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Availability of Consumer Prices From US Hospitals for a Common Surgical Procedure

Jaime A. Rosenthal; Xin Lu, MS; Peter Cram, MD, MBA

Importance: Many proposals for health care reform incentivize patients to play a more active role in selecting health care providers on the basis of quality and price. While data on quality are increasingly available, availability of pricing data is uncertain.

Objective: To examine whether we could obtain pricing data for a common elective surgical procedure, total hip arthroplasty (THA).

Design: We randomly selected 2 hospitals from each state (plus Washington, DC) that perform THA, as well as the 20 top-ranked orthopedic hospitals according to *US News and World Report* rankings. We contacted each hospital by telephone between May 2011 and July 2012. Using a standardized script, we requested from each hospital the lowest complete “bundled price” (hospital plus physician fees) for an elective THA that was required by one of the author’s 62-year-old grandmother. In our scenario, the grandmother did not have insurance but had the means to pay out of pocket. We explained that we were seeking the lowest complete price for the procedure. When we encountered hospitals that could provide the hospital fee only, we contacted a random hospital affiliated orthopedic surgery practice to obtain the physician fee. Each hospital was contacted up to 5 times in efforts to obtain pricing information.

Setting/Participants: All top-ranked and a sample of non-top-ranked US hospitals performing THA.

Main Outcome Measures: Percentage of hospitals able to provide a complete price estimate for THA (physician and hospital fee) for top-ranked and non-top-ranked hospitals and range of prices quoted by each group.

Results: Nine top-ranked hospitals (45%) and 10 non-top-ranked hospitals (10%) were able to provide a complete bundled price ($P < .001$). We were able to obtain a complete price estimate from an additional 3 top-ranked hospitals (15%) and 54 non-top-ranked hospitals (53%) ($P = .002$) by contacting the hospital and physician separately. The range of complete prices was wide for both top-ranked (\$12 500-\$105 000) and non-top-ranked hospitals (\$11 100-\$125 798).

Conclusions and Relevance: We found it difficult to obtain price information for THA and observed wide variation in the prices that were quoted. Many health care providers cannot provide reasonable price estimates. Patients seeking elective THA may find considerable price savings through comparison shopping.

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Author Affiliations: Division of General Internal Medicine, Department of Internal Medicine, University of Iowa Carver College of Medicine, Iowa City (Ms Rosenthal and Lu, and Dr Cram); and The Center for Comprehensive Access and Delivery Research and Evaluation (CADRE), Iowa City Veterans Administration Medical Center, Iowa City (Ms Lu and Dr Cram). Ms Rosenthal is a student at Washington University, St Louis, Missouri.

AS US HEALTH CARE SPENDING has continued to grow at what is widely viewed as an unsustainable rate, policy makers and researchers have proposed numerous interventions.^{1,2} While potential solutions vary widely, nearly all will include incentives for patients to play a more active role in selecting hospitals and physicians on the basis of quality and price.³⁻⁵

Data on hospital quality—and to a lesser degree physician quality—are widely available from several public and private sector sources. Such information sources include Medicare’s Hospital-

Compare.gov website (<http://www.medicare.gov/hospitalcompare>), New York State’s myHealthFinder.com (<http://www.myhealthfinder.com>), Health Grades (<http://www.healthgrades.com>), and the widely

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used *US News and World Report* hospital rankings.⁶⁻¹⁰

Data on hospital and physician pricing remain much more difficult to obtain. While pricing transparency initiatives such as CastLight Health (<http://www.castlighthealth.com>) have garnered widespread media attention,¹¹ there is very

little peer-reviewed research addressing the availability of price data for medical services.^{12,13} It is unclear how feasible it may be for patients to obtain pricing data for common medical services and how price estimates might vary by health care provider.

Thus, our primary objective was to examine whether it was possible to obtain pricing data for a common elective surgical procedure, total hip arthroplasty (THA), from a sample of US hospitals. Our secondary objective was to examine whether the availability of pricing data might differ among top-ranked orthopedic hospitals compared with non-top-ranked hospitals.

METHODS

Hospital Identification

We used Medicare Part A data to identify all US hospitals performing at least 3 THA procedures in 2008 (n=4058). We then randomly selected 2 hospitals from each state plus The District of Columbia for inclusion in our study. For comparison, we selected the 20 top-ranked “honor role” orthopedic hospitals identified in the 2011-2012 *US News and World Report* rankings. A full list of the hospitals is provided in eAppendix 1 (<http://www.jamainternalmed.com>).

Interview Script Development

We developed a standardized interview script to guide our efforts to obtain pricing information for THA for study hospitals (eAppendix 2). The essence of the script was that the caller (J.A.R.) was seeking information on behalf of her 62-year-old grandmother who required hip replacement surgery. The grandmother had no comorbid medical conditions and did not have health insurance but would be able to pay for the procedure “out of pocket.” The caller explained that she was seeking the lowest complete cost for the procedure (hospital fee plus physician fee) and would be comparing prices among several nearby hospitals under consideration for her grandmother’s upcoming surgery. The caller explained that her grandmother had undergone a careful preoperative evaluation and that it was clear that the grandmother needed surgery. The script also contained a number of additional data elements that we envisioned that the hospital might request including medical history and social history; plans for postdischarge care (the grandmother would not want or require postacute care); *International Classification of Diseases, Ninth Revision* and *Current Procedural Terminology* codes for the relevant procedure; and an estimated inpatient hospital length of stay that would be expected to be provided for the grandmother. The script was pilot tested on several hospitals to insure clarity and modified until no further revisions were needed.

Hospital Interview Process

One of the study authors (J.A.R.) contacted each hospital by telephone between May 2011 and July 2012. We called the main telephone number for each hospital and asked to be directed to an individual or office that could provide us with a price estimate for an elective hip arthroplasty procedure. If the main hospital operator was uncertain how to assist, we would encourage them to transfer us to patient accounting or hospital financial services. We would begin with our script immediately on being connected with an individual who seemed interested and able to provide us with our information. When

we encountered hospitals that could provide the hospital fee but were unable to provide a physician fee, we would select a random orthopedic surgery practice affiliated with the hospital and contact the practice to obtain the physician fee.

Each hospital was contacted up to 5 times to obtain pricing information. We recorded the hospital and physician fee separately when possible but as a single bundled fee when this was what was provided by the hospital. Hospitals that were unable to provide a price estimate after 5 distinct contacts were deemed unable to provide an estimate. For each hospital we recorded the number of calls it took to obtain a price quote and/or if we left a message and if the hospital responded to our message and/or provided pricing information. For hospitals that were unable to provide a price estimate, we recorded the reason that was given.

Statistical Analyses

First, we compared the proportion of hospitals in the top-ranked and non-top-ranked groups that were able to provide a complete bundled price estimate (hospital plus physician fee) using the χ^2 test and the Fisher exact test when the expected cell number was less than 5. We used similar methods to compare the proportion that could provide only the physician fee, hospital fee, or neither in the 2 hospital groups. Second, we used the American Hospital Association annual survey to obtain a number of hospital characteristics including teaching status (membership in the Council of Teaching Hospitals), for-profit/not-for-profit status, geographic region of the United States, and percentage of total inpatient days covered by Medicaid; we compared the characteristics of hospitals that were and were not able to provide pricing information across these domains. Third, we compared the mean bundled price provided by hospitals in the 2 different groups and the number of calls needed to obtain a bundled price using the unpaired *t* test and Wilcoxon-Mann-Whitney test; we used graphical methods to display the pricing information that was obtained. We set the α level at .05. We reported *P* values from the χ^2 test and *t* test unless the results differed from their nonparametric counterparts. This analysis was approved by the University of Iowa institutional review board. All analyses were conducted using SAS statistical software (SAS Institute Inc).

RESULTS

Of the 20 top-ranked hospitals, we were able to obtain a complete price estimate containing both the physician and hospital fee from 12 (60%) (**Table 1**). Of these 12 hospitals from which we could obtain a complete price estimate, 9 (45%) were able to provide us with a single “bundled” price (hospital fee plus physician fee), while 3 (15%) were only able to provide a complete price estimate after we contacted the hospital and physician separately. Five of the top-ranked hospitals (25%) were able to provide a partial price—either the hospital fee or physician fee but not both. Three of the top-ranked hospitals (15%) were not able to provide any price whatsoever (Table 1).

Focusing on the 102 non-top-ranked hospitals, we were able to obtain a complete price estimate from 64 hospitals (63%). Ten (10%) were able to provide a single “bundled” price (hospital fee plus physician fee), while 54 hospitals (53%) were able to give a complete price only after we contacted the hospital and physician practices separately. There were 22 non-top-ranked hospitals (22%) that could provide partial prices (either the hospital fee or physician fee but not both), and 16 hospitals (16%)

Table 1. Proportions of Hospitals Provided Pricing Information for Total Hip Arthroplasty

| Variable | Hospitals, No. (%) | | P Value |
|----------------------------------------------------------------|-------------------------------|------------------------------------|---------|
| | Top-Ranked Hospitals (n = 20) | Non-Top-Ranked Hospitals (n = 102) | |
| Complete bundled price | 9 (45) | 10 (10) | <.001 |
| Complete price by contacting physician and hospital separately | 3 (15) | 54 (53) | .002 |
| Partial price (hospital or physician) | 5 (25) | 22 (22) | .77 |
| Unable to provide any price | 3 (15) | 16 (16) | >.99 |

Table 3. Pricing for Total Hip Arthroplasty

| Variable | Top-Ranked Hospitals (n = 20) | Non-Top-Ranked Hospitals (n = 102) | P Value |
|---------------------------|-------------------------------|------------------------------------|---------|
| Complete price, No. | 12 | 64 | |
| Mean (95% CI), \$ | 53 140 (37 489-68 791) | 41 666 (36 923-46 409) | .07 |
| Range, \$ | 12 500-105 000 | 11 100-125 798 | |
| Hospital price only, No. | 2 | 21 | |
| Mean (95% CI), \$ | 74 800 (0-204 403) | 35 417 (28 317-42 517) | .003 |
| Range, \$ | 64 600-85 000 | 9000-71 200 | |
| Physician price only, No. | 3 | 1 | |
| Mean (95% CI), \$ | 11 117 (0-25 330) | 9203 (NA) | NA |
| Range, \$ | 6450-17 500 | NA | |

Abbreviation: NA, not available.

Table 2. Characteristics of Hospitals That Were and Were Not Able to Provide Pricing Data

| Characteristic | Hospitals, No. (%) | | | | | P Value |
|---------------------------------|--------------------------------------|------------------------------------------------|-------------------------|-------------------------|-------------------|---------|
| | All Hospitals (n = 121) ^a | Complete Bundled Price (n = 75) ^{a,b} | Hospital Price (n = 24) | Physician Price (n = 4) | No Price (n = 18) | |
| Teaching status | | | | | | |
| Teaching | 52 (43.3) | 30 (40.5) | 8 (33.3) | 4 (100) | 10 (55.6) | .55 |
| Nonteaching | 68 (56.7) | 44 (59.5) | 16 (66.7) | 0 | 8 (44.4) | |
| Organization | | | | | | |
| For profit | 23 (19.2) | 15 (20.3) | 4 (16.7) | 0 | 4 (22.2) | .98 |
| Not for profit | 86 (71.7) | 53 (71.6) | 18 (75.0) | 3 (75.0) | 12 (66.7) | |
| NA | 11 (9.2) | 6 (8.1) | 2 (8.3) | 1 (25.0) | 2 (11.1) | |
| Region | | | | | | |
| Northeast | 26 (21.5) | 11 (14.7) | 4 (16.7) | 3 (75.0) | 8 (44.4) | .24 |
| Midwest | 29 (24.0) | 18 (24.0) | 9 (37.5) | 0 | 2 (11.1) | |
| South | 36 (29.8) | 24 (32.0) | 7 (29.2) | 0 | 5 (27.8) | |
| West | 30 (24.8) | 22 (29.3) | 4 (16.7) | 1 (25.0) | 3 (16.7) | |
| Medicaid inpatient days, % (SD) | 19.5 (10.8) | 20.4 (11.0) | 19.4 (11.3) | 21.1 (10.6) | 15.7 (8.6) | .42 |

Abbreviations: NA, not available; SD, standard deviation.

^aOne hospital did not report to the American Hospital Association.

^bIncludes all hospitals for which we could obtain a complete price either through call to hospital alone or hospital plus physician office contacted separately.

could not provide any price (Table 1). Hospitals that were and were not able to provide pricing data were generally similar (Table 2), though there was an appearance that hospitals in the Midwest were more likely to be able to provide pricing data, while hospitals in the Northeast were less likely.

In total, a larger percentage of top-ranked hospitals were able to provide a single bundled price (45% vs 10%; $P < .001$). The percentage of top-ranked hospitals and non-top-ranked hospitals that were unable to provide any pricing information was similar (15% vs 16%; $P > .99$). We found that 8 of the top-ranked hospitals (40%) and 33 of the non-top-ranked hospitals (32%) provided pricing information on the first or second telephone call; an additional 4 of the top-ranked (20%) and 22 of the non-top-ranked (22%) hospitals provided pricing information on the third or fourth call, and 0 and 9 (9%) provided pricing information on the fifth call.

The mean price for the 12 top-ranked hospitals from which we could obtain a complete price estimate

(mean = \$53 140) was statistically similar to the mean price for the 64 non-top-ranked hospitals (mean = \$41 666) ($P = .07$) (Table 3 and Figure). Alternatively, the mean price for the 2 top-ranked hospitals where we could obtain a hospital price estimate only (mean = \$74 800) was significantly higher than the mean price for the 21 non-top-ranked hospitals (mean = \$35 417) ($P = .003$).

Common reasons that hospital representatives gave for not being able to provide a price included that the patient has to see a physician before they could provide a price, that they do not provide price estimates over the telephone, and that they had no way to provide such an estimate.

COMMENT

The results of this study provide insight into the availability of pricing information for a common elective medical procedure, THA. We found that only 16% of a ran-

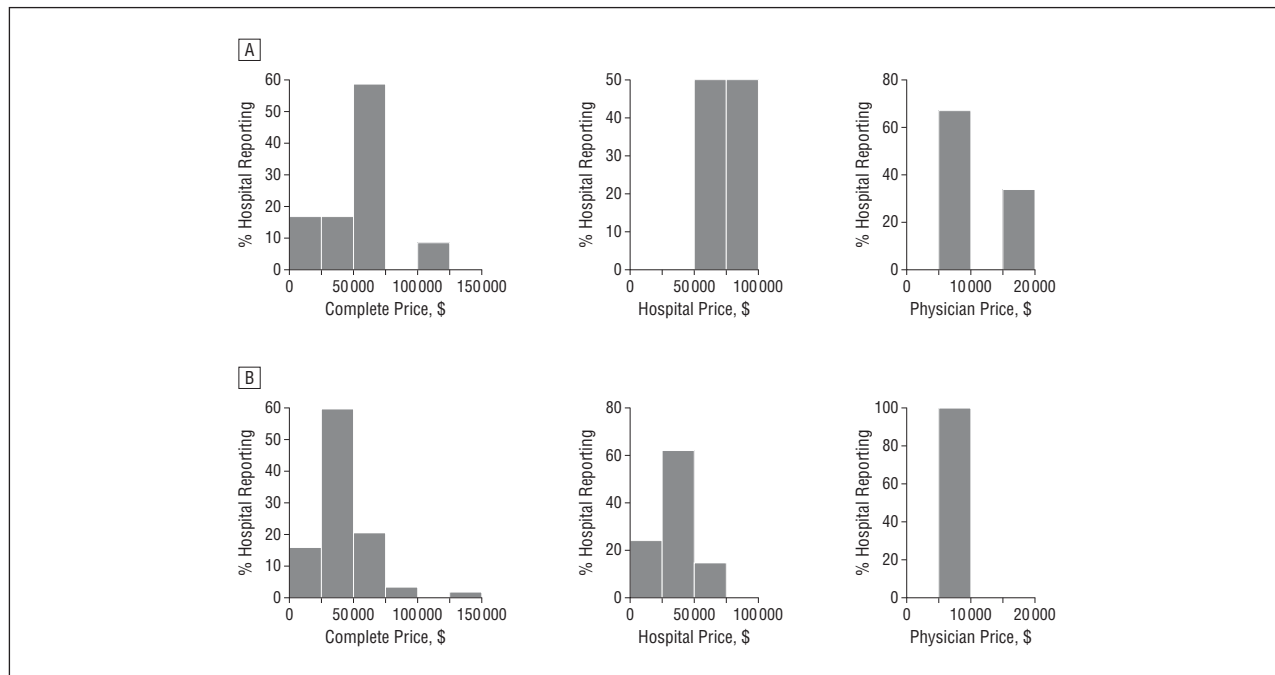


Figure. Distribution of pricing estimates obtained for total hip arthroplasty. A, Top-ranked hospitals; B, non-top-ranked hospitals.

domly selected group of US hospitals were able to provide a complete bundled price, though an additional 47% of hospitals could provide a complete price when hospitals and health care providers were contacted separately. Obtaining pricing information was difficult and frequently required multiple conversations with numerous staff members at each hospital as well as affiliated physician offices. Finally, we found that price estimates varied nearly 10-fold across hospitals, which is surprising considering that all hospitals were provided with standardized information about the procedure being requested. In aggregate, our results highlight the difficulty that consumers may have in obtaining price estimates for common medical procedures, but also that comparison shopping might yield significant price savings for savvy consumers.

First and foremost, understanding our results requires an understanding of the rationale behind calls for greater pricing transparency.^{14,15} The desire for pricing transparency is based in fundamental principles of economics¹⁶; the assumption that if patients know the prices of medical services, they will make rational decisions by avoiding high-cost health care providers *ceteris paribus*. There is substantial debate over the wisdom in such an assumption, but in other sectors of the economy, consumers routinely access price information to help inform purchases of consumer goods (Amazon.com), cars (Edmonds.com), and electronics. So there may be reason for hope. That said, available evidence on the impact of pricing transparency efforts to date are both extremely limited with little evidence that transparency initiatives have reduced prices.^{17,18} Of course it is not altogether surprising that pricing transparency efforts would have limited impact, since most forms of health insurance provide little incentive for patients to comparison shop and available transparency initiatives lack the con-

sistency in data formatting and user interface that most patients would find useful.¹⁹

A number of our findings merit discussion. First, it is important to note that less than one-half of top-ranked hospitals and one-third of non-top-ranked hospitals were able to provide a complete price on our first or second telephone call. Viewed from an alternative perspective, only 60% of the top-ranked hospitals and 63% of the non-top-ranked hospitals were able to provide a complete price even after multiple calls to both hospitals and affiliated physician practices. Our results expand on the work of Farrell et al.¹³ who mailed letters to 353 California hospitals in 2007 on behalf of fictitious patients requesting price estimates for 1 of 3 alternative elective procedures (a laparoscopic cholecystectomy, a hysterectomy for fibroids, or a routine screening colonoscopy). The investigators obtained an overall response rate of only 28% and found that only 3% of hospitals (10% of responding hospitals) were able to provide complete price estimate (hospital fee and physician fee).

Our results are somewhat remarkable considering the support expressed by virtually all stakeholders for pricing transparency. From the government perspective, an estimated 25 states now have health care pricing transparency statutes in place in addition to efforts by the federal government to foster pricing transparency.¹⁹ Private sector trade groups including the American Hospital Association and the Healthcare Financial Management Association have also taken steps to foster pricing transparency.²⁰ The health insurance industry has taken steps to encourage patients to demand pricing transparency through innovative health insurance benefits designs. Such innovations include high-deductible health plans and reference pricing in which insurance provides a fixed-dollar contribution toward a given procedure with the patient responsible for any additional cost^{21,22}; both de-

signs are meant to provide incentive for patients to think about cost in addition to other factors. Our results suggest that such efforts at pricing transparency have not been well integrated into the operations at many hospitals.

Second, it is also important to comment on the actual experience we had in attempting to obtain pricing information and the difficulty we encountered at the level of the individual hospital or health care provider office. Our calls to hospitals were often greeted by uncertainty and confusion by the hospital representatives about how to assist us. We were frequently transferred between departments, asked to leave messages that were rarely returned, and told that prices could not be estimated without an office visit; in these ways our experiences mirrored those of analysts at the Government Accountability Office, who used similar methods.¹⁹ It is sobering to compare our experience with the best practices we have come to expect from other service industries.

Third, it is important to consider the wide variation in pricing that we found across hospitals. Among both top-ranked and non-top-ranked hospitals, total price estimates ranged from \$10 000 to well over \$100 000; for reference, available data suggest that Medicare and other large payers frequently pay between \$10 000 and \$25 000 for primary joint replacement surgery.^{12,19,22} Some of this range might be attributable to differences in how individual hospitals attempted to convert their “charges” into a price for our hypothetical uninsured patient; some hospitals might have been providing a discounted price or the Medicare price, while others were providing their true “charges.” Differences may also have resulted from variation in the amenities that were offered. For example, one hospital representative said that the patient was paying for the comfort of a private room, resulting in a high price. Either way, the variation that we found was striking given that we provided each hospital with identical information about our hypothetical information and hints at fundamental issues in health care accounting that were well articulated in a recent *Harvard Business Review* article by Kaplan and Porter.²³

Irrespective of the reason for the variation we encountered, we would actually view our results with a modicum of optimism. The nearly \$100 000 range in pricing that we encountered suggests that a savvy and determined customer may find opportunities for significant savings with comparison shopping. Alternatively, it is equally possible to argue that our results suggest that less-educated or less-savvy patients could pay exorbitantly high prices.

Finally, it is important to think about the implications of our research. There are currently an estimated 30 to 50 million uninsured Americans with many others in insurance plans with significant cost sharing implemented through an array of different benefits designs.²⁴ The passage and pending implementation of the Patient Protection and Affordable Care Act is nearly certain to reduce the number of uninsured and boost demand for primary care,^{25,26} but it is also nearly certain that there will continue to be significant numbers of uninsured and underinsured Americans for whom the prices of health care services matter. There will also continue to be patients who want or require treatments that are not cov-

ered by their insurance plans. All of these patient groups will be potential consumers of transparent pricing data. The emergence of the medical tourism industry in recent years provides a hint of the underlying demand from activist consumers seeking better value for their health care dollars.¹²

There are several limitations of our study that are important to acknowledge. First, our study included only a small sample of US hospitals. Further research is needed to examine pricing in states that have and have not legislated price transparency. Second, although we tried to specify and standardize the services included in the price estimate, it is possible that the price differences we observed may have related to different services, amenities, or devices used in creating a price quote. Third, our study was limited to a single procedure and extrapolation to other conditions or diagnoses should be done with caution.

In conclusion, we have found that despite a growing interest in price transparency, obtaining price information for a common medical procedure (THA) is very difficult. We also observed enormous variation in price estimates across hospitals. Our results demonstrate that many health care providers are not able to provide reasonable price quotes.

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Correspondence: Jaime A. Rosenthal, Division of General Internal Medicine, Department of Internal Medicine, University of Iowa Carver College of Medicine, 200 Hawkins Dr, Room SE 618 GH, Iowa City, IA 52242 (jaime.a.rosenthal@gmail.com).

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REFERENCES

- Martin AB, Lassman D, Washington B, Catlin A; National Health Expenditure Accounts Team. Growth in US health spending remained slow in 2010; health share of gross domestic product was unchanged from 2009. *Health Aff (Millwood)*. 2012;31(1):208-219.
- Squires DA. Explaining high health care spending in the United States: an international comparison of supply, utilization, prices, and quality. *Issue Brief (Commonw Fund)*. 2012;10:1-14.
- Arrow K, Auerbach A, Bertko J, et al. Toward a 21st-century health care system: recommendations for health care reform. *Ann Intern Med*. 2009;150(7):493-495.
- Song Z, Safran DG, Landon BE, et al. The "Alternative Quality Contract," based on a global budget, lowered medical spending and improved quality. *Health Aff (Millwood)*. 2012;31(8):1885-1894.
- Chernew M, Goldman D, Axeen S. How much savings can we wring from Medicare? *N Engl J Med*. 2011;365(14):e29.
- Chen J, Radford MJ, Wang Y, Marciniak TA, Krumholz HM. Performance of the "100 top hospitals": what does the report card report? *Health Aff (Millwood)*. 1999;18(4):53-68.
- Chen J, Radford MJ, Wang Y, Marciniak TA, Krumholz HM. Do "America's Best Hospitals" perform better for acute myocardial infarction? *N Engl J Med*. 1999;340(4):286-292.
- Krumholz HM, Rathore SS, Chen J, Wang Y, Radford MJ. Evaluation of a consumer-oriented internet health care report card: the risk of quality ratings based on mortality data. *JAMA*. 2002;287(10):1277-1287.
- Werner RM, Bradlow ET. Relationship between Medicare's hospital compare performance measures and mortality rates. *JAMA*. 2006;296(22):2694-2702.
- Jha AK, Epstein AM. The predictive accuracy of the New York State coronary artery bypass surgery report-card system. *Health Aff (Millwood)*. 2006;25(3):844-855.
- Dolan KA. The startup that is x-raying the doctor bills. *Forbes*. July 16, 2012. <http://www.forbes.com/sites/kerryadolan/2012/06/27/the-startup-that-will-save-us-from-obamacare/>. Accessed January 24, 2013.
- Alleman BW, Luger T, Reisinger HS, Martin R, Horowitz MD, Cram P. Medical tourism services available to residents of the United States. *J Gen Intern Med*. 2011;26(5):492-497.
- Farrell KS, Finocchio LJ, Trivedi AN, Mehrotra A. Does price transparency legislation allow the uninsured to shop for care? *J Gen Intern Med*. 2010;25(2):110-114.
- Pauly MV, Burns LR. Price transparency for medical devices. *Health Aff (Millwood)*. 2008;27(6):1544-1553.
- Cutler D, Dafny L. Designing transparency systems for medical care prices. *N Engl J Med*. 2011;364(10):894-895.
- Smith A. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Chicago, IL: University of Chicago Press; 1776.
- Tynan A, Liebhaber A, Ginsburg PB. A health plan work in progress: hospital-physician price and quality transparency. *Res Brief*. 2008;(7):1-8.
- Tu HT, Lauer JR. Impact of health care price transparency on price variation: the New Hampshire experience. *Issue Brief Cent Stud Health Syst Change*. 2009;(128):1-4.
- Government Accountability Office. *Health Care Price Transparency: Meaningful Price Information Is Difficult for Consumers to Obtain Prior to Receiving Care*. Washington, DC: Government Accountability Office; 2011.
- Winterhalter SJ. Economic factors converge: force hospitals to review pricing strategies. *J Health Care Finance*. 2011;37(4):15-35.
- Wharam JF, Graves AJ, Zhang F, Soumerai SB, Ross-Degnan D, Landon BE. Two-year trends in cancer screening among low socioeconomic status women in an HMO-based high-deductible health plan. *J Gen Intern Med*. 2012;27(9):1112-1119.
- Robinson JC, MacPherson K. Payers test reference pricing and centers of excellence to steer patients to low-price and high-quality providers. *Health Aff (Millwood)*. 2012;31(9):2028-2036.
- Kaplan RS, Porter ME. How to solve the cost crisis in health care. *Harv Bus Rev*. 2011;89(9):46-52, 54, 56-61.
- Fronstin P. Sources of health insurance and characteristics of the uninsured: analysis of the March 2007 Current Population Survey. *EBRI Issue Brief*. 2007;(310):1-33.
- Hofer AN, Abraham JM, Moscovice I. Expansion of coverage under the Patient Protection and Affordable Care Act and primary care utilization. *Milbank Q*. 2011;89(1):69-89.
- Collins SR, Robertson R, Garber T, Doty MM. Gaps in health insurance: why so many Americans experience breaks in coverage and how the Affordable Care Act will help: findings from the Commonwealth Fund Health Insurance Tracking Survey of US Adults, 2011. *Issue Brief (Commonw Fund)*. 2012;9:1-22.