doi.org/10.1377/hlthaff.2019.00237>.
18. See Phillip Tseng and others, "Administrative Costs Associated With Physician Billing and Insurance-Related Activities at an Academic Health Care System," *JAMA*, vol. 319, no. 7 (February 20, 2018), pp. 691–697, <https://doi.org/10.1001/jama.2017.19148>.
19. See Michael Darden, Ian McCarthy, and Eric Barrette, *Who Pays in Pay for Performance? Evidence From Hospital Pricing*, Working Paper 24304 (National Bureau of Economic Research, August 2019), www.nber.org/papers/w24304; and Austin Frakt, "Hospitals Don't Shift Costs From Medicare or Medicaid to Private Insurers," *JAMA Forum* (January 4, 2017), <https://tinyurl.com/me8b77f7>.
20. See Michael E. Chernew and others, "Public Payment Rates for Hospitals and the Potential for Consolidation-Induced Cost Shifting," *Health Affairs*, vol. 40, no. 8 (August 2021), pp. 1277–1285, <https://doi.org/10.1377/hlthaff.2021.00201>.

Appendix A: Data Sources for Figures

Chapter 1: Levels of and Trends in Spending and Prices

Average Annual Growth Rates of Spending, Utilization, and Prices for Hospitals' and Physicians' Services, 2013 to 2018

Data sources: Growth rates for Medicare's fee-for-service (FFS) program reflect the Congressional Budget Office's analysis of information from Medicare Payment Advisory Commission, *A Data Book: Health Care Spending and the Medicare Program* (July 2020), Section 1; Boards of Trustees of the Medicare Trust Funds, *2020 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds* (April 2020), <https://tinyurl.com/mb9666c8> (PDF, 2.7 MB); and other, miscellaneous sources.

Growth rates for commercial insurers reflect CBO's analysis of aggregate data from Health Care Cost Institute, *2017 Health Care Cost and Utilization Report* (February 2019), <https://tinyurl.com/82jksnn3>, and *2018 Health Care Cost and Utilization Report* (February 2020), <https://tinyurl.com/27v534jv>.

CBO estimated total spending for Medicare FFS and for commercial insurers by summing per-person spending on inpatient, outpatient, and physicians' services but excluding spending on prescription drugs, home health care, and other types of care. In this analysis, commercial insurers' spending per patient reflects the payments that insurers negotiated with providers and excludes patients' cost sharing.

Studies' Estimates of Commercial Insurers' Prices for Hospitals' Services as a Percentage of Medicare FFS's Prices

Data sources: Sources are listed in Appendix B.

Studies' Estimates of Commercial Insurers' Prices for Physicians' Services as a Percentage of Medicare FFS's Prices

Data sources: Sources are listed in Appendix B.

Payment-to-Cost Ratios for Hospitals, 2000 to 2018

Data source: CBO's analysis of aggregate national-level data from American Hospital Association, *Trendwatch Chartbook 2020*, Appendix 4, Table 4.4, <https://tinyurl.com/em4rjw9z> (PDF, 3.6 MB).

Chapter 3: Variation in Prices Among and Within Geographic Areas

Average Prices for Hospitals' Inpatient Services, by State, 2018

Data source: CBO's analysis of aggregate data from Christopher M. Whaley and others, *Nationwide Evaluation of Health Care Paid by Private Plans: Findings From Round 3 of an Employer-Led Transparency Initiative*, RR-4394-RWJ (RAND, 2020), <https://doi.org/10.7249/RR4394>.

Average Prices for Physicians' Services, by State, 2017

Data source: CBO's analysis of aggregate data from Bill Johnson and others, "Comparing Commercial and Medicare Professional Service Prices: Public Use File" (Health Care Cost Institute, August 13, 2020), <https://tinyurl.com/3xux3hzj>.

Commercial Insurers' Prices for Vaginal Deliveries at Hospitals in Selected MSAs, 2016

Data source: CBO's analysis of aggregate data from Kevin Kennedy and others, "Past the Price Index: Exploring Actual Prices Paid for Specific Services by Metro Area" (Health Care Cost Institute, April 30, 2019), <https://tinyurl.com/ap25xhr8>.

Commercial Insurers' Prices for Colonoscopies Performed by Providers in Selected MSAs, 2014

Data source: CBO's analysis of data from Daria Pelech, *An Analysis of Private-Sector Prices for Physicians' Services*, Working Paper 2018-01 (Congressional Budget Office, January 2018), www.cbo.gov/publication/53441.

Chapter 4: Factors Affecting the Prices Paid by Commercial Insurers

Hospital Market Concentration, 2010 and 2017

Data source: CBO's analysis of aggregate data from Health Care Cost Institute, "Healthy Marketplace Index" (accessed December 2020), <https://tinyurl.com/u86tw3x9>.

Average Herfindahl-Hirschman Indexes for Primary Care and Specialist Physicians in Metropolitan Statistical Areas, 2010 to 2016

Data source: CBO's reproduction of Exhibit 1 in Brent D. Fulton, "Health Care Market Concentration Trends in the United States: Evidence and Policy Responses," *Health Affairs*, vol. 36, no. 9 (September 2017), pp. 1530–1538, <https://doi.org/10.1377/hlthaff.2017.0556>.

Share of Primary Care Physicians, by Ownership of Their Practice, 2010 to 2016

Data source: CBO's reproduction of Exhibit 4 in Brent D. Fulton, "Health Care Market Concentration Trends in the United States: Evidence and Policy Responses," *Health Affairs*, vol. 36, no. 9 (September 2017), pp. 1530–1538, <https://doi.org/10.1377/hlthaff.2017.0556>.

Number of Physicians' Practices Acquired Each Year by Private Equity Firms, 2013 to 2016

Data source: CBO, using data from Jane M. Zhu, Lynn M. Hua, and Daniel Polsky, "Private Equity Acquisitions of Physician Medical Groups Across Specialties, 2013–2016," *JAMA*, vol. 323, no. 7 (February 18, 2020), pp. 663–665, <https://doi.org/10.1001/jama.2019.21844>.

Relationship Between Hospitals' Wages and Commercial Insurers' Prices for Inpatient Services, 2017

Data sources: CBO's analysis of aggregate data from Health Care Cost Institute, "Healthy Marketplace Index" (accessed December 2020), <https://tinyurl.com/u86tw3x9>; and Centers for Medicare & Medicaid Services, "FY 2017 Proposed Rule Tables 2 and 3 (Wage Index Tables) (ZIP)," Table 3 (accessed May 2021), <https://tinyurl.com/cukuexa8>.

Relationship Between Physicians' Input Prices and Commercial Insurers' Prices for Physicians' Services, 2017

Data sources: CBO's analysis of aggregate data from Bill Johnson and others, "Comparing Commercial and Medicare Professional Service Prices: Public Use File" (Health Care Cost Institute, August 13, 2020), <https://tinyurl.com/3xux3hzj>; and Centers for Medicare & Medicaid Services, "CY 2017 PFS Final Rule Addenda (ZIP)," Addendum D (accessed December 2020), <https://tinyurl.com/ywftbrad>.

Quality Ratings for Hospitals, by Price Group, 2018

Data source: CBO's analysis of aggregate data from Christopher M. Whaley and others, *Nationwide Evaluation of Health Care Paid by Private Plans: Findings From Round 3 of an Employer-Led Transparency Initiative*, RR-4394-RWJ (RAND, 2020), <https://doi.org/10.7249/RR4394>.

Estimates of Providers' Administrative Spending, 2018

Data source: CBO's reproduction of Box Figure 1 in David M. Cutler, *Reducing Administrative Costs in U.S. Health Care*, Policy Proposal 2020-09 (Hamilton Project, Brookings Institution, March 2020), <https://tinyurl.com/ap9mcczh>.

Relationship Between a Hospital's Share of Medicare and Medicaid Patients and Commercial Insurers' Average Price for Its Services Over the 2016–2018 Period

Data sources: CBO's analysis of aggregate data from Christopher M. Whaley and others, *Nationwide Evaluation of Health Care Paid by Private Plans: Findings From Round 3 of an Employer-Led Transparency Initiative*, RR-4394-RWJ (RAND, 2020), <https://doi.org/10.7249/RR4394>; and Chapin White, "RAND Hospital Data: Web-Based Tool," TL-303 (RAND, 2018), www.rand.org/pubs/tools/TL303.html.

Appendix B: Sources of Estimated Average Prices for Hospitals' and Physicians' Services

This appendix describes the sources that underlie the figures and discussion in Chapter 1 of average prices for hospitals' and physicians' services. For this analysis, the Congressional Budget Office reviewed studies that compared commercial insurers' prices with the Medicare fee-for-service (FFS) program's prices and studies that reported ratios of payments to providers' costs for private payers (including people without insurance) and for Medicare. (Studies that looked at data before 2005 were not included because high-quality data on prices were not commonly available at that time.) For each major type of service, CBO calculated a simple average of the studies' estimates (see Table B-1). The estimates of commercial insurers' prices as a percentage of Medicare FFS's prices may differ among the studies because of differences in the locations, data sources, and time periods they examined, as well as differences in their methods for adjusting for the health status of patients.

Table B-1.

Studies Comparing Prices Paid by Commercial Insurers and the Medicare Fee-for-Service Program for Various Hospitals' and Physicians' Services

Estimate of Commercial Insurers' Prices as a Percentage of Medicare FFS's Prices	Source	Description of Data	Data Period
Hospitals' Services Overall			
250%	Ge Bai and Gerard F. Anderson, "Market Power: Price Variation Among Commercial Insurers for Hospital Services," <i>Health Affairs</i> , vol. 37, no. 10 (October 2018), pp. 1615–1622, https://doi.org/10.1377/hlthaff.2018.0567	Financial data for hospitals from the Florida Agency for Health Care Administration	2016
247%	Christopher M. Whaley and others, <i>Nationwide Evaluation of Health Care Prices Paid by Private Plans: Findings From Round 3 of an Employer-Led Transparency Initiative</i> , RR-4394-RWJ (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RR4394.html	Data from all states except Maryland. Sources consist of self-insured employers and commercial health plans, as well as all-payer claims databases from Colorado, Connecticut, Delaware, Maine, New Hampshire, and Rhode Island.	2018
241%	Chapin White and Christopher M. Whaley, <i>Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely: Findings From an Employer-Led Transparency Initiative</i> , RR-3033-RWJ (RAND Corporation, 2019), www.rand.org/pubs/research_reports/RR3033.html	Data from 25 states. Sources consist of self-insured employers and commercial health plans, as well as all-payer claims databases from Colorado and New Hampshire.	2017
209%	Richard Kronick and Sarah Hoda Neyaz, <i>Private Insurance Payments to California Hospitals Average More Than Double Medicare Payments</i> (West Health Policy Center, May 2019), https://tinyurl.com/yb7kyxj6	Annual financial disclosure reports filed with the California Office of Statewide Health Planning and Development	2015–2016
167%	American Hospital Association, <i>Trendwatch Chartbook 2020</i> (accessed November 2020), Table 4.4, https://tinyurl.com/em4rjw9z (PDF, 3.6MB)	Payment-to-cost ratios from all 50 states	2018
223%	Simple Average for Hospitals' Services Overall		

Continued



Table B-1.

Continued

Studies Comparing Prices Paid by Commercial Insurers and the Medicare Fee-for-Service Program for Various Hospitals' and Physicians' Services

Estimate of Commercial Insurers' Prices as a Percentage of Medicare FFS's Prices	Source	Description of Data	Data Period
Hospitals' Outpatient Services			
293%	Chapin White and Christopher M. Whaley, <i>Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely: Findings From an Employer-Led Transparency Initiative</i> , RR-3033-RWJ (RAND Corporation, 2019), www.rand.org/pubs/research_reports/RR3033.html	Data from 25 states. Sources consist of self-insured employers and commercial health plans, as well as all-payer claims databases from Colorado and New Hampshire.	2017
280%	Paul B. Ginsburg, <i>Wide Variation in Hospital and Physician Payment Rates Evidence of Provider Market Power</i> , Research Brief 16 (Center for Studying Health System Change, November 2010), www.hschange.org/CONTENT/1162	Data from Aetna, Anthem Blue Cross Blue Shield, CIGNA, and UnitedHealth Group for 8 metropolitan areas in 6 states	2005
267%	Christopher M. Whaley and others, <i>Nationwide Evaluation of Health Care Prices Paid by Private Plans: Findings From Round 3 of an Employer-Led Transparency Initiative</i> , RR-4394-RWJ (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RR4394.html	Data from all states except Maryland. Sources consist of self-insured employers and commercial health plans, as well as all-payer claims databases from Colorado, Connecticut, Delaware, Maine, New Hampshire, and Rhode Island.	2018
227%	Chapin White, Amelia M. Bond, and James D. Reschovsky, <i>High and Varying Prices for Privately Insured Patients Underscore Hospital Market Power</i> , Research Brief 27 (Center for Studying Health System Change, September 2013), https://tinyurl.com/yztwasr9	Claims data for auto workers from 13 markets in 6 states	2011
216%	Michael E. Chernew, Andrew L. Hicks, and Shivana A. Shah, "Wide State-Level Variation in Commercial Health Care Prices Suggests Uneven Impact of Price Regulation," <i>Health Affairs</i> , vol. 39, no. 5 (May 2020), pp. 791–799, https://doi.org/10.1377/hlthaff.2019.01377	IBM MarketScan commercial claims data, which cover all 50 states	2017
155%	Thomas M. Selden, "Differences Between Public and Private Hospital Payment Rates Narrowed, 2012–2016," <i>Health Affairs</i> , vol. 39, no. 1 (January 2020), pp. 94–99, https://doi.org/10.1377/hlthaff.2019.00415	Data from the Medical Expenditure Panel Survey, a nationally representative survey. CBO's estimate of the price ratio for outpatient services from this study is a weighted average of the study's price ratios for outpatient and emergency services.	2016
240%	Simple Average for Hospitals' Outpatient Services		

Continued



Table B-1.

Continued

Studies Comparing Prices Paid by Commercial Insurers and the Medicare Fee-for-Service Program for Various Hospitals' and Physicians' Services

Estimate of Commercial Insurers' Prices as a Percentage of Medicare FFS's Prices	Source	Description of Data	Data Period
Hospitals' Inpatient Services			
231%	Christopher M. Whaley and others, <i>Nationwide Evaluation of Health Care Prices Paid by Private Plans: Findings From Round 3 of an Employer-Led Transparency Initiative</i> , RR-4394-RWJ (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RR4394.html	Data from all states except Maryland. Sources consist of self-insured employers and commercial health plans, as well as all-payer claims databases from Colorado, Connecticut, Delaware, Maine, New Hampshire, and Rhode Island.	2018
220%	Zack Cooper and others, "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured," <i>Quarterly Journal of Economics</i> , vol. 134, no. 1 (February 2019), pp. 51–107, https://doi.org/10.1093/qje/qjy020	The authors estimated risk-adjusted prices using Health Care Cost Institute data, which include Aetna, UnitedHealthcare, and Humana and cover all 50 states.	2011
206%	Michael E. Chernew, Andrew L. Hicks, and Shivana A. Shah, "Wide State-Level Variation in Commercial Health Care Prices Suggests Uneven Impact of Price Regulation," <i>Health Affairs</i> , vol. 39, no. 5 (May 2020), pp. 791–799, https://doi.org/10.1377/hlthaff.2019.01377	IBM MarketScan commercial claims data, which cover all 50 states	2017
204%	Chapin White and Christopher M. Whaley, <i>Prices Paid to Hospitals by Private Health Plans Are High Relative to Medicare and Vary Widely: Findings From an Employer-Led Transparency Initiative</i> , RR-3033-RWJ (RAND Corporation, 2019), www.rand.org/pubs/research_reports/RR3033.html	Data from 25 states. Sources consist of self-insured employers and commercial health plans, as well as all-payer claims databases from Colorado and New Hampshire.	2017
189%	Jared Lane K. Maeda and Lyle Nelson, "How Do the Hospital Prices Paid by Medicare Advantage Plans and Commercial Plans Compare With Medicare Fee-for-Service Prices?" <i>Inquiry</i> , vol. 55 (June 11, 2018), pp. 1–8, https://doi.org/10.1177/0046958018779654	Health Care Cost Institute data, which include Aetna, UnitedHealthcare, and Humana and cover all 50 states	2013
178%	Paul B. Ginsburg, <i>Wide Variation in Hospital and Physician Payment Rates Evidence of Provider Market Power</i> , Research Brief 16 (Center for Studying Health System Change, November 2010), www.hschange.org/CONTENT/1162	Data from Aetna, Anthem Blue Cross Blue Shield, CIGNA, and UnitedHealth Group for 8 metropolitan areas in 6 states	2005
175%	Thomas M. Selden and others, "The Growing Difference Between Public and Private Payment Rates for Inpatient Hospital Care," <i>Health Affairs</i> , vol. 34, no. 12 (December 2015), pp. 2147–2150, http://dx.doi.org/10.1377/hlthaff.2015.0706	Data from the Medical Expenditure Panel Survey, a nationally representative survey	2012
165%	Laurence C. Baker and others, "Medicare Advantage Plans Pay Hospitals Less Than Traditional Medicare Pays," <i>Health Affairs</i> , vol. 35, no. 8 (August 2016), pp. 1444–1451, https://doi.org/10.1377/hlthaff.2015.1553	Health Care Cost Institute data, which include Aetna, UnitedHealthcare, and Humana and cover all 50 states	2012
151%	Chapin White, Amelia M. Bond, and James D. Reschovsky, <i>High and Varying Prices for Privately Insured Patients Underscore Hospital Market Power</i> , Research Brief 27 (Center for Studying Health System Change, September 2013), https://tinyurl.com/yztwasr9	Claims data for auto workers from 13 markets in 6 states	2011
150%	Thomas M. Selden, "Differences Between Public and Private Hospital Payment Rates Narrowed, 2012–2016," <i>Health Affairs</i> , vol. 39, no. 1 (January 2020), pp. 94–99, https://doi.org/10.1377/hlthaff.2019.00415	Data from the Medical Expenditure Panel Survey, a nationally representative survey	2016
137%	Toren L. Fronsdal, Jay Bhattacharya, and Suzanne Tamang, <i>Variation in Health Care Prices Across Public and Private Payers</i> , Working Paper 27490 (National Bureau of Economic Research, May 2020), www.nber.org/papers/w27490	Data from the American Hospital Utilization Database; all-payer data from 474 hospitals in 38 states and estimates of risk- and hospital-adjusted prices	2009–2016
182%	Simple Average for Hospitals' Inpatient Services		

Continued



Table B-1.

Continued

Studies Comparing Prices Paid by Commercial Insurers and the Medicare Fee-for-Service Program for Various Hospitals' and Physicians' Services

Estimate of Commercial Insurers' Prices as a Percentage of Medicare FFS's Prices	Source	Description of Data	Data Period
Physicians' Services Overall			
163%	Michael E. Chernew, Andrew L. Hicks, and Shivana A. Shah, "Wide State-Level Variation in Commercial Health Care Prices Suggests Uneven Impact of Price Regulation," <i>Health Affairs</i> , vol. 39, no. 5 (May 2020), pp. 791–799, https://doi.org/10.1377/hlthaff.2019.01377	IBM MarketScan commercial claims data, which cover all 50 states	2017
135%	Medicare Payment Advisory Commission, "Physician and Other Health Professional Services," Chapter 4 in <i>Report to the Congress: Medicare Payment Policy</i> (March 2020), p. 132, https://tinyurl.com/lyckkxfuy	Claims data from a large preferred provider organization with national coverage	2018
128%	Daria M. Pelech, "Prices for Physicians' Services in Medicare Advantage and Commercial Plans," <i>Medical Care Research and Review</i> , vol. 77, no. 3 (June 2020), pp. 236–248, https://doi.org/10.1177/1077558718780604	Health Care Cost Institute data, which include Aetna, UnitedHealthcare, and Humana and cover all 50 states. To produce an overall estimate, CBO calculated a weighted average of prices for various services.	2014
122%	Bill Johnson and others, "Comparing Commercial and Medicare Professional Service Prices" (Health Care Cost Institute, August 13, 2020), https://tinyurl.com/3xux3hzj	Average prices paid by commercial insurers (including Aetna, UnitedHealthcare, and Humana) for the 500 most commonly provided physicians' services in metropolitan areas in 48 states and Washington, DC.	2017
121%	Erin Trish and others, "Physician Reimbursement in Medicare Advantage Compared With Traditional Medicare and Commercial Health Insurance," <i>JAMA Internal Medicine</i> , vol. 177, no. 9 (September 2017), pp. 1287–1295, https://doi.org/10.1001/jamainternmed.2017.2679	Using data from a large national insurer, the authors calculated average prices relative to Medicare for each service in each year from 2007 to 2012 and then averaged them across years. To produce an overall estimate, CBO calculated a weighted average of prices for professional services.	2007–2012
118%	Adam I. Biener and Thomas M. Selden, "Public and Private Payments for Physician Office Visits," <i>Health Affairs</i> , vol. 36, no. 12 (December 2017), pp. 2160–2164, https://doi.org/10.1377/hlthaff.2017.0749	Data from the Medical Expenditure Panel Survey for enrollees in employer-sponsored plans, nongroup marketplace plans, and Medicare. To produce an overall estimate, CBO calculated a weighted average of prices paid by nongroup and employer-sponsored plans (weighted by its 2020 baseline estimates of premiums in those two segments of the market).	2014–2015
118%	Paul B. Ginsburg, <i>Wide Variation in Hospital and Physician Payment Rates Evidence of Provider Market Power</i> , Research Brief 16 (Center for Studying Health System Change, November 2010), www.hschange.org/CONTENT/1162	Data from Aetna, Anthem Blue Cross Blue Shield, CIGNA, and UnitedHealth Group for 8 metropolitan areas in 6 states	2005
129%	Simple Average for Physicians' Services Overall		

Continued



Table B-1.

Continued

Studies Comparing Prices Paid by Commercial Insurers and the Medicare Fee-for-Service Program for Various Hospitals' and Physicians' Services

Estimate of Commercial Insurers' Prices as a Percentage of Medicare FFS's Prices	Source	Description of Data	Data Period
Primary Care Services or Office Visits			
128%	Medicare Payment Advisory Commission, "Physician and Other Health Professional Services," Chapter 4 in <i>Report to the Congress: Medicare Payment Policy</i> (March 2020), p. 132, https://tinyurl.com/yckkxfuy	Claims data from a large preferred provider organization with national coverage	2018
126%	Adam I. Biener and Thomas M. Selden, "Public and Private Payments for Physician Office Visits," <i>Health Affairs</i> , vol. 36, no. 12 (December 2017), pp. 2160–2164, https://doi.org/10.1377/hlthaff.2017.0749	Data from the Medical Expenditure Panel Survey for enrollees in employer-sponsored plans, nongroup marketplace plans, and Medicare. CBO calculated a weighted average of prices paid by nongroup and employer-sponsored plans (weighted by its 2020 baseline estimates of premiums in those two segments of the market).	2014–2015
120%	Bill Johnson and others, "Comparing Commercial and Medicare Professional Service Prices" (Health Care Cost Institute, August 13, 2020), https://tinyurl.com/3xux3hzj	The authors published commercial insurers' prices for primary care services in 320 metropolitan and state areas and compared them with what Medicare would have paid for the same services under the Medicare fee schedule. CBO calculated a weighted average of prices for those services (weighted by the volume of commercial insurers' claims in each core-based statistical area).	2017
107%	Erin Trish and others, "Physician Reimbursement in Medicare Advantage Compared With Traditional Medicare and Commercial Health Insurance," <i>JAMA Internal Medicine</i> , vol. 177, no. 9 (September 2017), pp. 1287–1295, https://doi.org/10.1001/jamainternmed.2017.2679	Using data from a large national insurer, the authors calculated average prices relative to Medicare for each service in each year from 2007 to 2012 and then averaged them across years.	2007–2012
106%	Daria M. Pelech, "Prices for Physicians' Services in Medicare Advantage and Commercial Plans," <i>Medical Care Research and Review</i> , vol. 77, no. 3 (June 2020), pp. 236–248, https://doi.org/10.1177/1077558718780604	Health Care Cost Institute data, which include Aetna, UnitedHealthcare, and Humana and cover all 50 states. CBO calculated a weighted average of prices for visits to physicians' offices.	2014
117%	Simple Average for Primary Care Services or Office Visits		

Continued

Table B-1.

Continued

Studies Comparing Prices Paid by Commercial Insurers and the Medicare Fee-for-Service Program for Various Hospitals' and Physicians' Services

Estimate of Commercial Insurers' Prices as a Percentage of Medicare FFS's Prices	Source	Description of Data	Data Period
Specialty (Nonemergency) Physicians' Services			
179%	Erin Trish and others, "Physician Reimbursement in Medicare Advantage Compared With Traditional Medicare and Commercial Health Insurance," <i>JAMA Internal Medicine</i> , vol. 177, no. 9 (September 2017), pp. 1287–1295, https://doi.org/10.1001/jamainternmed.2017.2679	Using data from a large national insurer, the authors calculated average prices relative to Medicare for each service in each year from 2007 to 2012 and then averaged them across years.	2007–2012
173%	Daria M. Pelech, "Prices for Physicians' Services in Medicare Advantage and Commercial Plans," <i>Medical Care Research and Review</i> , vol. 77, no. 3 (June 2020), pp. 236–248, https://doi.org/10.1177/1077558718780604	Health Care Cost Institute data, which include Aetna, UnitedHealthcare, and Humana and cover all 50 states. CBO calculated a weighted average of prices for various specialty services.	2014
132%	Jacob Wallace and Zirui Song, "Traditional Medicare Versus Private Insurance: How Spending, Volume, and Price Change at Age Sixty-Five," <i>Health Affairs</i> , vol. 35, no. 5 (May 2016), pp. 864–872, https://doi.org/10.1377/hlthaff.2015.1195	The authors used MarketScan data to estimate prices for imaging and surgical procedures using a regression-discontinuity exploiting the change in spending that occurs for people aging into Medicare.	2007–2013
120%	Bill Johnson and others, "Comparing Commercial and Medicare Professional Service Prices" (Health Care Cost Institute, August 13, 2020), https://tinyurl.com/3xux3hzj	The authors published commercial insurers' prices for non-primary-care services in 320 metropolitan and state areas and compared them with what Medicare would have paid for the same services under the Medicare fee schedule. CBO calculated a weighted average of prices for those services (weighted by the volume of commercial insurers' claims in each core-based statistical area).	2017
117%	Adam I. Biener and Thomas M. Selden, "Public and Private Payments for Physician Office Visits," <i>Health Affairs</i> , vol. 36, no. 12 (December 2017), pp. 2160–2164, https://doi.org/10.1377/hlthaff.2017.0749	Data from the Medical Expenditure Panel Survey for enrollees in employer-sponsored plans, nongroup marketplace plans, and Medicare. CBO calculated a weighted average of prices paid by nongroup and employer-sponsored plans (weighted by its 2020 baseline estimates of premiums in those two segments of the market).	2014–2015
144%	Simple Average for Specialty (Nonemergency) Physicians' Services		

Appendix C: Studies Examining the Relationship Between Market Concentration for Providers and Prices Paid by Commercial Insurers

This appendix describes the sources that underlie the discussion in Chapter 4 of how concentration in the markets for hospitals' services (see Table C-1) and physicians' services (see Table C-2) affects prices for those providers' services. This appendix also describes studies that examine the relationship between prices and vertical integration of hospitals and physicians—that is, when physicians' practices are owned by or affiliated with hospitals (see Table C-3).

Table C-1.

Studies of the Relationship Between Hospital Market Concentration and Prices

Source	Data Period	Experiment or Methods	Findings
Eric Barrette, Gautam Gowrisankaran, and Robert Town, "Countervailing Market Power and Hospital Competition," <i>Review of Economics and Statistics</i> (February 2021), https://doi.org/10.1162/rest_a_01020	2011–2014	Estimated models of consumers' willingness to pay (WTP) for hospitals' services in different metropolitan areas. Using the mean WTP of 1.26, and assuming that a typical hospital merger increases WTP by 14.4 percent, the authors examined the expected price change from hospital mergers in areas with different concentrations of insurers.	<ul style="list-style-type: none"> ■ A typical hospital merger would increase prices by 4.3 percent at the 25th percentile of insurer concentration but by only 0.97 percent at the 75th percentile of insurer concentration.
Daniel Arnold and Christopher M. Whaley, <i>Who Pays for Health Care Costs? The Effects of Health Care Prices on Wages</i> , WR-A621-2 (RAND Corporation, 2020), www.rand.org/pubs/working_papers/WRA621-2.html	2010–2016	Estimated the effects on hospitals' prices from nearly all U.S. hospital mergers that occurred during the 2010–2016 period	<ul style="list-style-type: none"> ■ Hospital mergers were associated with an increase of \$521 in the mean price of hospitals' services, which is about equal to a 2.6 percent relative increase in price.
Leemore Dafny, Kate Ho, and Robin S. Lee, "The Price Effects of Cross-Market Mergers: Theory and Evidence From the Hospital Industry," <i>RAND Journal of Economics</i> , vol. 50, no. 2 (Summer 2019), pp. 286–325, https://doi.org/10.1111/1756-2171.12270	1996–2012	Examined hospital mergers and compared price changes for three groups: hospitals that were acquired by a new system in the same state (but not in the same market), hospitals that were acquired by a new system in a different state, and hospitals that were neither acquired nor part of an acquiring system	<ul style="list-style-type: none"> ■ Hospital mergers across markets within a state resulted in price increases of about 7 percent to 10 percent. ■ Out-of-state hospital mergers did not result in price increases.
Zack Cooper and others, "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured," <i>Quarterly Journal of Economics</i> , vol. 134, no. 1 (February 2019), pp. 51–107, https://doi.org/10.1093/qje/qjy020	2007–2011	Examined the cross-sectional correlation between the structure of hospital markets and prices for hospitals' services. Also estimated the effects on hospitals' prices from nearly all U.S. hospital mergers that occurred during the 2007–2011 period by comparing the price changes at merged hospitals with those at control hospitals.	<ul style="list-style-type: none"> ■ Hospitals in monopoly markets had 12.5 percent higher prices than those in markets with at least four hospitals. ■ Prices increased by more than 6 percent at merged hospitals that were geographically close (5 miles or less) but did not increase at merged hospitals that were geographically distant (more than 25 miles apart).
Laurence C. Baker, M. Kate Bundorf, and Daniel P. Kessler, "Competition in Outpatient Procedure Markets," <i>Medical Care</i> , vol. 57, no. 1 (January 2019), pp. 36–41, https://doi.org/10.1097/MLR.0000000000001003	2008–2012	Estimated the relationship between prices and market concentration for outpatient services provided by hospitals' outpatient departments or ambulatory surgical centers (ASCs)	<ul style="list-style-type: none"> ■ Prices for outpatient services were 9.9 percent higher in the least competitive inpatient markets than in the most competitive markets. ■ Prices for ASC services were 7.7 percent higher in the least competitive ASC markets than in the most competitive markets. The number of ASCs per capita in an area was also associated with lower prices for hospitals' outpatient services. ■ Competition in markets for hospitals' outpatient services had no statistically significant effect on prices for those services.
Seidu Dauda, "Hospital and Health Insurance Markets Concentration and Inpatient Hospital Transaction Prices in the U.S. Health Care Market," <i>Health Services Research</i> , vol. 53, no. 2 (April 2018), pp. 1203–1226, https://doi.org/10.1111/1475-6773.12706	2005–2008	Examined the effects on prices from concentration in the markets for hospitals and insurers	<ul style="list-style-type: none"> ■ A 10 percent increase in hospital market concentration resulted in a 1.4 percent to 5 percent increase in prices. ■ A merger of two hospitals in a market with five equally sized hospitals would result in a 4.9 percent to 18.4 percent increase in prices.

Continued

Table C-1.

Continued

Studies of the Relationship Between Hospital Market Concentration and Prices

Source	Data Period	Experiment or Methods	Findings
Matthew S. Lewis and Kevin E. Pflum, "Hospital Systems and Bargaining Power: Evidence From Out-of-Market Acquisitions," <i>RAND Journal of Economics</i> , vol. 48, no. 3 (Fall 2017), pp. 579–610, https://doi.org/10.1111/1756-2171.12186	1998–2010	Examined price changes at hospitals acquired by an out-of-market health system (more than 45 miles away) relative to price changes at control hospitals that did not join a health system	<ul style="list-style-type: none"> Out-of-market mergers resulted in price increases for merging hospitals as well as for their local rivals. When independent hospitals were acquired by an out-of-market system, prices rose by about 17 percent.
Gautam Gowrisankaran, Aviv Nevo, and Robert Town, "Mergers When Prices Are Negotiated: Evidence From the Hospital Industry," <i>American Economic Review</i> , vol. 105, no. 1 (January 2015), pp. 172–203, https://doi.org/10.1257/aer.20130223	2003–2006	Simulated the effects of the proposed merger of Prince William Hospital and Inova Health System in northern Virginia using a bargaining model of competition	<ul style="list-style-type: none"> If the Federal Trade Commission had permitted it, the proposed merger would have increased prices by about 3 percent, on average.
Glenn A. Melnick, Yu-Chu Shen, and Vivian Yaling Wu, "The Increased Concentration of Health Plan Markets Can Benefit Consumers Through Lower Hospital Prices," <i>Health Affairs</i> , vol. 30, no. 9 (September 2011), pp. 728–1733, https://doi.org/10.1377/hlthaff.2010.0406	2001 and 2004	Examined the association between hospitals' prices and market concentration for health plans and hospitals among all nonfederal, general, acute care hospitals located in metropolitan statistical areas	<ul style="list-style-type: none"> A 1,000-point increase in the concentration of a hospital market (as measured by the Herfindahl-Hirschman index) was associated with an 8.3 percent increase in prices.
Deborah Haas-Wilson and Christopher Garmon, "Hospital Mergers and Competitive Effects: Two Retrospective Analyses," <i>International Journal of the Economics of Business</i> , vol. 18, no. 1 (February 2011), pp. 17–32, https://doi.org/10.1080/13571516.2011.542952	Fiscal years 1999 and 2002	Examined price changes for two hospital mergers in the Chicago metropolitan area, Evanston Northwestern–Highland Park Hospital and Vista Health (St. Therese–Victory Memorial Hospital), relative to price changes for control hospitals in that area	<ul style="list-style-type: none"> After the Evanston merger, price increases were at least 10 percentage points larger at the merged hospitals than at control hospitals for four of the five insurers included in the study. After the Vista Health merger, three of the five insurers experienced smaller price increases at the merged hospital than at the control hospitals. Only one insurer experienced a larger price increase at the merged hospital than at the controls.
Steven Tenn, "The Price Effects of Hospital Mergers: A Case Study of the Sutter–Summit Transaction," <i>International Journal of the Economics of Business</i> , vol. 18, no. 1 (February 2011), pp. 65–82, https://doi.org/10.1080/13571516.2011.542956	1999 and 2001	Examined price changes for the Sutter Alta Bates–Summit hospital merger in California relative to price changes for a set of control hospitals in that state	<ul style="list-style-type: none"> After the merger, price increases at Summit were 28 percent to 44 percent higher, depending on the insurer, than the average price increase at the control group, but prices at Alta Bates did not change significantly.
Aileen Thompson, "The Effect of Hospital Mergers on Inpatient Prices: A Case Study of the New Hanover–Cape Fear Transaction," <i>International Journal of the Economics of Business</i> , vol. 18, no. 1 (February 2011), pp. 91–101, https://doi.org/10.1080/13571516.2011.542958	1997–1998 and 2001–2002	Examined price changes for the New Hanover–Cape Fear hospital merger in North Carolina relative to price changes for a control group of similar urban hospitals in that state	<ul style="list-style-type: none"> After the merger, prices increased for some insurers and decreased for others. For two insurers, prices increased by 56.5 percent and 65.3 percent, respectively, while for another insurer, prices declined by 30 percent.
Asako S. Moriya, William B. Vogt, and Martin Gaynor, "Hospital Prices and Market Structure in the Hospital and Insurance Industries," <i>Health Economics, Policy, and Law</i> , vol. 5, no. 4 (October 2010), pp. 459–479, https://doi.org/10.1017/S1744133110000083	2001–2003	Examined the association between hospitals' prices and changes in market concentration for insurers and hospitals across health service areas	<ul style="list-style-type: none"> The relationship between increases in hospital market concentration and prices was not significant.

Table C-2.

Studies of the Relationship Between Physician Market Concentration and Prices

Source	Data Period	Experiment or Methods	Findings
Naomi Hausman and Kurt Lavetti, "Physician Practice Organization and Negotiated Prices: Evidence From State Law Changes," <i>American Economic Journal: Applied Economics</i> , vol. 13, no. 2 (April 2021), pp. 258–296, https://doi.org/10.1257/app.20180078	1996–2007	Examined the relationship between market concentration (as measured by the Herfindahl-Hirschman index, or HHI) and prices, using changes in judicial policies about noncompete agreements as a source of exogenous variation in the structure of physician markets	<ul style="list-style-type: none"> ■ A 100-point increase in the firm-based HHI (which could mainly affect providers' bargaining power) increased prices by 1.7 percent to 2.1 percent. ■ A 100-point increase in the practice-location-based HHI (which could mainly affect practices' efficiency) decreased prices by 1.4 percent to 1.9 percent. ■ A decrease of 10 percent in the enforceability of noncompete agreements caused physicians' prices to decline by 4.3 percent.
Thomas Koch and Shawn W. Ulrick, "Price Effects of a Merger: Evidence From a Physicians' Market," <i>Economic Inquiry</i> , vol. 59, no. 2 (April 2021), pp. 790–802, https://doi.org/10.1111/ecin.12954	2008–2013	Compared prices of services provided by orthopedists before and after a merger of six orthopedic practices into one, relative to prices in nearby areas	<ul style="list-style-type: none"> ■ Prices increased by 10 percent to 20 percent, relative to prices for the same services in nearby areas, for two of the three payers in the study. ■ Prices did not increase for the third payer.
Caroline S. Carlin, Roger Feldman, and Bryan Dowd, "The Impact of Provider Consolidation on Physician Prices," <i>Health Economics (United Kingdom)</i> , vol. 26, no. 12 (December 2017), pp. 789–1806, https://doi.org/10.1002/hecc.3502	2006–2011	Compared prices of physicians' services before and after three large, multispecialty clinics were acquired by two hospital-owned integrated delivery systems. Compared prices at practices controlled by the acquiring systems with prices at practices controlled by a competing system.	<ul style="list-style-type: none"> ■ Four years after a merger, average prices had increased by 32 percent to 47 percent at the newly acquired systems and had increased by 14 percent to 20 percent at clinics that had already been acquired. ■ Prices increased for physicians' services delivered in hospitals' inpatient and outpatient settings but did not increase for some services provided in physicians' offices.
Daniel R. Austin and Laurence C. Baker, "Less Physician Practice Competition Is Associated With Higher Prices Paid for Common Procedures," <i>Health Affairs</i> , vol. 34, no. 10 (October 2015), pp. 1753–1760, https://doi.org/10.1377/hlthaff.2015.0412	2010	Examined the relationship between prices for 15 common, high-priced specialty services and market concentration in the previous year for specialists providing those services	<ul style="list-style-type: none"> ■ For 11 of the 15 services, prices were 8 percent to 26 percent higher in the counties with the most market concentration than in the counties with the least concentration. ■ For the other 4 services, prices were not statistically related to market concentration.
Eric Sun and Laurence C. Baker, "Concentration in Orthopedic Markets Was Associated With a 7 Percent Increase in Physician Fees for Total Knee Replacements," <i>Health Affairs</i> , vol. 34, no. 6 (June 2015), pp. 916–921, https://doi.org/10.1377/hlthaff.2014.1325	2001–2010	Examined the relationship between changes in physicians' prices for knee replacements and concentration in the market for orthopedic surgery in 311 counties throughout the United States	<ul style="list-style-type: none"> ■ Prices for knee replacements were 7 percent higher in the most concentrated markets than in the least concentrated markets.
Samuel A. Kleiner, William D. White, and Sean Lyons, "Market Power and Provider Consolidation in Physician Markets," <i>International Journal of Health Economics and Management</i> , vol. 15, no. 1 (January 2015), pp. 99–126, https://doi.org/10.1007/s10754-014-9160-y	2009	Used data on consumers' demand (willingness to pay) for cardiology and ophthalmology services in three metropolitan areas to model the incremental value of including a physician in a network. Compared that incremental value with prices and modeled hypothetical mergers.	<ul style="list-style-type: none"> ■ Prices were positively correlated with higher willingness to pay in the two most concentrated markets. ■ A hypothetical merger between the two largest practices in an area increased prices by 5.7 percent to 5.9 percent in the most concentrated market. ■ In the other two markets, simulated mergers had small or insignificant effects, increasing prices by less than 1.5 percent.

Continued

Table C-2.

Continued

Studies of the Relationship Between Physician Market Concentration and Prices

Source	Data Period	Experiment or Methods	Findings
Laurence C. Baker and others, "Physician Practice Competition and Prices Paid by Private Insurers for Office Visits," <i>JAMA</i> , vol. 312, no. 16 (October 2014), pp. 1653–1662, https://doi.org/10.1001/jama.2014.10921	2003 and 2010	Examined the relationship between physicians' prices for office visits in 2010 for 10 common specialties and market concentration in the previous year. Also examined the relationship between changes in concentration and changes in prices between 2003 and 2010.	<ul style="list-style-type: none"> ▪ Prices were 8 percent to 16 percent higher in the most concentrated markets than in the least concentrated markets. ▪ Prices increased more in places that had more market concentration initially.
Abe Dunn and Adam Hale Shapiro, "Do Physicians Possess Market Power?" <i>Journal of Law and Economics</i> , vol. 57, no. 1 (February 2014), pp. 159–193, https://doi.org/10.1086/674407	2005–2008	Examined the relationship between prices for cardiology and orthopedic services and market concentration in the previous year for specialists providing those services. Also examined the relationship between changes in concentration and changes in prices over time.	<ul style="list-style-type: none"> ▪ Prices were 14 percent to 30 percent higher in the most concentrated markets than in the least concentrated markets. ▪ The effect of concentration on prices became larger as markets became more concentrated.

Table C-3.

Studies of the Relationship Between Providers' Vertical Integration and Prices

Source	Data Period	Experiment or Methods	Findings
Haizhen Lin, Ian M. McCarthy, and Michael Richards, "Hospital Pricing Following Integration With Physician Practices," <i>Journal of Health Economics</i> , vol. 77 (May 2021), https://doi.org/10.1016/j.jhealeco.2021.102444	2009–2015	Examined the relationship between changes in prices for hospital discharges and changes in whether a hospital owned a physicians' practice in the same hospital referral region. Also examined the relationship between price changes and changes in the number of physicians working in those practices.	<ul style="list-style-type: none"> On average, hospitals' prices increased by about 3 percent after integration of a hospital with a physicians' practice. Prices were about 4 percent higher at the 75th percentile of the number of physicians working in local practices owned by a given hospital than at the 25th percentile.
Laurence C. Baker, M. Kate Bundorf, and Daniel P. Kessler, "Does Multispecialty Practice Enhance Physician Market Power?" <i>American Journal of Health Economics</i> , vol. 6, no. 3 (Summer 2020), pp. 324–347, https://doi.org/10.1086/708942	2008–2012	Examined the relationship over time between changes in prices for office visits with general practitioners or specialists and prior-year changes in the prevalence of integration between those physicians	<ul style="list-style-type: none"> On average, prices were 2.7 percent higher for general practitioner office visits and 2.0 percent higher for specialist office visits in zip code areas in the top one-quarter of generalist-specialist physician integration than in areas in the bottom one-quarter of such integration.
Richard M. Scheffler, Daniel R. Arnold, and Christopher M. Whaley, "Consolidation Trends in California's Health Care System: Impacts on ACA Premiums and Outpatient Visit Prices," <i>Health Affairs</i> , vol. 37, no. 9 (September 2018), pp. 1409–1416, https://doi.org/10.1377/hlthaff.2018.0472	2011–2016	Examined the association between changes in prices for primary care and specialist physicians' office visits in California and prior-year changes in the percentage of primary care or specialist physicians in practices owned by a hospital	<ul style="list-style-type: none"> On average, prices were 5.0 percent higher for primary care office visits and 9.1 percent higher for specialty office visits in counties where all practices were owned by hospitals than in counties that had the average level of vertical integration (33 percent integrated for primary care physicians and 35 percent integrated for specialty care physicians).
Cory Capps, David Dranove, and Christopher Ody, "The Effect of Hospital Acquisitions of Physician Practices on Prices and Spending," <i>Journal of Health Economics</i> , vol. 59 (May 2018), pp. 139–152, https://doi.org/10.1016/j.jhealeco.2018.04.001	2007–2013	Compared changes in prices of physicians' services in several states before and after physicians' vertical integration with a hospital, relative to price changes for physicians' services at practices that never integrated	<ul style="list-style-type: none"> On average, prices for physicians' services increased by 14.1 percent after integration of a physicians' practice with a hospital.
Hannah T. Neprash and others, "Association of Financial Integration Between Physicians and Hospitals With Commercial Health Care Prices," <i>JAMA Internal Medicine</i> , vol. 75, no. 12 (December 2015), pp. 1932–1939, https://doi.org/10.1001/jamainternmed.2015.4610	2008 and 2012	Examined the association between changes in spending for and use of inpatient and outpatient hospitals' and physicians' services in a metropolitan statistical area (MSA) and changes in the proportion of physicians in that area billing exclusively with a hospital outpatient department code	<ul style="list-style-type: none"> On average, spending increased by 3.1 percent for outpatient services in MSAs where the amount of integration increased by about 5 percentage points (equivalent to the 75th percentile of changes that occurred in MSAs). There was no statistically significant increase in the use of services, which suggests that the spending increase was driven almost entirely by price increases. There was no statistically significant change in spending or utilization for inpatient services associated with increases in vertical integration, but those results were inconsistent when alternative measures of physician-hospital integration were used.

Continued

Table C-3.

Continued

Studies of the Relationship Between Providers' Vertical Integration and Prices

Source	Data Period	Experiment or Methods	Findings
Laurence C. Baker, M. Kate Bundorf, and Daniel P. Kessler, "Antitrust for Accountable Care Organizations," <i>Journal of Competition Law and Economics</i> , vol. 11, no. 2 (June 2015), pp. 317–329, https://doi.org/10.1093/joclec/nhv002	2001–2007	Examined the association between changes in prices for outpatient physicians' services in 639 counties and changes in the share of the market served by hospitals in one of four hospital-physician integration categories	<ul style="list-style-type: none"> On average, prices increased by 1.7 percent for outpatient physicians' services in areas where the type of organization with the most vertical integration increased its market share by 10 percentage points and where there had initially been low levels of integration.
Laurence C. Baker, M. Kate Bundorf, and Daniel P. Kessler, "Vertical Integration: Hospital Ownership of Physician Practices Is Associated With Higher Prices and Spending," <i>Health Affairs</i> , vol. 33, no. 5 (May 2014), pp. 756–763, https://doi.org/10.1377/hlthaff.2013.1279	2001–2007	Examined the association between changes in prices for hospital admissions in 639 counties and changes in the share of the market served by hospitals in one of four hospital-physician integration categories	<ul style="list-style-type: none"> On average, prices increased by 3.2 percent for hospital admissions in areas where the type of organization with the most vertical integration increased its market share by one standard deviation.

About This Document

This report was prepared at the request of the Chairman of the House Committee on the Budget. In keeping with the Congressional Budget Office's mandate to provide objective, impartial analysis, the report makes no recommendations.

Michael Cohen, Jared Maeda (formerly of CBO), and Daria Pelech wrote the report with guidance from Lyle Nelson (formerly of CBO) and Chapin White. Yiqun Gloria Chen, Carrie H. Colla, Noelia Duchovny, Caroline Hanson, Tamara Hayford, and Ian McCarthy of CBO offered comments. Christian Henry and Joshua Varcie fact-checked the report.

Comments were also provided by Zack Cooper of the Yale University School of Public Health; Paul Ginsburg of the Price School of Public Policy, University of Southern California; Aditi Sen and Zhera Valencia of the Health Care Cost Institute; and Jeffrey Stensland and Ariel Winter of the Medicare Payment Advisory Commission. The assistance of external reviewers implies no responsibility for the final product; that responsibility rests solely with CBO.

Jeffrey Kling and Robert Sunshine reviewed the report. Christian Howlett edited it, and Casey Labrack created the graphics and prepared the report for publication. The report is available at www.cbo.gov/publication/57422.

CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.



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