

# Nationwide Evaluation of Health Care Prices Paid by Private Health Plans

Findings from Round 3 of an Employer-Led  
Transparency Initiative

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## Preface

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The largest source of health insurance coverage in the United States is through an employer or union. Despite the size and importance of this market, prices are opaque. In this study, we use 2016 to 2018 data from all but one state in the United States, covering \$33.8 billion in hospital spending from three sources—self-insured employers, state-based all-payer claims databases, and health plans—to document variation in facility and professional prices for the commercially insured population. We also examine trends and potential reasons that may explain the observed variation in prices. In this study, prices reflect the negotiated allowed amount paid per service, including amounts from both the health plan and the patient, with adjustments for the intensity of services provided. We report differences in standardized negotiated prices and prices relative to Medicare reimbursement rates for the same procedures and facilities.

This report is designed to provide price transparency to a large and important market. Price transparency has not been traditionally available in a manner that allows for an easy comparison of prices between hospitals and other providers. The price information in this report can help employers and other purchasers of health care assess the prices that they pay for health care services. This report can also help contribute to policy discussions on price transparency and how to lower health care prices for privately insured Americans.

The findings of this study are reported at a high level in this report, and a supplemental Microsoft Excel spreadsheet and an interactive map both provide additional detail ([www.rand.org/t/RR4394](http://www.rand.org/t/RR4394)). This report follows two previous studies on hospital prices (White 2017; White and Whaley, 2019). The current report extends these prior studies by examining additional data sources and documenting prices for additional providers and for specific service categories. Unlike many other examinations of hospital prices, our studies identify hospitals and groups of hospitals under joint ownership (“hospital systems”) by name.

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# Summary

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## Background, Goals, and Approach

Most Americans receive health insurance coverage through an employer-sponsored private health plan. The employer role as a provider of health benefits became widespread during World War II when American employers used health benefits as a way to circumvent wartime wage controls (Buchmueller and Monheit, 2009). Employers continue to play an important role in the U.S. health care system, both in financing health care spending and in selecting health plans to offer their employees.

Spending on hospital services accounts for 44 percent of total personal health care spending for the privately insured, and hospital price increases are key drivers of recent growth in per capita spending among the privately insured. Although recent price transparency initiatives have increased information about procedure-level prices available to patients, employers do not commonly have usable information about the prices negotiated on their behalf. Although the COVID-19 pandemic has placed pressure on hospital finances, many employers and their workers also face uncertain financial futures. For employers to diligently navigate this environment, they need to have information about prices.

This study is designed to inform employers about the prices they and their employees are paying for hospital services. Employers can use this report to become better-informed purchasers of health benefits. For broader policy and research audiences, the information in this report also highlights the levels and variation in hospital prices paid by employers and private insurers.

To accomplish these goals, we collected claims data, including provider identifiers and allowed amounts, for enrollees in employer-sponsored health benefits from three types of data sources:

- self-insured employers who chose to participate in the report and provided claims data for their enrollees
- state-based all-payer claims databases from Delaware, Colorado, Connecticut, Maine, New Hampshire, and Rhode Island
- health plans that chose to participate.

Together, these data sources include \$33.8 billion in spending on hospitals from 3,112 hospitals in all states in the United States, with the exception of Maryland. This report expands a previous analysis of hospital price data from hospitals in 25 states. The analysis focuses on claims data from 2016 through 2018. We include both facility and professional claims. We include claims for inpatient and outpatient services provided by both Medicare-certified short-stay hospitals and other facility types. For each private claim, we reprice the service using Medicare's grouping and pricing algorithms. Although some variation exists in Medicare's

hospital prices, the variation is much narrower than for private health plans and is clearly related to specific hospital and patient characteristics. We report price levels and trends for states, hospitals, and hospital systems (i.e., groups of hospitals under joint ownership).

We calculate and report two types of hospital prices:

- *standardized prices*, meaning the average allowed amount per standardized unit of service, where services are standardized using Medicare's relative weights
- *relative prices*, meaning the ratio of the actual private allowed amount divided by the Medicare allowed amount for the same services provided by the same hospital.

Relative prices have the advantage of incorporating all of Medicare's adjustments for case mix, wages, inflation, medical education, and the volume of uncompensated or disproportionate share services provided. Relative price comparisons also allow for a more intuitive one-number comparison across hospitals because it has a common denominator across inpatient and outpatient services. The base for both is what Medicare would have paid for the same set of services at the same provider. This interpretation makes relative prices easier to use by employers and health plans as hospital price benchmarks. However, some hospitals criticize this method because Medicare increases inpatient reimbursement when a hospital provides medical education. The effect of this is to lower a teaching hospital's reported inpatient prices relative to nonteaching hospitals.

Standardized prices eliminate the teaching adjustment (along with many other Medicare adjustments) but can be difficult to interpret because they require two sets of weights, one for inpatient care and another for outpatient services. There are a number of ways that these two numbers (e.g., an average acuity-adjusted inpatient price of \$15,000 and an average acuity-adjusted outpatient price of \$200 for many more services) can be composited, but the explanation of the resulting number is complex and not at all intuitive. However, this method focuses on absolute acuity-adjusted price differences without Medicare's adjustments for regional wage differences, medical education, and other factors.

Importantly, we are using Medicare prices as a common benchmark to compare commercial prices. This study does not propose the percentage of Medicare prices that employers should be paying hospitals and other health care providers, and instead focuses on variations in private prices. Price variation is expected in a market as complex as health care. However, without information on prices, employers and other purchasers have a limited ability to make trade-offs between spending on health benefits and spending on wages and other benefits. This report is designed to provide a level of transparency that allows employers to compare prices between hospitals and to consider if the prices they are paying are appropriate. Because employer payments to hospitals are a key driver of employers' health care spending, making these prices accessible and transparent can help employers and policymakers design appropriate policies to address rising health care costs.

## Key Findings

In 2018, across all hospital inpatient and outpatient services, employers and private insurers included in this study paid 247 percent of what Medicare would have paid for the same services at the same facilities, including both professional and facility fees. This difference increased from 224 percent of Medicare in 2016 and 230 percent in 2017. In 2018, relative prices for hospital inpatient services averaged 231 percent of Medicare and 267 percent of Medicare for hospital outpatient services.

Some states (Arkansas, Michigan, and Rhode Island) had relative prices under 200 percent of Medicare, whereas other states (Florida, Tennessee, Alaska, West Virginia, and South Carolina) had relative prices that were above 325 percent of Medicare.

## Implications

Addressing prices paid by employer-sponsored and other private insurance plans represents a tangible way to reduce health care spending. Where quality and convenience are comparable, employers can use network and benefit design approaches to move patient volume away from higher-priced, lower-value hospitals and hospital systems and toward lower-priced, higher-value providers. Employers can also use this information to reformulate how contracts are negotiated on their behalf. For example, many employers use discounted-charge contracts in which employers pay a percent discount of hospital chargemaster rates. These contracts have historically been common but may contribute to the observed wide variation in prices by leaving employers and their plans vulnerable to list-price inflation. Employers can exert pressure on their health plans and hospitals to shift from discounted charge contracts to contracts based on a multiple of Medicare reimbursement rates, bundled payments, reference-based pricing, or other forms of contracting that limit price variability. These actions to change contracts or move patients away from higher-priced providers can be taken by both small and large employers. If a sufficient number of employers within a market aggressively design benefits with provider prices in mind, providers may respond by lowering prices.

These types of changes are not possible without price transparency information. However, price transparency by itself will not be sufficient if employers do not act on price information. In some cases, employers may need state or federal policy interventions to rebalance negotiating leverage between hospitals and their health plans. Such interventions could include addressing noncompetitive health care markets, placing limits on payments for out-of-network hospital care, or allowing employers to buy into a public option that pays providers prices based on Medicare.

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## Abbreviations

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APC	ambulatory payment classification
APCD	all-payer claims database
CAH	critical access hospital
CMS	Centers for Medicare and Medicaid Services
EFI	Employers' Forum of Indiana
IPPS	inpatient prospective payment system
MPN	Medicare provider number
MS-DRG	Medicare Severity Diagnosis-Related Group
OPPS	outpatient prospective payment system
TPA	third-party administrator

# 1. Background

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## Employers Bear Responsibility for Health Care Costs but Have Limited Access to Useful Information on Hospital Prices

In 2018, more than 153 million Americans, or 57 percent of the nonelderly U.S. population, received health insurance through an employer (Kaiser Family Foundation, 2018). In 2018, the privately insured population accounted for 34.1 percent (\$1.2 trillion) of U.S. health care spending. The employer-sponsored insurance market consists of (1) fully insured employers that pay state-regulated insurers a fixed premium per enrollee per month to provide benefits and (2) self-insured employers who are financially responsible for covered benefits but contract with third-party administrators (TPAs) to administer the plan and process claims. U.S. employers play an important role in the U.S. health care system, both in financing health care spending and working with insurers and TPAs to design the structure of health benefits.

Employers face high and rising health care costs. Many employers do not have the analytic or contracting expertise to negotiate the prices they pay providers and instead rely on insurers and TPAs to negotiate contracts with providers. Ultimately, employees bear most or all of the costs of employer-sponsored health benefits through a combination of employee premium contributions, employee out-of-pocket spending, and employer contributions for health care that take the place of other forms of compensation, such as wages and retirement benefits.

Despite the importance of this market, health care prices remain opaque to patients, employers, and policymakers. Several patient-facing price transparency initiatives, including recent Centers for Medicare and Medicaid Services (CMS) proposals, have recently attempted to provide price information, but with modest impacts (Desai et al., 2016; Desai et al., 2017; Whaley et al., 2014). Nearly all Americans with commercial insurance already have access to a consumer-facing price transparency tool, although these tools vary in their usability and features (Phillips and Labno, 2014).

This report is designed to provide a different and less common type of price transparency. Although existing price transparency tools provide a multitude of service-specific prices, they do not easily identify high- and lower-priced providers for broad baskets of services. This absence of easily interpretable price rankings limits the ability of employers to efficiently approach benefit design decisions. This report is designed to allow an easy comparison of hospital prices using a single metric. Employers can use this information to track price trends and to help assess the value of hospitals in their market.

Employers generally lack useful information about the prices they are paying, and many contracts between large provider systems and insurers include “gag clauses” that prohibit sharing detailed pricing information with employers or patients (Catalyst for Payment Reform, 2020).

Employers are typically wary of limiting the network of providers available to their employees, and the lack of transparency further undermines self-insured employers' efforts to limit their insurance networks to lower-priced, high-quality hospitals. This lack of information limits the ability of employers to monitor the prices negotiated on their behalf, to implement innovative insurance benefit designs, and to ensure that insurers are in fact negotiating favorable prices. Because employers are important buyers of health care services, equipping them with useful information on provider prices can help them to demand increased value from the health care system.

Although they are just one component of the health care system, hospitals account for 44 percent of total health care spending for the privately insured population (CMS, 2019). Hospital price increases have been identified in previous research as a key contributor to rising health care costs among the privately insured population (Cooper, Craig, Gaynor, Harish, et al. 2019; Health Care Cost Institute, 2020). Despite their importance, the prices that private health plans pay for hospital care have been characterized as “chaos behind a veil of secrecy” (Reinhardt, 2006). In addition, the prices employers and other private insurers pay for hospital services have grown at a faster rate than in public plans (Selden et al., 2015), although the rate of divergence has slowed in recent years (Selden, 2020).

The divergence in prices between private and public plans has been linked to provider consolidation that increases hospital price negotiation leverage (Berenson et al., 2015; Gaynor, Ho, and Town, 2015; Ginsburg and Pawlson, 2014). Although consolidation is linked with higher prices, it has not been associated with improved quality, and higher-priced providers often do not have higher quality than lower-priced providers (Beaulieu et al., 2020; Schmitt, 2017; Whaley, 2018). When the variation in hospital prices is not tied to commensurate differences in quality, then prices paid to higher-priced hospitals may represent wasteful spending to employers and their employees.

This variation in hospital prices is both a cause for high health care spending among the privately insured population and a potential opportunity for savings. Reducing the use of higher-priced hospitals is a potential way for employers to reduce health care spending. Likewise, employers taking a more active role in bargaining over prices and monitoring the prices negotiated on their behalf can also lead to health care spending reductions for employers and for their employees.

## Scope and Contribution of the Study

This study builds on two previous studies of hospital price variation, which examined variation in hospital facility prices in Indiana (White, 2017) and in 25 states (White and Whaley, 2019). This study extends these two existing reports by expanding the analysis to the remaining states, with the exception of Maryland, and by including professional fees, which cover amounts charged by physicians. Although several studies report just hospital facility fees, the prices

reported in this study combined facility and professional fees to provide a more comprehensive estimate of the prices employers and private insurers pay for hospital services. Maryland is excluded because hospitals in Maryland have an “all-payer” rate setting model where hospitals charge equal prices to Medicare and private insurance payers (Sharfstein, Stuart, and Antos, 2018). Because of the expanded population and inclusion of professional fees, the results of this study may not be comparable to previous versions. We examine difference in prices paid by private health plans for hospital inpatient, hospital outpatient, and nonhospital services, compared with how much Medicare would have paid for the same services at the same facilities. Hospital inpatient services involve a stay of at least one night with a doctor’s orders for formal admission and discharge, whereas hospital outpatient services are typically provided on an ambulatory basis. Examples of common inpatient services provided by community hospitals to the privately insured include childbirth, knee replacements, and admissions for treatment of septicemia or psychoses. Examples of common hospital outpatient services include imaging, emergency department visits, and colonoscopies.

For hospitals, we limit the analysis to *community hospitals*, which we define as Medicare-certified nonfederal short-stay general hospitals. Community hospitals include academic medical centers but exclude specialty hospitals (such as cancer hospitals, psychiatric hospitals, long-term care hospitals, and children’s hospitals), skilled nursing facilities, inpatient rehabilitation facilities, and Veterans Administration facilities. The two most common types of hospitals are those paid under Medicare’s inpatient prospective payment system (IPPS) and critical access hospitals (CAHs). To qualify as a CAH, a hospital must be very small and located in a rural area. Together, IPPS hospitals and CAHs comprise community hospitals, which is the population of interest for this study.

In general, services are included in the analysis if they are covered by Medicare and paid either under Medicare’s IPPS or Medicare’s outpatient prospective payment system (OPPS). Some hospital outpatient services, such as outpatient rehabilitation therapy and mammography, are not paid under Medicare’s OPPS and, therefore, are excluded from the analysis.

Although other studies have examined variation in hospital prices (e.g., Chernew, Hicks, and Shah, 2020), 2020; Cooper, Craig, Gaynor, Harish, et al., 2019; Franzini et al., 2014; Health Care Cost Institute, 2020; Maeda et al., 2014; Newhouse and Garber, 2013; Pelech, 2017; White, 2012; White, Bond, and Reschovsky, 2013; U.S. Government Accountability Office, 2014), these studies generally analyze and report market- or state-level average hospital prices and do not report hospital-specific prices. This study is also unique in that we have obtained claims data for a large population of privately insured individuals, in all but one state in the United States. It is also unique in that our data use agreements allow us to report prices paid to hospitals and hospital systems identified by name. Data use agreements for many widely used sources of private claims data prohibit the identification of specific providers.

## 2. Overview of Hospital Markets and Pricing

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### How Private Health Plans Set Hospital Prices

Private health plans and hospitals generally agree to prices through a complex process of contract negotiations. If the hospital and plan are able to agree on a set of contracted prices, then the hospital will be included in the plan's network, and patients typically face lower cost-sharing payments at in-network facilities compared with out-of-network facilities. Failing to contractually agree can leave the plan's enrollees facing out-of-network cost-sharing (and perhaps balance billing charges) or no covered benefit at all when receiving care from the relevant hospital.

Both the hospital and the insurance industries have experienced substantial consolidation, in part to increase their respective bargaining leverage. Many hospitals have joined systems, which allows them to jointly negotiate prices. Some hospital systems have instituted "all-or-nothing" clauses, which require all hospitals to be in a health plan's network if a single hospital is in the network. Some systems also require that they be included in a health plan's network for all procedures and at the most "preferred" patient cost-sharing levels. These clauses limit the ability of insurers to design lower-priced networks on behalf of employers. Finally, some hospital systems have implemented gag clauses that limit the ability of price-transparency tools to display negotiated prices (Catalyst for Payment Reform and Health Care Incentives Improvement Institute, 2015; Gold, 2017).

The prices that result from the contract negotiations between health plans and hospitals can vary widely. In general, hospitals and plans both consider the hospital attributes that are important for patients (e.g., hospital safety, convenience, reputation, quality scores). The hospitals for which patients have stronger preferences are generally able to negotiate higher prices, and health plans with larger market shares are generally able to demand lower prices (Berenson et al., 2015; Trish and Herring, 2015). But idiosyncratic factors appear to play a large role, and the wide variation in prices has led to an increased focus on price transparency initiatives.

### How Medicare Calculates Prices Paid for Hospital Services

Medicare, rather than negotiating with providers, sets prices administratively based on legislative authority and funding provided by Congress. For each procedure and service, CMS has established a fee schedule, which is publicly available. Medicare then adjusts this fee schedule based on geographic marketplace and hospital type (e.g., teaching hospital, CAH). To account for differences in patient severity and procedures performed across hospitals, case-mix adjustments are applied based on the type of service that an individual patient receives.

Case-mix adjustments are designed to account for the fact that services vary in their resource requirements. In the inpatient setting, Medicare uses the Medicare Severity Diagnosis-Related Groups (MS-DRGs); in the outpatient setting, Medicare uses ambulatory payment classifications (APCs) (Medicare Payment Advisory Commission, 2018). Hospital-specific adjustments are applied to all services provided by a given hospital and are designed to account for differences in local wages among hospitals, the cost of doing business, and other hospital characteristics (e.g., teaching status). Outlier payments are added in a small number of cases to lessen hospitals' financial losses from treating cases that are exceptionally costly.

## 3. Data and Methods

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### Data Sources

#### *Medical Claims Data*

The medical claims data in our analytic data set were aggregated from several sources. First, we included claims data from approximately 120 self-insured employers who chose to participate in the study. The participating self-insured employers include a variety of industries ranging from local government to manufacturing to higher education and range in the number of covered lives, from a few hundred to more than 100,000. Unlike past versions of this report, where employers from Indiana represented a majority of the employer population, the data used in this report include employers from all states with the exception of Maryland. The data include both employers who operate within a single market and employers with a national presence. We also include data from 11 state employee plans. In many states, the state employee health plan is among the largest providers of health insurance benefits.

The second source of data is all-payer claims database (APCD) from six states—Connecticut, Colorado, Delaware, Maine, New Hampshire, and Rhode Island. Our previous study included data from only the Colorado and New Hampshire APCDs. Currently, 17 states operate an APCD with mandatory submission, five additional states have an APCD with voluntary submission, and three states are in the process of implementing an APCD (APCD Council, 2020). Unfortunately, not all residents of these states are represented in their APCDs, partly because of exemptions from reporting requirements for fully insured plans and partly because of self-insured plans opting out following the U.S. Supreme Court’s decision in *Gobeille v. Liberty Mutual Insurance Company* (Brown and King, 2016). Data provided by APCDs included employer-sponsored and individual market plan data.

All data sources provided claim identifiers and line item–level detail on services provided and allowed amounts. We used the claim and line-item identifiers to group claims into DRGs. For each hospital service, we identified the corresponding professional claim and linked both the facility and the professional claims to measure a combined price. Although physicians who perform services in many hospitals are independent from the hospital, combining facility and professional fees for each service provides a price that is more relevant to payers than a single component. A full description of this process can be found in the Appendix.

#### *Hospital Systems*

Hospitals were linked to multihospital systems, meaning groups of two or more hospitals under joint ownership. To link hospitals and other providers to systems, we used data provided

by the Agency for Health Research and Quality’s Compendium of U.S. Health Systems (AHRQ, 2019). These data allow us to link specific hospitals to their broader health systems.

### *Quality*

To incorporate quality metrics into the analysis, we used CMS’s overall hospital star ratings from Hospital Compare (one star is the worst rating, five stars is the best) (Yale New Haven Health Services Corporation/Center for Outcomes Research and Evaluation, 2017). The star ratings summarize dozens of individual quality measures in seven domains that include mortality, safety, readmissions, and efficiency. Although many different hospital quality measures are available, the CMS star ratings provide an accessible and thoroughly documented summary measure. We downloaded the “Hospital General Information” file from CMS Hospital Compare, which includes data on star ratings for hospitals paid under Medicare’s IPPS (CMS, 2020). The star ratings were merged with the analytic data set using Medicare provider numbers (MPNs).

We also used hospital safety score data from the Leapfrog Group. These safety scores include answers from the Leapfrog Hospital Survey sent to all U.S. hospitals and containing questions on hospital safety. The Leapfrog Hospital Safety Grade measures include standardized infection ratios for inpatient care, a measure score for Falls and Trauma, and other such safety measures. The Leapfrog Group collects and aggregates 28 evidence-based measures of patient safety into a single numerical score for 2,633 unique hospital locations. Leapfrog also translates these numeric scores into letter grades (e.g., A, B, C, D, and F). Leapfrog combines measures of patient safety from CMS and from the 2019 Leapfrog Hospital Survey to produce these scores/grades. The Leapfrog survey responses are voluntary and self-reported, which may inflate reported hospital quality (Smith et al., 2017).

### *Hospital Patient Mix and Finances*

We also examine data on hospital patient mix and volume using data from the Healthcare Cost Reporting Information System (HCRIS) compiled and processed through the RAND Corporation Hospital Data repository. All Medicare-certified institutions are required to submit an annual cost report to CMS with information such as facility characteristics, utilization data, cost, charges, revenues, and financial statement data. From the HCRIS data, we construct each hospital’s case-mix-adjusted share of patient discharges who are enrolled in Medicaid and each hospital’s case-mix-adjusted profit margins.

### **Definition of Price**

In this report, *price* refers to the amount paid to a health care provider per service. The amount paid is often referred to as the *allowed amount*, and it includes amounts paid by the health plan and any amounts due from the patient, including deductibles, copayments, and coinsurance.

One challenge in comparing health care prices is that services differ widely in their intensity and complexity from patient to patient and from provider to provider. We used two approaches to make comparisons between hospitals. Both approaches are case-mix adjusted and account for differences in procedure composition between hospitals.

### *Standardized Price*

The *standardized price* of a basket of services equals the total allowed amount for those services divided by the number of standardized units of service. A *standardized unit* is a service of average intensity, with a relative weight equal to one, where the relative weight reflects the intensity of the service. For example, a heart transplant is far more complicated and requires far more clinical resources than an uncomplicated childbirth. In 2017, a heart transplant with complications had a relative weight of 27.1—and, therefore, accounted for 27.1 standardized units of inpatient service—compared with an uncomplicated childbirth, which had a relative weight of 0.6.

Standardized units are defined and applied differently depending on the following type of service:

- In the *hospital inpatient* setting, a standardized unit is one inpatient stay with relative weight equal to one. We used MS-DRG relative weights, although there are other algorithms available for assigning relative weights for inpatient stays, including All Patient-Refined Diagnosis-Related Groups and Pediatric-Modified Diagnosis-Related Groups. All of the relative weighting algorithms are designed to assign relative weights based on the clinical characteristics of the stay and the expected resource requirements.
- In the *hospital outpatient* setting, a standardized unit is one service, with a relative weight equal to one. In the outpatient setting, Medicare uses the APC system to assign relative weights to services. Like diagnosis-related groups, APCs are designed to assign relative weights to services based on the clinical characteristics of the patient and service and the expected relative resource requirements.

### *Relative Prices Using Medicare as a Benchmark*

Without context, standardized prices can be difficult to interpret. Is an inpatient standardized price of \$15,000 high or low? How do we compare prices if one hospital is located in an area with a high cost of living and another is located in an area with a low cost of living? To summarize hospital prices and make them easier to interpret, we calculate and report *relative prices* using Medicare reimbursement amounts as a benchmark. The relative price is a ratio: the allowed amount from private health plan claims divided by the Medicare allowed amount—for the same services provided by the same hospital—using Medicare’s price-setting formulas. A detailed numerical example of how relative prices are calculated is provided in the Appendix.

Medicare provides a useful price benchmark for several reasons, which are as follows:

1. Medicare is the largest purchaser of health care services in the world and, in many ways, defines and enforces the technical standards used for claims processing and payment in the U.S. health care system.

2. Private health plans negotiate prices with providers, and those negotiated prices will reflect the negotiating leverage of both the plan and the provider. Medicare prices, in contrast, are not affected by bargaining leverage and are, instead, set with the overarching goal of compensating providers fairly based on their costs of doing business and the services they provide (Medicare Payment Advisory Commission, 2016a). Medicare's price-setting formulas are not perfect (Hayes, Pettengill, and Stensland, 2007), but they have been refined over time based on ongoing analysis of legitimate sources of cost variation (Institute of Medicine, 2012) and with the goal of balancing the competing interests of providers, taxpayers, and beneficiaries.
3. Medicare hospital prices are adjusted for a number of key sources of variation in costs (Medicare Payment Advisory Commission, 2016b, 2017), including
  - a. annual updates based on empirical measures of overall inflation in wages and prices of inputs used to produce hospital services, with a downward adjustment for expected improvements over time in productivity
  - b. geographic adjustments based on local variation in wages and the cost of doing business
  - c. hospital-specific adjustments for medical education and treating low-income patients and uninsured patients
  - d. case-mix adjustment based on the diagnoses and treatments provided to an individual patient
  - e. additional outlier payments for cases that are exceptionally costly relative to Medicare's standard price.
4. The federal government makes freely and publicly available detailed data on the prices paid (see, e.g., CMS, 2016a, 2016b) and minutely detailed descriptions of the formulas that determine those prices (see, e.g., CMS, 2015) and the methods used to measure and summarize those prices (CMS, Office of Enterprise Data and Analytics, 2018).
5. A growing body of research reports private prices relative to Medicare prices, allowing benchmarking and comparisons with the findings from the current study (Clemens and Gottlieb, 2017; Ginsburg, 2010; Pelech, 2018; Selden et al., 2015; Sen et al., 2019; Trish et al., 2017; White, 2012).
6. Finally, using Medicare as a price benchmark allows for easy comparisons of price ratios instead of comparisons of absolute price differences.

The pilot study of Indiana employers (White, 2017) only calculated and reported relative prices. Some hospitals felt that they were disadvantaged by that price measure because they received small or no increases in Medicare payment for teaching or uncompensated care. To offer a more complete price comparison, in this study we calculate and report both relative prices and, in the supplemental material, we also report standardized prices.

Although this report benchmarks commercial prices to Medicare rates, it does not identify what percentage of Medicare is the optimal price for commercial prices. Employers can use this information, along with knowledge of their employee population and other market-specific information, to determine if the relative prices that they are paying are appropriate.

## Minimum Cell Sizes

To ensure patient confidentiality in our hospital-level analyses, we do not report allowed amounts, standardized units, prices, or service counts in this report or in the supplemental material for any combination of hospital and service line, or “cell,” with fewer than 11 claims.

We also calculate and report outcomes using more aggregated definitions of a cell, including state; combination of state and year; hospital system; and combination of state, hospital system, and year. For each of those more aggregated cells, we do not report prices unless the cell included at least 100 inpatient claims and 100 outpatient claims, and we only report hospital system-level outcomes if the cell includes data from two or more hospitals. When calculating the more aggregated results, we included hospitals and service lines without applying the 11-or-more restriction.

## Simulating Medicare Prices

Simulating Medicare prices involves the following two steps: grouping (i.e., assigning services to case-mix groups) and pricing (i.e., assigning a price for each service based on the national base rate, the case-mix group, hospital-specific adjustments, and outlier adjustments). We assigned Medicare prices using our own pricing algorithm. That pricing algorithm reflected, to the extent possible, the details of Medicare’s payment formula, although it may exclude some minor adjustments.

Overall, Medicare prices provide a very useful benchmark, but they do have some drawbacks. For example, Medicare’s case-mix-adjustment weights are based on relative costs measured among Medicare beneficiaries, and those relative weights might not be appropriate for enrollees in employer-sponsored plans. Future work should examine the appropriateness of applying Medicare case-mix adjustments to commercially insured populations. Also, Medicare’s uncompensated care adjustments for inpatient hospital stays can result in extremely high Medicare prices for a handful of hospitals. In general, the Medicare program calculates each hospital’s uncompensated care costs and then calculates an add-on payment for each Medicare-covered stay, where the Medicare add-ons partially offset the hospital’s uncompensated care costs. Hospitals that provide large amounts of uncompensated care and have very few Medicare-covered stays, such as hospitals that specialize in childbirth and delivery, can receive very large add-ons to their Medicare prices for inpatient care. We applied an adjustment, described in the Appendix, to avoid using inappropriately large uncompensated care adjustments in calculating the Medicare price benchmark.

The allowed amounts reported by private health plans in claims data do not include nonclaims-based payments to providers, such as risk-sharing payments and pay-for-performance bonuses. Allowed amounts reported in claims data may exceed the amounts actually paid to the provider if the TPA who negotiates prices retains a portion of the allowed amount (American Health Policy Institute, 2018). We did not adjust prices to reflect systematic differences in hospitals’ costs of

treating the privately insured versus Medicare beyond that captured by Medicare's case-mix adjustment.

## Limitations

This study has several limitations. First, the claims data used in this study were only available for enrollees in self-insured plans sponsored by the employers that chose to participate in the study, residents of the six states that contributed APCD medical claims, and enrollees in the private insurance plans that submitted data. The underlying sample represents a convenience sample of participating employers and plans. The claims data included in the study represent only a portion of the entire population of privately insured patients, and it is possible that our estimates are not representative of the prices paid by the broader privately insured population. Although other commercial claims data resources offer broader scope, these other resources do not typically allow researchers to identify hospitals and providers by name. In addition, our results are consistent with studies that have used data from broader populations. For example, a recent work by Michael Chernew and colleagues uses data that represent approximately 10 percent of 2017 U.S. commercial hospital spending and finds similar results (Chernew et al., 2020). In addition, although the sampling approach may limit external validity, for the employers who contributed data, our estimates represent the scope of prices that they pay.

For some states, such as Michigan, our claims data come exclusively from self-insured plans, whereas for other states, such as Colorado, our claims data come from a mix of fully and self-insured plans. Researchers using the Massachusetts APDC found that self-insured plans on average paid hospitals prices that were 2 to 4 percent higher than those paid by fully insured plans (Craig, Ericson, and Starc, 2018), and class-action lawsuits have alleged differential pricing by the same carrier for their fully insured versus self-insured products (U.S. Court of Appeals for the Sixth Circuit, 2007). It is possible, therefore, that our rankings and comparisons among states are affected by the mix of fully and self-insured claims data.

In addition, our analysis of price variation across states and hospital systems does not account for differences in payer composition and insurer mix, which could explain observed price differences. Future work should leverage these data to examine how hospital and insurer market characteristics influence prices. We also do not account for differences in procedure composition between hospitals. Although the Medicare case-mix weights account for service intensity, they may not completely account for differences in pricing between hospitals. However, regression analysis finds that variation in relative prices is explained by variation in providers and not procedures.

To ensure patient confidentiality, we suppressed reporting any prices if fewer than 11 claims were available for a combination of hospital and type of service. Even in geographic areas with significant representation in our claims data, smaller hospitals and facilities may fail to meet the 11-plus claims threshold and thus may have their prices suppressed. Also, because hospitals tend to provide many more outpatient services than inpatient, many hospitals meet the 11-plus claims

threshold for their outpatient services but not their inpatient services. For these hospitals, we only report their outpatient prices and not their inpatient or inpatient plus outpatient prices. The system- and state-level prices and overall average prices for outpatient services include a broader set of hospitals than the corresponding average prices for inpatient services.

Under the terms of our data use agreements, prices could not be compared among or between health plans. The study design also excluded Medicaid plans and Medicare Advantage plans. The prices that we include in this report are based only on the claims data available to us and do not represent the overall average price paid to each hospital by all private health plans. Based on analyses of the Massachusetts APCD, health plans vary in the prices they pay to the same hospital, and so there may be differences between the prices we report and the prices individual employers pay to each hospital and hospital system (Craig et al., 2018).

Our analysis was not limited to in-network providers. Therefore, the prices that we report represent a mixture of negotiated contracted rates paid to in-network providers and allowed amounts for services provided by out-of-network providers. Another limitation arises from the fact that the private claims data often do not include MPNs. It is possible that there are inaccuracies in the crosswalk from provider identifiers in the claims data to MPNs, as well as in the assignment of hospitals to systems. The provider identifiers in some cases only identified the billing provider (i.e., the provider that submits the claim and receives payment) and not the servicing provider (i.e., the provider that actually provided the service). Although significant effort went into creating those crosswalks and ensuring their accuracy, some discrepancies may remain.

In some cases, providers submitted a claim that was subsequently reversed and then resubmitted and paid. We removed reversals from the analytic data set, which was straightforward because those claims are clearly designated as reversals, and they have negative charge amounts and allowed amounts. We also attempted to remove all claims that were subsequently reversed by matching reversals with the original claim. Claims that were subsequently reversed might not have been removed in some cases either because our matching algorithm failed to detect the subsequent reversal or because the reversal occurred after the claims data were extracted for this study.

## 4. Findings

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This study used data from 49 states and the District of Columbia. Data from Maryland was collected but was excluded from the analysis due to Maryland's all-payer rate setting program. The sample includes data from 3,112 hospitals. Over the 2016 to 2018 period, the claims data used for this study accounted for \$33.8 billion in spending by private payers. Of this amount, \$15.7 billion consisted of spending for hospital inpatient claims, \$14.8 billion in spending for hospital outpatient claims, and \$3.3 billion in spending for professional claims provided in a hospital. The analysis included approximately 750,000 claims for inpatient hospital stays and 40.2 million claims for outpatient services. The simulated Medicare payments for the same services provided by the same facilities totaled \$14.1 billion—\$6.9 billion for inpatient hospital claims, \$5.2 billion for hospital outpatient claims, and \$2.0 billion for associated professional services.

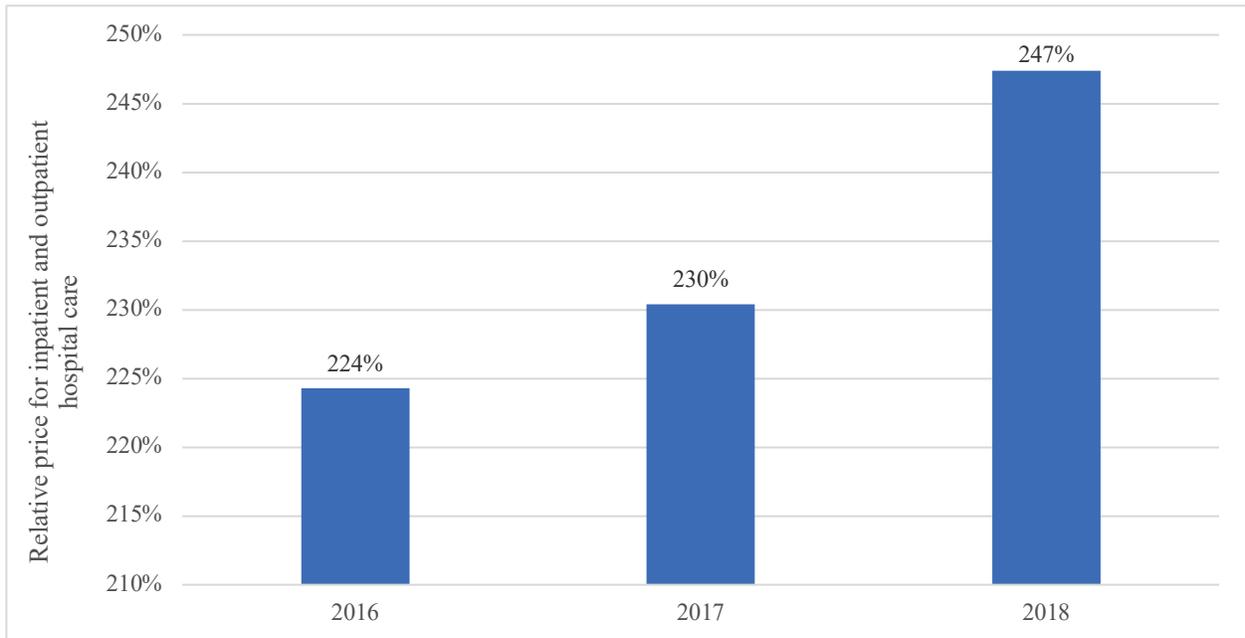
This difference implies that, overall, the private payers included in this study paid 240 percent of what Medicare would have spent at that time for the exact same services at the same set of facilities, a difference of \$19.7 billion. Put another way, if the private health plans participating in the study had paid hospitals using Medicare's payment formulas, the total allowed amount over the 2016 to 2018 period would have been reduced by \$19.7 billion, a potential savings of 58 percent.

A detailed list of both relative and standardized prices for each facility, identified by name and MPN, is included in the supplemental material. The supplemental material also includes CMS Hospital Compare star ratings for those hospital facilities.

### Trends in Hospital Relative Prices

One important question for employers is whether the relative prices for hospital care have continued to rise in recent years. To address this question, we measured relative prices (including inpatient and outpatient care) for hospitals by calendar year. This analysis includes all hospitals in our analytic sample. As shown in Figure 4.1, from 2016 to 2018, we find that the overall relative price increased from 224 to 247 percent, a compounded annual rate of increase of 5.1 percent. This growth rate is higher than the annual growth rate of 1.6 percent observed in the previous study (White and Whaley, 2019). The differences between these results and previous studies are partially due to the broader set of employers and other data contributors used in the current study. In addition, the prices presented in this study combine professional and facility fees into a single service-level price.

**Figure 4.1. All-State Trends in Relative Prices**



NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. Prices include prices for inpatient and outpatient services and group facility and professional fees.

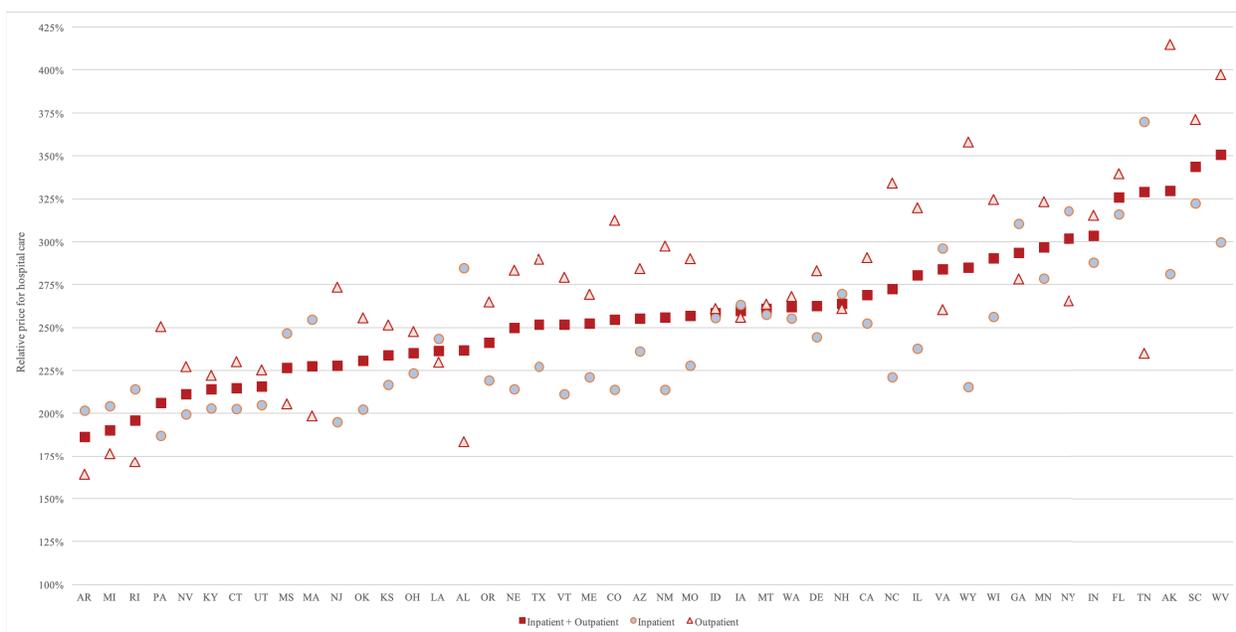
Because these prices are relative to Medicare, which inflation-adjusts its payment rates and incorporates changes due to rising wages, they represent increasing divergence in the prices paid by private plans and the prices paid by Medicare.

### Relative Prices, Overall and by State and Hospital System

In the most current year for which we have full data, 2018, the average overall relative price for hospital procedures, including inpatient and outpatient providers and combining professional and facility fees, was 247 percent of Medicare prices. Among just hospital inpatient procedures, the average relative price in 2018 was 231 percent, while hospital outpatient procedures averaged 267 percent of Medicare prices.

The states included in the study vary by twofold in their relative prices in 2018, as shown in Figure 4.2, ranging from under 200 percent of Medicare in Arkansas, Michigan, and Rhode Island to nearly 325 percent of Medicare rates in Florida, Tennessee, Alaska, South Carolina, and West Virginia. Prices are case-mix adjusted and relative to Medicare, and differences in prices are thus unlikely to be due to differences in patients and procedures. We exclude states with fewer than 100 outpatient and 50 inpatient observations.

**Figure 4.2. Relative Prices, by State, 2018**

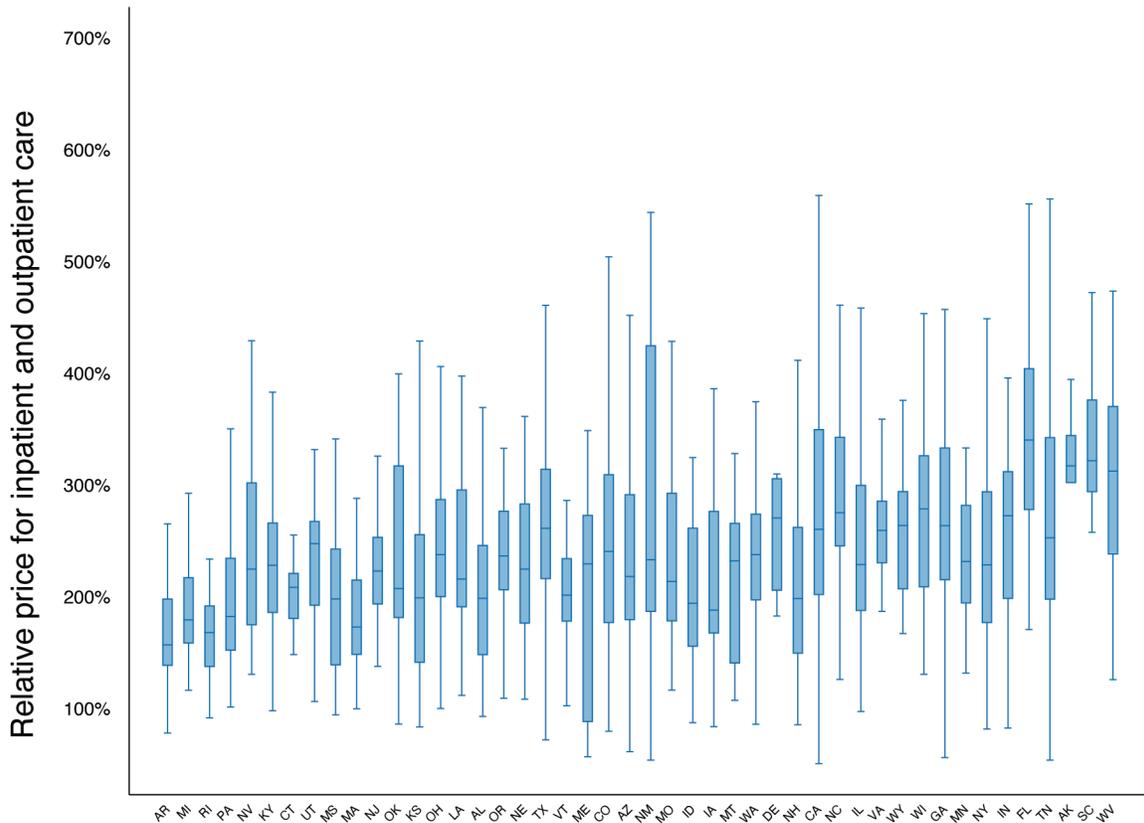


NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. Prices include prices for inpatient and outpatient services and group facility and professional fees.

We also examined the distribution of prices within each state. As shown in Figure 4.3, the 2018 distribution of prices varies considerably both within and between states. Across all states, the average state-level 25th and 75th percentile of relative prices, denoted by the top and bottom markers for each state, are 1.9 and 3.0, respectively. For example, in Indiana, the 25th percentile of hospital relative prices is 198 percent of Medicare, while the 75th percentile is 313 percent of Medicare. Thus, within a typical state, moving from hospitals at the 75th percentile of relative prices to hospitals at the 25th percentile would result in a reduction in prices equivalent to lowering prices by 110 percentage points relative to Medicare. Relative to the mean price of 247 percent of Medicare, this movement translates to a 45-percent reduction in hospital prices. In contrast, moving from the state with the 75th percentile price to the state with the 25th percentile prices would result in a reduction in prices equivalent to 58 percentage points of Medicare, equivalent to a 23-percent relative reduction. Thus, the typical state has more variation in prices within their state than exists between states.

We also compared prices between hospitals within the same hospital system. For this analysis, we limited the sample to 40 hospital systems with at least 10 hospitals. As shown in

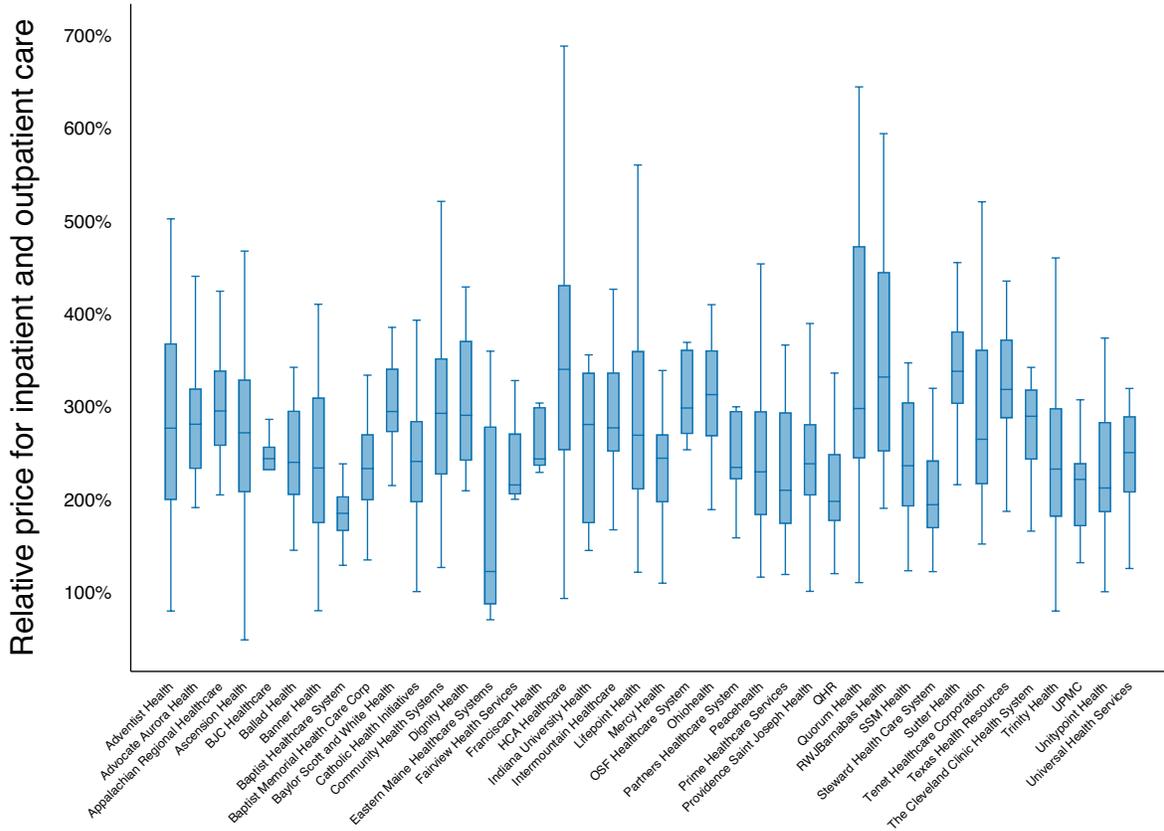
**Figure 4.3. Distribution of Relative Prices, by State, 2018**



NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. For each state, this figure denotes the 25th-percentile, median (50th-percentile), and 75th-percentile relative prices.

Figure 4.4, wide variation exists in hospital prices across many large systems. Within these hospital systems, the median price for each system varies from a 25th percentile of 233 percent of Medicare to a 75th percentile of 292 percent of Medicare, a relative difference of 20 percent. Within an average hospital system, the hospital with the 75th price percentile has relative prices that are 32 percent higher than the system’s 25th percentile price. Thus, prices vary more within a system than across a system. Although this analysis is limited by not considering potential payer differences that affect prices, it provides descriptive evidence that hospital prices vary within large hospital systems.

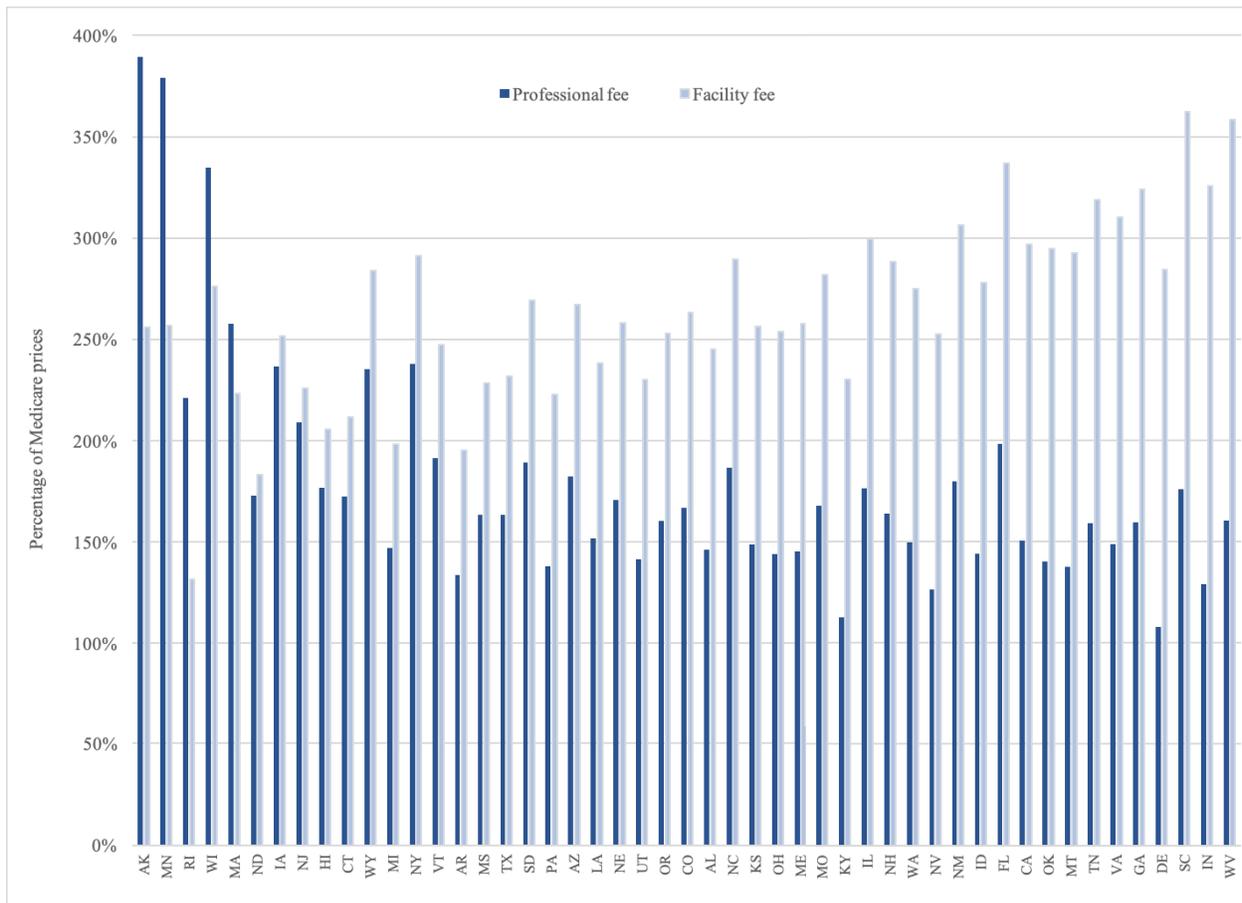
**Figure 4.4. Distribution of Relative Prices, by Hospital System, 2016–2018**



NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. For each hospital system, this figure denotes the 25th-percentile, median (50th-percentile), and 75th-percentile relative prices for hospitals in the system. Only systems with ten or more hospitals included.

Our main results combine professional and facility fees. As an additional test, we compared the state-level facility and professional fees relative to Medicare. Figure 4.5 presents state-level facility and professional fees relative to Medicare reimbursement rates and is ordered by the state-level absolute difference between professional and facility fees. In Minnesota, professional fees are 378 percent of Medicare, compared to 259 percent for facility fees, a difference of 120 percentage points. At the other end in West Virginia and Indiana, professional fees are 199 and 197 percentage points, respectively, lower than facility fees. Combining these results with the results in Figure 4.2 suggests that across states, an average of 13 percent of overall hospital price difference relative to Medicare is driven by professional fees.

**Figure 4.5. Relative Facility and Professional Prices, by State, 2016–2018**



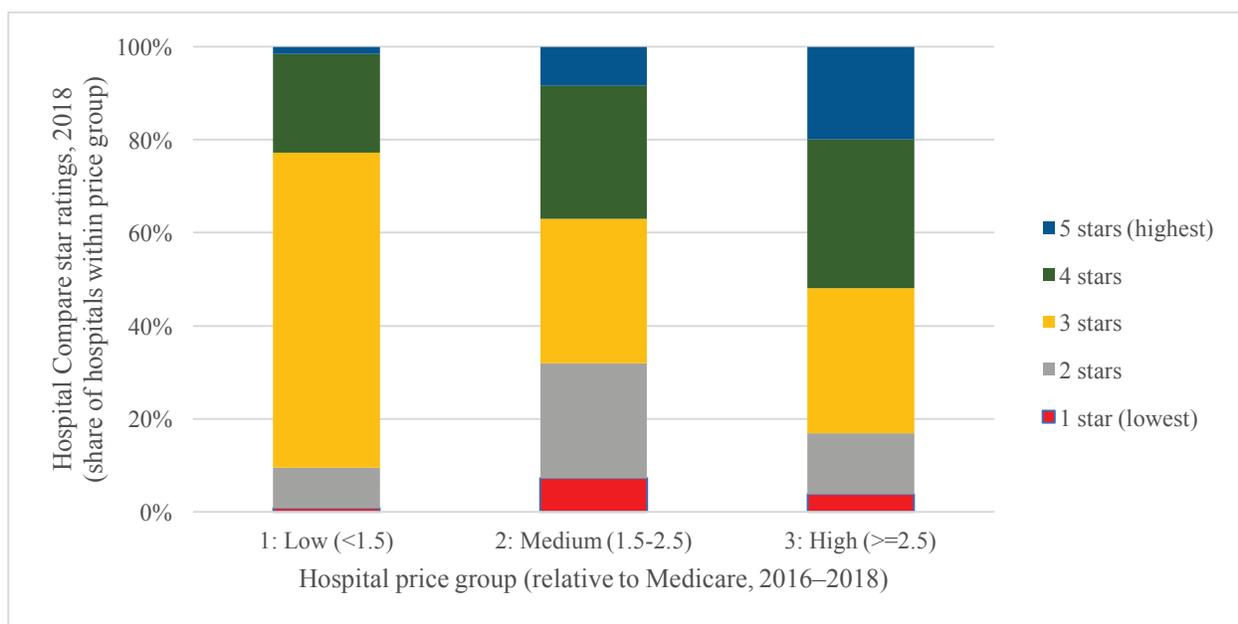
NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. For each state, this figure denotes relative prices for facility and professional payments. States are sorted by the percentage-point difference between facility and professional relative prices.

## Prices and Quality

To examine the association between hospital prices and quality, we assigned each hospital to one of three groups based on its overall relative price: low (less than 150 percent of Medicare), medium (150 to 250 percent of Medicare), and high (greater than 250 percent of Medicare). Within each of those three groups of hospitals, we measured the share of hospitals receiving each of the five-star ratings (one through five). To account for differences in hospital size, these hospital shares within each price group were weighted by each hospital’s simulated Medicare payments, which reflect the quantity and intensity of services.

The relationship between star ratings and prices, as shown in Figure 4.6, can be viewed from at least two different perspectives. One perspective is that high-priced hospitals, at least based on this particular measure of quality, tend to have better quality than low-priced hospitals—among

**Figure 4.6. Number of Hospitals Receiving One Through Five Stars from CMS, by Price Group**

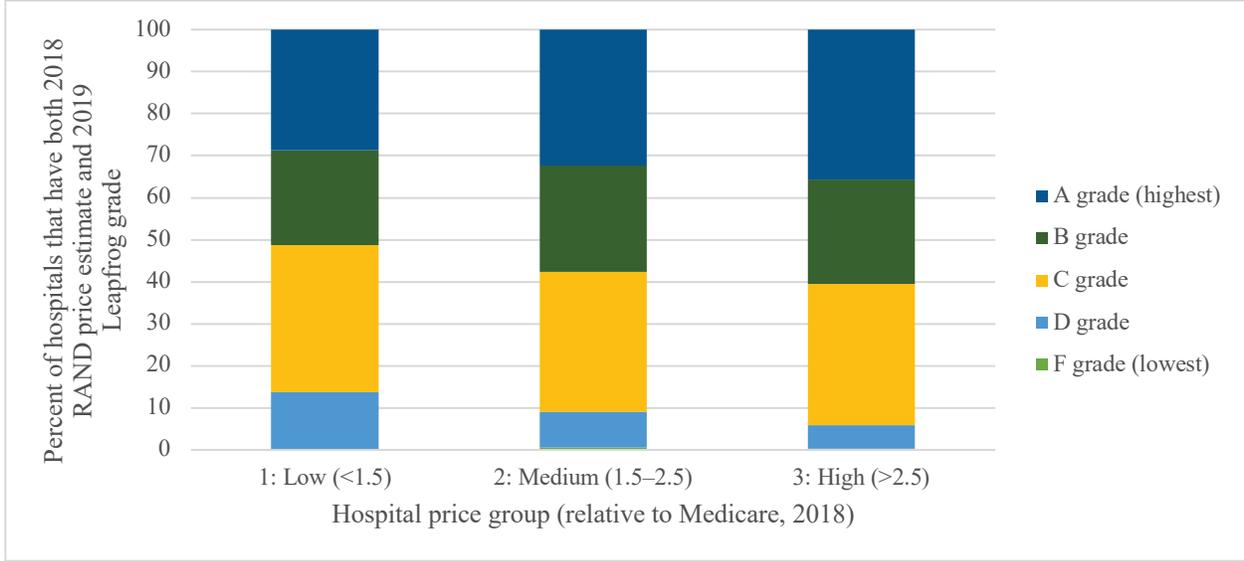


NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. Hospitals are categorized as those with prices below 1.5 times Medicare rates, between 1.5- and 2.5-times Medicare rates, and 2.5 times or above Medicare rates. Prices include facility and professional payments. Each price category contains the share of hospitals in that category with each CMS Hospital Compare star category.

high-priced hospitals, those with relative prices 2.5 times and higher of Medicare prices, 20 percent received five stars and only 4 percent received one star. Among lower-priced hospitals, those with relative prices below 1.5 times Medicare prices, 2 percent received five stars, and 1 percent of hospitals received one star. At the same time, high-value hospitals—meaning those offering low prices and high quality, at least based on this particular measure of quality—do appear to exist: 91 percent of lower-priced hospitals received three or more stars. Seventeen percent of higher-priced hospitals received one or two stars, compared with 10 percent for lower-priced hospitals, and 32 percent of hospitals with relative prices between 1.5- and 2.5-times Medicare rates. Thus, in at least some parts of the country, employers have options for high-value facilities that offer high quality at lower prices.

We also used measures of hospital safety to explore the same question: whether hospitals with relatively high prices tend to deliver more value. Seventy-one percent of hospitals in the sample received a Leapfrog grade. As with the previous graphic, the relationship between Leapfrog Hospital Safety grades and prices (Figure 4.7) tells at least two stories. One perspective is that the high-priced hospitals in our sample tended to have the same safety grades that lower-priced hospitals had. Among graded hospitals, 51 percent of hospitals in the low-price category, 1.5 times Medicare and below, received a Leapfrog grade of A or B. Among the middle (1.5 to 2.5 times Medicare) and high (above 2.5 times Medicare) price categories, 58 and 60 percent of

**Figure 4.7. Number of Hospitals Receiving Leapfrog Safety Grades A Through F, by Price Group**



NOTE: Relative prices equal the ratio of the amounts actually paid divided by the amounts that would have been paid—for the same services provided by the same hospitals—using Medicare’s price-setting formulas. Hospitals are categorized as those with prices below 1.5 times Medicare rates, between 1.5- and 2.5-times Medicare rates, and 2.5 times or above Medicare rates. Prices include facility and professional payments. Each price category contains the share of hospitals in that category with each Leapfrog Hospital Safety grade.

hospitals received an A or B score. For low-safety scores, 14, 10, and 6 percent of hospitals received a grade of F or D in the lowest, middle, and highest relative price categories, respectively.

Therefore, high-value hospitals—meaning those offering low prices and high safety, at least based on this particular measure of safety—do exist. In at least some parts of the country, employers have options for high-value facilities that offer high quality at lower prices.

Although this analysis does not show a clear link between hospital price and quality/safety, the analysis is incomplete for several reasons. First, it only includes data from the subset of U.S. hospitals that were in the Leapfrog survey. Also, the Leapfrog and CMS measures we used to approximate value do not capture all the outcomes that health care purchasers value, such as patient convenience and hospital reputation. To fully measure hospital value, one would also have to consider many other factors, including the prevalence and degree of positive health outcomes (the efficacy of prevention and treatments), not just hospital safety and patient experience.

### Prices and Patient Composition

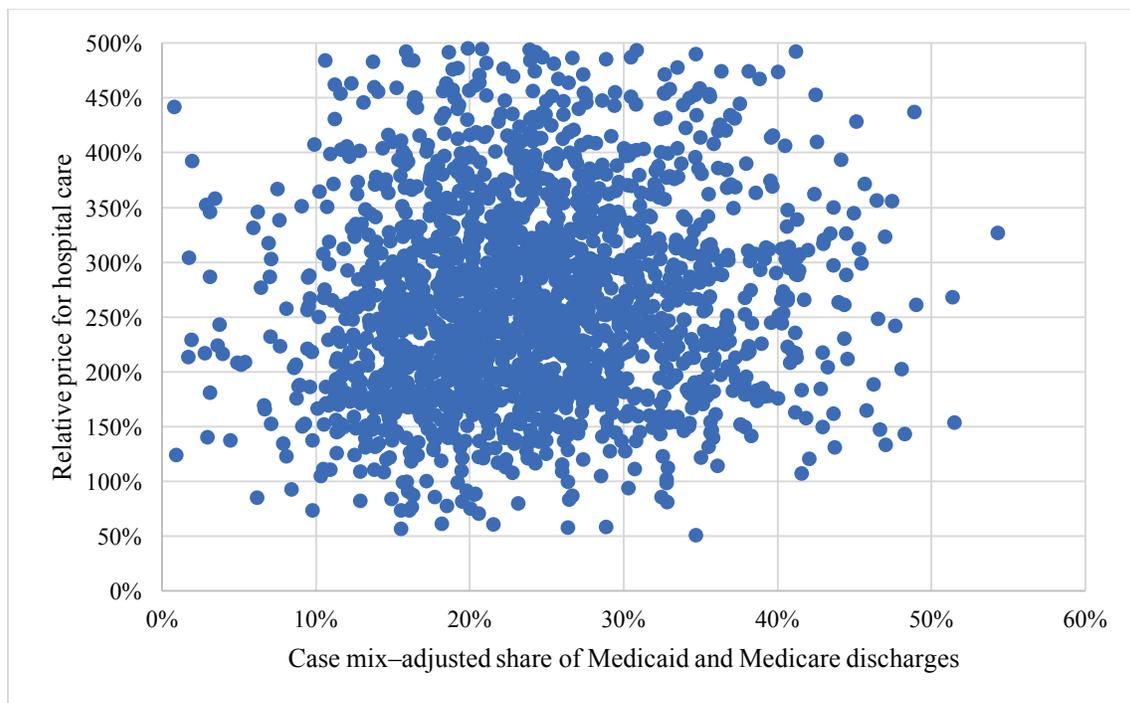
The wide variation in prices is notable, and addressing this variation can lead to substantial reductions in medical spending. However, the sources of this variation are important to

understand before employers and policymakers implement policies that attempt to address the gap between Medicare and commercial prices.

Several possible causes of this variation exist. First, natural variations in wages, cost of living, and other such factors related to geography exist. However, the Medicare system systematically adjusts for these differences, so they are unlikely to significantly contribute to the observed differences in prices. Second, they could be explained by differences in clinical quality. However, as illustrated above, we do not find a strong relationship between prices and two widely recognized quality and patient safety metrics.

A common rationale offered by hospitals is the economic need to charge commercial payers' higher prices to offset underpayments by public payers and losses due to uncompensated care. As a test of this argument, using HCRIS data, Figure 4.8 plots relative prices and the share of each hospital's case-mix-adjusted Medicaid and Medicare discharges. There is not a strong visual relationship between hospital prices and the share of patients covered by Medicare or Medicaid. The hospital-level portion of private prices explained by the share of Medicare and Medicaid patients is 0.3 percent. Although not a causal test, the absence of a correlation between hospital prices and payer composition does not support the argument that higher hospital prices are in place to offset underpayments by Medicaid and Medicare.

**Figure 4.8. Hospital Relative Prices and Case-Mix-Adjusted Share of Discharges Attributed to Medicaid and Medicare Patients**



## 5. Discussion

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This study compared the difference in prices between private health plans and Medicare for 3,112 U.S. hospitals. The prices that employers are paying for hospital care are highly variable across states, hospitals, and sites of care. On average, and over the 2016 to 2018 period, employers pay hospitals 240 percent of what Medicare pays for the same services at the same set of hospitals. To illustrate the magnitude of price variation, we calculated relative prices at the 25th and 75th percentiles in each state. For employers included in this study, the difference between paying prices at the 75th percentile hospital versus the 25th percentile hospital within their state represents a 45-percent reduction in spending on hospital care.

When analysts discuss the observed gap between private prices and Medicare prices, they cite two starkly divergent explanations. One explanation (the *cost shifting* story) is that because Medicare severely underpays hospitals, hospitals are compelled to charge higher prices to their privately insured patients to remain financially viable (Dobson, DaVanzo, and Sen, 2006). Many hospitals either break even or receive below cost reimbursement from Medicare and Medicaid (AHA, 2020). Underpinning this argument is the assumption that, unlike many other industries, hospitals leave the ability to price higher “on the table” when setting prices. However, the empirical evidence supporting the cost-shift rationale is limited (Frakt, 2011; Menachem and Halverson, 2020). In addition, in our analysis, we find a very weak relationship between hospital prices and the share of patients treated by that hospital who are covered by either Medicaid or Medicare.

The other explanation (the *leverage* story) is that hospitals, especially “must-have” hospitals, use their negotiating leverage to extract price concessions from private health plans. Higher negotiated prices, in turn, allow hospitals’ costs to increase, which makes Medicare prices look low by comparison (Gowrisankaran, Nevo, and Town, 2015; Ho, 2009; Stensland, Gaumer, and Miller, 2010).

As noted in our previous report, from the employer’s perspective, these competing explanations are largely abstract. As purchasers of health care services, the more concrete question for employers is whether it is reasonable and necessary for employers to be paying prices that are nearly 2.5 times as much as Medicare rates, especially when there are hospitals with similar quality scores that have lower prices. Even if cost-shifting were a reasonable response to shortcomings in government payments, many employers would not consider it to be their responsibility to make up the shortfall when shopping for health care or for other goods and services. Even if some employers do not object to helping to address financial shortfalls of Medicare and Medicaid, the prices paid to hospitals still deserve consideration. Medicare sets hospital rates to approximate hospital operating costs. Although positive net margins are needed for hospitals to stay in business, employers may feel uncomfortable paying for substantially higher margins at many hospitals.

In the case of specific high-priced hospitals, there may be justification for the unusually high prices, such as offering specialized services or a well-deserved reputation for higher-quality care. However, if two hospitals have similar quality, then any difference in prices may be harder to justify. Employers can use the data in this report to help inform these comparisons and to make judgments about appropriate pricing.

For providers, high prices paid by private health plans allow a facility to achieve healthy operating margins and cash flow, while adding clinical staff and administrative personnel. Robust revenues from private health plans can also help underwrite upgrades to existing facilities and service lines, entry into new service lines and geographic markets, and integrating vertically with physician organizations and other provider types to increase coordination of care. Lower private prices would require hospital managers to find ways to increase revenues or reduce costs to maintain current margins and service operations.

Hospitals are important to many communities, and reducing hospital revenues may lead to reductions in community benefits, employment, and services. However, employer spending on health care for their employees may offset spending on wages and other benefits, which are also important for communities. For example, other studies have found that a rise in health care costs leads to lower wages (Arnold and Whaley, 2020; Baicker and Chandra, 2006). Employers are cognizant of the trade-offs imposed by high health care spending. Different employers operating in different markets may reach different conclusions on the appropriate level of prices that they should pay, but this important conversation with their insurers and TPAs cannot occur without reliable data on the actual prices they pay.

## What Strategies Can Employers Use to Address High Hospital Prices?

Many employers are focused on strategies to reduce health care spending, but many rely on wellness and other programs designed to improve employee health and reduce health care utilization. Despite their promise and widespread adoption, wellness programs have not been shown to reduce spending or improve employee health (Jones, Molitor, and Reif, 2019; Matkke et al., 2013; Song and Baicker, 2019). Employers may realize much larger savings if they instead place increased emphasis on the prices negotiated on their behalf.

## Benefit Design Approaches

A growing set of studies finds that provider consolidation is a key contributor to price increases and price variation (Cooper, Craig, Gaynor, Harish, et al., 2019; Gaynor, 2016; Gaynor, Ho, and Town, 2015). Although employers do not have regulatory oversight of provider consolidation, they still have options to influence prices. Providing employees with usable price transparency information is one way of encouraging employees to use lower-priced providers. However, previous research suggests that price information alone is not sufficient to reduce the

use of higher-priced providers (Desai et al., 2017; Whaley et al., 2014; Whaley, Brown, and Robinson, 2019).

To effectively increase the use of lower-priced providers, employers need to change the underlying incentives for employees and their dependents. The most commonly implemented benefit design change, the high-deductible plan, has had limited success in encouraging patients to price shop (Brot-Goldberg et al., 2017; Sinaiko, Mehrotra, and Sood, 2016; Sood et al., 2013; Zhang et al., 2017). However, more targeted benefit designs, such as narrow networks, tiered networks, and reference pricing, which use patient cost-sharing incentives to shift patients towards lower-priced providers, have been successful in moving patient volume. Patient steering can be accomplished through the relatively blunt approach of offering employees a new choice of a narrow network at a lower premium contribution or by applying differential cost-sharing based on hospital tiers (Ginsburg and Pawlson, 2014; Gruber and McKnight, 2016; Sinaiko, Landrum, and Chernew, 2017). One form of differential cost-sharing is reference pricing, in which patients who receive services from higher-priced hospitals may be liable for allowed amounts above a preestablished limit (Robinson, Brown, and Whaley, 2017). Employers and plans can also use changes in patient volume to negotiate lower prices (Whaley and Brown, 2018).

An opportunity for immediate savings is to use cost-sharing incentives to move patient care outside the hospital. A key reason for the success of the reference pricing programs implemented by the California Public Employees' Retirement System for surgical services and Safeway for diagnostic tests is the availability of ambulatory surgical centers and free-standing testing facilities, respectively. Rather than navigating between different providers and facilities, patients simply need to know to get care outside hospitals (Whaley, Brown, and Robinson, 2019).

Although these patient-focused approaches can be beneficial, they are not applicable to all types of care. Approximately 35 to 43 percent of all health care services are potentially shoppable (Frost and Newman, 2016; White and Eguchi, 2014). In addition, consumer-focused approaches have the potential disadvantage of placing the burden of navigating a complex health care system on patients. Thus, they must be accompanied by adequate information on provider prices and must allow patients to learn about the programs (Robinson et al., 2017).

At the extreme end, some employers go further and use direct-contracting approaches, in which the hospital or health system agrees to lower pricing in exchange for the employer directing sizable patient volume to that hospital. For example, General Motors allows employees to enroll in an insurance plan in which the majority of care is provided by the Henry Ford Health System. This approach links lower rates with higher patient volume and can also promote care coordination and clinical integration. Other employers use bundled payment approaches, where providers bear the risk for excess costs and have financial incentives to restrain costs (Meyer, 2019). Relatedly, employers in Fort Wayne, Indiana used information from the previous version of this report, which identified local hospitals as among the most expensive in the country, to push their TPA to negotiate lower prices (Abelson, 2019; Slater, 2020).

More broadly, employers can change the way prices are negotiated on their behalf by insurers and TPAs. One common contracting approach is to use discounted charges, in which allowed amounts are set as a percentage of billed charges (e.g., listed chargemaster rates). Discounted-charge contracts are relatively simple and have historically been common in the hospital industry (Cooper, Craig, Gaynor, and Van Reenen, 2019; Weber et al., 2019) especially for outpatient services (Small, 2002). But discounted-charge contracts have a severe downside—they leave employers and their plans vulnerable to aggressive inflation of charges by some hospitals (Bai and Anderson, 2015, 2016), making it difficult for health plans and employers to track price increases over time, compare prices across hospitals, and incentivize list-price inflation (Tompkins, Altman, and Eilat, 2006). Although some limits are put in place, discounted-charge contracting allows hospitals and providers to drive rate setting.

Negotiating prices for specific services is an alternative but cumbersome process. An alternative is to specify allowed amounts based on a case-mix-adjustment system with a hospital-specific negotiated base rate. Specifying contracts as a multiple of Medicare would be a straightforward and transparent way to achieve this type of price setting and would surmount the problems with discounted-charge contracts without requiring any proprietary case-mix adjusters.

“Multiple-of-Medicare” or “Medicare-plus” contracting relies on the ability of Medicare to set relative prices between procedures. Compared with other benefit design changes, it is easy to implement because the employer only has to designate the percentage of Medicare payments that it will accept. The contract with the hospital does not have to specify prices for each service. Instead, it specifies the percentage of Medicare that will be applied to all services. In both Montana and Oregon, the health plan for state employees transitioned to a multiple-of-Medicare contracting arrangement (Appleby, 2018, 2019; Bartlett, 2018; OregonLaws.org, 2017), which has been referred to as “reference-based contracting—Medicare.” Employers in Indiana recently pushed their TPA to implement RBC for outpatient services.

The North Carolina state employee plan considered a similar program (Mathews, 2018), but this met strong resistance from hospitals and has not been implemented. As the North Carolina example shows, the challenge with reference-based contracting—Medicare is getting hospitals to agree to these terms. As this study highlights, currently hospitals receive prices that may be many multiples of Medicare. Hospitals may not agree to accept Medicare-plus contracts that are not within their current multiples of Medicare and may instead elect to be out-of-network. The patient-focused approaches outlined above may be one way to ease into broader Medicare-plus models. In addition, in markets where employers face few hospital choices due to market consolidation or naturally occurring monopolies, employers have less leverage to negotiate benefit or contracting options to reduce prices.

These approaches rely on employers and health plans having some degree of negotiating leverage with hospitals. This leverage may be lacking in negotiations with geographically dominant or must-have systems. In addition, using negotiation leverage can come at a cost. The must-have status that enables high prices exists in part because patients avoid insurance networks that do not include certain providers. Employees may chafe at restrictions on their preferred

providers or hospitals, and directors of human resources are typically reluctant to disrupt their employees' relationships with their health care providers. Restrictions on hospital access may be inappropriate or impossible for patients needing emergency care or highly specialized services such as organ transplantation or burn intensive-care units. To protect patients from bearing high costs, appropriately designed steering models should actively engage patients and provide exemption policies. Employers can increase employees' acceptance of steering strategies by communicating clearly both the rationale and the mechanism, as well as reinforcing the fact that savings on health benefits can benefit workers by leading to higher wages (Lechner, Gourevitch, and Ginsburg, 2013). Nonetheless, using negotiating leverage requires that self-insured employers consider the trade-off between wide access to providers and lower prices.

## Policy and Regulatory Advocacy Approaches

The feasibility of benefit design approaches may be limited due to few hospital options in many markets. Using market competitiveness thresholds developed by the Department of Justice, research using the Health Care Cost Institute data finds that 70 percent of U.S. metropolitan markets are concentrated (Health Care Cost Institute, 2019). In addition to benefit design approaches, employers can develop and support state and federal policy interventions that change the balance of negotiating leverage in their favor without necessarily restricting networks. Employers can support efforts to promote competition in health care markets by opposing consolidation among existing providers and by promoting entry of new, lower-priced providers. For example, several employers in California sued the Sutter Health system over anticompetitive practices, and employers in Indiana have pushed for state-level policies that promote competition and eliminate gag clauses (Journal, 2020; Thomas, 2019). Employers can also support efforts to develop and maintain APCDs and allow these APCDs to be used for price reporting purposes. Although the 2016 U.S. Supreme Court's decision in *Gobeille* prohibits states from requiring self-insured employers to provide APCD data, self-insured employers can support APCDs by voluntarily contributing their data, ensuring that the prices that they are paying are reflected in APCDs. As the employer participation in this study indicates, many employers are motivated to know the prices that are being negotiated on their behalf.

Another state or federal policy intervention could be to establish limits on total payments for out-of-network care (Murray, 2013). These limits restrict how much providers can be reimbursed for care that is received outside the health plan's network; and such limits, if designed appropriately, can help to reduce in-network negotiated rates by limiting the negotiation leverage hospitals have with insurers (Cooper, Nguyen, et al., 2019; Duffy, Whaley, and White, 2020). If hospitals do not agree to lower in-network limits, the insurer can designate the hospital as an out-of-network provider and simply pay the regulated rate. For example, recent research finds that the most stringent out-of-network regulations could reduce in-network prices by up to 40 percent, whereas more moderate policies could lead to a 23-percent reduction (Duffy et al., 2020). For such limits to be effective, they should apply to total payments, including from

the plan and the patient. If providers can “balance bill” and charge patients for any amounts not paid for by the employer or health plan, the effect can inadvertently strengthen hospitals’ negotiating leverage and drive up prices. Total payments for out-of-network care are limited in private Medicare Advantage plans, and those limits have been shown to subtly but dramatically reshape negotiations between plans and hospitals and drive down negotiated prices (Berenson et al., 2015; Duffy et al., 2020; Trish et al., 2017).

Employers may also consider supporting all-payer and global budget programs, such as the program implemented in Maryland, which remove employers from the price negotiation process (Sharfstein et al., 2018). Global budgets can also enable financial protections and guarantees to provider groups (Fried, Liebers, and Roberts, 2020; Padula and Trish, 2020). In addition, proposals for a Medicare buy-in would potentially allow employers to buy coverage for their employees that pays providers at Medicare prices. In 2017, Senators Michael Bennet and Tim Kaine released a federal Medicare buy-in proposal, “Medicare X” (Kliff, 2017), which the American Hospital Association (AHA) has estimated would reduce payments to hospitals by \$800 billion over a ten-year period (Koenig et al., 2019). Although the AHA analysis focuses on the negative financial effects of Medicare X on hospitals, savings of that magnitude would likely reduce premiums and out-of-pocket payments for patients and provide additional resources for wages and other benefits.

## 6. Conclusion

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Employers are among the most important purchasers in the U.S. health care system. For many employers, health care benefits are the second largest business expense after wages. However, many employers lack fundamental information about the health care prices that are negotiated on their behalf, which hampers their ability to be prudent purchasers of health care benefits. This report is designed to take a step toward reducing this information barrier for employers, but information cannot by itself lead to changes in prices. Although many hospitals do face increasing costs, such as growing employment and personnel costs, increased needs for investments in electronic health records, and other technologies, the results of this study show that some hospitals are still able to charge much lower prices than other hospitals. Moving patient volume to lower-priced hospitals that offer better value is an opportunity for employers, their employees, and society to reduce health care spending, and also helps the market to reward the most efficient hospitals.

This process may require employers to think more judiciously about the prices that are being negotiated on their behalf, rather than outsourcing much of the work to brokers and TPAs. As illustrated in this report, there are large potential savings at stake.

# Appendix

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## Detailed Methodology

### *Obtaining and Preprocessing the Claims Data*

RAND entered into data use agreements with TPAs, the organizations that maintain APCDs and health plans. The data use agreements describe the data-security protocols and restrict the data to be used only for this project, and sometimes also for related follow-on studies. The data-security protocols and analytic plan were approved by RAND's Human Subjects Protection Committee.

Each participating employer instructed its health plan administrator or data warehouse to transmit paid claims data to RAND, based on the following criteria:

1. only enrollees in a plan sponsored by one of the participating employers
2. facility claims and claims for professional services but no pharmacy claims
3. services provided from 2016 through 2018 (and, in some cases, a longer period)
4. only claims from private health plans (this excludes enrollees in Medicare Advantage plans and Medicaid managed-care organizations)
5. the employer-sponsored plan includes medical coverage (this excludes enrollees in dental-only plans or vision-only plans)
6. the employer-sponsored plan is the enrollee's primary payer (this excludes claims paid as secondary payer—e.g., through a Medicare supplemental plan or through coordination of benefits with another private health plan).

The claims data that were transmitted to RAND excluded any direct patient identifiers (e.g., name or member number), and they were transmitted by secure file-transfer protocol. Some data contributors provided limited data sets that contained protected health information—namely, dates of service and date of birth. Deidentification required stripping out any data elements that could be used to indirectly identify patients while retaining the minimum data necessary for the pricing analysis. For example, before leaving the cold room, date of birth was used to calculate age (in years) at the time of service, and age was kept while date of birth was stripped out. Similarly, the “from” and “to” dates on the claim were used to identify the year in which a service was provided and the length of the service in days. The year of the service and length of service were kept while the specific dates of service were stripped out. After preprocessing, the claims data were transferred to a secure, dedicated encrypted drive where the main analysis was performed.

A *claim* represents a request for payment for a set of services provided by a specific facility to an individual patient over a period of one or more days. A claim may consist of many line

items, where each line item represents one specific service and diagnosis. We applied the following criteria to limit the types of services and providers included in the analysis:

1. facility claims for hospital inpatient or hospital outpatient services
2. for each facility claim, we linked the claim with the respective professional claim
3. only claims for facilities whose identities in the private claims data could be crosswalked to Medicare provider numbers (MPNs)
4. claims for services provided by Medicare-certified community hospitals—that is, short-stay hospitals that are paid by Medicare either under the IPPS or the CAH payment system
5. claims for services covered by Medicare and paid through the IPPS or the OPPOS.

Each claim in the database includes detailed information on the procedure or service performed, the provider that performed the service, the price for that procedure that was negotiated by the provider and the insurer, and the amount of that price that was paid by the patient. Flags for in- versus out-of-network providers were generally either unavailable or not reported consistently. Therefore, the analysis included claims regardless of provider network status.

### *Measuring Relative Prices for Hospital Inpatient and Outpatient Services*

#### Subsetting to Hospital Inpatient and Outpatient Services

To measure hospital prices, we had to identify claims for hospital services, as opposed to services provided by other types of facilities (e.g., skilled nursing facilities). To select hospital inpatient and outpatient services, we subsetting our data to include only claims with the place of service reported as hospital inpatient (type-of-bill code equal to 111 or 117) or hospital outpatient (type-of-bill code equal to 131 or 137).

#### Subsetting to Community Hospitals and Assigning Medicare Provider Numbers

We excluded from the analysis hospitals that are not Medicare certified, and we excluded hospitals other than IPPS or CAHs and subunits within community hospitals. Excluded facilities include cancer hospitals, children's hospitals, long-term-care hospitals, and inpatient rehabilitation facilities. We also excluded from the analysis federal hospitals operated by the Veterans Health Administration.

To identify the universe of community hospitals, we used the December 2018 Medicare Provider of Services file, which includes MPNs and information about provider name, location, and type. We selected all providers in the Provider of Services that were hospitals (provider category code equals 01), that were located in one of the states represented by our data contributors, and that were either an IPPS hospital (provider category subtype code equals 01) or a CAH (provider category subtype code equals 11). The private claims data do not include MPNs, so we assigned them. MPNs, which are also known as CMS Certification Numbers, differ from National Provider Identifiers. MPNs are six-character alphanumeric codes that uniquely identify

each facility and that are incorporated throughout Medicare's payment algorithms and claims data processing.

### Simulating Medicare Payment Amounts for Inpatient Services

The private claims data were reported at the line-item level, whereas Medicare inpatient payments are determined based on services provided over the course of an inpatient stay. Therefore, we first collapsed our private claims data to the stay level, summing charges and allowed amounts across line items and maintaining a list of all diagnoses and treatment codes over the course of the stay.

For stays occurring at IPPS hospitals, we fed our stay-level claims data through the MS-DRG grouper software (CMS, 2018). The grouper software assigns an MS-DRG based on diagnoses and procedures reported on the claims data, automatically applying the appropriate grouper version based on the federal fiscal year of the date of discharge. We used the v20.3 for APC grouping and v37.0 for DRG grouping. The grouper software is compatible with both International Classification of Diseases (ICD)-9 and ICD-10 codes, and it successfully assigned MS-DRGs to almost all inpatient stays at IPPS hospitals. Stays that could not be assigned a valid MS-DRG were dropped from the analysis.

We then assigned Medicare payment amounts for each inpatient stay at an IPPS hospital incorporating MS-DRG relative weights, hospital-specific adjustments, and any outlier payments. The factors applied to the hospital-specific adjustments include

- local wage indexes
- successful reporting of hospital quality indicators, as mandated by Section 501(b) of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003
- meaningful use of electronic health records
- disproportionate share of hospital adjustments for hospitals that treat large shares of low-income patients
- indirect medical education adjustments for teaching hospitals
- increased payments for Medicare-dependent hospitals, sole community hospitals, and essential access community hospitals
- uncompensated care adjustments
- Hospital Readmission Reduction Program penalties
- value-based payment adjustments.

As described in the report, Medicare's uncompensated care adjustments can result in very high Medicare prices for a handful of hospitals that provide large amounts of uncompensated care and have few Medicare discharges. To avoid using inappropriately high Medicare inpatient prices as a benchmark in those cases, we applied a correction factor to each hospital's Medicare-uncompensated care adjustment. The correction factor, which was calculated separately for each hospital year, equaled the number of Medicare discharges divided by the sum of the number of Medicare discharges and the number of private discharges, both calculated from the RAND Hospital Data (2020). Private discharges were estimated as total discharges minus the sum of

Medicare discharges and Medicaid/Children’s Health Insurance Program discharges. Conceptually, the correction factor follows the spirit of the Medicare price benchmark (i.e., what would private plans pay if they followed Medicare’s price setting?) and Medicare’s uncompensated care adjustment (by how much does the price for each inpatient stay have to increase so that the hospital receives an appropriate amount in the aggregate?). In other words, if private health plans were paying Medicare prices, then the aggregate Medicare uncompensated care payments would be spread over a base that includes both Medicare discharges and private discharges, and so the per-discharge adjustment would be correspondingly smaller. The Medicare payment amounts *did not* include adjustments for new technology add-ons, short-stay “inlier” adjustments for transfers, or the low-volume adjustment.

Most data contributors provided claims data that included billed charges, and, for those claims, outlier payments were calculated based on billed charges multiplied by cost-to-charge ratios from the provider-specific file. A few data contributors did not agree to provide claims data that included billed charges, and, for those claims data, we simulated outlier payments for inpatient stays by adding a uniform 5-percent add-on. A few minor payment adjustments were not included in the analysis: add-on payments for new technologies, downward adjustments for short-stay transfers, and adjustments for low-volume hospitals.

CAHs are paid by Medicare for inpatient and outpatient services based on their reasonable costs plus 1 percent (CMS, Medicare Learning Network, 2017). Therefore, for inpatient stays occurring at CAHs, we simulated Medicare payment amounts as billed charges multiplied by the hospital’s Medicare inpatient cost-to-charge ratio multiplied by 1.01. The Medicare inpatient cost-to-charge ratio for each CAH and federal fiscal year was calculated using the RAND Hospital Data (2020) resource, which is based on data reported in the Healthcare Cost Report Information System form 2552-10.

### Simulating Medicare Payment Amounts for Outpatient Services

To simulate Medicare payments for outpatient services provided at IPPS hospitals, we first fed our line-item–level claims data through the Integrated Outpatient Code Editor (IOCE) software in batch mode (3M Health Information Systems, 2017). The Integrated Outpatient Code Editor determines, for each line item, whether the service is eligible for payment under the Medicare OPSS and, if so, the appropriate APC. Under Medicare’s OPSS, line items may fall into one of the following three categories:

- assigned an APC and eligible for payment by Medicare
- eligible for payment by Medicare but packaged, meaning that the line item is not paid separately and is instead subsumed within a larger service with its own APC (CMS, Medicare Learning Network, 2019)
- ineligible for payment under the Medicare OPSS.

We defined an *outpatient service* as a line item that is assigned an APC. In some cases, a single patient visit can generate payment for several separate services.

We excluded from the analysis any line items that were flagged by the Integrated Outpatient Code Editor as ineligible for payment under the Medicare OPSS (such as outpatient therapy services, which are paid by Medicare under a fee schedule), nonallowed, or paid under special pass-through provisions. After excluding those line items, we identified all line items with valid APCs and assigned Medicare payment amounts to those line items, taking into account the relative weight of the APC, geographic wage adjustments, discounting for multiple procedures, and outlier payments. For claims from data contributors that did not provide billed charges, a uniform 1-percent add-on was applied for outlier payments. Payments for services provided by sole community hospitals (a type of IPPS hospital) were increased by 7.1 percent. Outpatient claims without any valid APCs were dropped from the analysis.

Some outpatient claims have two or more APCs, in which case we calculated the share of Medicare payments generated by each APC within a claim. We then summed the allowed amounts in the private claims data for each claim and allocated those allowed amounts to line items with APCs. That approach allowed us to calculate relative prices for different types of outpatient services. To simulate Medicare payments for outpatient services provided by CAHs, we multiplied the billed charges for each line item by the Medicare outpatient cost-to-charge ratio and then multiplied the result by 1.01.

#### **Simulating Medicare Payment Amounts for Professional Services Linked to Inpatient and Outpatient Services**

For each inpatient and outpatient service, we identified the corresponding professional service(s). Reimbursements for professional services account for payments to physicians and other professional health care providers. Including professional payments allows us to measure the comprehensive price for a service delivered in an inpatient or outpatient facility. To link professional claims to inpatient and outpatient services, we matched claims occurring within the date range of the first and last dates of service listed on a facility claim.

We then simulated Medicare payments for professional payments by applying the Medicare fee schedule for physician services for procedure codes with active or bundled status codes. For each procedure, the Medicare physician fee schedule assigns relative value units, which reflect the relative effort to perform each service. The fee schedule is further adjusted by a geographic cost index based on the facility NPI, or zip code when the NPI was not available.

#### **Calculating Standardized and Relative Prices for Hospitals, Hospital Systems, States, and Types of Services**

Extending this concept, the relative price of inpatient care for a group of hospitals equals the sum of the allowed amounts for services provided by the group of hospitals divided by the sum of the simulated Medicare-allowed amounts for those services. Similarly, the standardized price for a group of hospitals equals the sum of the allowed amounts divided by the sum of the

standardized units. The same general approach is used to calculate standardized prices and relative prices for specific types of services (e.g., hospital outpatient emergency department visits and hospital inpatient stays for orthopedic procedures).

The overall relative price for a single hospital equals the total allowed amount (including inpatient and outpatient services) divided by the simulated Medicare payments for services provided by the hospital (including inpatient and outpatient services).

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