STUDY GUIDE

Price Transparency: How to Fix Healthcare

KEY TERMS:

healthcare	procedure	premium
price transparency	market competition	innovate

NOTE-TAKING COLUMN: *Complete this section <u>during</u> the video. Include definitions and key terms.*	**CUE COLUMN:** *Complete this section <u>after</u> the video.*
1. How many Americans have medical debt in the collections stage?	1. What are some of the primary problems with the American healthcare system?
2. In addition to a 36% increase in deductibles, American employees have had to increase their contribution to their premiums by how much?	2. What are some of the best solutions to the problems with the American healthcare system?
3. How much money does one study estimate is wasted in the U.S. healthcare system every year?	

Discussion & Review Questions

1. Towards the beginning of the video, Mr. Bruhn contends that, "With rare exceptions, when you go in for a back surgery or a thousand other kinds of medical procedures, you have no idea how much it's going to cost you. Worse, no one would be able to tell you if you bothered to ask. That's because medical billing is a ridiculously complex dance between hospitals, insurance companies and various middlemen. The hospitals charge crazy prices, $100 for aspirin, for example, and the insurance companies and middlemen agree, through special, often secret deals, to pay some percentage of that." What do you think has contributed to the healthcare system becoming such a convoluted and complicated mess of constituents and companies?

2. Later in the video, Mr. Bruhn explains that, "Markets only work when consumers have the proper information to make purchasing decisions. And the two most important pieces of information are the price and the quality of a good or service. As it relates to health care, Americans don't have access to either of those. ...if pricing was transparent, Americans could actually start pushing the market towards rewarding those who offer a fair and honest price, and pushing out the bad actors. That, in turn, would allow more Americans to have access to healthcare." Who do you think the 'bad actors' are that Mr. Bruhn is referring to here? In what ways, specifically, do you think that rewarding those healthcare providers who offer a reasonable price will correlate to more Americans having access to healthcare? Explain.

3. After arguing that price transparency for many standard medical procedures would "present a great opportunity to allow the laws of market competition to operate," Mr. Bruhn notes that, "One study estimates that $760 billion is wasted in the US healthcare system every year, with 'administrative complexities' as one of the main culprits. If a transparent upfront price was offered, and most medical care could be paid for in advance just like an airline ticket, medical centers could cut a significant portion of their administrative staff that's now involved in billing and debt collection." How do you think 'allowing the laws of market competition to operate' and medical centers 'cutting a significant portion of their administrative staff' would equate to lower healthcare costs and equate to much better quality care? Explain.

4. Mr. Bruhn goes on to point out that, "We don't need the government to take over our health care. Just the opposite. We need the government to get out of the way. Let entrepreneurs innovate in the healthcare space. Whenever they do, prices go down and quality goes up. It's already happened in fields like laser eye surgery, MRI testing, and plastic surgery." Considering its horrible record of running various industries, especially with the VA, why do you think that some people advocate for a complete government takeover of the healthcare system? In what ways, specifically, should government 'get out of the way' of healthcare? Explain. What do you think the connections are between innovation and the condition of the price of healthcare going down and the quality of healthcare going up? Explain.

5. At the end of the video, Mr. Bruhn concludes that, "Giving consumers better information always leads to better decisions, and healthcare is no exception. Price transparency not only lowers costs, but it puts the patient back in the center of what medicine is all about: helping those in a time of need. Price transparency. We all want it. So, let's do it." How, specifically, does price transparency equate to lower costs? Explain. What, specifically, do you think can

be done to make price transparency an industry-wide, mainstream reality? Explain.

Extend the Learning:

Case Study innovation and price transparency

INSTRUCTIONS: Read the articles "The Changing Future of Innovation," and "Price Transparency For MRIs Increased Use Of Less Costly Providers And Triggered Provider Competition," then answer the questions that follow.

1. Where is the change in innovation especially evident? What is driving the need to innovate, and what is underlying it all? Why is the adoption and use of AI and cloud computing happening out of sight and out of mind from patients and providers? What is the 'patient-centrism coin,' and how does it relate to value-based medicine? Why have the metrics used for how departments decide which technology to purchase changed? Why and in what way is economics becoming a part of health care? What is innovation focused on now? Why can hospitals charge more for imaging than other providers can? Why are patients generally unable to estimate the extent to which medical costs vary? When a healthcare provider contracts with different health plans at different prices, what challenges then arise in terms of being able to disclose to patients the cost of many procedures? What factors in a geological area negatively impact competition and negotiation between insurance providers? What was the objective of the study that the team in the second article reported on? What were some of the limitations of the study? What was the adjusted average cost of an MRI for people in the group that got outreach calls from their insurer in 2012? The proportion of hospital-based MRI imaging decreased to what percentage in the 2012 intervention cohort? What did James Robinson and Timothy Brown observe, and how did their observation relate to price transparency? What must a price transparency program provide in order to be successful? What conclusions did the team reach regarding the study?

2. Why does the *type* of innovation being made in medical technology matter so much, in terms of lowering costs and increasing the quality of care? What else besides innovation and price transparency is helping to check or to lower the costs of healthcare? What else to you think could help to lower the cost of healthcare and to increase the quality of that care? Explain.

3. In the video, Mr. Bruhn asks how come Americans allow it to continue to be the case that they seek out and receive healthcare procedures without knowing what the costs are? How would you answer his question: why do Americans let their healthcare industry operate without clear pricing? Explain. Which points made in the video are supported by direct evidence in the articles, and what, specifically, is that direct evidence?

https://www.itnonline.com/content/blogs/greg-freiherr-industry-consultant/changing-future-innovation

The Changing Future of Innovation

Innovation is all around, especially at trade shows. It's been that way for as long as I can remember. What's different today is that the type of innovation has changed. This change is especially evident in information technology, where artificial intelligence (AI) and cloud computing are driving markets.

The use of AI to interpret radiological images was emphasized at the annual meeting of the Healthcare Information and Management Systems Society (HIMSS) in Orlando. The presence of AI was obvious in the Innovation Live Pavillion, just as its presence was palpable on the exhibit floor. Ditto for cloud computing, which like AI, rated its own forum at the HIMSS meeting.

Innovation Teems At HIMSS

Trade shows are rife with innovation. That was the case at HIMSS 2019, as it was at RSNA 2018, where vendors showed products and works-in-progress for every marketable form of imaging modality and information technology. I am certain we'll see other such offerings as the year progresses, each tailored to specific medical disciplines and applications, at annual meetings for the American College of Cardiology (ACC) in March; Society of Breast Imaging (SBI) in April; Society for Imaging Informatics in Medicine (SIIM) in May; and American Society for Radiation Oncology (ASTRO) in September.

Driving the need to innovate is the newfound patient centrism of value-based medicine, which is creating demands that medicine is finding hard to fulfill. Underlying it all — masquerading, if you will, as technological insight — is fear … fear of not meeting patient expectations.

In this rapidly evolving world of innovation, radical thinking is turning moment-by-moment into conventional thought. It is fertile ground for the seeds of AI and cloud computing to take root; where both promise economic and clinical advances. But AI and cloud computing are just examples of the new kind of innovation.

Vendors are focusing on the ends that their products provide rather than the means by which they are obtained. CT vendors, for example, years ago stopped focusing on the number of slices their scanners produce in a single rotation; how fast the "gantries" — actually the electronic guts within — scan a patient; or even how fast a scan is performed (unless, of course, the CT is targeting the emergency department). Now vendors are focusing on clinical or operational benefits for patients or users. In short, the means are blending into the background.

This is why the adoption and use of AI and cloud computing are happening out of sight and out of mind from patients — and providers — who care mostly about results. It is why AI and cloud computing are being adopted and will continue to be adopted in the foreseeable future — and not because they are the latest or most advanced technologies.

This is a decidedly good thing. It is how it must be if the price of healthcare is to be checked (or go down) at the same time quality goes up. These two are different sides of the patient centrism coin. And both — clinical and operational improvements — must be achieved if value-based medicine is to really catch on.

Technological transparency is the "go-to" characteristic as the world becomes more and more dependent on the results of technology. In this world, AI and cloud computing are the "doers" that will allow providers to reach what were previously unattainable goals.

Why Profits Matter

Choices determine not only what we do but who we are. And equipment vendors have made choices on the basis of what providers want. Typically those choices have reflected what could be measured with absolute certainty. More CT slices, for example, might be obtained per rotation from successive generations of systems. This metric was handy only until it was obvious that the number of slices made no radiological sense. Similarly vendors pointed to scan speed, often measured in tenths of a second, a speed that weirdly had little or no significance in terms of reduced patient wait time or backlog.

Departments that purchased these systems based their decisions on metrics that have since become either obsolete or are rapidly doing so. This has or is happening thanks to a fundamental change among healthcare providers. Simply put, the profit motive is taking hold.

Profits have long been important to equipment vendors. And for good reason. Generating more revenue than expenses has been essential for companies to grow or — even more basically — stay in business. But this reality of the business world had largely eluded healthcare providers if

they purchased new equipment releases that achieved only iterative improvement, particularly when the improvement had no calculable impact on either their bottom lines or patients.

The slice wars in CT — where quad-slice scanners gave way to 16-, then 64- and 128-slice models (with stepping-stone releases of systems capable of generating, for example, 8 and 32 slices) — exemplify this. The war stopped only after it was obvious that the majority of patients would not benefit — when 64-slice scanners delivered as many slices per rotation as radiologists could reasonably use.

In that vein, profits, it seemed, were once widely viewed as antithetical to healthcare. They were the oil; patient care was the water. Totally incompatible. But the realization has begun to set in that volunteers who wheel patients out of hospitals and fund-raisers that help pay for equipment can go only so far. Neither is sustainable. Smart management is.

Economics — the common denominator of business success — is becoming a part of healthcare. And it is being made so by value-based medicine — and value-based imaging.

How Value-based Imaging Is Powering AI, Cloud Computing

The innovation that is part of this value equation is radically different from what was defined as being innovative in the past. Technology is no longer king but rather king maker. It goes unseen both in what it does clinically to benefit the patient's health and operationally to shore up the provider's bottom line. Whereas technology was once held up by providers as one — and sometimes the key — differentiator, AI and cloud computing, for example, tend to be transparent. They in themselves are not the point. Their results are.

AI and cloud computing are the catalysts. They make value-based change possible. And it is why AI and cloud computing are — and will continue — taking hold.

Rather than being iterative, innovation now has a loftier purpose. It is focused on making healthcare higher quality and less expensive — and they promise in some circumstances to do both at the same time. Value-based imaging requires that diagnosis be not only precise but that patient wait times are shorter; care must be rendered efficiently to multiple interested parties, as well as the patient. And the most successful applications are ones that not only do these but also make a difference in the clinical management of the patient.

This is heady stuff. But not so much that they are beyond the reach of today's innovation. And that is the beauty of what we have now. It's a lot different than how it used to be.

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Price Transparency For MRIs Increased Use Of Less Costly Providers And Triggered Provider Competition

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Abstract

To encourage patients to select high-value providers, an insurer-initiated price transparency program that focused on elective advanced imaging procedures was implemented. Patients having at least one outpatient magnetic resonance imaging (MRI) scan in 2010 or 2012 were divided according to their membership in commercial health plans participating in the program (the intervention group) or in nonparticipating commercial health plans (the reference group) in similar US geographic regions. Patients in the intervention group were informed of price differences among available MRI facilities and given the option of selecting different providers. For those patients, the program resulted in a $220 cost reduction (18.7 percent) per test and a decrease in use of hospital-based facilities from 53 percent in 2010 to 45 percent in 2012. Price variation between hospital and nonhospital facilities for the intervention group was reduced by 30 percent after implementation. Nonparticipating members residing in intervention areas also observed price reductions, which indicates increased price competition among providers. The program significantly reduced imaging costs. This suggests that patients select lower-price facilities when informed about available alternatives.

TOPICS

- Magnetic resonance imaging
- Cost reduction
- Health care providers
- Quality of care
- Hospital costs
- Costs and spending
- Computed tomography
- Patient testing
- Markets
- Cost sharing

During the past several years, increasing attention has been paid to the variation in pricing for health care services. [1–6] The variation is found throughout health care, but price variation for imaging scans has been more widely documented. [1–4] For instance, the same magnetic resonance imaging (MRI) scan can range from $300 to $3,000 within a given geographic area, with no demonstrated difference in quality. [7]

A number of factors contribute to price variation, including the type of facility that performs the scan. Hospital-based outpatient departments typically charge higher rates than freestanding imaging centers or physician offices because of costs related to hospitals' emergency care capabilities and stringent accreditation and regulatory requirements. [1] According to a 2009 Medicare Payment Advisory Commission report to Congress, hospitals can charge more for imaging than other providers can, because hospitals use their market power to negotiate highe payments from private insurers. [8]

Among hospital-based facilities, prices may vary further—by academic status, with teaching hospitals usually charging higher prices; [9] by mix of services provided; or by mix of population served, because of the need to cross-subsidize across payers and services. Even within a single commercial payer, cost sharing will vary by plan benefit designs. As a result, patients generally are unaware of or unable to estimate the extent to which medical costs vary. [7,10]

Background

Price Transparency In Health Care

In contrast to other competitive markets, it is often difficult for patients to obtain prices for health services and procedures from providers before receiving a service. [11,12] Health care price typically reflect negotiations between providers and payers. A provider may contract with numerous health plans at different prices, which makes the disclosure of costs for specific procedures challenging in several ways.

First, health care providers are accustomed to negotiating prices. It is in providers' interest to keep these prices confidential or to publish only partial costs, such as facility fees but not professional fees for a particular procedure. [12,13]

Second, it is logistically challenging for providers to supply useful insurer-specific price data to patients without information about the patient's benefit design.

Third, not all patients possess sufficient medical literacy to accurately compare all cost components for different types of services or to predict their cost-sharing responsibility. [12] Ever if consumers are aware of actual medical costs, they might apply standard market principles an misinterpret a higher price as an indication of higher quality. [14] This misinterpretation often serves as a disincentive to shop for lower-cost services.

Finally, patients have historically been responsible for only a small portion of a procedure's true cost. [15–19] Thus, there is neither a strong tendency nor an established practice for patients to verify prices before receiving a service.

Challenges Of Price Transparency Initiatives

In an attempt to redress this situation, federal and state governments have implemented policies to increase transparency across a broad range of providers and services. In some cases, governments have engaged in efforts to publish health care prices in public reports or online. In early 2007 New Hampshire became one of the first states to launch a price transparency program. [20] Costs of health care procedures—including preventive services; emergency visits; and radiological, surgical, and maternity procedures—were posted on the web-based New Hampshire Comprehensive Health Care Information System. [21] In 2013 the Centers for Medicare and Medicaid Services published an online database containing the costs charged by individual hospitals for the most common inpatient and outpatient services. [22] In April 2014 Medicare payments to individual physicians for fee-for-service beneficiaries were posted on the same website.

Presumably, such price transparency initiatives would enable patients to make informed choices and select lower-cost facilities, thus reducing overall medical costs. However, research conducted by the New Hampshire Insurance Department several years after the state's price transparency initiative began found no such decrease. That is, the existence of New Hampshire's price transparency website had no impact on reducing price variations among providers. [20]

There are both patient- and provider-related challenges to the success of price transparency initiatives. It is difficult to engage patients when costs remain largely hidden behind insurance deductibles and copayments, [7,20] costs of only selected procedures or services are published, [13] or portions of the total costs are not disclosed. [13] If data are limited and obscured, patients remain uninformed about how much they will have to pay for health care, and they have little incentive or opportunity to seek the lowest prices.

Insurance providers may be engaged in price negotiations, but such efforts are weakened by a lack of competition among hospital-based facilities in many geographic areas. The simple proximity of neighboring facilities does not guarantee competition. Aggressive negotiating practices, limited capacity of potential competitors, prestigious reputations, and affluence in the surrounding community all hinder competitive pricing. [20]

Fortunately, promising signs for price transparency have begun to emerge. A study on a reference-based purchasing benefit design for Anthem Blue Cross in California and the California Public Employees' Retirement System (CalPERS) reported that combining reference-based pricing with member outreach on cost information enabled members to select lower-cost facilities for elective surgery. [23,24] In a separate study of 1,421 consumers presented with multiple scenarios, 80 percent selected the health care provider that had the highest value when they were given access to well-designed reports on price and quality—for example, about avoidable complications. [14] These findings indicate that when patients are engaged in the decision process, they are able to select facilities for nonurgent care that provide high-quality service in relation to the cost of care. [14,20]

Informed Choice: Making It Simple For The Consumer

In late 2010 one of the largest specialty benefit management [25] companies in the United States, AIM Specialty Health, implemented a price transparency initiative that was focused on elective advanced imaging procedures in parts of the Northeast, Midwest, and Southeast.

Advanced imaging was selected because it is one of the most common elective procedures: In 2010, 65 MRI scans and 149 computed tomography (CT) scans were performed per 1,000 patients. [26] In addition, the availability of multiple imaging service providers in a given geographic area made it feasible for price competition.

Information on the quality of imaging services was also available, based on an imaging facility's capabilities. This enabled a quantifiable and defensible estimation of value for each test. The capability score for an imaging facility was based on staff qualifications, accreditation, quality programs, equipment, and overall service levels.

The price transparency program was also supported by the availability of timely imaging preauthorization data for insurance plan members in the program. The prior authorization process enabled the radiology benefit management staff to compare pricing information about the referred imaging provider with information about other providers in the same geographic area.

If there was a significant difference in price (at least $400 per imaging study), quality, or both, a customer service agent telephoned the member and suggested alternative facilities. If the member accepted the recommendation to use a higher-value facility, the agent helped schedule a new appointment. There was no effect on benefits if the member did not accept the recommendation.

This price transparency initiative was unique in that it engaged members through phone calls when a high-value imaging facility was a practical choice instead of referring members to static information on a website. The program used real-time member profiles and provider referral information to identify cases scheduled at low-value facilities. Finally, because there was approximately a five-day window between a preauthorization request and the imaging test, there was sufficient time for customer service agents to discuss other options with members.

The objective of the study we report on here was to evaluate consumers' responses to the insurer-initiated price transparency program and determine whether the intervention prompted members to select high-value imaging providers, resulting in a lower per image price than in the year before the intervention. This study is the first evaluation of a large-scale private-sector effort in price transparency and of its impact on consumer response.

Study Data And Methods

Data Source And Study Population

This retrospective cross-sectional study used administrative claims data from commercial Blue Cross and Blue Shield health plans in the Northeast, Midwest, and Southeast regions of the United States. Patients had at least one outpatient diagnostic MRI scan during either the pre-implementation (2010) or post-implementation (2012) year. Inpatient and emergency department MRI tests were excluded because they were not subject to the preauthorization and price transparency program. All patients were age eighteen or older, continuously enrolled in

the health plan during the year of the MRI scan, and enrolled in either a preferred provider organization (PPO) or a consumer-directed health plan insurance product.

The intervention cohort was composed of members whose employers participated in the price transparency program. These members resided in the metropolitan hospital service areas of Atlanta, GA; Cincinnati, OH; Cleveland, OH; Indianapolis, IN; and St. Louis, MO. The reference cohort consisted of patients residing in areas in the same census regions as the intervention group (Albany, NY; Chicago, IL; Hartford, CT; Kansas City, MO; Lexington, KY; Louisville, KY; New Haven, CT; Richmond, VA; and Rochester, NY) where no price transparency program was implemented. (for a map that shows the locations of the intervention and reference groups, see online Appendix Exhibit 1). [27] The areas in the two groups were similar in terms of significant Anthem or Empire Blue Cross and Blue Shield market penetration and provider network characteristics such as the availability and quality of imaging services.

The primary outcome measure was the change in average cost per image from 2010 to 2012 among members offered the price transparency program (the intervention cohort), compared to the change among members in metropolitan areas where no program was implemented (the reference cohort). [28] The imaging costs analyzed were based on total costs per test—the amounts paid by the health plan and those paid by the member.

Statistical Analysis

Unadjusted analyses are reported using summary statistics. We used difference-in-differences regression to evaluate the impact of the price transparency program on unit cost. The impact was net of preprogram price differences between the intervention group and the reference group, common imaging cost trends, and other covariates relevant to imaging. Those covariates included type of imaging test (such as imaging of the head, chest, abdomen, or spine) and the Medicare geographic adjustment factor, which measures operating expenses for health care facilities across regions. The geographic adjustment factor was introduced into the regression to minimize possible variations in costs among metropolitan areas.

Limitations

This study had several limitations. We assumed that the pricing trend derived from the reference group was linearly applicable to the price transparency program. We also assumed that the variation in baseline imaging costs among different cities would be reduced through risk adjustment with the geographic adjustment factor. However, we cannot confirm that the risk adjustment eliminated all baseline differences.

The study did not include other socioeconomic or provider-level factors that could have affected imaging costs in each of the cities included in the study. However, these effects, if any, would likely be homogeneously distributed among both the intervention and reference cohorts. Both cohorts consisted of a limited number of metropolitan areas, and the results might not be generalizable to other regions.

Lastly, about one-third of the patients in the study had no cost sharing for the imaging test. In some cases, this was because they had no deductible. In other cases, it was because they had reached their out-of-pocket maximum, which might limit their responsiveness to the program.

One enhancement currently under consideration would identify the actual out-of-pocket savings and prioritize for outreach those members with the greatest potential savings. Future research could evaluate the impact of this or similar initiatives when patient cost sharing is a more explicit component of the outreach effort.

Study Results

Patient Demographics

There were 61,271 patients in the intervention cohort and 44,366 patients in the reference cohort, for a total of 105,637 patients who had at least one MRI scan. Age and sex distributions were comparable in the two groups (see Appendix Exhibit 2). [27]

Fifteen percent of the patients were enrolled in high-deductible health plans. The minimum annual deductible defined by the federal government for these plans was $1,200 for individual coverage and $2,400 for family coverage. The remaining patients were enrolled in PPO plans, and the majority of them had an annual deductible of less than $1,000 for an individual. The distribution of high-deductible health plans and PPOs was also comparable in the intervention and reference groups.

Impact On Imaging Cost

From 2010 to 2012 the unadjusted average cost of an MRI decreased by $99 (9.4 percent) in the intervention cohort (Exhibit 1). In contrast, the cost increased by $97 (10.5 percent) in the reference cohort—a change that is in line with published data from the Bureau of Labor Statistics on price inflation for medical care services. [29]

Exhibit 1 Volume And Cost Of Magnetic Resonance Imaging (MRI) Scans In Intervention And Reference Groups, 2010 And 2012

	Intervention group		Reference group	
	2010	2012	2010	2012
Number				
Patients	33,349	27,922 a	21,861	22,505
MRI scans	44,050	36,213 a	28,534	28,988
Average MRI scans per patient	1.32	1.30	1.31	1.29
Average cost per MRI ($)				
Unadjusted	1,055	956	928	1,025
Adjusted b	1,053	958	868	992

SOURCE Authors' analysis.

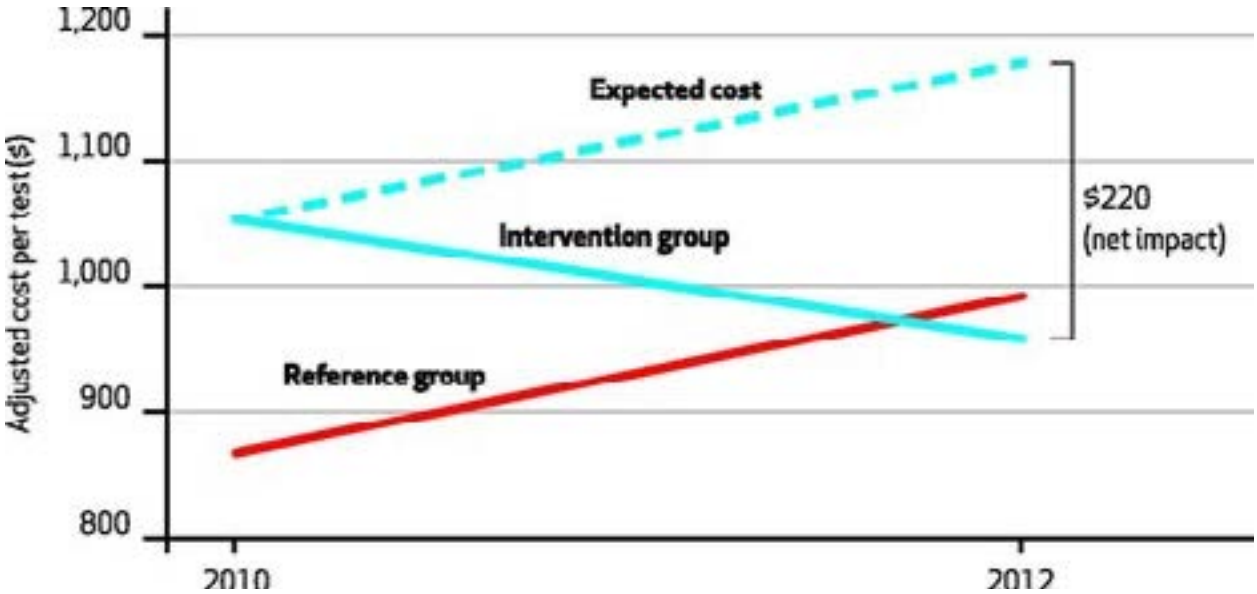
[a]Not all employer groups in the intervention area signed up for the price transparency program.

[b]Adjusted for type of imaging test (such as imaging of the head, chest, abdomen, or spine) and the Medicare geographic adjustment factor.

The results were consistent after we adjusted the imaging cost with the difference-in-differences regression model (Exhibit 1). We observed an adjusted cost per test decrease of $95 (9.0 percent) for the intervention cohort from 2010 to 2012 and an increase of $124 (14.3 percent) for the reference cohort.

We compared the regression-adjusted change from 2010 to 2012 in the intervention and reference groups (Exhibit 2). The result of the price transparency intervention was an adjusted $220 reduction (18.7 percent; $p<0.001$) in the cost of an MRI scan.

Exhibit 2 Adjusted Cost Per Magnetic Resonance Imaging (MRI) Scan In Intervention And Reference Groups, 2010 And 2012

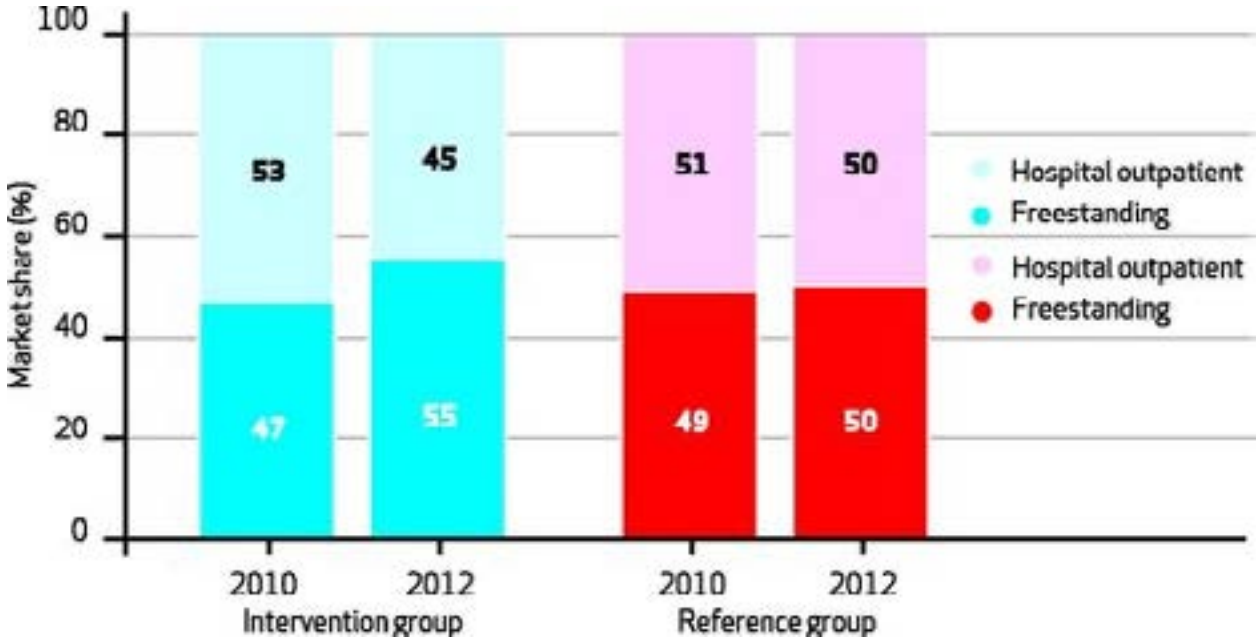


SOURCE Authors' analysis. NOTES The expected cost is the expected trend for the intervention group, based on the trend in the reference group. It represents the projected per image cost in the intervention group had there been no price transparency program for that group.

Patients Shifted Away From Hospital-Based Facilities

One factor driving the cost reduction was that a notable percentage of members in the intervention cohort shifted from hospital-based outpatient facilities to freestanding or office facilities. The proportion of MRI imaging that occurred at hospital-based facilities decreased from 53 percent in 2010 to 45 percent in 2012 in the intervention cohort (Exhibit 3). In contrast, the rate was essentially unchanged in the reference cohort (51 percent in 2010 and 50 percent in 2012). This change in the intervention cohort indicated a shift by patients to facilities with lower average costs.

Exhibit 3 Market Share Of Magnetic Resonance Imaging In Freestanding Or Office Facilities And In Hospital Outpatient Facilities In Intervention And Reference Groups, 2010 And 2012



SOURCE Authors' analysis.

Hospital-Based Facilities Reduced Price

Prompting provider competition is a desirable impact of price transparency. [20] We found that the unit MRI price for the intervention group decreased, on average, from $1,488 to $1,313 in hospital-based facilities after the intervention (Exhibit 4), while the price increased in nonhospital facilities. (The price increase in nonhospital facilities was also observed in areas without the program.) This 30 percent reduction in price variation between imaging locations in the intervention group is consistent with the findings of James Robinson and Timothy Brown, who observed that high-price hospitals reduced their prices after the implementation of a reference-based pricing benefit design. [24]

Exhibit 4 Magnetic Resonance Imaging Costs At Freestanding Or Office Facilities And At Hospital-Based Outpatient Facilities In Intervention And Reference Groups, 2010 And 2012

	Intervention group		Reference group	
	2010	2012	2010	2012
Freestanding or office facilities	$563	$668	$652	$672
Hospital-based outpatient facilities	1,488	1,313	1,198	1,383
Difference	925	645	546	711

SOURCE Authors' analysis. NOTES Between 2010 and 2012 the difference in the intervention group fell 30 percent. In the reference group it rose 30 percent.

Discussion

In this real-world analysis of a health care price transparency program, we found that when similar-quality but lower-price alternatives were presented to health plan members by outreach, members were willing to select lower-price facilities. As a result, the price transparency program greatly reduced the average price level, shifted patients away from hospital-based facilities, and reduced the price variation between hospital and nonhospital facilities in the intervention group. These positive findings were attributed to responsiveness not only among members in the intervention group but also among providers.

Evidence Of Price Competition By Providers

It appears that the benefits of the program extended beyond the members targeted for intervention to health plan members whose employers had not participated. A subanalysis of 39,755 MRI patients residing in the same metropolitan areas who were included in the study but were not part of the price transparency program also showed a reduction in average cost per test, although to a lesser extent than patients participating in the program. The nonparticipating employer groups experienced an average decrease of $57 per test, compared with a $99 decrease in the employer groups participating in the intervention (and a $97 cost increase in the reference group residing outside the regions of the intervention program).

The cost reduction in the nonparticipating employer groups provides evidence of universal provider competition that was influenced by the intervention. In fact, after the implementation of the price transparency program, more than thirty hospital-based imaging providers reportedly negotiated to lower prices, to stay competitive.

This study demonstrated that a price transparency program can effectively trigger provider competition that goes beyond the participating members. Such an effect was also observed recently in a study on elective joint replacement after patients shifted to less expensive facilities and benefited from significant cost reductions. [10]

Sensitivity Analysis Using Computed Tomography

We repeated these analyses on diagnostic CT scans in the same geographic areas as a sensitivity test for the effect of the price transparency intervention on different imaging procedures. A coding change for CT scans in 2011 that integrated two separate CT procedures into one common *Current Procedural Terminology* (CPT) code resulted in a reduction in CT unit costs for both the intervention and reference groups. Despite the coding change, we observed that the net program impact on average unit cost was directionally the same as for MRI scans—an adjusted net reduction of $102 in the intervention cohort.

Road Map To A Successful Price Transparency Program

The price transparency initiative has the potential to be effective for nonurgent procedures, when there are at least several days between a patient's decision to select the provider and the time when the procedure takes place. Procedures that could offer the greatest benefits from member outreach would generally have a preauthorization or prenotification component. These could include echocardiography or other high-tech imaging, such as positron emission

tomography (PET) scans and nuclear cardiology; sleep studies; preventive colonoscopy; arthroscopy; and elective joint replacement surgeries.
In contrast to the more commonly employed passive websites, this intervention program included outreach to members when they were scheduling an imaging procedure. The intervention also included several elements that are key to making a price transparency program successful.

Relevant To Consumers:
This intervention did not use a static price transparency website that exposed members to a plethora of general information. Instead, the intervention reached out to members with information specific to their procedure types. It did not provide members with the amount charged by facilities, which is usually of limited interest to consumers, but with the cost of the "negotiated" amount (insurer-specific and provider-specific costs). Moreover, members were redirected to comparable facilities close to the original referred facilities or their home. Providing customized information empowered members to respond more effectively to the recommendation during the outreach.

Quality Emphasized Along With Price:
Consumers are interested in the quality of health care along with its cost. Without additional contextual information on health care quality, some consumers believe the adage, "You get what you pay for." [14] A successful price transparency program provides understandable quality information to members in addition to cost data.

Up-To-Date, Accurate Data:
Up-to-date and accurate member data and cost and quality information are essential for successful consumer-engaged price transparency programs. For this intervention, patients' phone numbers entered during an office visit were uploaded into a preauthorization database, enabling effective member outreach with a high contact rate. Quality scores were derived from provider-reported capability data, and cost information about imaging facilities was populated with average imaging cost based on medical claims. All data were updated periodically to provide the most current data to members.

Timing:
To influence a decision, health care decision support needs to be provided to patients at the time that decision is made. [30,31] In clinical decision support systems, which have been implemented throughout the health care field to promote better clinical decisions, [32–39] the provision of well-timed support, in addition to access to up-to-date information, is seen as a critical factor. [33] Providing personalized cost and quality information on the care process before the member enters it, at a time when his or her choice of providers could be changed, makes the information instantly relevant.

Integrated Decision Support Information System:
Lastly, health decision support needs to integrate quality and cost data on relevant services and provider characteristics such as location, contact information, and the availability of appropriate equipment into one system to offer seamless, effective decision support.

Conclusion

The price transparency program we studied provided timely and relevant information on cost and quality to assist health plan members in selecting high-value facilities for advanced imaging procedures. Patients responded to price transparency with increased use of less costly facilities, which were often not hospital based. This program prompted higher-cost facilities to respond and resulted in a 30 percent reduction in price variation between hospital and nonhospital facilities in the intervention group. The effect of price transparency extended beyond the intervention cohort and triggered large-scale provider competition and cost reduction for nonparticipating plan members residing in the same region.
The price transparency program resulted in a significant price reduction of 18.7 percent per MRI test. This suggests that a price transparency initiative involving direct member outreach with integrated quality information can successfully reduce health care costs.

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NOTES

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QUIZ

Price Transparency: How to Fix Healthcare

1. **Researchers found that the price for the same heart procedure varied between _____.**

   a. $400 dollars to $4,800 dollars
   b. $4,000 dollars to $48,000 dollars
   c. $4,800 dollars to $40,000 dollars
   d. $44,000 dollars to $448,000 dollars

2. **Americans have no idea how much they are paying for healthcare services.**

   a. True
   b. False

3. **How many Americans have medical debt in the collections stage?**

   a. Nearly 1 in 5
   b. Nearly 1 in 50
   c. Nearly 1 in 500
   d. Nearly 1 in 5,000

4. **In addition to a 36% increase in deductibles, American employees have had to increase their contribution to their premiums by how much?**

   a. 3%
   b. 8%
   c. 15%
   d. 23%

5. **One study estimates that _____ is wasted in the U.S. healthcare system every year, with "administrative complexities" as one of the main culprits.**

   a. $7 million
   b. $60 million
   c. $60 billion
   d. $760 billion

QUIZ: ANSWER KEY

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