

Spending on Shoppable Services in Health Care

In the United States, the price of health care services is often not known to patients prior to receiving care. This is generally true regardless of whether the patient is covered by health insurance. Over the last several years a movement to introduce price transparency—information about the price before the service is rendered—has emerged.

As consumers are asked to pay more for health care services, understanding and anticipating those costs may be increasingly important to them. At the same time, consumers must be able to consume value through shopping, by choosing lower-priced high-quality providers. Insurers, employers, and governments also have an interest in greater price transparency as they hope it will lead to lower spending on health care. In general, two main arguments have been advanced for how price transparency may lower spending on health care.¹ First, consumers will be able to know the full cost of services before receiving them, and will be able to choose lower-cost services or providers, while holding quality constant. Second, when pricing information is publicly available, health care providers will be incentivized to lower their prices to be more competitive (for more information about the difficulties with this, see CBO 2008²). This issue brief focuses on the first of these: the potential for consumer activity to lower overall health care spending.

One study has estimated that price

transparency efforts could save \$100 billion dollars over a decade.³ Of this amount, \$18 billion could come from greater consumer access to pricing information. In theory, consumers would use pricing information to comparison shop for their health care services and providers. However, not all health care services are shoppable. It should not be expected that someone pull out his or her Smartphone and research the lowest price emergency room before dialing 911. For a health care service to be “shoppable,” it must be a common health care service that can be researched (“shopped”) in advance; multiple providers of that service must be available in a market (i.e., competition); and sufficient data about the prices and quality of services must be available. Another study has estimated that only about one third of total health care spending in a given year is on services that are shoppable.⁴ Also notable is that consumer shopping does not have to be limited to comparisons across providers for Service X. Consumers may also choose to compare the cost of Service X with the cost of Service Y or even choose not to receive Service X at all.

KEY FINDINGS

At most, **43%** of the \$524.2 billion spent on health care by individuals with ESI in 2011 was spent on shoppable services.

About **15%** of total spending in 2011 was spent by consumers out-of-pocket.

\$37.7 billion (7% of total spending) of the out-of-pocket spending in 2011 was on shoppable services.

Overall, the potential gains from the consumer price shopping aspect of price transparency efforts are modest.

Analysis

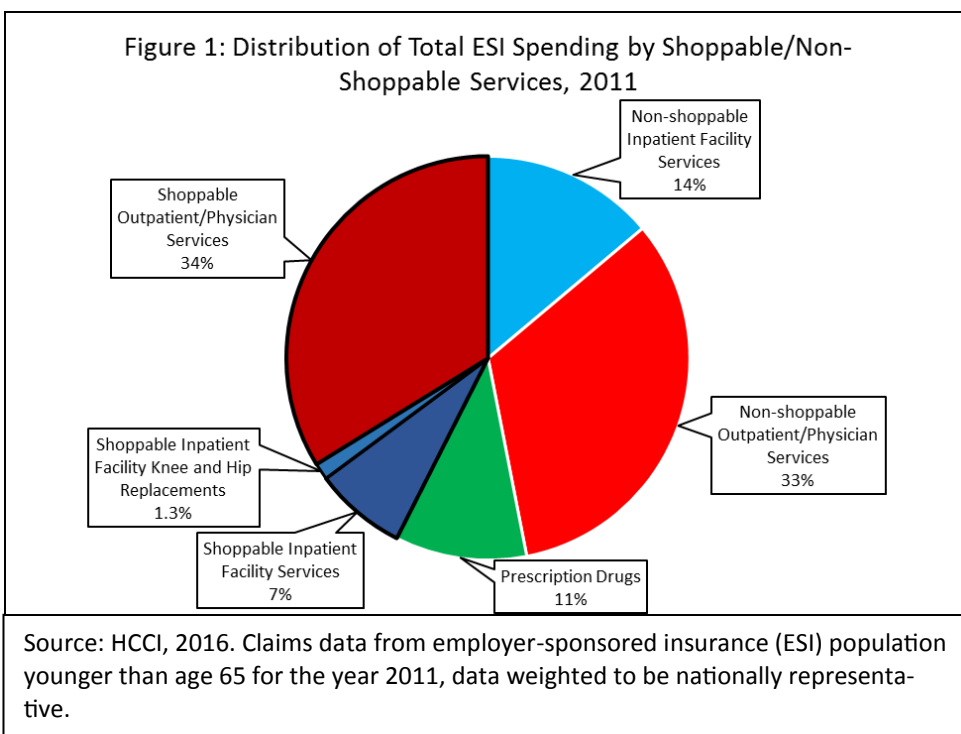
This analysis replicated the White and Eguchi methodology as closely as possible using the HCCI dataset weighted to be nationally representative. The HCCI study population comprised individuals younger than age 65 and covered by employer-sponsored insurance (ESI). The analysis was conducted using 2011 data comparable to those of White and Eguchi. Using their definition of “shoppable” health care services, we examined the total spending on these services. As defined by White and Eguchi, shoppable services are those that are both the highest-spending and could be scheduled in advance of receiving the service. That is not to say that shopping for each of these services would be practical for an individual, only that he or she could shop for the service. Health care services are divided into six general categories, as shown in Table 1.⁵ (See Data and Methods for more information about the categories of services and the meth-

odology used in the analysis.) The numbers presented in this issue brief should be viewed as estimated upper-bound maximums for the amount of money that could be spent on shoppable and non-shoppable services. It is important to note that this analysis did not incorporate market features (e.g., number of providers in a market, insurer concentration), geographic location (e.g., rural, urban, population), or health status (e.g., percentage of population with serious health problems).

Total health care spending

In 2011, total spending on all health care services for the national ESI population was estimated at \$524.2 billion. Of this amount, we found that at most, 43% of total spending was on services that can be considered shoppable. This is in contrast to, and higher than, the one-third of spending on shoppable services found by White and Eguchi. One reason for this difference could be the study populations, as the White and Eguchi study population included mainly urban auto-workers and their families, whereas the HCCI population was weighted to be nationally representative.

As seen in Figure 1, the largest piece of the spending “pie” was for shoppable outpatient/physician services (34% of total spending), followed by non-shoppable outpatient/physician services



(33% of total spending). This suggests that in 2011, more dollars were spent on shoppable outpatient/physician services than on non-shoppable outpatient/physician services. In contrast, more was spent on non-shoppable inpatient services than on shoppable inpatient services. And hip and knee replacements, which are considered shoppable, add only an additional 1.3% to the shoppable inpatient services category. These disparate findings may reflect differences in the mix and use of services between the two categories: inpatient services and outpatient/physician services. For example,

there are more services that are considered shoppable among the shoppable outpatient/physician services than among the shoppable inpatient services category, and far more outpatient/physician services than inpatient admissions are used in a given year. Overall, however, more than half of the spending in 2011 was on services not considered shoppable.

Out-of-pocket spending for health care

For consumers—those potentially actually shopping—out-of-pocket spending should be more important than total

Table 1: Description of Categories of Services

Shoppable Inpatient Admissions	Shoppable Knee and Hip Replacement Admissions	Shoppable Outpatient/Physician Services	Non-Shoppable Inpatient Admissions	Non-Shoppable Outpatient/Physician Services	Prescription Drugs
68 DRG-based admissions	5 DRG-based admissions	277 CPT or HCPCS codes	Other hospital admissions not considered shoppable	Other outpatient/physician claims not considered shoppable	Prescription drug and device claims filled through a pharmacy

Source: HCCI, 20156

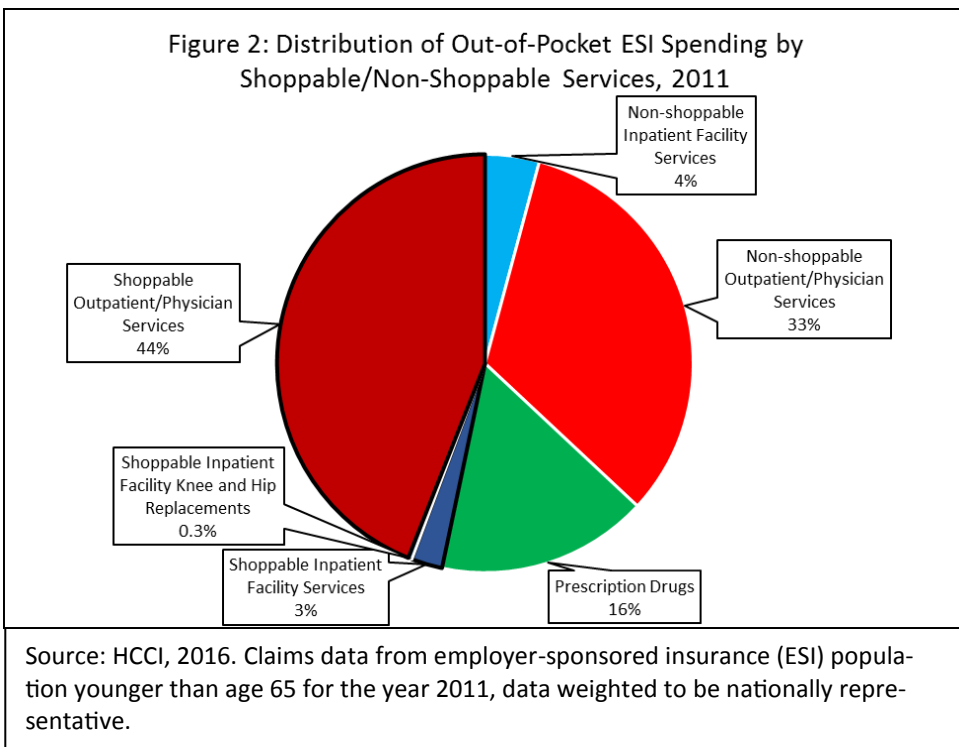
Note: Categories of services used in the analysis are based on the schema designed by Chapin and White..

spending. Out-of-pocket spending in the HCCI dataset is calculated as the total of copayments, coinsurance payments, and deductible payments made by consumers to providers for health care services. According to HCCI's *2012 Health Care Cost and Utilization Report* (using 2011 data), about 16% of spending on health care services are payments made out of pocket by consumers in the form of copayments, coinsurance, and deductibles. In this analysis, of the \$524.2 billion spent on health care in 2011, about 15%⁶—or \$80.8 billion—was spent out of pocket. Of this amount, about 7%—or \$37.7 billion—was spent out of pocket on shoppable services (Figure 2).

Of the out-of-pocket spending, the most dollars were spent on shoppable outpatient/physician services: around 44%. Out-of-pocket spending on inpatient services, both shoppable and non-shoppable, makes up a very small piece of total out-of-pocket spending, as most consumers spend far more money on outpatient/physician services than on inpatient services.

Total out-of-pocket spending, however, is not the complete story. The amount of money consumers spend out of pocket on any given health service is determined in part by their health insurance benefit design. Out-of-pocket payments can be one of three types: coinsurance, deductibles, or copayments. Though copayments tend to be specifically defined dollar amounts, coinsurance and deductible payments can be highly variable, depending on the insurance plan, the provider, and the health care services.

For consumers hoping to save money through price shopping, a (relatively) straightforward method might be to choose lower-priced providers when shopping for services that require coinsurance payments, as coinsurance pay-



ments often vary with the price of the health care service. In this analysis, about 27% of the out-of-pocket spending for shoppable services was for coinsurance payments. These coinsurance dollars represent around 12% of all dollars spent out of pocket. The vast majority of the coinsurance payments were on outpatient/physician services; consumers spent about six times more for coinsurance payments for these shoppable services than for coinsurance for shoppable inpatient services.

We also might assume that consumers would be more likely to price-shop for procedures that cost more (i.e., “high-dollar” procedures) than for procedures that cost less (i.e., “low-dollar” procedures), as the potential savings to the consumer would be greater. Coinsurance payments by consumers on high-dollar outpatient/physician services⁷ accounted for about 9% of total out-of-pocket spending for all health care services. In other words, if we were to assume that consumers have the highest incentive to

alter their behavior and price-shop for high-dollar outpatient/physician services, they could alter only 9% of their total out-of-pocket spending, on average, through coinsurance payments.

Deductible payments, as opposed to coinsurance payments, may provide a different set of incentives for consumers. Consumers may want to choose low priced providers while in their health plan’s deductible. Conversely, they may care less about price if they believe they will reach their deductible. In this analysis, payments for deductibles accounted for nearly 50% of the dollars spent out of pocket on shoppable services. However, deductible payments make up a larger portion of the out-of-pocket spending on low-dollar outpatient/physician services (51% of out-of-pocket spending) as compared to out of pocket spending on high-dollar outpatient/physician services (41% of out-of-pocket spending).

After coinsurance and the deductible, the balance of the out-of-pocket spending is copayments. For consumers who want to

Table 2: Price Variation in Inpatient Services

Services	Coefficient of Variation (lower numbers indicate less price variation)
Inpatient Facility Shoppable (excludes hip/knee replacements)	2.07
Inpatient Facility Hip/Knee	0.61
Inpatient Facility Non-Shoppable	2.45

Source: HCCI, 2016

Notes: Data represents the weighted national population of insureds 0-64 covered by ESI, for the year 2011

save money on their health care services, price-shopping services that are mainly paid for by copayments (rather than through coinsurance or deductible payments) may not be a very effective way to save money. Copayments are generally a fixed price for a service and are set by the health plan: for example, a \$20 flat fee to see an in-network primary care provider. One fourth of the dollars spent out of pocket on shoppable services were for copayments in 2011. Copayments seem to have the largest effect on low-dollar shoppable outpatient/physician services, where 30% of out-of-pocket spending on this category of services was through copayments. In contrast, copayments on shoppable high-dollar outpatient/physician services accounted for only 2% of the out-of-pocket spending.

Price variation

For consumers to be able to influence their out-of-pocket payments by price-shopping, price variation must exist in the market. If prices do not vary in a market,

the availability of perfect pricing information will not lead to lower spending, as consumers would find no lower-priced services from which to choose. This section describes the amount of variation observed in the weighted data; the higher the coefficient of variation, the larger the price variation.

We find that nationally, knee and hip replacement admissions had a coefficient of variation much lower than either inpatient shoppable (excluding knee and hip replacements) or inpatient non-shoppable (Table 2). In other words, nationally there seems to be less price variation in the categories of shoppable services than non-shoppable services. While we understand that people cannot shop nationally for most services, Table 1 illustrates general price variation across broad categories of services. However, this result is not to suggest that shopping for knee and hip replacements never makes sense. In Palm Bay, Florida, for example, a knee replacement costs

\$16,822 more than the same surgery 180 miles away in Miami.

Analysis of price variation by state reveals that the three states with the highest variation across all three categories of inpatient services were Kentucky, Texas, and Georgia (Table 3). These states had much more variation than the national average across all three categories. Two states near the bottom for variation in all three categories were Montana and Hawaii. These states had far less price variation than the national averages, and less than almost all other states. In general, the more populous states had greater price variation, while the less populous states had the least variation.

The top five most frequently utilized services were analyzed for both the shoppable and non-shoppable outpatient/professional services categories (Table 4). Of all ten frequently used services identified, the most price variation was observed for venipunctures—a shoppable service with a coefficient of variation five

Table 3: Price Variation in Inpatient Services for States with Most and Least Variation

State	Inpatient Shoppable Coefficient of Variation	Inpatient Hip/Knee Coefficient of Variation	Inpatient Non-Shoppable Coefficient of Variation
Kentucky	2.99	1.03	3.14
Texas	2.98	0.84	3.28
Georgia	2.51	0.97	3.17
Montana	0.83	0.23	1.15
Hawaii	0.41	0.29	0.37

Source: HCCI, 2016

Notes: Data represents the weighted population of insureds 0-64 covered by ESI, for the year 2011

times larger than that for urinalysis, the service with the second-most observed price variation. Overall, the level of variation is fairly similar across categories and is possibly a bit higher for the shoppable identified services as compared to the non-shoppable services.

Another frequently discussed shoppable procedure is colonoscopies (CPT code 45378). The national price variation for colonoscopies (coefficient of variation = 0.95) is relatively similar to that of the procedures displayed in Table 4. However, as noted above, price variation also varies across geographies. The greatest price variation for colonoscopies was observed for Arizona (coefficient of variation = 1.36); Florida (coefficient of variation = 1.35); and Kentucky (coefficient of variation = 1.32). At the other end of the spectrum, the states with the least variation were South Dakota (coefficient of variation = 0.30); Alaska (coefficient of variation = 0.29); and Hawaii (coefficient of variation = 0.15).

Discussion

One barrier to consumer shopping is the presence and/or perception of transaction costs, whereby the costs of shopping appear to be higher than the perceived

benefits. This may apply especially to lower-cost services, and services with consumer payments mandated by the benefit design (e.g., pre-set copayments for doctor visits). In terms of a simple calculus: the benefits of shopping must exceed the individual’s costs associated with shopping, in order to achieve the desired outcome of price shopping. This provides two possible ways whereby interventions could encourage consumers to price-shop for the health care services: lowering costs and/or increasing benefits.

Lowering the costs associated with shopping is possible and there are many private and public efforts made at this. For example, HCCI’s Guroo.com, pricing tools available to the members of many health insurers, and state efforts at building all-payer claims databases (APCDs)—in states such as Vermont—and creating pricing Websites as in New Hampshire and Maine. However, even in a world with perfect pricing information, consumers must perceive benefits to want to gather and then apply the information.

While raising benefits may seem more difficult than lowering the costs associated with shopping, early efforts at these types of efforts are ongoing and may

prove fruitful at saving money. One notable example of this is the reference-based pricing program implemented by California Public Employees’ Retirement System (CalPERS) for knee and hip replacements. Based on the implementation of this program, procedures at lower-cost facilities increased while procedures at higher-cost facilities decreased. This reference price program was estimated to save the state of California \$2.8 million and saved CalPERS members an additional \$300,000 in out-of-pocket costs.⁸

Another idea would be a modification of the reference price model into a benefits-sharing model. Once the reference price is set, if consumers chose providers with prices above the reference price, they would pay the difference, whereas if they chose a provider under the reference price—holding quality constant—they would share in the savings. An important note is that this type of incentive structure would require information about provider quality, so consumers were not forced to choose lower-quality care to save money. And, at the same time, standardizing quality across the health care system would remove quality from this process. Additionally, this type of

Table 4: Price Variation in the Most Frequently Utilized Procedures for Shoppable and Non-Shoppable Outpatient/Professional Services

Outpatient Shoppable CPT Code	Coefficient of Variation	Outpatient Non-Shoppable CPT Code	Coefficient of Variation
Established patient office visit, level 3: 99213	0.54	Immunization administra- tion: 90460	0.86
Established patient office visit, level 4: 99214	0.51	Chiropractic manipulative therapy: 98940	0.51
Collection of venous blood through venipuncture: 36415	10.89	Urinalysis: 81001	2.02
Therapeutic exercises: 97110	1.05	E&M emergency room visit, moderate severity: 99283	0.88
Manual therapy techniques: 97140	1.08	Rapid strep test: 87880	0.80

Source: HCCI, 2016

Notes: Data represents the weighted national population of insureds 0-64 covered by ESI, for the year 2011

incentive structure could work only for specific health services that are shoppable; if prices are high; where consumer payments are not set ahead of time (i.e., copayments); pricing and quality information is available; there are a sufficient number of providers in market from which to choose; and where there is a wide variation in the distribution of prices for that service within the geography.

The limits of price transparency and shopping

Some evidence suggests that greater price transparency and emphasis on price shopping by consumers might lower spending on health care—for states, insurers, employers, and consumers.³ At the same time, however, logistical and incentive roadblocks prevent full realization of the goals of price transparency efforts.

Patient limits: Some of the biggest limitations in price-shopping by consumers are from the patients themselves. Most important, if an individual is very sick, he or she might not be able or willing to shop for services, even if the needed services can be defined—or utilized by others—as shoppable. Additionally, though some services might be considered shoppable, such as a venipuncture, shopping for that service might not be convenient, practical, or advisable. Many such services often take place at a patient’s usual care

source (i.e., their primary care physician’s office) and, as such, shopping for a different provider to provide small routine services may present difficulties, or even hardships, to many. There is also a sizable segment of the ESI-covered population that is largely unengaged from the health care system. In any given year, roughly 25% of HCCI’s ESI population does not have a health care claim (see “The percentage of HCCI’s ESI population that has no health insurance claim (2010–2014)”). Engaging these individuals as consumer price shoppers may be difficult and not immediately productive.

Integrated care: An important theme within the Affordable Care Act was the development of a comprehensive and integrated medical records system across the health care system. However, nearly 4 years out from the ACA implementation, this worthy goal has yet to be wholly realized. Shopping for low priced health care services seems likely to lead to consumers accessing care and services from a variety of providers. Without an integrated records system, health care providers will have a difficult time providing quality care. This shopping for providers also may be at odds with other ACA initiatives, such as Accountable Care Organizations (ACOs), whose goal is to coordinate patient care across providers.

Prescription drugs: In this analysis, pre-

scription drugs are not considered shoppable services. This is not because it is impossible for consumers to shop for lower drug prices; rather, it is an open question as to how consumers should be incentivized to shop for their prescriptions. Without an integrated data system, shopping could increase the risk of drug interactions.

Benefit design: As noted above, consumer payments made out of pocket on health care services are often largely determined by the specific benefit design of their insurance plan. Some basic benefit design features may make consumers either more or less likely to price-shop, absent any other cost or benefit calculations. On one hand, for example, benefit designs that are heavily dominated by copayments may deter consumers from price shopping. On the other hand, shopping may make the most sense for people in high-deductible health plans (HDHPs), as these consumers tend to face the highest (and perhaps the most variable) deductible and coinsurance costs.

Conclusions

The analysis presented here suggests that a large portion of health care spending every year is on services for which consumers could price-shop ahead of receiving them. As much as 43% of the dollars spent on health care services in 2011

The percentage of HCCI’s ESI population that has no health insurance claim (2010-2014)

In any given year, about 25% of the population of individuals younger than age 65 and covered by ESI in HCCI’s dataset (unweighted) have no health care claim filed with their insurer. Though this percentage of non-utilizers has increased slightly over time, it has remained at around a quarter of the population in all years.

Year	Percentage of Non-Utilizers
2010	25.3%
2011	24.3%
2012	24.6%
2013	25.1%
2014	26.9%

Source: HCCI, 2016

Notes: Data represents the population of insureds 0-64 covered by ESI..

were for such shoppable services. For consumers, shoppable services totaled about 47% of their portion of the health care bill. This is an interesting finding—that consumers might be able to effect, on average, up to nearly half of their yearly out-of-pocket payments by price-shopping. Given the limits of benefit design, however, altering some of this total may be difficult for consumers.

The parts of out-of-pocket spending that might be variable, and therefore have the potential to be lowered through price-shopping, are coinsurance and deductible payments. Coinsurance and deductible payments made up 75% of the out-of-pocket spending on shoppable services in 2011. This totaled 35% of all of the out-of-pocket spending in that year. One takeaway from this might be that on average, consumers may be able to alter a third of their out-of-pocket health care spending in a given year. This could mean important savings for people with serious health conditions or people with high deductible plans. At the same time, this also suggests that on average, consumers will have difficulty altering 65% of the out-of-pocket spending. While 46% of total out-of-pocket spending was on shoppable services, 53% of out-of-pocket spending was on non-shoppable services.

Overall, we come to the conclusion that the potential gains from the consumer price shopping aspect of price transparency efforts are modest. There are those arguing that we need to design health care systems and price transparency tools with consumer price shopping as central goals. Though one important feature of properly functioning markets is the availability of both price and quality information, consumer activity driven by this information should not be the focus. Rather, we believe that delivery systems should be designed without consumer

shopping at the fore and view any benefits from shopping as a positive outcome.

Limitations

Our study has several limitations that can affect the interpretation of the findings. For this reason, HCCI considers its work a starting point for analysis and research on the cost of shoppable services for individuals younger than age 65 covered by ESI.

Our findings are estimates for the United States ESI population based on a sample of approximately 25% of ESI insureds younger than age 65. The estimates for numbers of insured individuals by each plan type were weighted to account for any demographic differences between the analytic sample and population estimates based on the United States Census, making the dataset representative of the national, ESI population younger than age 65. The tables and figures presented are limited to descriptive statistics for they study population. Finally, the numbers presented here represent an outer-upper bounds for potential totals of spending and shoppable services. Follow up analyses that include finer precision and more potential factors, such as place of service, could further refine these numbers.

Data and Methods

This issue brief utilized the Health Care Cost Institutes' dataset of private insurance health care claims. The final analytic dataset consisted of individuals who were covered by ESI for calendar year 2011. To be included in the study population individuals must have been younger than age 65 in 2011, had an identifiable age and gender, and a valid state, zip code, or core-based statistical area (CBSA) of residence. If an individual had multiple states of residence listed in

2011, the state from the first month of insurance in 2011 was used. The final study population was weighted by age-gender-state to be representative of the national population.

Emergency room visits: The original methodology designed by White and Eguchi classified otherwise shoppable services (inpatient and outpatient/physician) as non-shoppable if there was evidence of an emergency room (ER) visit within the 3 days prior to the service utilization. ER visits were identified as outpatient claims with a 23 point of service (POS) claim or a 450, 451, 452, 456, or 459 revenue code.

Outpatient/physician services: Outpatient and physician claims were combined and then divided into shoppable and non-shoppable services by the CPT or HCPCS code on the claim (see outpatient/physician shoppable CPT and HCPCS codes). Claim lines were removed from the sample if there were null values for the procedure code, and all three diagnosis codes.

Inpatient admissions: To create an inpatient admission, all inpatient claim lines with the same patient identification number, admit identification number, and first admission date were combined. The three categories of inpatient admissions (shoppable inpatient admissions – excluding knee and hip replacements; shoppable knee and hip replacements; non-shoppable inpatient admissions) were classified by the diagnosis-related group (DRG) for each admission (see all shoppable inpatient admissions DRGs). If any claim line in an admission had a DRG from the list of shoppable DRGs, admission was considered shoppable. If an admission had DRGs from both the shoppable inpatient and shoppable knee and hip replacement lists then the following rules were applied. 1) If the DRG was 945, 462,

494, or 491, then the admission was considered a shoppable knee and hip replacement. 2) If the DRG was any other from the shoppable admissions list, than the admission was classified by the DRG with the earliest claim date. If the total allowed amount of an admission summed to less than \$50, the average allowed amount for the whole category was substituted for the less than \$50 amount. Several rules were also applied to limit outlier admissions. Admissions were removed from the sample if:

- The length of stay was greater than 180 days or less than 1 day;
- The allowed amount on the admission summed to less than or equal to zero dollars;
- All claim lines for the admission had a null DRG or null major diagnostic category (MDC).

Endnotes

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3. White C, Ginsburg PB, Tu HT, Reschovsky JD et al. *Healthcare Price Transparency: Policy Approaches and Estimated Impacts on Spending*. West Health Policy Center. Web. May 2014.
4. White C, Eguchi M. Reference Pricing: A Small Piece of the Health Care Price and Quality Puzzle. *National Institute for Health Care Reform Research Brief* Number 18. Web. October 2014.
5. For a full list of DRG and CPT/HCPCS used to categorize services, see the online appendix of White and Eguchi.
6. Differences between these two numbers are likely due to small differences in study populations and population weighting techniques.
7. High dollar outpatient/physician services are defined here as services

whose average price is two standard deviations above the mean price for the whole category. For shoppable outpatient/physician services this is an average price of about \$1,000.

8. Robinson JC, Brown TT. “Increases in Consumer Cost Sharing Redirect Patient Volumes and Reduce Hospital Prices for Orthopedic Surgery.” *Health Affairs* 32.8 (2013): 1392-1397

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