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Hospital Prices For Commercial Plans Are Twice Those For Medicare Advantage Plans When Negotiated By The Same Insurer

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ABSTRACT Most major insurers operate in both the commercial health insurance and Medicare Advantage (MA) markets. We investigated the ratio of commercial-to-MA prices negotiated by the same insurer, in the same hospital and for the same services, using 2022 price information disclosed by hospitals in compliance with the hospital price transparency rule. Insurers negotiated median hospital prices for commercial plans that were two to three times higher than their MA prices in the same hospital for the same service. The median commercial-to-MA price ratio in the same hospital varied, from 1.8 for surgery and medicine services to 2.2 for laboratory tests and emergency department visits and 2.4 for imaging services. In multivariable Poisson regression analysis, higher ratios were associated with system-affiliated, nonprofit, and teaching hospitals, as well as with large national insurers. These findings reflect the differences in financial incentives and regulatory policies in the commercial and MA markets. Because insurers respond to differing incentives by obtaining different negotiated prices across markets, policy and practice efforts that alter incentives for insurers may have the potential to lower commercial prices.

The cost of health insurance in the commercial insurance market has risen rapidly over the course of the past decade,¹ driven primarily by high and rising prices for health care services in this market.^{2–5} Prices in Medicare Advantage (MA), the privately managed version of Medicare that accounted for roughly 50 percent of Medicare beneficiaries in 2022, are predominantly negotiated by the same major payers that dominate the commercial market.⁶ Facing different financial incentives and regulations in the two markets, are these insurers negotiating higher prices in the same hospitals for the same services for their commercial plans compared with their MA plans? In this article we examine this question and assess the price gaps by service, insurer, and hospital characteristics. These

questions were unexplored in prior literature because of data limitations that prevented a direct comparison of commercial and MA prices for the same insurer and hospital for the same service.

Background On Pricing

Prior qualitative work published in 2015 cited hospital and insurance executives' thoughts about why MA prices may be lower than commercial-market prices.⁷ First, out-of-network prices for MA plans are set at 100 percent of Medicare fee-for-service rates, meaning that hospitals receive Medicare fee-for-service prices from MA insurers if they do not join their network. This limit gives insurers bargaining leverage in their negotiations for their MA plans that

does not exist for their commercial plans and has been consistently noted in prior work as a key reason that MA prices tend to adhere closely to Medicare fee-for-service prices.⁸⁻¹² Second, MA plans face competition from traditional Medicare, and high prices for MA plans compared with traditional Medicare plans would make the premiums in the MA plans uncompetitive. Last, hospitals may be taking into consideration the insurer's total book of business, which may comprise both commercial and MA plans. In effect, hospitals may be willing to accept lower rates for MA plans, where out-of-network prices are benchmarked to Medicare fee-for-service, in return for higher rates in their commercial plans.

Another potential explanation is that insurers bear more risk for their MA plans than for their commercial plans: Every dollar spent on a patient by the MA plan is, in effect, a dollar lost. In the commercial market, in contrast, roughly two-thirds of the market is self-funded by employers,^{1,13} meaning that employers are paying out the claims while insurers are paid on a capitated basis to administer claims and manage provider networks. All else being equal, insurers may accept higher prices for their commercial plans if it allows them to remain competitive in the MA market, where gross margins are nearly twice as high per enrollee.^{14,15} In theory, insurers should compete for the business of self-funded employers by negotiating low prices with hospitals on their behalf. In practice, however, it can be difficult for employers to change third-party administrators, which also compete on a variety of other dimensions (for example, administrative fees), and many employers lack market power to negotiate directly with hospitals themselves.¹⁶ Recent empirical evidence suggests that self-funded plans pay higher prices than fully funded plans for the same service.^{17,18} Ultimately, higher prices are passed on to employees and their dependents in the form of higher out-of-pocket expenditures and premiums and lower wages.^{2,19}

The prior literature primarily found differences in the average prices paid by commercial and MA plans (not directly measured but indirectly inferred from comparisons with Medicare fee-for-service prices) for the same services.⁸⁻¹¹ One earlier study directly compared commercial and MA prices within the same insurer and hospital among eight hospitals across seven states.²⁰ However, no nationwide studies have been able to investigate differences in prices for commercial and MA plans negotiated by the same insurer with the same hospital. This is because prior work has relied on administrative claims databases, which typically lack insurer identifiers or represent only a subset of insurers participating

in both markets. Also, specific hospitals frequently are not identified in these data.

Because of these data limitations, prior work has not uncovered where price gaps are greatest across insurers, markets, and hospitals, and it has only compared prices across a limited number of services. The recent hospital price transparency rule, implemented in 2021, requires that hospitals disclose their payer-specific negotiated rates for all services or face financial penalties.²¹ These data provide a unique opportunity to compare prices across these two markets that were negotiated within the same insurer-hospital combination and to isolate factors associated with wider price gaps.

In this study we used hospital price transparency data updated as of September 2022 to investigate differences in commercial and MA prices paid to US hospitals. We first compared median prices overall in commercial and MA plans across four major categories of services: surgery and medical services, laboratory tests, imaging services, and emergency department (ED) visits. We then evaluated the commercial-to-MA price ratios within the same hospital-insurer combination for the same service and documented variation across different services, insurers, and geographies. Finally, we identified hospital and insurer characteristics associated with the commercial-to-MA price ratio.

Study Data And Methods

DATA AND SAMPLE Our primary data for this study were hospital price transparency data compiled by Turquoise Health, a health care data platform company.²² These data comprise current hospital facility prices disclosed by hospitals under the hospital price transparency rule. They include negotiated prices, at the hospital-insurer-plan level, for individual procedures in commercial, MA, and Medicaid managed care markets, as well as identifiers for specific insurers and hospitals; they have been used in prior empirical work.²³⁻²⁷ We extracted negotiated commercial and MA prices at general acute care hospitals for seventy shoppable services, as defined by the Centers for Medicare and Medicaid Services,²¹ and for five ED visit codes.

The extract was composed of more than three million unique combinations of hospitals, procedures, settings (that is, outpatient or inpatient), insurers, and plans. We dropped observations with unidentified insurers in the data. Because not all hospitals disclosed data on all seventy procedures, we limited the analysis to the forty-six services with disclosure rates above 50 percent among disclosing hospitals (see online appendix 1 for full list of extracted ser-

vices).²⁸ Finally, given that Maryland sets hospital prices paid by commercial and MA insurers, we also excluded the Maryland observations (see appendix 2 for counts for each sample selection step).²⁸

In total, our data comprised roughly 1.7 million hospital, insurer, plan, setting, and service combinations representing 2,434 total hospitals and 118 total insurers (74 commercial insurers also served MA), allowing for the analysis of 205,966 unique hospital, insurer, setting, and service combinations with at least one commercial price and MA price to compare.

We then merged these data with data from two additional sources to obtain insurer and hospital characteristics. For insurer characteristics, the source was Clarivate's 2021 Decision Resources Group Interstudy Enrollment data,²⁹ which contain county-level enrollment data for each insurer across market segments, collected through the Decision Resources Group's national proprietary census. For hospital characteristics, the source was the American Hospital Association (AHA) 2020 Annual Survey.³⁰

KEY VARIABLES The first outcome we examined was the negotiated price of services for each unique combination of hospital, insurer, service, and market segment (that is, commercial and MA). In addition, the key outcome of interest in this study was insurers' commercial-to-MA price ratio within the same hospital for the same service. To calculate this measure, we first calculated the average commercial price and the average MA price across an insurer's commercial and MA plans for a specific hospital and service (see appendix 3 for the distribution of raw prices relative to these averages).²⁸ Within each insurer-hospital-procedure combination, we then divided the insurer's average commercial price by the insurer's average MA price for the same service with the same hospital.

The key independent variables we examined included insurer and hospital characteristics. For insurers, we first identified the name of the insurance carrier from the payer names reported in the Turquoise data. We specifically identified Kaiser Permanente, Aetna, Humana, UnitedHealthcare, Blue Cross Blue Shield companies and Anthem (BCBS/Anthem), Centene, and Cigna, which have the largest presence in Medicare Advantage,⁶ and grouped all other insurers into one category. We used the Clarivate Decision Resources Group data to construct insurer concentration measures at the county level. For each county we calculated a Herfindahl-Hirschman Index (HHI) of insurer market shares by taking the sum of squared insurer enrollee market shares within a county and multiplying by 10,000.

In many cases, an insurer's commercial plans pay more than five times as much for the same service as their MA plans.

Hospital characteristics included hospital market concentration, system affiliation, teaching (that is, a hospital trains medical residents), number of hospital beds, rurality, ownership status (nonprofit, for profit, or public), and census region sourced from the AHA data. For each county, we measured hospital market concentration by constructing a hospital HHI based on hospital shares of admissions.

STATISTICAL ANALYSIS First, we calculated and plotted median prices for commercial and MA plans in our sample of insurer-hospital-procedure combinations with both a commercial price and an MA price across four categories of services: surgery and medicine, imaging, laboratory tests, and ED visits. See appendix 4 for medians in the broader sample, including commercial insurers with no MA plans (and vice versa).²⁸ We also examined raw price differences across all service categories in regression analyses, both unadjusted and with adjustment for insurer, hospital, and procedure fixed effects (see appendix 5 for linear regressions).²⁸

Next, we plotted the median, interquartile range, and distribution of the commercial-to-MA price ratio within insurer-hospital-procedure combinations across the four service categories. We also calculated the median commercial-to-MA price ratio for each state and divided states into six quantiles on the basis of the distribution of state medians. In addition, we also calculated medians for each of the major insurers (Kaiser Permanente, Aetna, Humana, UnitedHealthcare, BCBS/Anthem, Centene, and Cigna), for all other insurers, and for each individual procedure. See appendixes 6 and 7 for insurer- and procedure-specific ratios, respectively.²⁸

We performed Poisson regression analysis to examine factors associated with the commercial-to-MA price ratio. We used Poisson regression instead of log-linear regression because it is less likely to be overinfluenced by especially small ratios; does not require adjustment of model

estimates; and is consistent to most model misspecifications when robust standard errors are used, as we did in our analyses.^{31,32} We regressed the ratios on insurer and hospital characteristics (described above), controlling for procedure type and census region, and we plotted coefficients and 95% confidence intervals. We hypothesized that factors that may contribute to greater hospital market power would result in greater ratios, given that hospital market concentration is known to increase commercial prices,^{2,3,33-35} and we hypothesized that insurer market concentration would result in lower ratios because of greater insurer market power to negotiate lower commercial prices.^{36,37}

We also regressed the raw dollar difference in prices, as opposed to a ratio, on the same set of factors to assess the magnitude of the difference in dollar terms, and we estimated a probit regression predicting when ratios equal to exactly 1.0 were more common (see appendix 8 for the additional regression analyses).²⁸

LIMITATIONS This study was subject to limitations. First, our sample depended on hospitals' disclosure of their negotiated prices with insurers, which could contain inaccuracies. More important, as described in the Study Data And Methods, our analysis focused on 2,434 of the 4,331 hospitals with disclosed prices, forty-six of the seventy shoppable services, and five ED services with high disclosure rates. We found that compared with the full AHA sample of acute care hospitals, the disclosing hospitals underrepresented rural, system-unaffiliated, and public hospitals, as prior work has found²⁶ (see appendix 9 for comparison of the study sample to the AHA sample).²⁸ Our findings therefore might not be fully generalizable to hospitals with these characteristics. In addition, our sample did not include Kaiser Permanente hospitals, so all findings with respect to Kaiser Permanente should be interpreted as occurring outside their integrated delivery network. Relatedly, our analysis did not include hospital-insurer combinations with only a disclosed commercial price (or only a disclosed MA price), as we focused on within-hospital-insurer differences in prices across markets. If more specialized commercial insurers are better able to negotiate lower prices, then this could bias commercial price estimates upward. However, we found that the median commercial and MA prices across service types did not differ substantially between our narrower sample and a broader sample of insurer-hospital combinations with either a commercial price or an MA price (see appendix 4 for median commercial prices across service types in the broader sample).²⁸

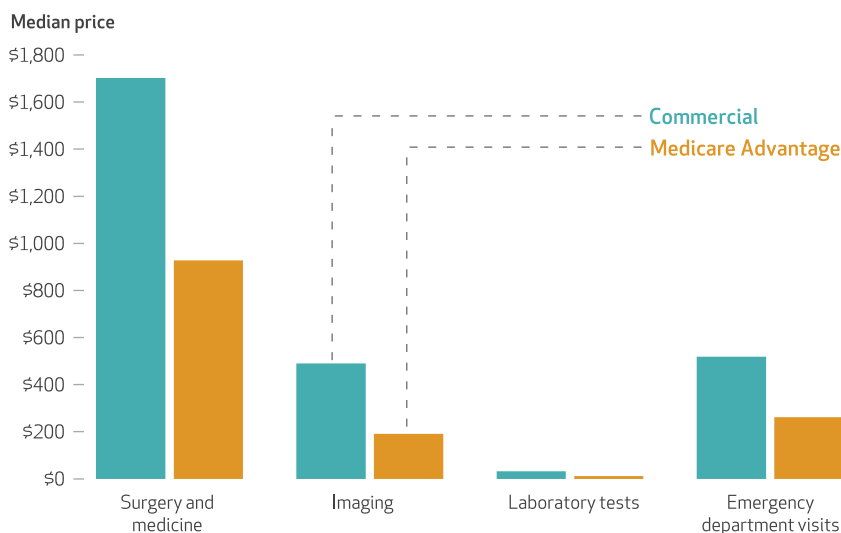
Second, this study was descriptive in nature.

Its results, including the regression analyses, are intended to document differences in commercial and MA prices for the same service within the same hospital-insurer pairing and to highlight where price gaps are the greatest. They do not, however, provide causal evidence of why ratios vary. The price transparency data lack utilization information (unlike administrative claims data) and information on the types of plans (for example, the network arrangement or whether the plan is fully funded or self-funded) and enrollment. As such, our analyses should be interpreted as assigning equal weight to each insurer-hospital-procedure combination, regardless of how often a service is used. We showed disaggregated ratios to aid interpretation of how this measure may vary across specific procedures and insurers (see appendixes 6 and 7 for median ratios for specific insurers and procedures, respectively).²⁸ To the extent that plans with greater enrollment have lower negotiated prices, as is common in commercial insurance markets,^{3,36,38,39} the commercial-to-MA price ratio measured in our study may overstate the enrollment-weighted commercial-to-MA price ratio.

Finally, as the hospital price transparency rule did not apply to providers in nonhospital settings and included a provision specific to shoppable services, our study was constrained to hospital-based facility prices among a set of ser-

EXHIBIT 1

Median commercial and Medicare Advantage (MA) prices for the same services in US hospitals, by service type, September 2022



SOURCE Authors' analysis of Turquoise Health data as of September 2022, containing health plan in-network negotiated facility prices disclosed by hospitals reporting both commercial and MA prices under the hospital price transparency rule. **NOTES** Median prices were calculated among all procedures within a service type (surgery and medicine, imaging, laboratory tests, and emergency department visits) and market segment (commercial and MA). Appendix 1 contains a list of individual procedures included in each service type group (see note 28 in text).

vices with the highest rates of disclosure that are mostly performed in the outpatient setting.

Study Results

Across all service categories, median commercial prices ranged between 1.8 and 2.7 times more expensive than MA prices. In dollar terms (exhibit 1), the largest difference was within surgery and medicine, where the median commercial price was \$1,702 compared with \$928 in MA plans, followed by imaging (\$490 versus \$191), laboratory tests (\$32 versus \$12), and ED visits (\$519 versus \$262). In regression-adjusted analyses, commercial prices were between \$660 and \$707 more expensive than MA prices, on average

(or 2.1 to 2.2 times more expensive; see appendix 5 for regression-adjusted results).²⁸

Even within the same hospital and insurer for the same service, commercial prices were more than twice MA prices in most instances (exhibit 2). The median commercial-to-MA price ratio was 1.8 for surgery and medicine services (interquartile range: 1.2–2.9), 2.4 for imaging services (IQR: 1.4–4.7), 2.2 for laboratory tests (IQR: 1.2–5.5), and 2.2 for ED visits (IQR: 1.3–3.8). See appendix 10 for the full distribution of price ratios for each service category.²⁸

There was substantial variation in the commercial-to-MA price ratio (appendix 10).²⁸ Commercial and MA prices were exactly the same between 3.7 percent and 6.6 percent of the time, depending on the service (4.8 percent for surgery and medicine, 5.3 percent for imaging, 6.6 percent for laboratory tests, and 3.7 percent for ED visits). In most cases, however, the ratio substantially exceeded 1.0. Commercial prices were more than five times higher than MA prices 6.5–27.2 percent of the time (6.5 percent of the time for surgery and medicine, 23.1 percent for imaging, 27.2 percent for laboratory tests, and 13.8 percent for ED visits).

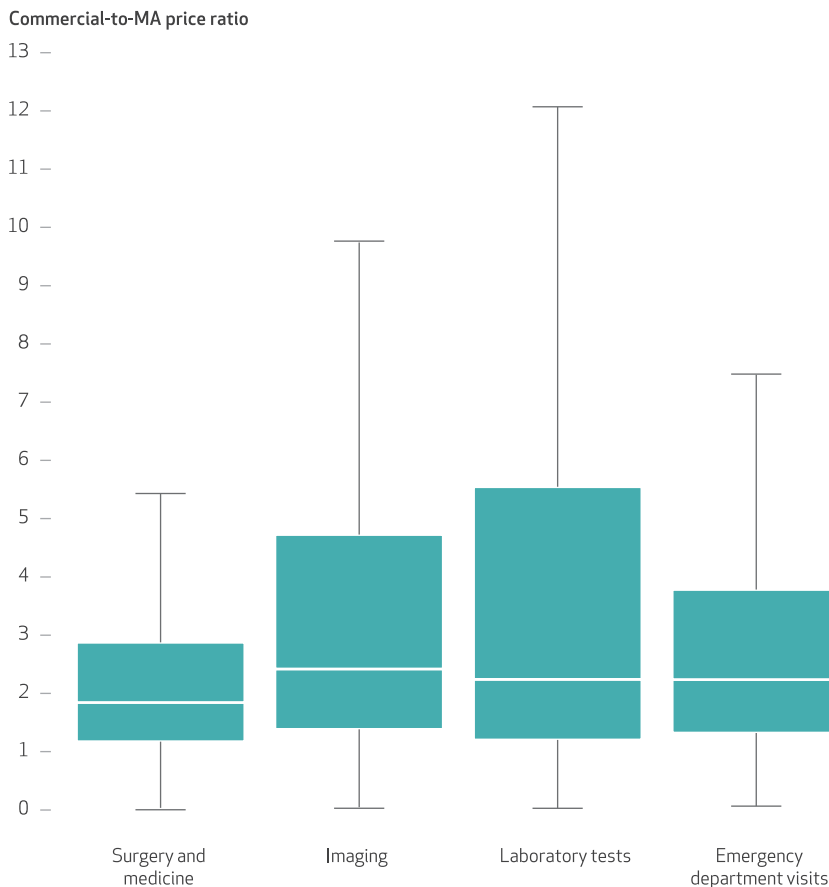
There was also substantial variation in the commercial-to-MA price ratio across states (exhibit 3). Although the median ratio in several states (the lowest of the six quantiles) was just below or above 1.0, it was substantially above 1.0, or even 2.0, in all other states. The median ratio was highest in Delaware (5.1), South Carolina (4.2), and Washington, D.C. (3.1), and was high in many of the most populous states (including 2.8 in California, 2.5 in Texas, and 2.7 in Florida). The ratio was generally highest in the Southeast and lowest in the Pacific Northwest and Midwest.

All of the major insurers generally had median price ratios above 2.0 for most or all service categories, with the exception of Centene (see appendix 6 for median ratios among specific insurers).²⁸ Kaiser Permanente generally had the highest median ratios, which were as high as 3.7 and 4.1 for imaging and laboratory tests, respectively. This is unsurprising, given that our sample contained non-Kaiser hospitals. Other insurers (that is, not the major national insurers) had median price ratios below 2.0. Median ratios were generally consistent in magnitude within a service category (see appendix 7 for median ratios for specific procedures).²⁸

We found that greater commercial-to-MA price ratios were associated with system-affiliated and teaching hospitals, as well as with the large national insurers (exhibit 4). Hospitals that were affiliated with a system were associated with a 0.13 higher price ratio compared with those that

EXHIBIT 2

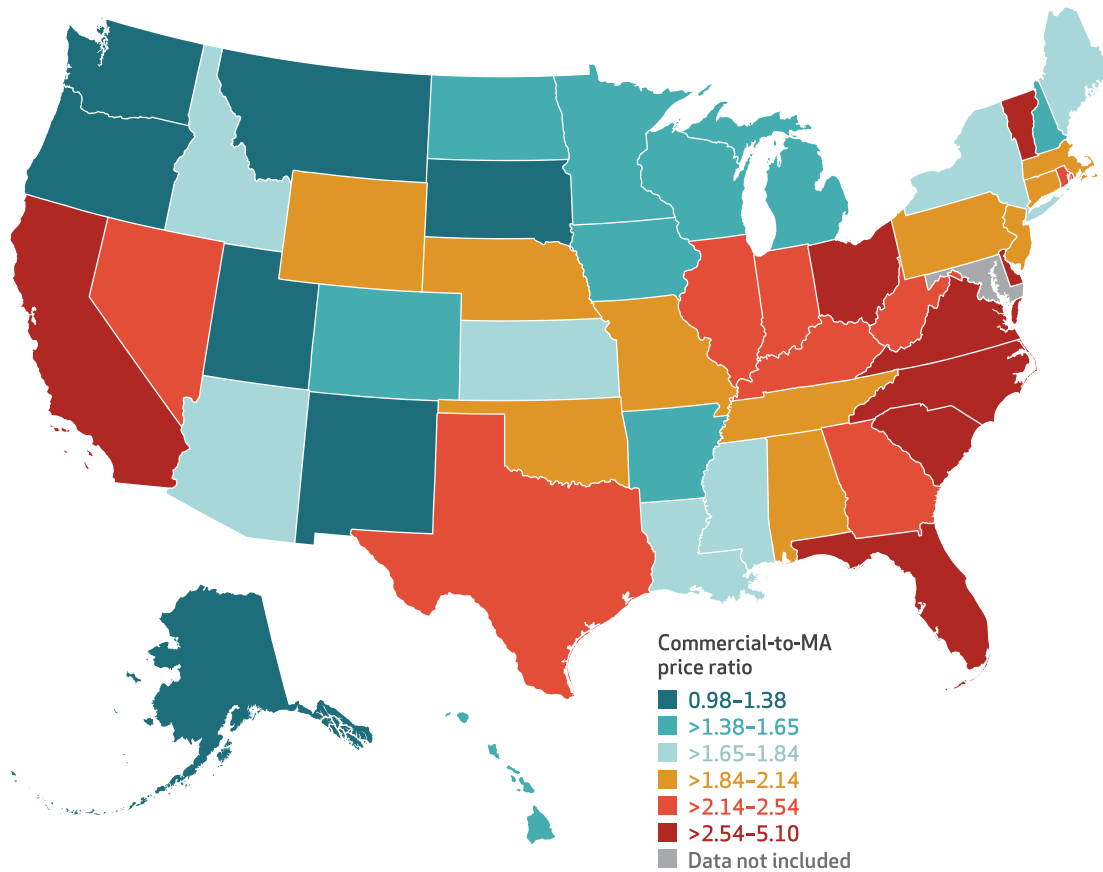
Commercial-to-Medicare Advantage (MA) price ratios for services provided in US hospitals, by service type, September 2022



SOURCE Authors' analysis of Turquoise Health data as of September 2022, containing health plan in-network negotiated facility prices disclosed by hospitals reporting both commercial and MA prices under the hospital price transparency rule. **NOTES** The distribution, median, and interquartile range of the ratio of within-insurer-hospital prices for the same service between commercial and MA plans are shown. Statistics are shown within a service type (surgery and medicine, imaging, laboratory tests, and emergency department visits). The median and interquartile ranges of each service type are shown in the boxes, with the middle line signifying the median. Whiskers extend to 1.5 times the interquartile range. Appendix 10 contains the full distribution of price ratios for each service type (see note 28 in text).

EXHIBIT 3

State variation in commercial-to-Medicare Advantage (MA) price ratios for services provided in US hospitals, September 2022



SOURCE Authors' analysis of Turquoise Health data as of September 2022, containing health plan in-network negotiated facility prices disclosed by hospitals reporting both commercial and MA prices under the hospital price transparency rule. **NOTES** The median ratio of within-insurer-hospital prices for the same service between commercial and MA insurers within a state is shown across six quantiles of state medians. Maryland is excluded from the analysis, as the state sets hospital prices paid by commercial and MA insurers.

were not (standard error: 0.01), as were teaching hospitals (0.10 higher ratio; SE: 0.01). Rural hospitals were associated with 0.30 lower price ratios (SE: 0.01) than nonrural hospitals. Relative to nonprofit hospitals, for-profit hospitals had 0.06 lower ratios (SE: 0.01) and public hospitals had 0.30 lower ratios (SE: 0.01). Greater hospital market concentration and a greater number of hospital beds were also associated with modestly higher commercial-to-MA price ratios.

The large national insurers had greater price ratios compared with other insurers. Kaiser Permanente had 0.75 higher ratios (SE: 0.03), followed by Aetna (0.38 higher; SE: 0.01), Humana (0.34 higher; SE: 0.01), UnitedHealthcare (0.23 higher; SE: 0.01), BCBS/Anthem (0.17 higher; SE: 0.01), Centene (0.16 higher; SE: 0.02), and Cigna (0.11 higher; SE: 0.01). Greater insurer market concentration was associated with mod-

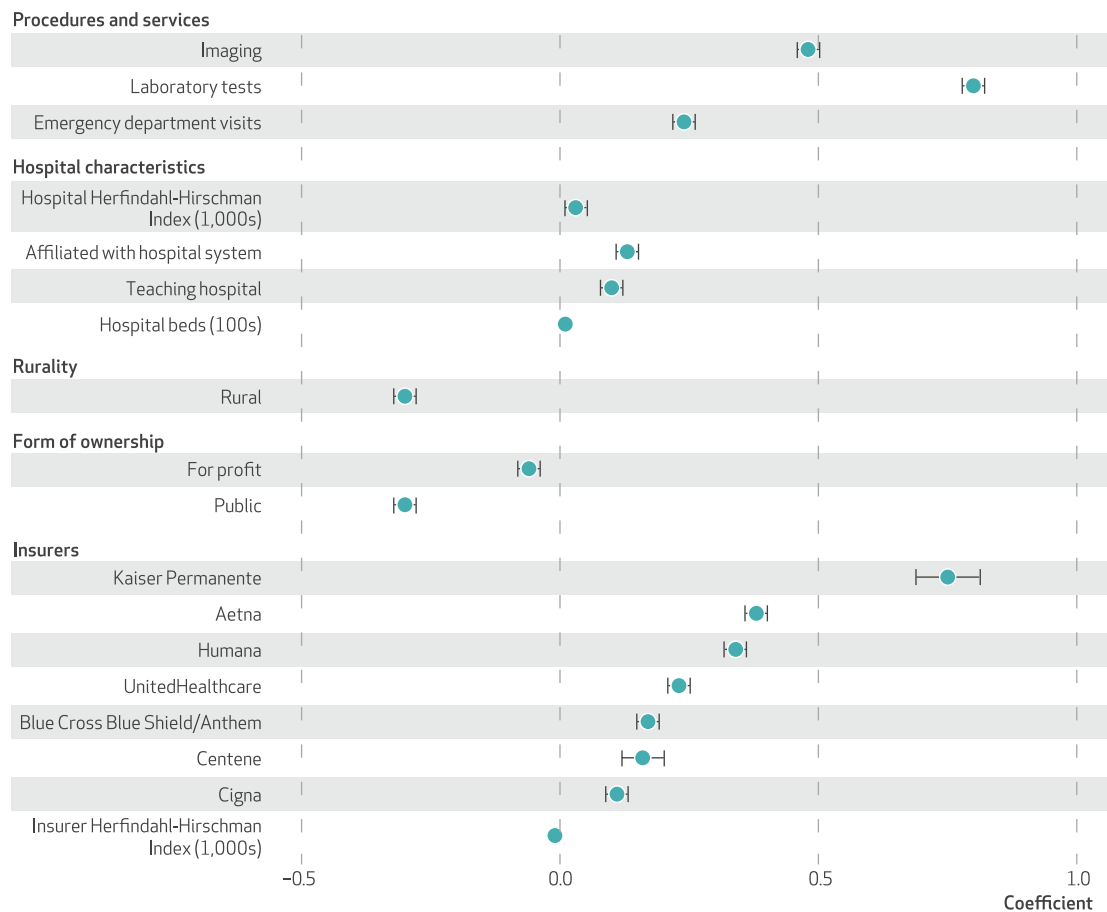
estly lower ratios. We also found that commercial prices were most likely to be exactly equal to MA prices for laboratory tests, at rural and public hospitals, at insurers other than the large national insurers, and in more concentrated insurance markets (see appendix 8 for regression results predicting the probability that commercial prices were the same as MA prices).²⁸

Discussion

Using 2022 pricing data disclosed by hospitals in compliance with the hospital price transparency rule, we found that commercial plans pay more than twice (median) what MA plans pay for the same service when prices are negotiated by the same insurer with the same hospital. In many cases, an insurer's commercial plans pay more than five times as much for the same service as their MA plans. The commercial-to-MA price

EXHIBIT 4

Factors associated with commercial-to-Medicare Advantage (MA) price ratios for services provided in US hospitals, September 2022



SOURCES Authors' analysis of Turquoise Health data as of September 2022, containing health plan in-network negotiated facility prices disclosed by hospitals reporting both commercial and MA prices under the hospital price transparency rule. Hospital characteristics are from the American Hospital Association 2020 Annual Survey, and market enrollment data for six large national insurers are from Clarivate's 2021 Decision Resources Group Interstudy Enrollment data. **NOTES** The ratio of within-insurer-hospital prices for the same service between commercial and MA plans was regressed on insurer and hospital characteristics using Poisson regression. Coefficients and 95% confidence intervals are shown with dots and whiskers, respectively. Many whiskers might not be visible because of narrow confidence intervals. The hospital Herfindahl-Hirschman Index is calculated as the sum of squared hospital market shares of admissions in a county. Insurer Herfindahl-Hirschman Index is calculated as the sum of squared insurer market shares of enrollment in a county. Reference categories are as follows. For "Procedures and services," the reference category is "Surgery and medicine." Under "Hospital characteristics," for binary variables ("Affiliated with hospital system" and "Teaching hospital"), the reference category is the complement of the variable shown; for other variables listed ("Hospital Herfindahl-Hirschman Index" and "Hospital beds"), a coefficient greater than 0.0 indicates that the commercial-to-MA price ratio is positively related with the variable, whereas a coefficient less than 0.0 indicates that the commercial-to-MA price ratio is negatively related with the variable. For "Rurality," the reference category is "Nonrural." For "Form of ownership," the reference category is "Nonprofit." For "Insurers," the reference category is "Other insurer" (referring to all insurers not individually named), and for "Insurer Herfindahl-Hirschman Index," the coefficient indicates a negative relationship between the variable and the commercial-to-MA price ratio.

ratio is higher at larger, teaching, and system-affiliated hospitals and is higher for large national insurers with a major presence in both the MA and commercial markets.

Our finding that commercial prices are, on average, two to three times higher than MA prices is consistent with prior work that used administrative claims data to compare average commercial and MA prices.⁸⁻¹¹ This study contributes to the literature in several ways. First,

taking advantage of the unique data compiled from hospital disclosures under the hospital price transparency rule, we were able to compare prices across commercial and MA plans within the same insurer and hospital for the same service. This approach made it possible to reveal the differing negotiating dynamics and incentives across the commercial and MA markets for the same insurer. Moreover, prior work has typically relied on administrative claims databases that

The large price gap between commercial and MA prices within an insurer reveals the pricing consequences of differing incentives across markets.

included only a subset of all insurers in the US. Our data, in contrast, encompassed more than seventy commercial insurers (all major ones included), a strength that enhances the generalizability of these findings.

Furthermore, we expand on the prior literature by identifying the insurer and hospital characteristics associated with greater commercial-to-MA price ratios. Large national insurers (Kaiser Permanente, Aetna, Humana, United-Healthcare, BCBS/Anthem, Centene, and Cigna) negotiate even higher ratios than other insurers. This result is surprising in light of the literature that finds that greater insurer market power is generally associated with lower commercial prices.^{36,37} It is worth noting that large national insurers also have a substantial (and growing) footprint in the more profitable MA market.^{1,14} In theory, this could attenuate their incentives to negotiate lower prices for their commercial

plans if hospitals are otherwise unwilling to agree to be in network for their MA plans. Future work should investigate whether these competing incentives among major insurers affect the prices paid by commercial plans.

Finally, the commercial-to-MA price ratios are greater at larger system-affiliated hospitals. This finding suggests that the notion from the prior literature that greater hospital market concentration results in higher negotiated prices^{2,3,33-35} manifests primarily in the commercial market and less so in the MA market.

Our study has important implications for researchers, employers, policy makers, and other stakeholders interested in containing commercial hospital prices. High commercial prices are ultimately passed on to employees and their dependents in the form of lower wages, higher premiums, and higher out-of-pocket expenditures.^{2,19,40-44} The large price gap between commercial and MA prices within an insurer reveals the pricing consequences of differing incentives across markets. Out-of-network price benchmarking through government regulation, competition with Medicare fee-for-service,⁷ and the fact that insurers actually bear risk in the MA market may drive down prices in MA. In contrast, in the commercial market, self-insured employers are largely the ones bearing risk and paying the higher prices.^{1,13,17} Future research should investigate the relative contributions of these various factors in affecting the price gap between commercial and MA prices. Because insurers respond to differing incentives by negotiating substantially different prices across markets, policy and practice efforts that alter incentives for insurers may have the potential to lower commercial pricing. ■

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