Original Investigation

Using Publicly Available Data to Construct a Transparent Measure of Health Care Value: A Method and Initial Results

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Policy Points:

- Using publicly available Hospital Compare and Medicare data, we found a substantial range of hospital-level performance on quality, expenditure, and value measures for 4 common reasons for admission.
- Hospitals' ability to consistently deliver high-quality, low-cost care varied across the different reasons for admission.
- With the exception of coronary artery bypass grafting, hospitals that provided the highest-value care had more beds and a larger average daily census than those providing the lowest-value care.
- Transparent data like those we present can empower patients to compare hospital performance, make better-informed treatment decisions, and decide *where* to obtain care for particular health care problems.

Context: In the United States, the transition from volume to value dominates discussions of health care reform. While shared decision making might help patients determine *whether* to get care, transparency in procedure- and hospital-specific value measures would help them determine *where* to get care.

Methods: Using Hospital Compare and Medicare expenditure data, we constructed a hospital-level measure of value from a numerator composed of quality-of-care measures (satisfaction, use of timely and effective care, and avoidance of harms) and a denominator composed of risk-adjusted 30-day episode-of-care expenditures for acute myocardial infarction (1,900 hospitals), coronary

artery bypass grafting (884 hospitals), colectomy (1,252 hospitals), and hip replacement surgery (1,243 hospitals).

Findings: We found substantial variation in aggregate measures of quality, cost, and value at the hospital level. Value calculation provided additional richness when compared to assessment based on quality or cost alone: about 50% of hospitals in an extreme quality- (and about 65% more in an extreme cost-) quintile were in the same extreme value quintile. With the exception of coronary artery bypass grafting, higher-value hospitals were larger and had a higher average daily census than lower-value hospitals, but were no more likely to be accredited by the Joint Commission or to have a residency program accredited by the American Council of Graduate Medical Education.

Conclusions: While future efforts to compose value measures will certainly be modified and expanded to examine other reasons for admission, the construct that we present could allow patients to transparently compare procedure- and hospital-specific quality, spending, and value and empower them to decide *where* to obtain care.

Keywords: value, quality, expenditures.

ALTHOUGH THE COST AND QUALITY IMPACT OF VALUE-BASED reimbursement appears to be modest,¹⁻³ the Centers for Medicare and Medicaid Services (CMS) is expanding and accelerating such efforts, intending to tie 85% of Medicare reimbursements to quality or value and having 30% of Medicare payments in alternative payment models by the end of 2016,⁴ and working to engage other payers in similar activities.⁵ Broader use of these new reimbursement models will require providers to engage patients⁶ and transparently demonstrate value.⁷⁻⁹ Historically, performance indicators have been used to assess measures of quality independent of spending¹⁰⁻¹⁶; however, when such measures are aggregated at the hospital level by different rating systems, rankings are inconsistent.¹⁷

While shared decision making might help patients determine *whether* to obtain health care interventions,¹⁸⁻²⁰ patients might wish to shop for particular procedures to determine *where* to obtain such care, based on transparent measures of quality and anticipated costs.^{21,22} CMS has recently developed a 5-star system designed to help consumers make health care choices,²³ but that evaluation system only provides detailed measures of patient experience; measures of harms and costs that are readily available for public consumption indicate only whether hospitals are extreme outliers on those measures. While *US News and World Report*

has demonstrated substantial variation in health care outcomes for a variety of conditions, reflecting how institutions vary according to patient outcomes, it did not take other aspects of quality or costs into account.²⁴ Currently, there are no transparent measures that combine quality and costs in the public domain that can empower consumers to use a measure of value that compares hospital performance at the procedure level, so that they can determine where to obtain care.

We sought to create such a measure, using 2 constraints. First, we wanted our measure of value to use publicly available data, so it would be transparent to consumers and hospitals. Second, we wanted to use a construct of value that could be disaggregated into component parts so patients could weigh trade-offs between cost and quality components and make better-informed decisions. This article describes the construct of our measure of value and its application for 4 reasons for admission across a wide swath of US hospitals.

Methods

Construct of a Measure of Value

Fundamentally, health care value is conceptualized as follows:

$$\text{Value} = \frac{\text{Quality}}{\text{Expenditures}}$$

The “Triple Aim” framework expanded the numerator to specifically include health outcomes and measures of patient experience,²⁵ and the 2001 Institute of Medicine framework identified 5 aspects of care quality that construct value’s numerator (safety, effectiveness, patient centeredness, timeliness, and equity) and a sixth—efficiency—that relates to value’s denominator.²⁶ Incorporating aspects of both models, we could calculate the value equation as follows:

$$\text{Value} = \frac{\left(\begin{array}{c} \text{Measures of} \\ \text{equity, patient} \\ \text{satisfaction,} \\ \text{patient} \\ \text{experience,} \\ \text{and patient} \\ \text{centeredness} \end{array} \right) \times \left(\begin{array}{c} \text{Measures} \\ \text{of timely} \\ \text{and} \\ \text{effective} \\ \text{care} \end{array} \right) \times \left(\begin{array}{c} \text{Measures} \\ \text{of health} \\ \text{care} \\ \text{outcomes} \end{array} \right) \times \left(\begin{array}{c} \text{Measures} \\ \text{of care} \\ \text{safety} \end{array} \right)}{\text{Expenditures for care provided}}$$

As patient safety is generally measured by rates of adverse outcomes,²⁷ the complement of adverse outcomes—or patients who experienced unsafe care—can be used in their place. If we assume that ideal care, as currently measured, is the goal of a particular admission, we can construct a measure of the value of that admission as the proportion of patients who experienced ideal care within components of the value equation, as follows:

$$\text{Value} = \frac{\left(\begin{array}{c} \text{Product of} \\ \text{achievement} \\ \text{of highest} \\ \text{score for all} \\ \text{relevant equity,} \\ \text{patient} \\ \text{satisfaction,} \\ \text{patient experience,} \\ \text{and patient} \\ \text{centeredness} \\ \text{rates} \end{array} \right) \times \left(\begin{array}{c} \text{Product of} \\ \text{achievement} \\ \text{of perfect} \\ \text{care delivery,} \\ \text{as defined} \\ \text{by current} \\ \text{measures, for} \\ \text{all relevant} \\ \text{timely and} \\ \text{effective} \\ \text{care measures} \end{array} \right) \times \left(\begin{array}{c} \text{Product of} \\ \text{achievement} \\ \text{of perfect} \\ \text{care outcomes,} \\ \text{as defined} \\ \text{by current} \\ \text{measures, for} \\ \text{all relevant} \\ \text{outcomes} \\ \text{measures} \end{array} \right) \times \left(\begin{array}{c} 1 - [\text{proportion} \\ \text{of patients} \\ \text{who} \\ \text{experienced} \\ \text{unsafe care}] \end{array} \right)}{\text{Expenditures for the episode of care provided}}$$

This equation has the advantage of having component parts that might be used by patients to make internal trade-off decisions in order to decide where to obtain care. For instance, patients might be willing to experience lower satisfaction scores in exchange for lower expenditures on care, but they might be unwilling to trade an anticipated experience of lower rates of safe care or effective care for lower expenditures. And patients who have first dollar coverage might focus much more on the numerator than on the denominator.

Data Sources

To be able to compare a large number of hospitals, we used publicly available data from Hospital Compare for 2012. Created by CMS, Hospital Compare provides information about patient satisfaction, use of effective care processes, and patient harms for more than 4,000 Medicare-certified hospitals.²⁸ Unfortunately, no measures of the degree to which care delivery is equitable and no measures of achievement of patient outcomes are currently available in the Hospital Compare dataset. Therefore, to construct our numerator, we chose measures that can be represented as

percentages of *ideal* care achievement as currently measured for patient satisfaction (for instance, the percentage of surveyed patients who reported that their doctors always communicated well), use of timely and effective care (for instance, the proportion of patients who received cardiac surgery whose blood glucose was normal postoperatively), and harm avoidance (for instance, the proportion of surgical patients who *did not* have a serious complication from surgery). We then created an aggregate measure of each component by multiplying all measures together, using the equation shown earlier.

We were able to map a number of Hospital Compare–obtained hospital-specific measures of patient experience, and hospital- and procedure-specific measures of use of timely and effective care as well as measures of harm avoidance for 4 admission types: acute myocardial infarction (AMI), coronary artery bypass grafting (CABG), colectomy, and hip replacement surgery. The specific Hospital Compare measures that we used for each condition are shown in Table 1.

For the denominator, we obtained the average price-standardized and risk-adjusted hospital-specific Medicare spending for a 30-day episode associated with each of the admission types in 2012. Briefly, for each patient with one of the reasons for admission that we studied, price-standardized Medicare Part A and B payments for all service types were calculated from the date of the index admission to 30 days after index hospitalization discharge and aggregated at the hospital level; these payments were then case-mix adjusted using multiple linear regression (accounting for clustering of patients within hospitals) and adjusting for patient age, sex, race, admission acuity, length of stay, individual comorbidities, and patient-specific expenditures in the previous 6 months.²⁹ While expenditure data are not as readily available, they are accessible from the University of Michigan where researchers are developing episode-based cost estimates for public consumption.

Although we studied all hospitals for which Hospital Compare data were available, not all Hospital Compare data or Medicare spending data for the relevant conditions examined were available for all hospitals. Therefore, we were able to calculate measures of value for 1,900 hospitals providing AMI care, 884 hospitals providing CABG care, 1,252 hospitals providing colectomy services, and 1,243 hospitals providing hip replacement surgery.

Table 1. Mapping of Hospital Compare Measures to Value Categories for 4 Reasons for Admission^a

Value Component	Measure Description	Hospital Compare Measure Identifier			
		Acute myocardial infarction	Coronary artery bypass grafting	Colectomy	Hip replacement
Satisfaction measures	Nurses always communicated well.		H-COMP-1-A-P		
	Doctors always communicated well.		H-COMP-2-A-P		
	Patients always received help as soon as they wanted it.		H-COMP-3-A-P		
	Pain was always controlled.		H-COMP-4-A-P		
Timeliness and effectiveness measures	Staff always explained about medications before administering them.		H-COMP-5-A-P		
	The room and bathroom were always clean.		H-CLEAN-HSP-A-P		
	The area around room was always quiet at night.		H-QUIET-HSP-A-P		
	Patients were given discharge information.		H-COMP-6-Y-P		
	Acute myocardial infarction patients given aspirin at discharge	AMI-2			
	Acute myocardial infarction patients given PCI within 90 minutes	AMI-8a			
	Acute myocardial infarction patients given statin script at discharge	AMI-10			

Continued

Table 1. <i>Continued</i>				
Value Component	Measure Description	Hospital Compare Measure Identifier		
		Acute myocardial infarction	Coronary artery bypass grafting	Hip replacement
	Cardiac surgery patients with controlled 6 am postoperative blood glucose		SCIP-INF-4	
	Hospitals with a registry for cardiac surgery		REGISTRY	
	Surgical patients whose antibiotics were started at the right time			SCIP-INF-1
	Surgical patients given the right kind of antibiotics			SCIP-INF-2
	Surgical patients whose antibiotics were stopped at the right time			SCIP-INF-3
	Surgical patients whose urinary catheters were removed quickly			SCIP-INF-9
	Surgical patients who were actively warmed in the operating room			SCIP-INF-10
	Patients who got blood clot prevention medications in a timely fashion			SCIP-VTE-2
	Surgical patients on a β -blocker who received one perioperatively			SCIP-CARD-2
	Iatrogenic pneumothorax rate**			PSI-6
	Postoperative pulmonary or deep vein thrombosis rate**			PSI-12
Measures of harm avoidance				
				<i>Continued</i>

Table 1. *Continued*

Hospital Compare Measure Identifier				
Value Component	Measure Description	Acute myocardial infarction	Coronary artery bypass grafting	Colectomy
	Postoperative wound dehiscence rate**			PSI-14
	Accidental puncture or laceration rate**			PSI-15
	Serious complications from surgery rate**			PSI-90
	Mortality rate*			PSI-4
	Surgical site infection from colon surgery rate	MORT-30-AMI		SSI-COLON-SURGERY
Cost	Complication from hip/knee replacement rate***			COMP-HIP-KNEE
	30-day unplanned readmission rate	READM-30-AMI	READ-30-HOSP-WIDE	READ-30-HIP-KNEE
	Medicare 30-day risk- and price-adjusted condition-specific episode-of-care expenditures		Calculated	

PCI = percutaneous coronary intervention
a All measures save those with an asterisk were for 1/1/12-12/31/12; otherwise, * denotes measures for 7/1/10-6/30/13; ** denotes measures for 7/1/11-6/30/13; *** denote measures for 4/1/10-3/31/13.

Analysis

In an effort to prevent dominance of any one quality metric, we standardized the different component measures through a 3-step process. First, for each individual measure that we used to calculate a component score (for instance, the measure examining whether “nurses always communicated well,” which is used to calculate the satisfaction component, as shown in Table 1), we calculated a hospital-specific functional “Z score,” which generates normalized scores around a common mean, according to the following formula:

$$\text{Z score}_i = \frac{\text{Hospital}_i (\text{value}) - \text{mean (value)}}{\text{Standard deviation}}$$

Next, for each of these individual measures, we generated a standardized score with a mean of 0.50 and a standard deviation of 0.10, according to the following equation:

$$\text{Standardized score}_i = (50 + [10 \times \text{Z score}_i])/100$$

Then, to generate a component measure that included multiple individual measures (for example, the composite of individual satisfaction measures that generated the satisfaction component measure, as shown in Table 1), we calculated the geometric mean of all standardized scores that formed the component measure. This process equally weighted all individual measures that were used to generate a component measure and prevented component measures and numerators from being smaller because one procedure might have more measures that were used to generate the component score or numerator. We calculated a value score by taking the numerator multiplied by 10,000 and dividing by the hospital-specific risk- and price-adjusted condition-specific 30-day episode-of-care spending by Medicare.

To develop a consumer-friendly rating scale, we ranked hospitals' component measures and overall value scores and assigned them to quintiles in which 5 stars represent highest-quintile performance and 1 star represents lowest-quintile performance within each procedure.

To show the distribution of hospitals on our measures for each condition, we calculated several descriptive statistics (minimum, maximum, range, 10th percentile, 90th percentile, and median values) for the 3 main components of value that we evaluated (quality, cost, and value). We chose to examine 10th and 90th percentiles because these would be

the median values of the highest and lowest quintiles, a division point that we used to show consistency of dimensional measures by displaying what proportion of hospitals that were in the first quintile in value were also in the first quintile in quality and cost. Finally, to compare characteristics of hospitals in the highest- and lowest-value quintiles, we obtained 2012 hospital-specific information on the number of general adult medical and surgical beds, total annual surgical operations, and average daily census as well as whether the hospital was Joint Commission accredited, had a residency program accredited by the American Council on Graduate Medical Education, or was a for-profit hospital.³⁰ We compared highest- to lowest-quintile results using Student's T-test for continuous variables and the Chi-square test for dichotomous variables. We used SPSS v22 (released in 2013, Armonk, NY: IBM Corporation) for all analyses.

Results

As we expected, given our methods, the composite quality score centered at 0.5 while the spending per episode varied considerably according to the reason for admission (Figure 1). The composite quality score varied most for acute myocardial infarction (0.14-0.62, range 0.48) and least for coronary artery bypass grafting (0.40-0.58, range 0.18), although variation in quality was similar for colectomy and hip replacement. Risk-adjusted cost per 30-day episode varied most for coronary artery bypass grafting (\$28,069-\$82,209, range \$54,140) and least for acute myocardial infarction (\$19,909-\$35,396, range \$15,487) (Table 2). Value scores varied most for acute myocardial infarction (0.56-2.69, range 2.13) and least for colectomy (1.00-1.72, range 0.72). While median and percentile measures of quality were expectedly similar across reasons for admission (given their construct), median and percentile measures of costs varied more. Median value scores ranged from 0.93 for coronary artery bypass grafting to 2.15 for hip replacement, with differences between the 10th and 90th percentiles ranging from 0.25 for coronary artery bypass grafting and colectomy to 0.55 for hip replacement.

About half of hospitals in the highest- or lowest-value quintiles were also in the highest- or lowest-quality quintile, respectively (range 43%-59%, depending on the reason for admission) (Table 3). The proportion of hospitals in the highest- or lowest-value quintiles that were also in

Figure 1. Hospital-Specific Value Numerators and Spending per Episode for the 4 Reasons for Admission Examined

Table 2. Descriptive Statistics for the 3 Main Components of Value Calculated for the 4 Conditions Examined

		Acute myocardial infarction	Coronary artery bypass grafting	Colectomy	Hip replacement
Number of hospitals		1,900	884	1,252	1,243
Quality	Minimum	0.14	0.40	0.37	0.38
	Maximum	0.62	0.58	0.57	0.58
	Range	0.48	0.18	0.20	0.20
	10 th percentile	0.44	0.46	0.46	0.46
	90 th percentile	0.53	0.53	0.52	0.52
	Median	0.49	0.50	0.49	0.49
Cost	Minimum	\$19,909	\$28,069	\$29,885	\$16,726
	Maximum	\$35,396	\$82,209	\$46,464	\$33,099
	Range	\$15,487	\$54,140	\$16,579	\$16,373
	10 th percentile	\$22,764	\$47,705	\$32,389	\$20,613
	90 th percentile	\$27,003	\$59,812	\$37,015	\$25,616
	Median	\$24,476	\$52,914	\$34,376	\$22,875
Value	Minimum	0.56	0.62	1.00	1.40
	Maximum	2.69	1.69	1.72	3.02
	Range	2.13	1.07	0.72	1.62
	10 th percentile	1.72	0.81	1.30	1.88
	90 th percentile	2.21	1.06	1.55	2.43
	Median	1.98	0.93	1.43	2.15

the highest- or lowest-cost quintile, respectively, was somewhat higher (range 54%-75%).

With the exception of coronary artery bypass grafting (which showed the exact opposite trends), hospitals in the highest-value quintiles had a higher average daily census, had more adult medical and surgical beds, and performed more operations each year than those in the lowest-quality quintile (Table 4). Again with the exception of coronary artery bypass grafting, whether the hospital was JCAHO accredited or had an ACGME-accredited residency program was not associated with value (for coronary artery bypass grafting, both were associated with lowest-value quintile hospitals). Only for hip replacement was higher-value care associated with for-profit hospital status.

Table 3. Consistency of Dimensional Measures: Proportion of Hospitals in the Highest- and Lowest-Value Quintiles Remaining in Same Quintile After Quality and Cost Considerations^a

Reason for admission	Number (%) of hospitals in highest-value quintile also in quintile of			Number (%) of hospitals in lowest-value quintile also in quintile of		
	Highest value	Highest quality	Lowest cost	Lowest value	Lowest quality	Highest cost
Acute myocardial infarction	380 (100%)	223 (59%)	213 (56%)	380 (100%)	213 (56%)	206 (54%)
Coronary artery bypass grafting	177 (100%)	76 (43%)	133 (75%)	177 (100%)	79 (45%)	128 (72%)
Colectomy	250 (100%)	123 (49%)	159 (64%)	250 (100%)	124 (50%)	144 (58%)
Hip replacement	249 (100%)	113 (45%)	178 (71%)	249 (100%)	116 (47%)	170 (68%)

^aFor cost, highest quintile is lowest cost, and lowest quintile is highest cost.

Table 4. Characteristics of Hospitals in the Highest- and Lowest- Value Quintiles for the 4 Conditions Examined

Variable type	Hospital characteristic	Value quintile	Acute myocardial infarction	Coronary artery bypass grafting	Colectomy	Hip replacement
Continuous	Average daily census	Highest	246	257	216	263
		Lowest	173	325	168	209
	Number of general adult medical and surgical beds	p-value	<0.001	0.002	0.003	0.002
		Highest	198	211	229	145
	Total surgical operations	Lowest	145	244	184	111
		p-value	<0.001	0.019	0.001	<0.001
Dichotomous	JCAHO accredited	Highest	12,092	12,666	9,921	12,931
		Lowest	9,998	17,460	8,623	12,407
		p-value	<0.001	<0.001	0.25	0.56
		Highest	88.8%	87.0%	88.8%	88.8%
		Lowest	91.1%	93.7%	90.8%	89.8%
		p-value	0.30	0.033	0.47	0.72
	ACGME-accredited residency program	Highest	40.2%	36.7%	41.6%	38.6%
		Lowest	33.7%	63.4%	41.0%	42.2%
		p-value	0.07	<0.001	0.89	0.41
	For-profit hospital	Highest	18.2%	18.1%	17.2%	16.9%
		Lowest	18.7%	11.4%	12.4%	8.6%
		p-value	0.85	0.08	0.14	0.006

P values <0.05 are bolded, those <0.001 are also italicized.

For each of the 4 procedures examined, the online appendix table provides hospital-level data for individual components of the quality numerator as well as cost and value.

Discussion

We used publicly available data from Hospital Compare on multiple aspects of health care delivery quality and 30-day episode-of-care Medicare expenditures to calculate measures of value for 4 common admission types in a large number of US hospitals. Using those data, we created procedure-specific value scores (from which we derived hospital-level star rating systems that consumers might easily use) that would allow decision makers to make informed decisions about *where* to get care. While we found substantial variation in value scores and their components, the degree of variation that we saw differed according to reason for admission. We found that having either high quality or low cost was only moderately predictive of high value. Finally, we found that, with the exception of coronary artery bypass grafting, higher-value hospitals were larger and had a higher average daily census than lower-value hospitals, but were no more likely to be JCAHO accredited or to have an ACGME-accredited residency program.

Despite concerns that public reporting of quality data might result in untoward changes in physician behavior,³¹ reporting the disaggregated components of our value calculation as well as the overall value score (as we did in the online appendix table) allows patients to make informed decisions that incorporate their own preferences regarding time, money, and health.³² Our measure of value thereby aligns managerial goals and patient preferences.

While our results focused on 4 reasons for hospital admissions, similarly constructed value scores could be generated for hospital service lines, ambulatory care facilities, and health care organizations like Accountable Care Organizations. For these, value scores and their components could provide strategic direction to leadership and align organizational performance goals with aspects of care that are important to patients.

Our results have several limitations. First, our model does not weight any one component more than another and assumes that patients can experience “perfect” care, at least as currently measured, wherein the

value numerator would be 1. While some may argue that such perfection is practically impossible, it seems reasonable to expect that a patient would desire perfection and that while health care systems may fall short, they should constantly be striving for the best performance possible. Certainly, patients could use our star rating system to make trade-offs and prioritize those imperfections that matter most to them when deciding where to obtain care.

Second, we might have used a different method to calculate the numerator; for instance, instead of multiplying the components in the numerator, we might have added them, possibly generating different results. However, we believe that such an additive approach would have eliminated the compound effect of imperfect care across care dimensions and, therefore, would have weakened our argument that ideal care across all components is the goal and, increasingly, will be the expectation.

Third, because we thought patients should expect perfect care, we purposely did not attempt to risk adjust quality scores that were assembled to generate the aggregate quality numerator: particularly in the absence of functional outcomes measures, we did not believe that patients who had a greater illness burden should anticipate experiencing physicians with worse communications skills, less adherence to process measures, or more harms. Nonetheless, caring for a patient with a greater illness burden may reasonably take more resources; hence, our rationale for using risk-adjusted 30-day episode-of-care expenditures.

Fourth, our cost data, while procedure- and hospital-specific, are Medicare expenditures for an episode of care. These expenditures may not be directly relevant to patients, but they can inform them about both how much Medicare is spending on the procedure and the amount by which such expenditures vary. We would anticipate that, over time, measures of out-of-pocket costs would be included in the model.

Fifth, we examined only 1 year of data, and, because these are publicly available data, there is a substantial time lag; hospital performance might have changed in the last couple of years. Over time, analyses may identify hospital characteristics that are associated with provision of higher-value care and reveal measures that could be dropped, added, or weighted to better calculate results. Further, concentration on the collection of the most meaningful and influential measures may improve the timeliness of their availability.

Sixth, our results are derived from Medicare data; other data sources might produce different findings. In addition, because of data

availability, our results were based on hospital-level, but not procedure-specific, data on patient experience and some measures of effective care and avoidance of patient harms. While we have no *a priori* reason to believe that patients who were admitted for the reasons we examined differed from the general hospital population in these aspects, further refinement of value measures might include procedure-specific measures of satisfaction, effective care, and harm avoidance. Along the same lines, we anticipate that future iterations of our measure of value might include condition-specific outcomes measures that indicate achievement of treatment goals in the numerator and not just avoidance of harms. Further, measures of informed choice, which might help to mitigate overall health care expenditures by matching supply of services with patients' true demand, might be included in the numerator as a measure of health care equity. In addition, further refinement of our measure of value over time—perhaps informed by willingness-to-pay models or results of focus groups that suggest patient prioritization of components—might weight numerator component scores differently.³³

Despite these limitations, our work used admission- and hospital-specific health care spending and publicly available quality measures to generate value scores that consumers might use to make health care choices about where to obtain their care. As competition in the health care marketplace increasingly becomes value based, transparent component scores and measures of health care value will help inform patients, payers, providers, and policymakers about where the highest-value care can be obtained. But, unlike measures that evaluate overall performance of health care plans³⁴ or hospitals (across multiple procedures),¹⁷ the type of scoring we developed could help patients choose providers for a particular condition or intervention, which is likely how they will shop for care in the future.²¹

We are in a new era of health care delivery; it is unfortunate and somewhat remiss not to use regularly collected, valid, and widely available data to help engage patients in their health care delivery choices. The measures we examined are imperfect, but Voltaire observed that “*le mieux est l'ennemi du bien*.” We believe that the use of even imperfect measures might stimulate more rapid uptake of patient-centered measures of health care value in the marketplace, as health care providers try to differentiate themselves. But waiting for perfection is not an option.

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Funding/Support: None.

Conflict of Interest Disclosures: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. No disclosures were reported.

Acknowledgments: None.

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Supplementary Material

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Appendix Table