Turquoise Health

Is Price Transparency Helping?

At its onset, price transparency legislation aimed to increase market competition and drive down the cost of healthcare for patients. Over three years later, let's see what's actually happened.

2024 **Forrest Xiao, Turquoise Health**

Preface

While price transparency has made significant progress since regulations began in 2021, we have just begun to observe its effects on healthcare markets. We see this as an opportunity to reflect on emerging trends and stimulate industry-wide discussion on the additional steps needed for price transparency to realize its full potential. As you read, please note the following.

Using data collected, parsed, cleaned, and enriched by Turquoise Health, this paper examines price trends following the implementation of federal price transparency regulations. Our informal analysis focuses on a specific subset of providers, payers, and services using only data posted by hospitals. Hospital data, while robust, is limited to the quality of the data posted by hospitals. This data may contain errors, omit information, or be duplicative. Our team of engineers has painstakingly worked to address these gaps and account for outliers, zombie rates, duplicates, etc. We believe the data holds its merit and is extremely valuable, but it is important to acknowledge its natural limitations. A detailed methodology can be found at the end of this paper.

Additionally, while we have employed rigorous analytical methods, this white paper is not a peer-reviewed academic study. As more data becomes available and as price transparency continues to evolve, we anticipate further formal research will emerge to assess its full impact on healthcare markets and consumer costs.

Our findings represent only the early stages of understanding price transparency's broader impact. The industry has just begun to realize the utility of this data, and as such, these findings do not capture the full diversity of the U.S. healthcare landscape.

We encourage readers to approach this white paper as an invitation to engage in further dialogue and formal research. The healthcare industry is on a journey toward greater transparency. We hope our examination is one of many along that path. We look forward to the insights and discussions it may inspire as the industry continues to examine, explore, and uncover the impact of price transparency in healthcare.

Introduction

On January 1, 2021, the Hospital Price Transparency Final Rule went into effect, bringing healthcare prices into the open. Over three years later, people want to know: Is price transparency leading to a more competitive healthcare market? And further, is it resulting in more affordable healthcare for consumers? Is it helping at all? Let's figure it out.

Price transparency aims to increase market competition and ultimately drive down the cost of healthcare for patients. Early evidence suggests that price transparency is beginning to achieve its objectives. In this analysis, we examined commercially negotiated rates at over 200 hospitals across the 10 largest U.S. metropolitan areas, focusing on 37 common healthcare services from December 2021 to June 2024.

OUR FINDINGS REVEALED

Significant price convergence, with:

High rates declining by 6.3% annually

Low rates increasing by 3.4% annually

Pervasive price convergence across **83% of the markets we examined**

Greater price convergence in outpatient services compared to inpatient services

These trends are consistent with economic theory, which posits that enhanced price transparency should lead to increasingly uniform market prices. However, while the observed price movements represent a crucial step toward the goals of transparency, the ultimate success of price transparency hinges on two factors.

First, price adjustments must continue leading to more competitive healthcare markets. Second, these price changes must result in more affordable healthcare for consumers or more competitive care options based on cost, value, and access. Our analysis lays the groundwork for understanding the market response to price transparency, providing insights to inform ongoing policy discussions, and identifies key areas for future research in this critical area of healthcare economics.

Who (and how) does price transparency help?

Healthcare price transparency emerged as a key policy initiative to address rising healthcare costs in the United States. Regulations like the Hospital Price Transparency Final Rule, the CY2024 OPPS Final Rule, and the Transparency in Coverage Final Rule (TiC) require providers and payers to publish clear, accessible pricing information and other measures for enforcement and standardization. As we examine the effects of price transparency regulations, it's important to consider: Who does price transparency intend to help, and how does it intend to do it?

The Centers for Medicare & Medicaid Services (CMS) states that the primary goal of price transparency is to "Increase market competition, and ultimately drive down the cost of healthcare services, making them more affordable for all patients." This goal reflects a broader shift in healthcare policy toward a market-driven approach where supply and demand dynamics are leveraged to exert downward pressure on healthcare prices.

Several incremental steps are needed to achieve CMS' goal for consumers:

1 Data Availability:

Prices must be readily accessible to all healthcare market participants, including payers, providers, employers, suppliers, and consumers.

2 Data Usage:

Market participants must actively use price data in decision-making. Payers and providers should use data in negotiations, employers should consider it when selecting carriers and plans, and consumers should use it when shopping for healthcare.

3 Price Adjustments:

In response to the availability and usage of price data, market competition should drive prices to change, ideally resulting in lower and more uniform pricing across providers.

4 OOP Cost Reductions for Consumers:

Lower prices must translate into lower out-of-pocket (OOP) costs for consumers to realize the full benefits of price transparency[1].

Since federal price transparency regulations took effect in early 2021, we have seen significant progress in data availability. Price data from machine-readable files (MRFs) has become broadly available, with data becoming more uniform and detailed over time.

We have also seen increasing usage of price transparency data though not in the ways emphasized by regulation, but instead, in ways we generally anticipated given the complexity of the data and early guidance by CMS. At the onset of these regulations, adoption was led by those most equipped with the resources to access the raw data, and more importantly, make sense of it: first payers and providers, then employers, and lastly, consumers. Preambles to price transparency regulations included commentary on the need to facilitate competition in managed care negotiations. To date, we've seen price transparency data primarily used by payers and providers to inform rate negotiations, with consumer usage to a lesser extent.

[1] For consumers who receive their insurance coverage through their employers, these lower costs might manifest in a variety of ways, such as increased wages, lower deductibles, reduced co-pays, or expanded coverage options.

It is important to note that at TiC's inception, CMS said the following when discussing TiC 45 CFR Part 147, which codified the required format for payer MRFs,

"Additionally, the Departments expect that third-party application developers, researchers, regulators, and other file users will have the expertise to aggregate, standardize, and interpret the pricing information included in the file and translate the pricing information into products, research, and market oversight and reforms that will ultimately benefit consumers."

In 2021, CMS indicated price transparency data alone wasn't suitable for raw consumer consumption. As groups like Turquoise Health have successfully translated MRFs into digestible, actionable data, CMS' intentions for the regulations have evolved to emphasize lower costs of care. So, a lack of consumer use to date is to be expected. Robust data availability and a healthy track record of data usage in negotiations mean the industry is now ready to measure price adjustments over time, and attempt to plot its efforts toward realized consumer impact.

Earlier price transparency initiatives produced mixed results. But, none of them looked at the market response to federal regulations.

Economic theory and evidence from other markets suggest that increased price transparency should lower healthcare costs. However, empirical studies on the effects of earlier price transparency initiatives produced mixed results.

Empirical Studies Produced Mixed Results

2014

Christensen et al. analyzed the causal effects of state-level price transparency regulation using National Inpatient Sample (NIS) charge data. They found that price transparency reduced prices charged for common elective procedures by about 5% on average and increased the sensitivity of demand to prices. However, they concluded the effects were limited primarily to consumers with the greatest incentives to consider costs.

Whaley et al. studied the impact of an employer-sponsored private price transparency platform using claims data. Their results showed that use of the platform was associated with lower payments for laboratory tests (-13.93%), advanced imaging (-13.15%), and office visits (-1.02%).

2016

Desai et al. examined the impact of offering a price transparency tool to employees of two large companies. Analyzing claims data, they found no significant reduction in outpatient spending associated with tool availability. Being offered the price transparency tool was associated with a mean $18 increase in out-of-pocket spending after adjusting for relevant factors.

2021

More recently, Gourevitch et al. studied patterns of use of a price transparency tool for childbirth among commercially insured individuals, using data collected from the price transparency tools and claims data. They found a positive association between the use of the price transparency tool and delivery spending.

These mixed results highlight the complexity of healthcare markets and the challenges in predicting the impact of price transparency initiatives.

However, to our knowledge, there has been limited exploration of the actual market response to the federal price transparency rules implemented in 2021. While many researchers have analyzed cross-sectional price variation (ie Gul et al., Wei et al., Rochlin et al.), none have studied longitudinal patterns in price variation. We attempt to informally fill this gap by analyzing healthcare price changes since December 2021, using the price transparency data itself. By analyzing these trends, we aim to shed light on the early effectiveness of price transparency regulations in achieving their intended goals. Are we seeing the expected market responses? Are prices converging as economic theory would predict? And if so, in which areas of healthcare are these changes the most pronounced?

This analysis is our first step in understanding the complex relationship between federal price transparency regulations and US healthcare market dynamics. The following provides valuable insights into how healthcare prices have evolved since federal price transparency regulations went into effect. Our findings not only offer insight into the evolving state of healthcare pricing but also lay the groundwork for future formal research to establish causal links between price transparency, price adjustments, and ultimately, reductions in patient expenses.

Healthcare Prices Have Begun to Converge

We analyzed a longitudinal dataset of commercially negotiated rates, extracted from hospital machine-readable files between December 2021 and June 2024. This dataset consisted of over 390,000 monthly negotiated rates for 37 common healthcare services at 234 unique hospitals across the 10 largest U.S. metros. To track price changes across different segments of the market, we categorized each contracted rate (the negotiated rate of a single billing code for a given provider and payer over time) into one of three market segments, comparing the December 2021 value to other rates for the same service and metro:

Top 25%:
Rates above the 75th percentile

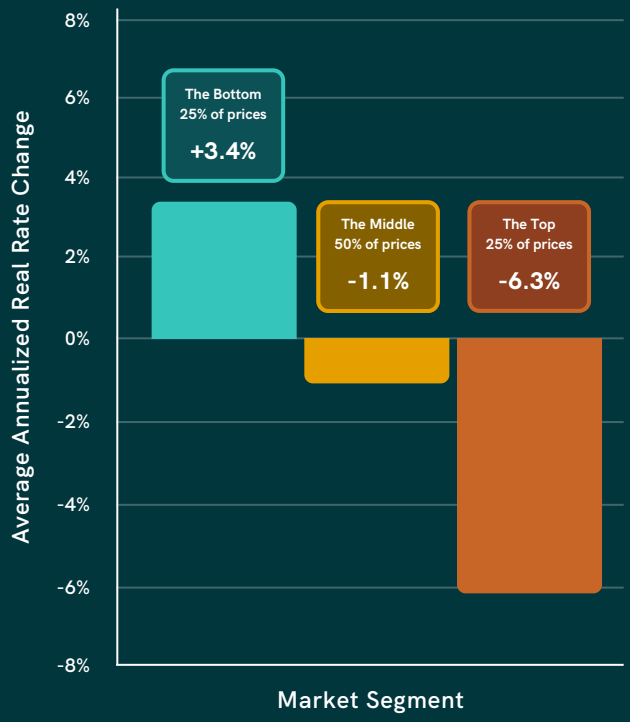
Middle 50%:
Rates in the 26th to 75th percentile

Bottom 25%:
Rates at or below the 25th percentile

For each contracted rate, we calculated the annualized real rate change ("rate change" going forward) between December 2021 and June 2024, adjusting for inflation using the Hospital Services component of the Consumer Price Index (CPI). By analyzing rate changes instead of rate levels, we mitigated the non-stationarity introduced by inflation-driven distortions.

Negotiated rates began converging between Dec 2021 and June 2024.

Top-tier rates dropped by an annualized -6.3%, while Bottom-tier rates increased by an annualized +3.4%. Middle-tier rates decreased moderately, by -1.1% a year.



These rate changes are significant from a statistical and economic perspective. Statistically, we find that the rate changes are significantly different between the Top, Middle, and Bottom tiers (Kruskal–Wallis test: $p < 0.001$). This supports the notion that the three market segments have responded differently post price transparency. Notably, rates have begun to converge as Top-tier rates move closer to Bottom-tier rates (Dunn's test: $p < 0.001$).

Economically, converging rates are an encouraging sign that healthcare markets are responding to price transparency with increased market competition. There has been much discussion on how price transparency will cause healthcare prices to change. Much of the evidence suggests that price transparency "lowers prices and makes them more uniform" but other work suggests that it "does not necessarily lead to sharpened competition or lower prices."

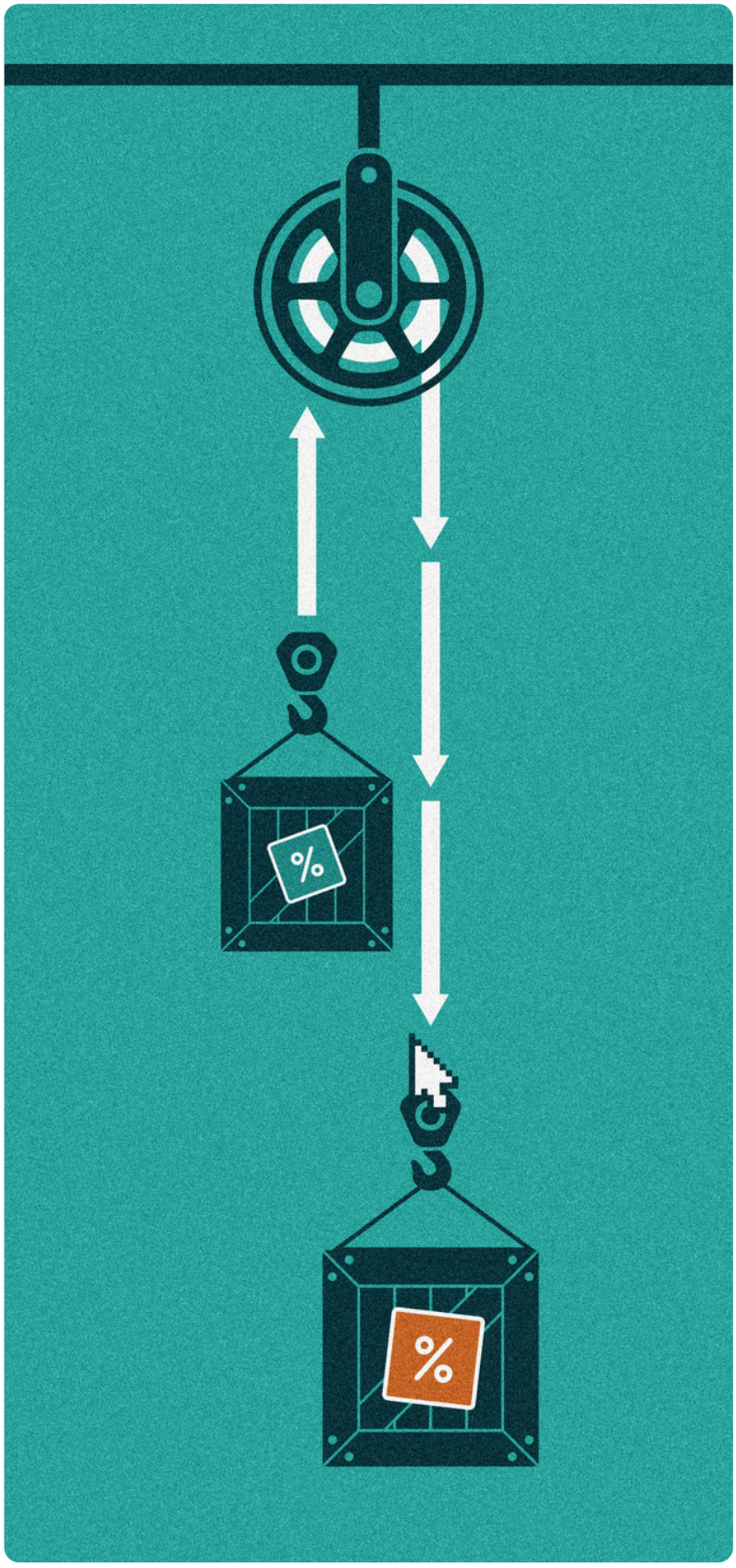
Our analysis shows that prices are becoming more uniform, as expected, but this has not resulted in lower prices in all market segments. Instead, convergence has occurred between both ends of the spectrum, with Top-tier rates dropping and Bottom-tier rates increasing.

The decrease in Top-tier rates aligns with the primary goal of price transparency: to reduce healthcare costs through increased competition. Downward pressure on high prices represents a significant win for consumers, potentially leading to more affordable care. On the other hand, increases in Bottom-tier prices raise questions about market dynamics and potential unintended consequences. As pricing information becomes more widely available, some providers offering services at below-market rates may negotiate prices upward to match market rates.

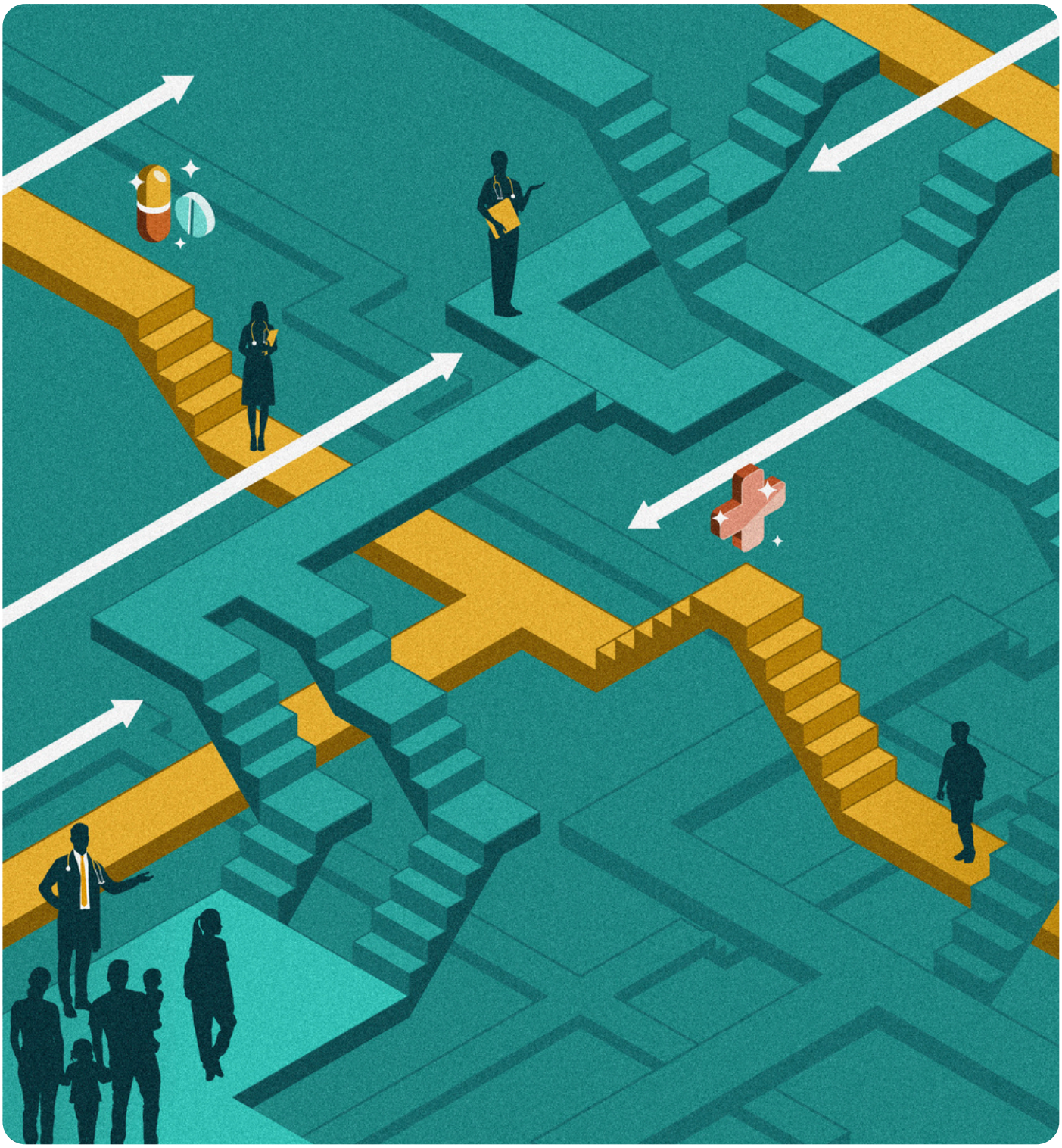
We see the convergence of prices toward a middle ground as a sign of a maturing, more efficient market. In theory, this should lead to pricing that more accurately reflects the true cost and value of healthcare services. However, price convergence alone does not necessarily equate to overall cost reduction or improved consumer affordability. The net direction and magnitude of price changes are also important to acknowledge.

Using the Middle market segment as a baseline, Bottom-tier rates have increased by 4.4% relative to the Middle, while the Top-tier rates have decreased by 5.2% relative to the Middle. Given that Top-tier rates have the highest initial starting prices (by definition) and that their relative annualized rate changes have been larger in magnitude, the economic impact of lowering Top-tier rates appears to more than offset the increased Bottom-tier rates. However, the actual consumer impact depends heavily on which specific prices are changing, healthcare utilization patterns, and how price changes translate into reduced consumer costs.

While these high-level averages provide some evidence of price convergence and its overall impact on healthcare markets, we can better understand and gain additional confidence in these effects by examining the strength and consistency of price convergence across different healthcare markets.



Convergence is Pervasive Across Markets

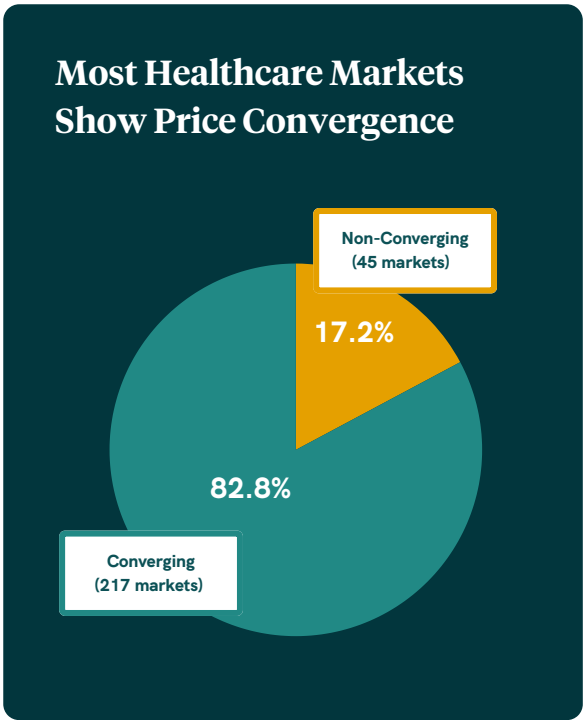


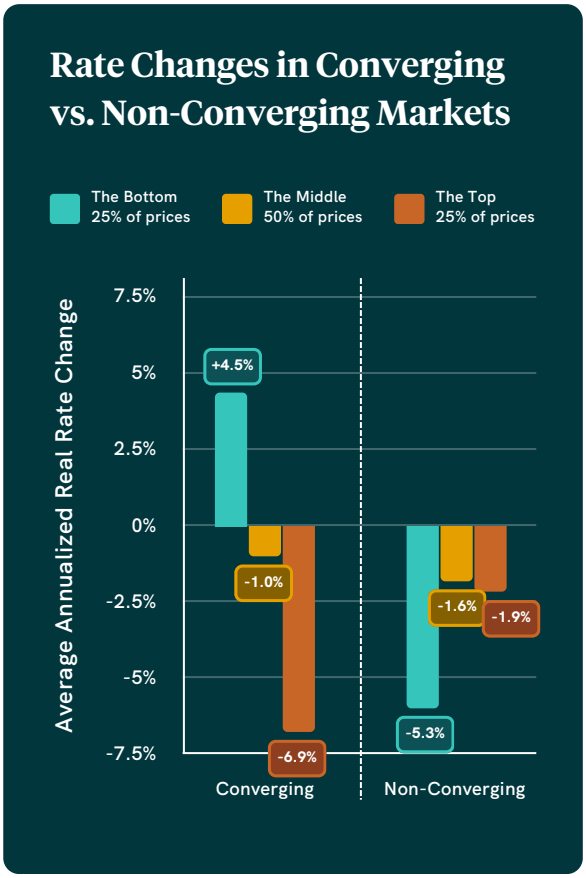
To assess the prevalence of price convergence, we examined negotiated rate changes for 37 services across the 10 largest U.S. metros, treating each service in each metro as a distinct market. For each market, we compared the average rate changes in the Top and Bottom tiers. If rates in the Top tier decreased relative to those in the Bottom tier, we considered that market to be converging. The table below summarizes the number of Converging and Non-converging markets, along with the average rate changes for each tier.

Converging vs Non-Converging Markets [2]

	# of Markets	Avg Bottom 25% Change	Avg Middle 50% Change	Avg Top 25% Change
Converging Markets	217	4.5%	-1.0%	-6.9%
Non-Converging Markets	45	-5.3%	-1.6%	-1.9%

The number of Converging markets (217) significantly outweighed the number of Non-Converging markets (45) (binomial test: $p < 0.001$), pointing to the broad influence of price transparency across diverse geographic and service contexts. Within Converging markets, we observed a familiar monotonic pattern of rate changes, with increases (+4.5%) in the Bottom tier, slight decreases (-1.0%) in the Middle tier, and larger decreases (-6.9%) in the Top tier. Interestingly, in Non-Converging markets, we saw rate decreases across all market segments, with the Bottom tier experiencing the largest drop (-5.3%), followed by the Top (-1.9%) and Middle (-1.6%) tiers. While these markets didn't exhibit convergence, the overall downward price trend is noteworthy and potentially beneficial for consumers.





[2] Note that we have <370 markets as not all rates were available in all markets.

To further understand the dynamics at play, we categorized each market based on the dominant source of price movement. We labeled markets as Top-Driven when the Top-tier rates moved more than the Bottom-tier rates (in relation to Middle-tier rates) on an absolute basis, and vice versa for Bottom-Driven markets.

Top-Driven vs Bottom-Driven Markets

	Top-Driven	Bottom-Driven	Total
Converging Markets	124	93	217
Non-Converging Markets	15	30	45

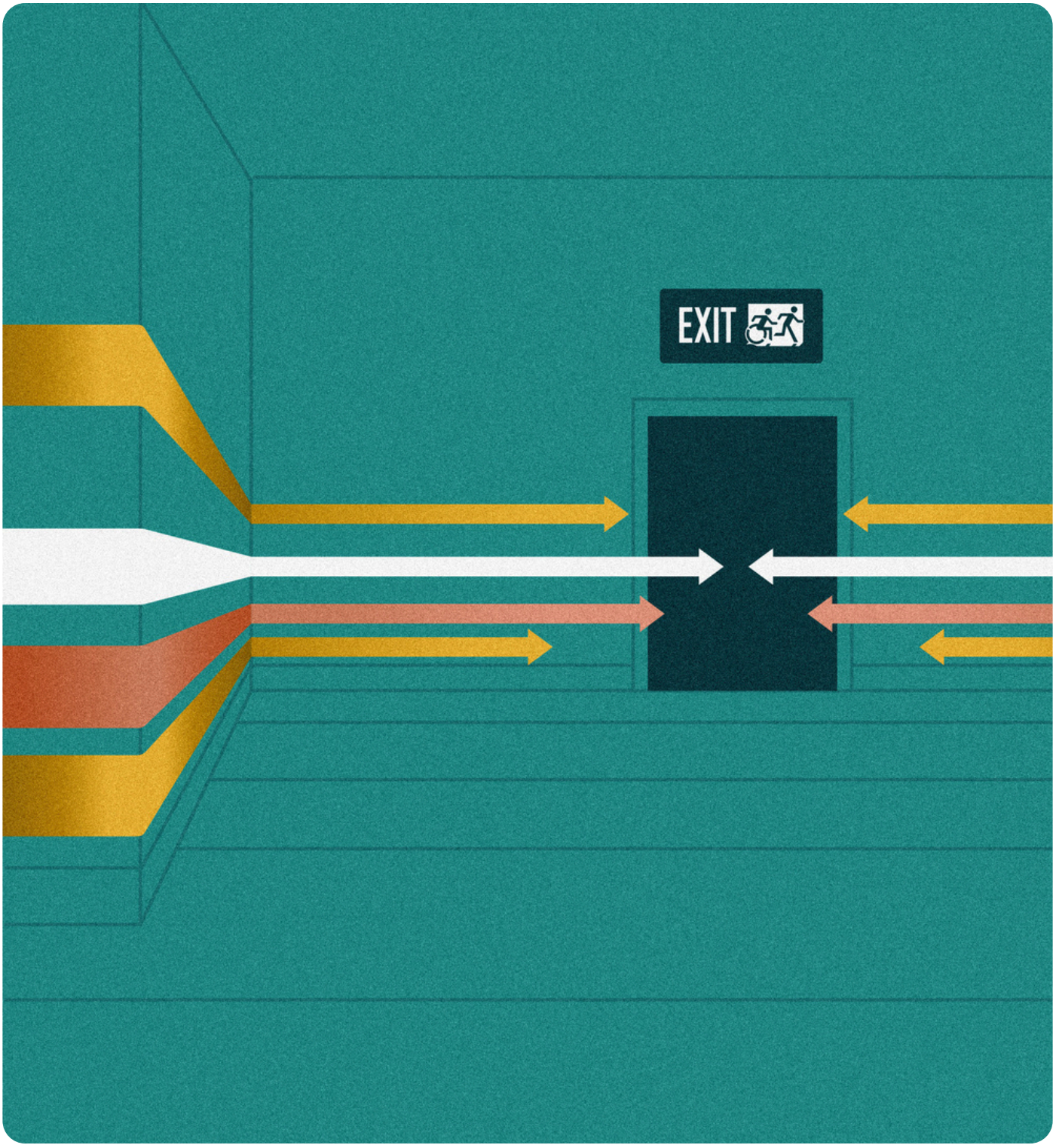
Converging and Non-Converging markets showed significantly different drivers (chi-squared test: p= 0.0060). In Converging markets, we found that a higher proportion of markets were Top-Driven (57%, binomial test: p= 0.041). This provides additional evidence that price decreases in higher-priced segments of the market tend to drive price convergence. Conversely, Non-Converging markets were more likely to be Bottom-Driven (67%, binomial test: p= 0.036), suggesting that in these markets, the lowest rates have been most susceptible to price decreases, driving rates further from the Middle- and Top-tier rates.

A large majority of markets show price convergence, most often driven by decreases in Top-tier rates. However, we also observe a minority of markets that have not shown price convergence. In these Non-Converging markets, average prices decreased across the board, particularly for the Bottom-tier rates.

Why are some markets converging while others are not? Part of the complexity in understanding healthcare markets comes from the breadth and economic heterogeneity of different healthcare services. Analyzing variations between these services can provide insights into which areas of healthcare are most responsive to price transparency and where additional interventions might be necessary.

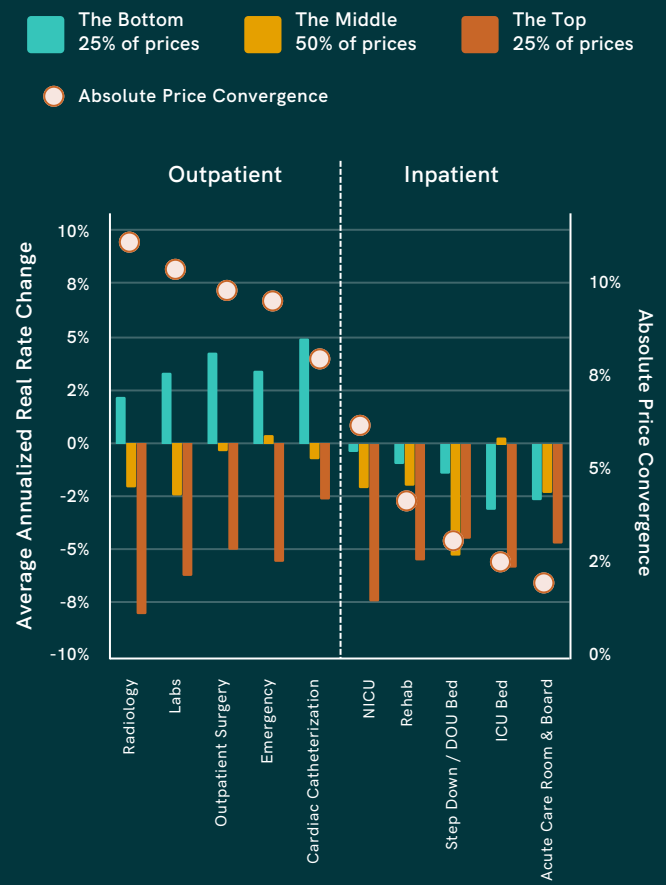
These findings paint a nuanced picture of market dynamics in the first few years post price transparency.

Outpatient Services Show More Price Convergence



We explored inter-service trends by analyzing rate changes between the Top, Middle, and Bottom tiers for 37 common healthcare services. We grouped these services into 10 major service categories and calculated the average rate change within each segment and service category, along with the absolute price convergence in that service category. The absolute price convergence was calculated as the absolute value of the difference between the average Top- and Bottom-tier rate changes. The graph below shows the rate changes for each major service category, sorted by decreasing absolute price convergence from left to right.

Variation in Price Convergence Across Services

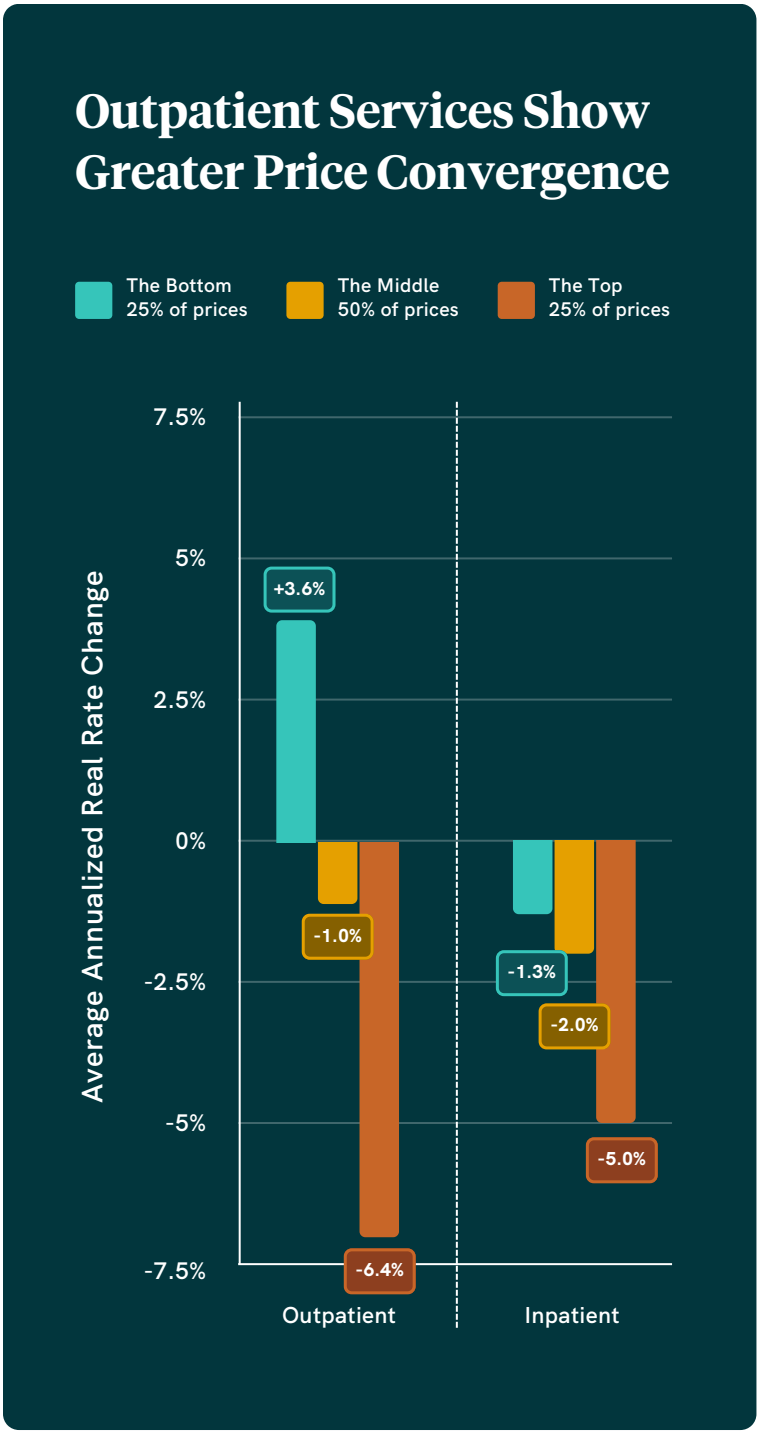


On the far left we see Radiology and Labs with the greatest price convergence. These outpatient services are particularly shoppable, with many of the services appearing on CMS' list of shoppable services. On the far right, we see ICU Beds and Acute Care Room and Board, less shoppable inpatient services that show the least price convergence. Notably, the five service categories on the left with higher price convergence are all outpatient services, while the five service categories on the right with lower price convergence are all inpatient services.

Beyond the differences in convergence magnitude, we also see differences in how inpatient and outpatient rate change varies across market segments. The monotonic relationships between rate changes and market segments are remarkably consistent in outpatient services, with all five service categories showing rate changes for the Bottom > Middle > Top. This relationship is weaker in outpatient services, with only two out of five showing the same monotonic relationship.

The direction of the rate changes themselves is also an interesting difference. All outpatient services showed increases in the Bottom tier and decreases in the Top tier, while all inpatient services showed decreases in both the Bottom and Top tiers. Though the direction of these real rate changes is directly dependent on the inflation measure we use, it's still notable that the Bottom tier inpatient rates are not increasing as much as Bottom-tier outpatient rates, on a percentage basis.

To strengthen our confidence in the different convergence characteristics between inpatient and outpatient services, we analyzed the average rate changes and price convergence prevalence for each care setting.



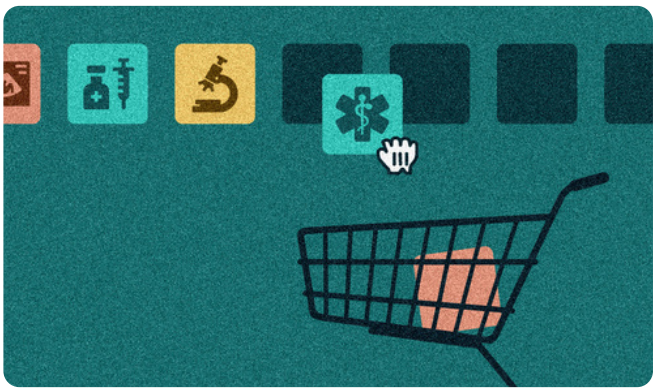
More Prevalent Convergence in Outpatient Services

Care Setting	Converging Markets	Non-Converging Markets	Total Markets
Outpatient	187	27	214
Inpatient	30	18	48

As we saw before, outpatient services showed greater price convergence, with absolute price convergence of 10.0% (difference between Top- and Bottom-tier rate changes) vs. 3.8% absolute price convergence across inpatient services. Outpatient services also showed more prevalent convergence (chi-squared test: $p < 0.001$), with outpatient rates converging in 87.4% of markets (binomial test: $p < 0.001$).

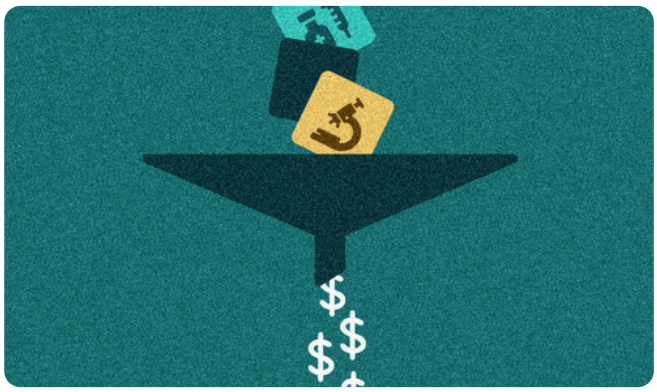
Meanwhile, inpatient rates converged in just 62.5% of markets, and convergence has not occurred at a statistically significant level (binomial test: $p = 0.111$).

A few factors may be driving the greater convergence in outpatient services.



Shoppability:

As mentioned above, outpatient services are generally more shoppable. Consumers can often plan and schedule these services in advance, compare options, and "shop" for the best offer. Consumer price sensitivity, or even the perception of consumer price sensitivity, may influence how outpatient rates are negotiated.

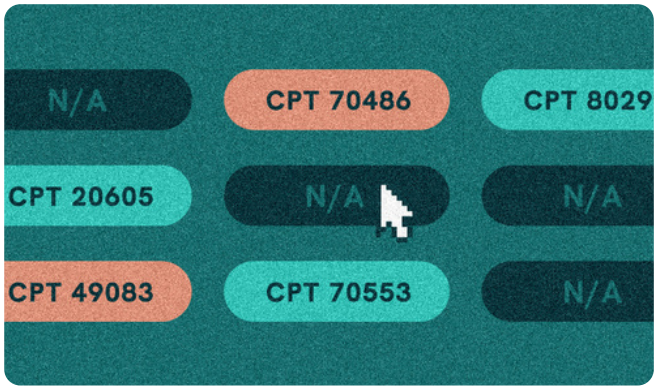


Commoditization:

With free competition and price flexibility, we expect prices to converge for identical goods over time. While inpatient services can vary quite a bit between hospitals, outpatient services like Radiology and Labs are often fairly commoditized, with minimal differentiation between providers. This commoditization may lead to price being a primary competitive factor.

Competition:

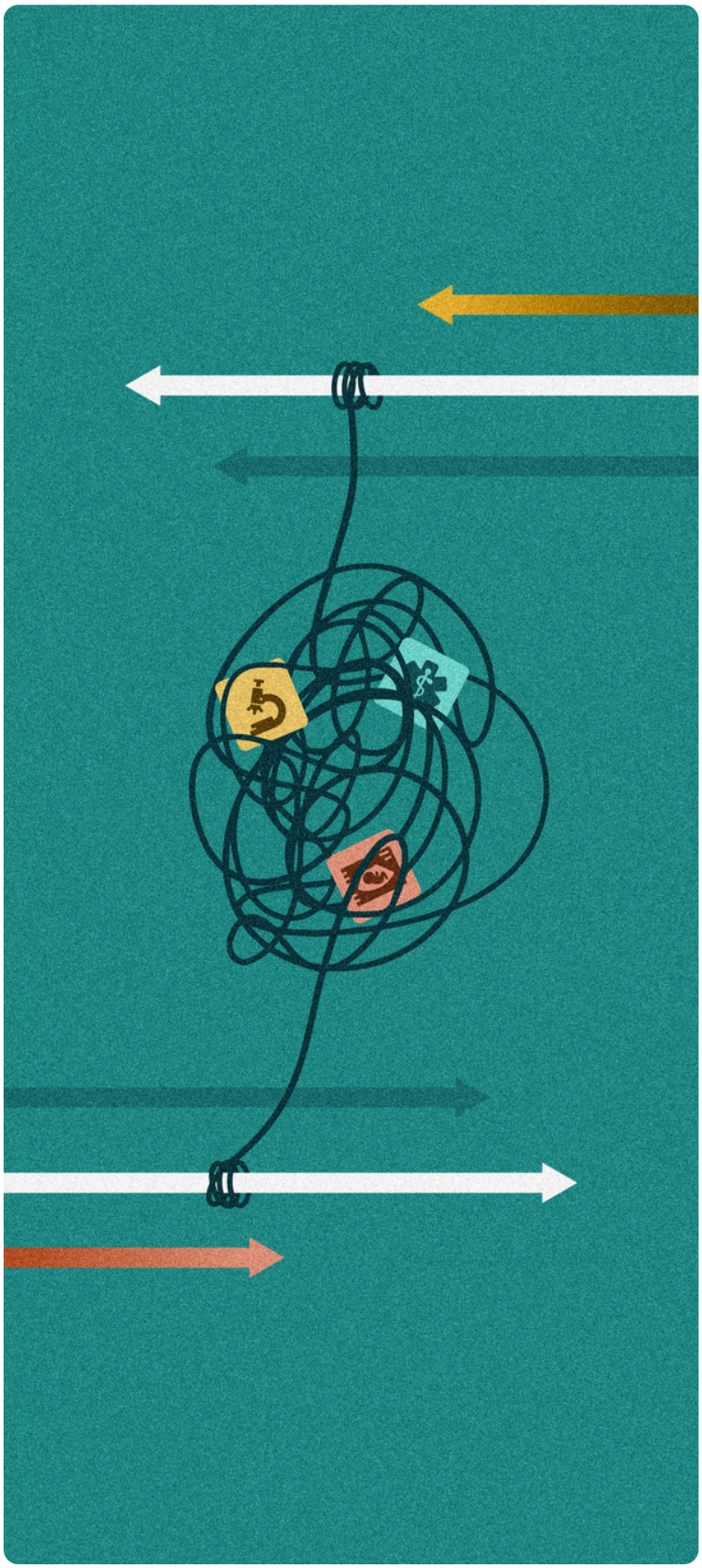
The outpatient services market often has more providers (Ambulatory Surgery Centers, Imaging Centers, etc) and lower barriers to entry compared to inpatient services. This increased competition may make outpatient prices more responsive to price transparency initiatives.



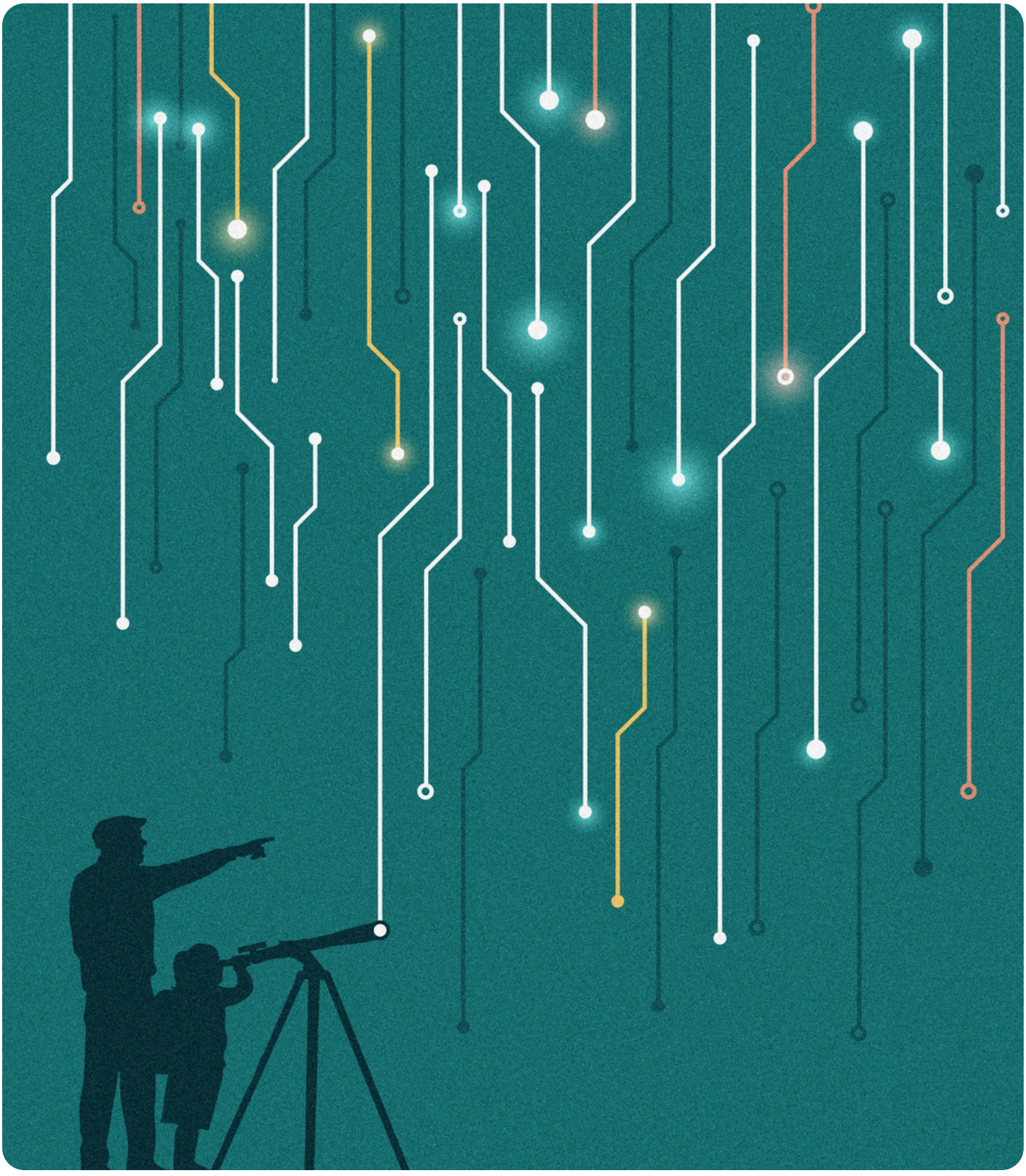
Data Availability:

Negotiated rates for this group of inpatient services were available in fewer markets than rates for outpatient services, even adjusting for the number of services within each group. With less available data, we might expect less market competition and subsequent price adjustments.

The differences in price convergence between outpatient and inpatient services highlight the complexity of healthcare markets and the potentially varying impact of price transparency across different care settings. While the trends observed in outpatient services align closely with the intended effects of price transparency initiatives, the more muted response in inpatient services suggests that additional factors may be at play in these markets.



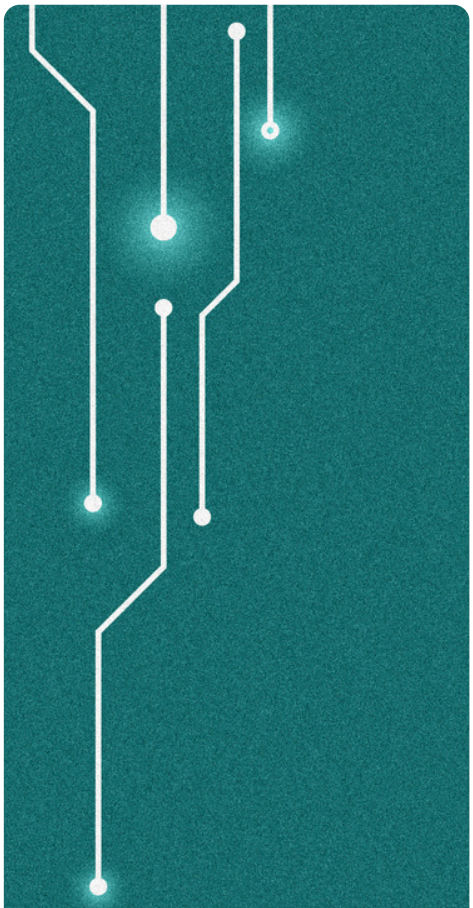
Looking Forward



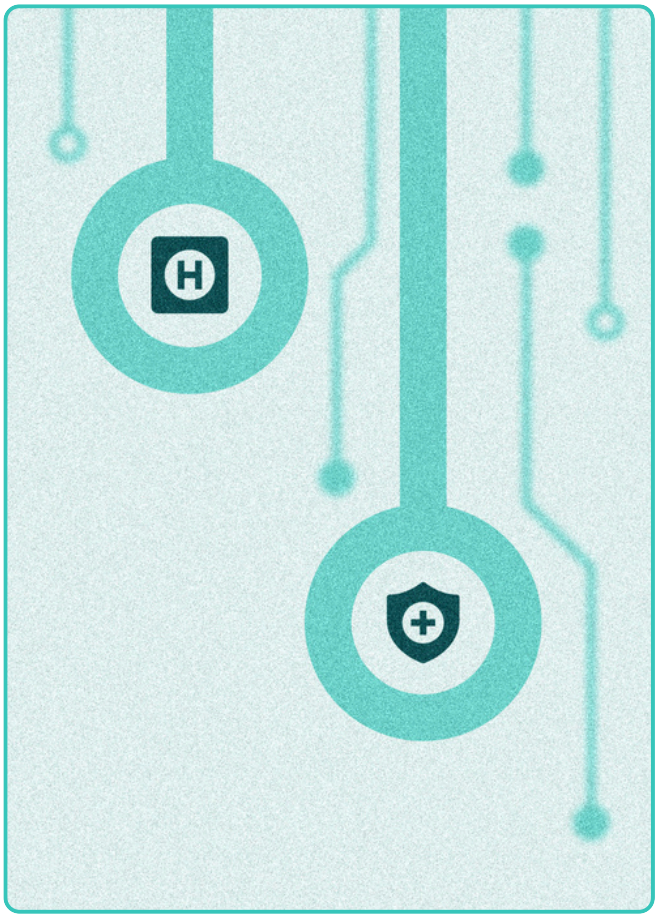
Our analysis of hospital price transparency data from December 2021 to June 2024 reveals significant and widespread convergence in healthcare prices following the implementation of price transparency regulations. High prices are decreasing, while low prices are increasing. Convergence is notably more pronounced in outpatient services, where competition and shoppability are higher. These are promising signs that healthcare markets are responding to price transparency, but we are still in the early days. How might healthcare market dynamics continue to evolve over the coming years?

First, we anticipate more price adjustments. Price transparency data availability continues to improve, with **new requirements** for hospital machine-readable files (MRF) requirements in effect as of July 1, 2024, **and more following right after**, on January 1, 2025. As the data becomes more accessible and comprehensive, it is increasingly utilized by payers, providers, employers, and consumers in their decision-making processes. This growing integration of price transparency into the U.S. healthcare system is likely to drive continued price adjustments. As markets gradually move toward equilibrium, we expect to see more uniformity and predictability in healthcare pricing.

Predicting exactly where prices will stabilize remains challenging. Early evidence suggests a potential bifurcation in healthcare markets. On one end, we have commoditized outpatient services like Radiology and Labs. To date, we've seen the greatest price convergence in these services, and prices for these services may continue to trend toward a uniform rate in each market. On the other end, we see inpatient services like ICU beds and Acute Care Room and Board. So far we've seen less price convergence in these services, though interestingly, we have seen real rate decreases in both high and low rates. The variation in provider quality for these inpatient services means even identical procedures from different providers within the same metro may not be perceived as identical goods. In such cases, we may see persistent price disparities, with rates for higher-quality providers stabilizing at a premium.

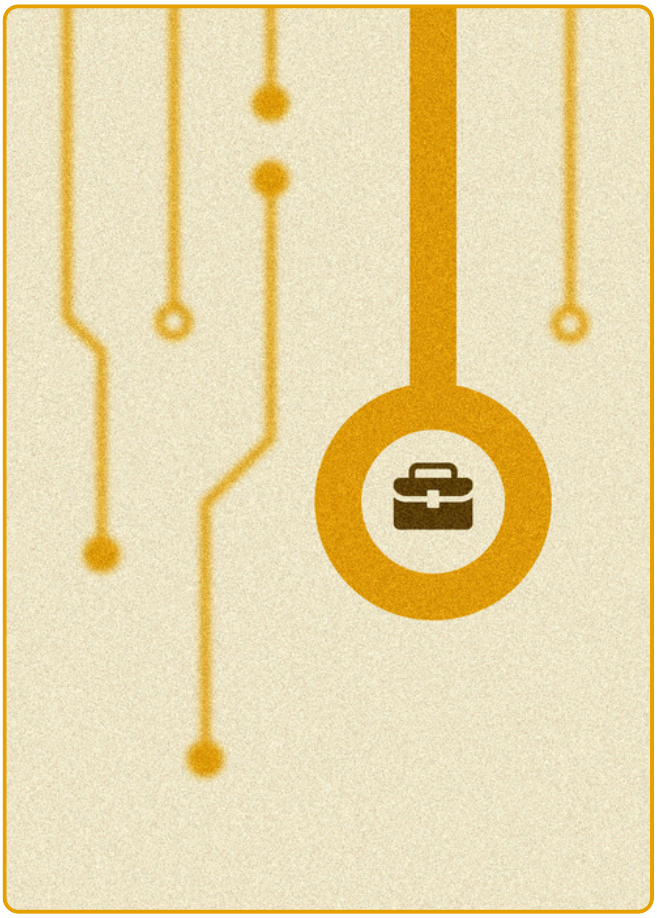


These evolving market dynamics have profound implications for payers, providers, consumers, employers, and policymakers, reshaping the healthcare landscape in nuanced ways.



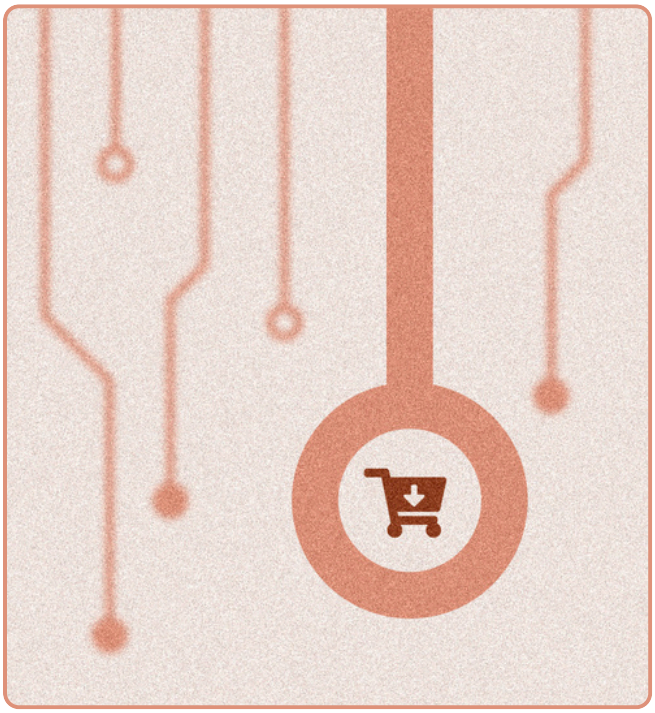
Payers and Providers

The introduction of price transparency has led to an increased use of pricing data in rate negotiations between payers and providers. This availability of transparent pricing information is beginning to influence the market dynamics in the healthcare market, pushing both parties toward more uniform pricing, especially in outpatient services. Price convergence signals a shift in bargaining power among payers and providers. Some high-price outliers are losing their ability to command premium rates, while low-price providers are gaining leverage. In the coming days, providers may further embrace quality differentiation in some services, while competing on price in others.



Employers

Employers, particularly self-funded employers, are uniquely experiencing the result of more transparency into the cost of care. There has been an unprecedented increase in employer lawsuits on the basis of fiduciary responsibility. As rates continue to converge, we anticipate employers will be required to exert their collective power to force the market to define a "market rate" for individual services. These "right prices" will prevent market correction jumps that often cause employers to suffer the brunt of price increases downstream. With the right price for healthcare items and services identified, employers may lose their incentive to shop for plans.



Consumers

Price convergence is a win for consumers. More standardized rates create a more consistent, predictable experience for healthcare consumers. The reduction in high-end prices alleviates sticker shock, potentially making previously expensive procedures more accessible. This reduction could lead to improved health outcomes, as consumers face fewer financial barriers to high-cost services.

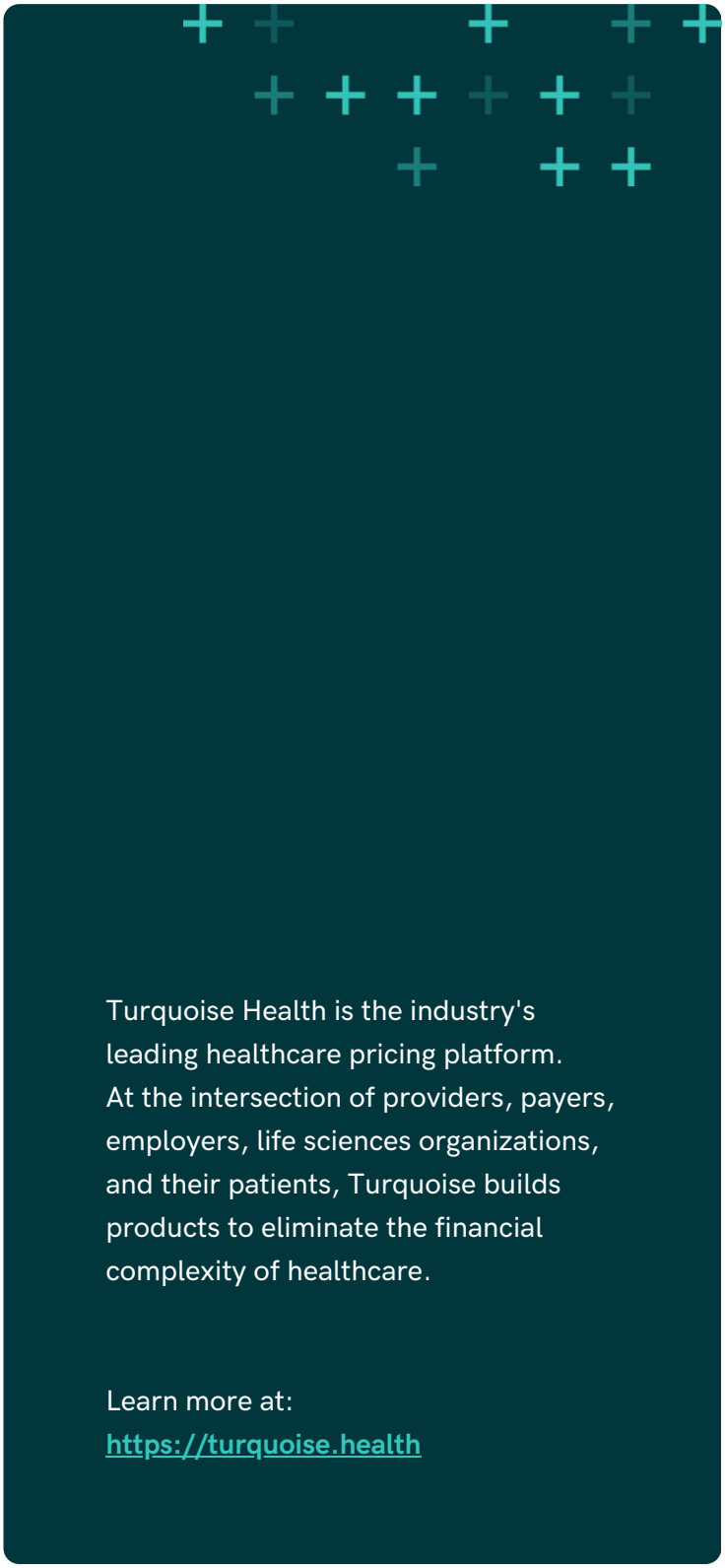
However, we've also seen some increases in low-end prices. If the availability of lower-cost alternatives diminishes as prices converge, consumers with limited financial means may have trouble accessing essential care. While we are still in the early days of price transparency, current trends highlight the need for additional research and monitoring of consumer costs, to ensure that the benefits of reduced high-end pricing do not come at the expense of affordability at the lower end.

Policy Makers and Regulators

Our analysis suggests that healthcare markets are adapting to price transparency through increased competition and more uniform prices. However, the varied impact across different market segments and healthcare services indicates that a one-size-fits-all policy approach may not be sufficient. Although high-end prices are dropping, low-end prices are increasing. Outpatient services have demonstrated significant price convergence, while inpatient services have been less pronounced, though these services still exhibit encouraging overall real rate decreases. While it is too early to draw definitive conclusions, these early indications suggest that policymakers may need to consider more tailored interventions to address the specific market dynamics of different healthcare services.

Conclusion

Price transparency represents a significant step forward in making healthcare markets more competitive and prices more uniform. However, its success depends on the ability of healthcare stakeholders to navigate the complex and evolving market dynamics. To date, we've begun to see effective use of price transparency data in rate negotiations and the early stages of market adjustments. Continuous monitoring, tailored policy interventions, and formal research to understand the full impact of price transparency on both prices and patient costs will be needed to ensure that the promise of transparency is fully realized across the healthcare ecosystem.



Methodology

Data Collection and Processing

We created a longitudinal dataset of commercial negotiated rates, extracted from hospital machine-readable files. We included data from December 2021 through June 2024.

Service Inclusion

We selected a basket of 37 common services typically explicitly paid as case rates, per diem rates, or per visit rates across all Top payers that usually exist in the Chargemaster by default.

OUTPATIENT SERVICES:

- **Cardiac Catheterization**
  - 92928: Transcatheter placement of stent, with coronary angioplasty when performed
  - 93653: Supraventricular tachycardia (SVT) ablation
- **Emergency levels 1-5**
  - 99281: Emergency Level 1
  - 99282: Emergency Level 2
  - 99283: Emergency Level 3
  - 99284: Emergency Level 4
  - 99285: Emergency Level 5
- **Labs**
  - 80299: Therapeutic drug assays
  - 83520: Immunoassay for analyte other than infectious agent antibody or infectious agent antigen
  - 86003: Allergy testing
- **Radiology**
  - 70486: CT Scan of the face and jaw without dye
  - 70553: MRI scan of brain before and after contrast
  - 71045: X-Ray of Chest Single View
  - 73140: Radiologic examination of the finger(s)
  - 74018: Radiologic examination of the abdomen
  - 78014: Thyroid imaging with blood flow
- **Outpatient Surgery**
  - 10060: Incision and drainage of abscess
  - 10140: Incision and drainage of hematoma, seroma, or fluid collection
  - CPT 10160: Puncture aspiration of abscess, hematoma, bulla, or cyst
  - CPT 19081: Percutaneous biopsies of the breast
  - CPT 20605: Draining or injecting medication into a large joint/bursa without ultrasound
  - CPT 32555: Thoracentesis, needle or catheter, aspiration of the pleural space
  - CPT 49083: Abdominal paracentesis with imaging guidance

Service Inclusion

INPATIENT SERVICES:

- **Acute Care Room and Board**
  - Revenue Codes: 0110, 0111, 0120, 0121, 0130, 0131, 0140, 0141
- **ICU Bed**
  - Revenue Codes: 0200, 0201, 0202, 0203, 0207, 0208, 0209, 0210, 0211, 0212, 0219
- **NICU levels 2-4**
  - Revenue Code 0172: NICU Level 2
  - Revenue Code 0173: NICU Level 3
  - Revenue Code 0174: NICU Level 4
- **Rehab**
  - Revenue Codes: 0118, 0128, 0138, 0148, 0158
- **Step Down / DOU Bed**
  - Revenue Codes: 0206, 0214

Payer Inclusion

Four national payers: Aetna, Anthem Blue Cross Blue Shield, Cigna, UnitedHealthcare.

Plan Inclusion

Hospital Data has not consistently included plan-level granularity. Where granular data was available, we selected plans that included "PPO" in the name. In cases where more than one PPO rate was reported for a payer or where no plan name included "PPO," we selected the highest rate as the PPO rate.

Rate Inclusion

We constructed a monthly time series of each contracted rate (the negotiated rate of a single billing code for a given provider and payer over time) from Dec 2021 to June 2024. Any missing data was imputed at the negotiated rate of the previous month or the closest prior month where data is available.

We excluded codes with modifiers as well as rates with a modified z-score below -5 or above 5, calculated within each service and CBSA. We also excluded rates that showed a coefficient of variation greater than 0.5 over the full time period, or where the June 2024 rate was >5x or <⅕x the Dec 2021 rate. These outliers removal thresholds aimed to strike a balance between removing true outlier data and keeping valid data that simply showed high rates or large rate changes. Admittedly, setting an appropriate threshold can be a bit of an art, but the general robustness of our results to different outlier thresholds gave us confidence in their validity. Additionally, we excluded all rates from providers where no rate changes were observed across all services included in this analysis over the defined period. We assume the lack of variation indicates potentially inaccurate data.

Provider Inclusion

234 HOSPITALS THAT MET THE FOLLOWING CRITERIA:

- **Currently exist in the Hospital Data, ie the Hospital has not closed**
- **The Hospital MRF data has existed in more than 12 monthly historical data snapshots with a Turquoise Transparency Score of 4 or 5**
- **Turquoise has been able to associate the Hospital with a valid NPI**
- **The Hospital is a General Acute Care Hospital**
- **The Hospital is located within one of the 10 largest core-based statistical areas (CBSAs, colloquially "metros" throughout this article):**
  - New York-Newark-Jersey City, NY-NJ-PA
  - Los Angeles-Long Beach-Anaheim, CA
  - Chicago-Naperville-Elgin, IL-IN-WI
  - Dallas-Fort Worth-Arlington, TX
  - Houston-The Woodlands-Sugar Land, TX
  - Atlanta-Sandy Springs-Roswell, GA
  - Washington-Arlington-Alexandria, DC-VA-MD-WV
  - Philadelphia-Camden-Wilmington, PA-NJ-DE-MD
  - Miami-Fort Lauderdale-West Palm Beach, FL
  - Phoenix-Mesa-Scottsdale, AZ

Inflation Measure

We used the Hospital Services Component of the Consumer Price Index as an inflation measure in our analysis. We used non-seasonally adjusted data.

To read our full methodology and detailed limitations, click here. →

Is Price Transparency Helping?