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**ESTIMATING INPATIENT HOSPITAL PRICES FROM STATE  
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# **Estimating Inpatient Hospital Prices**

**from**

**State Administrative Data and Hospital Financial Reports**

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## Abstract

**Objective:** To demonstrate the feasibility and validity of estimating the prices received by hospitals for inpatient stays from different major payers.

**Data Sources/Study Setting:** The Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) and hospital financial data collected by individual states.

**Study Design:** Pilot study to estimate hospital inpatient prices in 10 states by payer and to validate the results using similar information from Medicare and private insurance claims and household survey databases.

**Data Collection and Extraction Methods:** We merged hospital-specific HCUP SID discharge abstracts containing charge information with hospital-specific financial information by payer on charges and net revenue collected in 10 states.

**Principal Findings:** Revenue received by hospitals for inpatient stays (the “price”) differs by geographic area, diagnosis and payer. Prices can be reasonably estimated for Medicare, Medicaid, and private insurance in specific hospitals.

**Conclusions:** By merging state-specific hospital data sets collected for separate reasons, it is possible to estimate the revenue (“price”) that hospitals receive from specific major payers for inpatient hospital stays for specific diagnoses. Prices can be used to promote transparency in health care costs, study market area competition, and increase understanding of payment differentials among payers.

**Key Words:** Prices for inpatient hospitalizations by payer, Medicare, Medicaid, private insurance, self-pay

Inpatient hospitalizations are one of the most expensive groups of health care services. In 2010, spending on hospital care was projected to account for 37 percent of all health care services and products purchased in the United States; inpatient services accounted for about two-thirds of this spending.<sup>1</sup> Because hospitals operate in a competitive marketplace, little is publicly revealed about the actual revenue, which we refer to as the paid “price” that hospitals receive for an inpatient stay for a specific condition. This lack of available information limits consumers’ ability to compare prices with quality of care for the treatment of specific conditions in specific hospitals. The lack of information also limits researchers’ ability to investigate the way hospitals set prices for specific services and payers, and the financial implications of payer mix within a competitive market area. With efficiency and quality improvement at the center of health care debates, public information on prices could afford consumers and researchers better access to information with which to evaluate the value of inpatient hospital treatment, and to better understand the revenue streams for, and competition among hospitals in the same market areas.

To address the information gap on hospital price, the Agency for Healthcare Research and Quality (AHRQ) initiated a pilot project to investigate the feasibility of estimating prices received by specific hospitals from major payer groups for each hospital stay. Publicly accessible data on financial transactions for specific types of inpatient stays are usually limited to prices paid by specific government payers such as Medicare or to charges billed to the patient or his insurer.<sup>2</sup> Charges have only limited use in understanding prices received by hospitals because the billed charges are seldom paid in full. Instead, substantial discounts negotiated by private insurers, payment rates imposed by Medicare and Medicaid, and nonpayment by some uninsured patients reduce billed charges to a lower actual paid price that often differs by payer for the same service.

The objective of this pilot study is to present methods used to estimate hospital prices in ten states and to evaluate the results against a variety of other available data sources. We also present more detailed prices by state and sub-state areas for all diagnoses and specific diagnoses to demonstrate the value of providing price information to consumers and researchers.

## **Methods**

### ***Data***

The data for this study were derived from the Healthcare Cost and Utilization Project (HCUP) State Inpatient Database (SID) files and hospital financial data from states for 2006.

**Healthcare Cost and Utilization Project (HCUP).** The first dataset comes from HCUP, sponsored by AHRQ. HCUP is a family of health care databases, related software tools and reports, support services, and products.<sup>3</sup> HCUP databases integrate the data collected by state governments, hospital associations, and private data organizations (the “Partners”) to create a national health care information resource of hospital, ambulatory surgery center, and emergency department data. For this project, we used one

group of the HCUP databases—the State Inpatient Databases (SID), which have been converted into uniform formats. The SID capture most inpatient discharges from a census of hospitals in 44 states, collecting more than 95 percent of all discharges in the United States. The SID include information on patient demographics, diagnoses, procedures, charges, and hospital characteristics. Although hospital cost information can be imputed using the HCUP Cost-to-Charge Ratio tool, price information is not available. The main data elements used included charges and primary payer identification. For this project, we limited the hospitals used from the SID to short-term, acute care community facilities in ten states for 2006.

**Hospital Financial Data.** The second source of data comes from states that separately collected extensive information on hospital finances in 2006. To identify states collecting the information required for this pilot study, we turned to AHRQ’s annual survey of HCUP Partners that collected information on data availability for specific research efforts. In 2007, this assessment asked about the availability of 2006 financial data on inpatient and outpatient charges and net revenue by major payer for each hospital in their state. From this list, we were able to determine the states most likely to collect the hospital-specific financial data we required.

We evaluated source documents and/or consulted with state experts to understand the specific, detailed financial information that was available from 28 HCUP Partner states. The best sets of financial data for our purposes came from states whose data contained: 1) hospital-specific financial information for each major payer (Medicare, Medicaid, private insurance and self-pay); 2) charges and net revenue separately for inpatient and outpatient services for each payer; and 3) financial information for most hospitals in the state. We also looked for states that were geographically diverse and granted AHRQ permission to link the financial data to the HCUP SID and then to publicly report the results at a state or sub-state level.

Our search narrowed to ten states (California, Florida, Massachusetts, Nevada, New Jersey, Virginia, West Virginia, Wisconsin, and two additional states where public release of the information was not possible) that collected the most complete hospital financial information for 2006 for our purposes.

### ***Estimating Hospital Prices***

The general method used to estimate inpatient hospital prices was to create payer-specific “price-to-charge ratios” (PCRs) for each hospital using the state financial data collected from hospitals in each state. PCRs were then applied to the HCUP-SID charges to estimate the price of a single hospital stay based on the primary payer and gross charges for that discharge.

**Data Validation and Hospital Mapping.** We obtained state financial data and performed checks to ensure that detailed information agreed with statewide totals.<sup>4</sup> There were only a few discrepancies in the data and they were resolved with the state data organization.

We mapped hospitals from the state financial data to those in the HCUP SID. We excluded non-community hospitals (rehabilitation hospitals, psychiatric hospitals, Federal hospitals, and long-term care hospitals), California hospitals operating under capitated arrangements that did not report sufficient state financial data, and a few hospitals that could not be matched between the two data sets. Occasionally, summarized data from one data set were matched to a single combined report in the other data set for some hospitals with the same parent organization.

We compared total discharges/admissions and charges in the linked HCUP SID and state financial data to uncover any major discrepancies between the two sources. There were almost no exact matches in counts of discharges/admissions and charges between the data sources. Some of these discrepancies were related to differences in the period covered by the report (fiscal years, rather than calendar years) or in reporting instructions that either excluded or allowed the reporting of long-term care units (such as nursing home units) in hospital statistics.<sup>5</sup> The timing issue should not pose any significant problem in creating PCRs; we did not expect great differences in the PCRs when the timing was offset by several months. The inclusion of nursing home units presented a potential bias to the extent that a payer may discount charges for acute care differently from long-term care, but the actual effect is unknown. While we can identify this issue, we could not adjust the data to account for this.

**Estimating PCRs.** We defined the “price” of a hospital stay as equal to the revenue received by a hospital from all sources for delivering services for a single inpatient hospitalization. The sum of “prices” for all inpatient discharges in a particular hospital equals the total net inpatient revenue received by the hospital in support of inpatient services. In most states, total inpatient revenue cannot be obtained directly from the hospital financial data, but must be constructed from financial variables: Gross inpatient charges reduced for inpatient contractual adjustments and other uncollected inpatient revenue including bad debt, charity care and other deductions such as employee, courtesy, administrative, and prompt payment discounts. Gross inpatient charges must also be increased for other revenue sources associated with inpatient stays, including Medicaid and Medicare disproportionate share (DSH) payments and other assessments or subsidies for indigent inpatient care as shown in Table 1.

[Insert Table 1]

Although the ten states with hospital financial data selected for this study were states with the most complete data, individual data elements required to construct net inpatient revenues were often not available for each payer. All states reported inpatient gross revenue by payer. Most states also supplied inpatient contractual adjustments for most payers. For other data elements such as bad debt, discounts, charity care, charity pool payments, and government subsidies and grants, states often reported inpatient and outpatient values combined, and usually reported one value for all payers. As these problems with the state financial data were encountered, we developed procedures for estimating splits in these composite inpatient/outpatient and all-payer figures. We devised ratios based on similar data in a group of other states that did report inpatient and outpatient variables separately, and estimated distributions across payers based on a related variable (e.g., charity subsidies distributed to payers based on bad debt distributions by payer, or uncompensated care pool funds distributed to payers

based on inpatient gross revenues for Medicaid, other state medical assistance payments, and the uninsured). Most of these estimates were for relatively small portions of deductions or revenue.

The final step was to calculate net revenues for each hospital and each payer using the steps outlined in Table 1. Net revenues (prices) by payer were then divided by gross revenues (charges) by payer to create a PCR by payer for each hospital.

**Calculating Prices.** Once the payer-specific PCRs were created, we identified the primary payer for each HCUP-SID discharge and applied the state hospital financial PCR for that payer and hospital to the charges recorded for that stay on the HCUP SID. This created a payer-specific “price” for that discharge. For this study, we defined five uniform payer categories used in HCUP: Medicare, Medicaid, private health insurance, self-pay (including the uninsured), and all other payers.

## ***Analysis***

We evaluated our estimated prices by comparing the results against data from other sources that also reported payments by payer for hospital stays. Only a limited number of data sources contain hospital prices by payer: the Medical Expenditure Panel Survey (MEPS) sponsored by AHRQ that surveys a sample of households for their medical expenditures; the Thomson Reuters MarketScan® commercial claims database; and Medicare claims databases from the Centers for Medicare and Medicaid Services (CMS). Only Medicare claims could be tabulated on a state basis for the ten states used in this study. For all data sources, we also calculated nationwide average prices. The results of these comparisons are shown in Table 2. Our overall assessment is that our HCUP average prices for hospitalizations in the United States fall within reasonable ranges of prices from other survey and claims data sources for all payers, Medicare, Medicaid, and private insurance in 2006.

[Insert Table 2]

**HCUP.** Table 2 shows the prices calculated by multiplying estimated PCRs from the state financial data by HCUP charges. The overall average price of a hospital stay in 2006 was \$8,704 across 10 states. The average prices paid by Medicare and private insurance were higher than the all-payer average and those paid by Medicaid, self-pay (including the uninsured) and other payers were lower than the all-payer average. Self-pay average prices were very low because many people without insurance pay little if any of their hospital bill. Among payers, average prices for Medicare stays (\$10,450) were highest, followed by prices paid by private insurance (\$9,254), Medicaid (\$7,236), and all other insurers (\$4,113). Prices paid directly by individual consumers (\$1,636) were the lowest.

**Medical Expenditure Panel Survey (MEPS).** MEPS is a household survey that collects health care event information from a sample of almost 12,811 households that included 32,577 individuals in 2006. The average payments reported by MEPS are generally similar to HCUP prices, but this difference varies by payer. All-payer average payments reported by MEPS (\$8,888) are 2 percent higher than our pilot study results (\$8,704). By payer, MEPS Medicare and Medicaid average prices are 7 to 8 percent lower than our pilot study results. MEPS private health insurance average payments are 5 percent higher than our study results, while the MEPS average prices for both self-pay and other payers are one to three times

those estimated in the pilot study. Similar to our pilot study results, Medicare and private insurance pay the highest average price per stay, and self-pay the lowest.

**MarketScan.**<sup>®</sup> The Thomson Reuters MarketScan commercial claims database comprises data from approximately 30 million covered lives (employees and dependents) each year who received their coverage through approximately 140 employers and regional health plans. Many of the employer plans included in MarketScan come from large, self-insured employers with generous benefit coverage.

We created a high and low average price for a privately insured hospitalization because we cannot identify with certainty the stays where private insurance was the primary payer. The higher price is the result of taking all payments made by private insurers and dividing them by each stay where private insurance comprised 50 percent or more of all expected payments, thus identifying most, but not all stays where private insurance was the primary payer. The lower average price was calculated by dividing all private insurance payments by all discharges with any amount of payment from private insurance, which may underestimate the average price.

MarketScan private insurance average prices ranged from 14 percent below to 12 percent above our pilot study results (\$7,957-\$10,337 in MarketScan compared to pilot study results of \$9,254).

**Medicare.** Medicare claims come from the CMS Standard Analytic File (SAF) database of hospital claims and exclude final payment settlements that take place subsequent to reimbursement, usually through the submission of Medicare Cost Reports. The Medicare average reimbursement in our ten HCUP states (\$9,643) is, as expected, somewhat lower (by 8 percent) than our HCUP-estimated Medicare prices (\$10,450).

Medicare SAF is the only database where we can accurately assess the average prices of our ten HCUP states against all states. For Medicare, this information shows that average Medicare prices in our ten HCUP states (\$9,643) are 10 percent higher than the all-state Medicare average price (\$8,752) from the same database. If this also holds true for other payers, then this fact may also explain some of the price differential between MEPS and HCUP.

## Results

**Estimated State and CBSA Prices.** Given the nationwide comparisons and an understanding of major caveats and assumptions, we can examine and assess estimated prices by payer for state and selected diagnoses and for all diagnoses for Core Based Statistical Areas (CBSAs) within our ten states.

Figure 1 shows average inpatient stay prices for four common conditions (heart attack, pneumonia, septicemia, and diabetes mellitus with complications) and for all conditions based on HCUP-SID estimated prices. In each of these conditions, Medicare, Medicaid, and private insurance prices are close to or above the all-payer average and the prices for self-pay and all other payers are substantially below the all-payer average. However, across all diagnoses, the average payments exhibit a slightly



different pattern in that the average price for Medicaid hospitalizations was lower than the all-payer average for all diagnoses. This difference in the average price pattern for Medicaid is because about one-quarter of all Medicaid stays are for lower-price maternal and newborn stays in community hospitals, which are not shown as a separate diagnosis in this figure.

[Insert Figure 1]

Table 3 shows the average prices for four common conditions depicted in Figure 1 at the state level. Prices vary dramatically by state and payer for the same condition. The range in prices can be attributed to a variety of factors, including age, gender and severity mix of the population receiving treatment, the degree of competition in an area, costs (such as wages and energy prices) in providing services, state-specific coverage and payment policies for Medicaid, and the share of the population that is uninsured.

Table 3 illustrates the analytic value of our estimated prices. There were 211,000 hospitalizations with a principal diagnosis of acute myocardial infarction (AMI), or heart attack in 2006. The all-payer average price for a stay with AMI was \$17,589. Medicare paid about 95 percent of the all-payer price; Medicaid (after the inclusion of DSH payments) paid 114 percent; private insurance, 128 percent; self-pay, 13 percent; and all other payers, 58 percent. By state, the all-payer prices for AMI ranged from \$13,949 in Nevada to \$20,660 in HCUP State A. The ten-state average price for Medicare was \$16,713, and ranged by state from \$13,032 in West Virginia to \$20,342 in an unnamed HCUP Partner state. Medicaid prices averaged \$20,012 across ten HCUP states, ranging from \$13,564 in New Jersey to \$23,905 in HCUP State B. Private insurance average price for heart attacks was \$22,496, ranging from \$9,933 in Nevada to \$31,991 in Wisconsin. Table 3 also shows average prices for pneumonia, septicemia, diabetes mellitus with complications, and all diagnoses for our ten HCUP states.

[Insert Table 3]

Table 4 shows the range of prices by selected Core Based Statistical Areas (CBSAs) in our ten states. Even within an individual state, the range of prices among areas was considerable overall and for specific payers. For example, in Massachusetts, average prices for all payers ranged from \$6,667 in the New Bedford/Fall River Massachusetts portion of the Providence/New Bedford/Fall River CBSA to \$10,436 in the Massachusetts portion of the Boston/Cambridge/Quincy CBSA—almost a 60 percent difference. Similar differences can be seen among other payers in the same two Massachusetts CBSAs: Medicare (43 percent), Medicaid (59 percent), and private insurance (73 percent).

[Insert Table 4]

## Discussion

In evaluating our estimated prices compared to other data sources, there are a number of reasons specific to the data sources that explain the small differences that we observed. In this section we will

discuss these issues and present a few limitations and caveats to understand in using our estimated prices. We also present our estimated prices by state and sub-state areas for some sample diagnoses.

**MEPS.** There are some general reasons why MEPS prices will differ from HCUP prices for all payers and specific payers. First, MEPS is a survey that comes from a sample of household respondents, and as such has a sampling variance. Because MEPS is a household survey, it also depends on individual respondents to identify all medical events. Missed events do occur, although less frequently for hospital inpatient stays than for other types of events. In addition, MEPS excludes certain groups of people from its sample, including nursing home residents and active duty military, and experiences underreporting of certain high-cost cases and Medicare and uninsured stays (Selden and Sing 2008). Further, MEPS does not collect information on certain administrative costs associated with Medicaid and Medicare, including Medicaid disproportionate share payments (DSH) made to certain hospitals serving a large percentage of Medicaid and uninsured patients, Medicare DSH, and other revenue adjustments that take place outside of claims transactions such as receipt of state and local government hospital subsidies. These payments would be excluded from MEPS but included in our pilot study prices, resulting in higher estimated prices for some payers using our methods.

**MarketScan.** Because a sizable portion of insured patients in the MarketScan database is comprised of retired persons covered by Medicare, private insurance will often be the secondary payer for the stay, with Medicare as the primary payer. Therefore, the higher average price calculation should be closer to our estimated average price than the lower price calculation. However, even the higher price calculation may slightly undercount some stays with private insurance as a primary payer, making the higher end of the range of MarketScan prices slightly overstated. In addition, many of the employer plans included in MarketScan come from large employers with generous benefit coverage, which will also make their average prices higher than overall insurance prices.

**Medicare.** Average prices based on Medicare claims are likely understated because final payment settlements take place subsequent to payment transactions, usually through the submission of Medicare Cost Reports.

There are two additional limitations and caveats to understand about our results.

**Aligning Charges and Prices.** In hospital financial data, the payer categories are defined by the state's accounting system and usually differ in some aspect from state to state. The amount of estimation required to calculate net revenue by payer varied among states, as did the extent of reported government payments to hospitals to support charity care and bad debt. Moreover, the alignment between charges and net revenue by payer affected the PCRs when multiple insurers paid for one hospitalization. For example, charges are usually assigned to a single primary payer such as Medicare. However, actual revenues received for that stay might be counted in multiple payer categories, such as Medicare and private insurance when private insurance was a secondary payer. The effect is that the revenues by payer may not align completely with the charges by primary payer, distorting the PCRs and affecting our interpretation of the results. This misalignment produced negative PCRs for some hospitals and therefore negative "prices" for self-pay and also occasionally for other payers. Negative

PCRs resulted from the assignment of certain deductions from revenue to specific payers that were greater than the charges assigned to that primary payer. For example, bad debt deductions were assigned only to private insurance (for unpaid copayments and deductibles) and self-pay, while charity care deductions were assigned entirely to self-pay. To the extent that bad debt and charity care deductions from revenue were really offsetting charges assigned to other payers, assigning all or part of these deductions to self-pay overstated the deduction from self-pay and created negative PCRs and prices in some hospitals. For Medicare, Medicaid and private insurance, missing bad debt and charity care deductions from revenue probably led to slightly higher PCRs because the copayments and deductibles that may not have been paid were usually much smaller than the payments by the primary insurer. However, because self-pay and all other payers are relatively small payer categories (4 percent and 5 percent of all hospital revenue, respectively), the deduction from revenues assigned to these payers did, in some cases, have a substantial impact on these PCRs, making them lower and producing negative values for self-pay in some hospitals.

**Payer PCR Assumption.** A major assumption in this study is that each payer in a single hospital discounts charges to the same extent regardless of diagnosis. A study by Ginsburg notes that payments to hospitals by private insurers are usually based on one of three methods: markups of Medicare diagnosis related groups (DRGs) rates, per diem rates (usually preferred by managed care insurers), or negotiated discounts off of charges (Ginsburg 2010). Various studies suggest that charge markups can vary substantially over the cost to produce a service, with newer high-cost technology services receiving lower percentage markups over cost than long-established services or supplies and pharmacy products (Dobson et al. 2005; Dalton 2007). This suggests some variation in the price received compared to the charge for specific services within the same hospital, which could affect our estimated prices. The extent of this effect in our study is unknown.

## Conclusion

As the largest portion of all health care spending, inpatient hospitalizations deserve much attention in any debate on health care expenditures, slowing spending growth, and assessing value received for that spending. As demonstrated in this article, the availability of hospital- and payer-specific prices for specific conditions at the state or sub-state level in a single database provides a rich information source for consumers and researchers.

This study has shown that hospital prices can be reasonably estimated for most major payers by merging data sets collected by states for different purposes. Despite the challenges in identifying appropriate financial data available from states, creating a standardized multi-state data set of financial variables, and linking financial data to administrative discharge information, the prices estimated in this project appear to be reasonably valid when validated against other data sources for most payers. The results

illustrate the differences among hospitals in prices received by payer for their services. There was also a considerable variation in prices among states, across diagnoses, and across CBSAs within a state.

Hospital inpatient prices fill an important gap in information that could increase the transparency of the health care system to consumers if this information is made publicly available. Estimated prices would allow researchers to study pricing policies for particular services, and how those policies vary based on the mix of payers, hospital characteristics, case mix and competition within the local market. Prices would also help researchers to understand the ability of private insurers to influence prices paid based on the hospital financial and other characteristics, and to track that influence over time. Prices could also make cost-shifting among payers more transparent. The differential in prices plays a fundamental role in the financial margins of hospitals and their ability to survive in their local marketplace. Estimating prices in an all-payer database such as HCUP would provide researchers with near-nationwide information for all payers, and their results may further policymakers' understanding of the patterns in geographic variations in spending for all payers. Understanding these factors as hospitals begin to comprehend and adapt to forthcoming regulations under the Affordable Care Act (ACA) would allow policy makers to react more knowledgeably to unforeseen effects of the ACA on the hospital system.

## **Future Directions**

This pilot study shows promising results for estimating prices. Next steps could include the expansion of this pilot to additional states to test the extent to which these methods are generalizable to a broader array of states. Predictive models could also be developed to estimate PCRs for states that do not collect financial information. Ideally, AHRQ could expand their list of HCUP tools to include hospital- and payer-specific PCRs that could be used to estimate prices in all HCUP states.<sup>6</sup>

## Notes

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<sup>1</sup> Data from the National Health Expenditure Accounts is available at:

[http://www.cms.gov/NationalHealthExpendData/03\\_NationalHealthAccountsProjected.asp#TopOfPage](http://www.cms.gov/NationalHealthExpendData/03_NationalHealthAccountsProjected.asp#TopOfPage).

<sup>2</sup> All fee-for-service Medicare claims are available from the Centers for Medicare and Medicaid Services.

For more information, see <http://www.cms.gov/IdentifiableDataFiles/>. The Healthcare Cost and Utilization Project, in partnership with state data organizations, collects administrative charges and other information for discharges from community hospitals. See <http://www.hcup-us.ahrq.gov/> for additional information.

<sup>3</sup> For additional information, go to <http://www.hcup-us.ahrq.gov/>. The database retrieval tool can be accessed at <http://hcupnet.ahrq.gov/>.

<sup>4</sup> Outpatient financial information was required because many of the smaller deductions from revenue in many states were only reported as inpatient and outpatient combined.

<sup>5</sup> HCUP SID consistently reports on a 12-month calendar year basis while the state financial data may be the state fiscal year or other 12-month period.

<sup>6</sup> Information on HCUP tools and software is available at: [http://www.hcup-us.ahrq.gov/tools\\_software.jsp](http://www.hcup-us.ahrq.gov/tools_software.jsp).

## References

Dalton, K. 2007. "A Study of Charge Compression in Calculating DRG Relative Weights." CMS Contract No. 500-00-0024-TO18. Baltimore, MD: Centers for Medicare and Medicaid Services [accessed on November 11, 2010]. Available at: <https://www.cms.gov/reports/downloads/dalton.pdf>

Dobson, A., J. DaVanzo, J. Doherty, and M. Tanamor. 2005. "A Study of Hospital Charge Setting Practices." No. 05-4. Washington, DC: MedPAC [accessed on November 11, 2010]. Available at: [http://www.medpac.gov/documents/Dec05\\_Charge\\_setting.pdf](http://www.medpac.gov/documents/Dec05_Charge_setting.pdf)

Ginsburg, P. 2010. "Wide Variation in Hospital and Physician Payment Rates Evidence of Provider Market Power." Research Brief No. 16. Washington, DC: Center for Studying Health System Change [accessed on November 11, 2010]. Available at: <http://www.hschange.com/CONTENT/1162/>

Selden, T.M. and M. Sing. 2008. "Aligning the Medical Expenditure Panel Survey to Aggregate U.S. Benchmarks." Working Paper No. 08006. Rockville, MD: Agency for Healthcare Research and Quality [accessed on November 11, 2010]. Available at: [http://www.meps.ahrq.gov/mepsweb/data\\_files/publications/workingpapers/wp\\_08006.pdf](http://www.meps.ahrq.gov/mepsweb/data_files/publications/workingpapers/wp_08006.pdf)

**Table 1: Construction of Inpatient Net Revenue**

Gross Inpatient Revenue (Charges)
Less Deductions from Gross Inpatient Charges:
Inpatient Contractual Adjustments
Inpatient Bad Debt
Inpatient Charity Care
Inpatient Discounts (Employee, Courtesy, Administrative, Prompt Payment)
Plus Other Inpatient Revenue (Medicaid DSH, Subsidies, Grants)
Equals Net Inpatient Revenue (Summation of Inpatient Hospital "Prices")

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**Table 2: Comparison of Prices for Hospital Stays by Payer Among Various Data Sets, 2006**

Data Source	All Payers	Medicare	Medicaid	Private Insurance	Self-Pay	Other
HCUP--10 States	\$8,704	\$10,450	\$7,236	\$9,254	\$1,636	\$4,113
MEPS--All States	8,888	9,584	6,751	9,733	5,374	7,808
MarketScan--All States <sup>†</sup>				7,957-10,337		
Medicare--10 States		9,643				
Medicare--All States		8,752				

Sources: Hospital financial data from 10 HCUP Partner states; Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Survey, State Inpatient Databases for 10 States; Medical Expenditure Panel Survey; Thomson Reuters MarketScan database; Centers for Medicare and Medicaid Services, Medicare Standard Analytic Files.

<sup>†</sup> The difference between the maximum and minimum prices depends on whether all stays or only some of the stays are counted in the denominator for private insurance. For both the minimum and maximum values, all revenue was counted. For the maximum value, discharges were counted only if the insurance payment was greater than or equal to 50% of revenue the hospital received, indicating that private insurance was the primary payer. For minimum value, discharges were always counted even if insurance payment was less than 50% of revenue the hospital received.

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**Table 3: Average Prices for a Hospital Stay by Payer for 10 States for Selected Principal and All Diagnoses, 2008**

Condition and State	Discharges in Thousands	Private					
		All Payers	Medicare	Medicaid	Insurance	Self-Pay	Other
<b>Acute Myocardial Infarction (Heart Attack) (CCS 100)</b>							
Ten-State Average Price <sup>‡</sup>	211	\$ 17,589	\$ 16,713	\$ 20,012	\$ 22,496	\$ 2,203	\$ 10,125
Specific Payer Price Divided by All Payer Price for 10 States:		100%	95%	114%	128%	13%	58%
Average Price by State							
CA	46	19,781	18,458	19,971	24,378	23,058	(2,323)
FL	47	14,480	14,249	16,311	23,972	(9,497)	11,012
MA	16	19,665	17,543	21,954	24,760	11,970	26,858
NJ	19	16,127	16,968	13,564	16,699	7,362	20,459
NV	4	13,949	19,378	22,754	9,933	(21,372)	38,234
VA	15	16,752	13,846	15,894	25,503	(7,297)	18,289
WI	10	20,020	15,403	14,270	31,991	4,343	29,478
WV	7	14,642	13,032	15,047	21,508	(1,655)	17,655
HCUP State A (CT)	6	20,660	20,342	16,912	23,658	6,875	9,973
HCUP State B (NY)	40	18,740	18,764	23,905	19,173	7,367	7,504
<b>Pneumonia (Except that Caused by Tuberculosis and Sexually Transmitted Diseases) (CCS 122)</b>							
Ten-State Average Price <sup>‡</sup>	364	\$ 8,533	\$ 8,932	\$ 8,555	\$ 9,079	\$ 2,111	\$ 3,521
Specific Payer Price Divided by All Payer Price for 10 States:		100%	105%	100%	106%	25%	41%
Average Price by State							
CA	92	10,146	10,383	9,579	11,131	12,805	204
FL	70	6,866	7,605	5,717	9,283	(3,732)	7,745
MA	26	7,622	7,464	7,705	8,360	4,047	9,996
NJ	32	8,576	9,808	6,316	7,794	2,922	8,370
NV	7	7,053	9,070	8,821	5,615	(8,763)	11,335
VA	23	6,444	6,258	4,900	8,504	(1,337)	7,408
WI	19	6,712	6,667	4,216	10,168	1,141	(17,901)
WV	13	5,660	6,064	4,185	6,656	(2,233)	5,934
HCUP State A (CT)	13	9,037	9,540	5,653	9,919	2,841	4,423
HCUP State B (NY)	69	10,190	10,676	12,027	8,478	5,571	476
<b>Septicemia (Except in Labor) (CCS 2)</b>							
Ten-State Average Price <sup>‡</sup>	199	\$ 17,509	\$ 16,663	\$ 22,047	\$ 22,450	\$ 3,102	\$ 5,331
Specific Payer Price Divided by All Payer Price for 10 States:		100%	95%	126%	128%	18%	30%
Average Price by State							
CA	57	20,075	19,054	22,170	25,609	20,740	(1,767)
FL	40	13,283	12,997	14,785	22,238	(7,696)	10,240
MA	10	19,263	16,467	28,221	27,320	9,973	24,496
NJ	18	15,995	16,060	15,373	17,899	5,829	20,381
NV	4	16,713	19,986	20,216	11,834	(7,870)	24,310
VA	16	12,695	10,905	14,010	21,282	(4,977)	17,773
WI	8	14,858	12,261	14,201	26,450	1,455	20,488
WV	4	10,590	10,121	10,512	14,197	(2,575)	14,468
HCUP State A (CT)	6	17,830	17,191	15,736	23,618	9,416	11,028
HCUP State B (NY)	37	21,801	21,188	32,799	21,873	5,129	(24,222)

**Table 3: Average Prices for a Hospital Stay by Payer for 10 States for Selected Principal and All Diagnoses, 2008**

Condition and State	Discharges in				Private		
	Thousands	All Payers	Medicare	Medicaid	Insurance	Self-Pay	Other
<b>Diabetes Mellitus with Complications (CCS 50)</b>							
Ten-State Average Price <sup>‡</sup>	166	\$ 8,768	\$ 9,834	\$ 9,533	\$ 9,806	\$ 1,652	\$ 2,868
Specific Payer Price Divided by All Payer Price for 10 States:		100%	112%	109%	112%	19%	33%
Average Price by State							
CA	41	9,547	10,250	10,014	10,724	10,420	(62)
FL	31	6,359	8,089	6,162	9,793	(3,240)	5,884
MA	9	8,663	8,876	8,310	9,342	3,989	14,418
NJ	16	8,968	10,884	7,474	9,625	1,790	8,727
NV	3	5,631	8,116	8,867	4,404	(5,789)	8,002
VA	12	6,702	6,953	5,617	9,484	(1,950)	5,679
WI	7	9,394	9,018	4,440	14,558	1,276	9,263
WV	4	5,508	5,915	5,623	7,431	(1,693)	5,131
HCUP State A (CT)	5	9,728	11,841	5,794	10,076	3,275	5,005
HCUP State B (NY)	39	10,831	11,863	12,576	9,245	3,482	(26)
<b>All Diagnoses</b>							
Ten-State Average Price <sup>‡</sup>	12,854	\$ 8,704	\$ 10,450	\$ 7,236	\$ 9,254	\$ 1,636	\$ 4,113
Specific Payer Price Divided by All Payer Price for 10 States:		100%	120%	83%	106%	19%	47%
Average Price by State							
CA	3,333	9,176	11,472	6,775	10,047	10,783	13
FL	2,510	7,280	8,840	4,902	9,900	(4,446)	7,819
MA	845	9,674	10,126	7,487	10,378	4,894	12,903
NJ	1,113	7,754	10,437	5,426	6,947	2,403	10,030
NV	275	6,069	10,344	6,078	5,017	(5,952)	11,861
VA	838	7,586	8,132	5,050	9,010	(1,950)	7,458
WI	640	9,183	9,118	3,846	11,788	1,055	10,386
WV	279	6,855	7,366	5,108	8,581	(1,857)	7,351
HCUP State A (CT)	404	9,226	11,568	5,202	9,209	2,846	5,418
HCUP State B (NY)	2,618	10,194	12,636	10,949	8,637	4,456	(2,099)

Sources: Hospital financial data from 10 HCUP Partner states; Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Survey, State Inpatient Databases for 10 States.

<sup>‡</sup> Includes results from two additional unidentified HCUP Partner states.

**Table 4: Average Prices for a Hospital Stay by Payer, State, and Selected CBSAs, 2006**

Geographic Area	Discharges in Thousands	Number of Hospitals in CBSA	Average Price					
			All Payers	Medicare	Medicaid	Private Insurance	Self-Pay	Other
Ten State Average Price <sup>‡</sup>	<b>12,854</b>		<b>\$ 8,704</b>	<b>\$ 10,450</b>	<b>\$ 7,236</b>	<b>\$ 9,254</b>	<b>\$ 1,636</b>	<b>\$ 4,113</b>
Selected States and CBSAs								
<b>CA Statewide</b>	<b>3,333</b>		<b>9,176</b>	<b>11,472</b>	<b>6,775</b>	<b>10,047</b>	<b>10,783</b>	<b>13</b>
Riverside-San Bernardino-Ontario, CA	329	29	7,873	10,676	5,490	7,791	8,439	7,580
Los Angeles-Long Beach-Santa Ana, CA	1,306	112	8,463	11,495	6,822	7,913	11,420	(1,584)
San Francisco-Oakland-Fremont, CA	298	30	13,091	13,827	11,993	13,308	22,538	3,263
Fresno, CA	80	8	6,610	9,991	3,768	7,353	2,737	814
<b>FL Statewide</b>	<b>2,510</b>		<b>7,280</b>	<b>8,840</b>	<b>4,902</b>	<b>9,900</b>	<b>(4,446)</b>	<b>7,819</b>
Tampa-St. Petersburg-Clearwater, FL	396	31	7,080	8,054	4,486	11,000	(14,070)	17,290
Orlando-Kissimmee, FL	283	20	7,756	9,124	4,806	9,981	1,162	6,564
Cape Coral-Fort Myers, FL	76	6	6,209	7,543	3,134	10,093	(3,210)	(4,472)
Gainesville, FL	64	4	11,620	12,944	8,284	14,420	3,419	9,082
<b>MA Statewide</b>	<b>845</b>		<b>9,674</b>	<b>10,126</b>	<b>7,487</b>	<b>10,378</b>	<b>4,894</b>	<b>12,903</b>
Boston-Cambridge-Quincy, MA-NH <sup>†</sup>	545	40	10,436	10,893	7,467	11,293	5,180	15,297
Providence-New Bedford-Fall River, RI-MA <sup>*</sup>	61	6	6,667	7,637	4,695	6,521	3,408	7,341
Springfield, MA	84	9	8,324	9,670	6,065	8,422	6,587	6,634
Worcester, MA	92	9	9,870	10,041	13,102	9,038	1,883	15,277
<b>NJ Statewide</b>	<b>1,113</b>		<b>7,754</b>	<b>10,437</b>	<b>5,426</b>	<b>6,947</b>	<b>2,403</b>	<b>10,030</b>
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD <sup>§</sup>	148	11	8,672	10,962	(728)	8,568	8,087	6,005
Trenton-Ewing, NJ	57	5	6,907	8,434	5,149	6,644	2,580	11,876
Atlantic City-Hammonton, NJ	37	3	9,061	13,143	837	9,865	(6,926)	22,557
<b>NV Statewide</b>	<b>275</b>		<b>6,069</b>	<b>10,344</b>	<b>6,078</b>	<b>5,017</b>	<b>(5,952)</b>	<b>11,861</b>
Las Vegas-Paradise, NV	207	12	5,448	10,979	6,531	3,506	(6,854)	16,460
Reno-Sparks, NV	50	5	7,852	9,252	4,763	10,236	(4,167)	5,284
Carson City, NV	12	2	9,310	8,759	2,740	12,327	513	11,777
<b>VA Statewide</b>	<b>838</b>		<b>7,586</b>	<b>8,132</b>	<b>5,050</b>	<b>9,010</b>	<b>(1,950)</b>	<b>7,458</b>
Washington-Arlington-Alexandria, DC-VA-MD-WV <sup>‡</sup>	216	13	7,428	8,591	3,850	7,857	1,134	8,889
Virginia Beach-Norfolk-Newport News, VA-NC <sup>‡</sup>	171	15	7,191	8,438	5,850	8,505	(7,659)	7,119
Richmond, VA	152	10	9,287	9,357	6,779	11,254	(10)	7,541
Roanoke, VA	52	3	8,495	8,144	4,642	11,754	830	10,973
<b>WI Statewide</b>	<b>640</b>		<b>9,183</b>	<b>9,118</b>	<b>3,846</b>	<b>11,788</b>	<b>1,055</b>	<b>10,386</b>
Minneapolis-St. Paul-Bloomington, MN-WI <sup>‡</sup>	6	4	5,418	7,058	3,203	5,655	(2,880)	(126)
Milwaukee-Waukesha-West Allis, WI	215	22	11,093	10,498	5,313	14,456	(206)	17,209
Madison, WI	75	7	12,093	12,562	5,455	13,800	340	11,199
Appleton, WI	19	4	7,457	8,755	2,064	8,213	1,552	2,089
<b>WV Statewide</b>	<b>279</b>		<b>6,855</b>	<b>7,366</b>	<b>5,108</b>	<b>8,581</b>	<b>(1,857)</b>	<b>7,351</b>
Charleston, WV	55	7	8,272	8,627	5,758	10,918	(1,746)	10,739
Huntington-Ashland, WV-KY-OH <sup>#</sup>	32	3	8,967	9,499	5,703	11,395	396	8,761
Morgantown, WV	32	3	11,833	12,618	11,910	12,620	2,170	10,646
<b>HCUP State A (CT)</b>			<b>9,226</b>	<b>11,568</b>	<b>5,202</b>	<b>9,209</b>	<b>2,846</b>	<b>5,418</b>
CBSA A-1 (Hartford-West Hartford-East Hartford, CT)	125	9	9,507	12,169	6,032	8,928	3,341	5,726
CBSA A-2 (New Haven-Milford, CT)	127	7	9,797	12,285	5,190	10,040	2,719	6,630
CBSA A-3 (Norwich-New London, CT)	26	2	7,498	8,464	3,287	9,393	3,631	3,882
<b>HCUP State B (NY)</b>			<b>10,194</b>	<b>12,636</b>	<b>10,949</b>	<b>8,637</b>	<b>4,456</b>	<b>(2,099)</b>
CBSA B-1 (New York-White Plains-Wayne, NY-NJ)	2,545	156	10,263	13,423	11,538	8,238	4,159	(4,879)
CBSA B-2 (Buffalo-Niagara Falls, NY)	131	15	8,241	10,012	8,224	6,702	778	7,644
CBSA B-3 (Albany-Schenectady-Troy, NY)	112	10	8,055	8,933	7,080	8,297	1,351	6,655
CBSA B-4 (Utica-Rome, NY)	39	6	6,335	7,908	5,110	5,036	3,304	4,590

Sources: Hospital financial data from 10 HCUP Partner states; Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Survey, State Inpatient Databases for 10 States.

<sup>‡</sup> Includes results from two additional unidentified HCUP Partner states.

<sup>\*</sup> Includes only the Massachusetts portion of the CBSA.

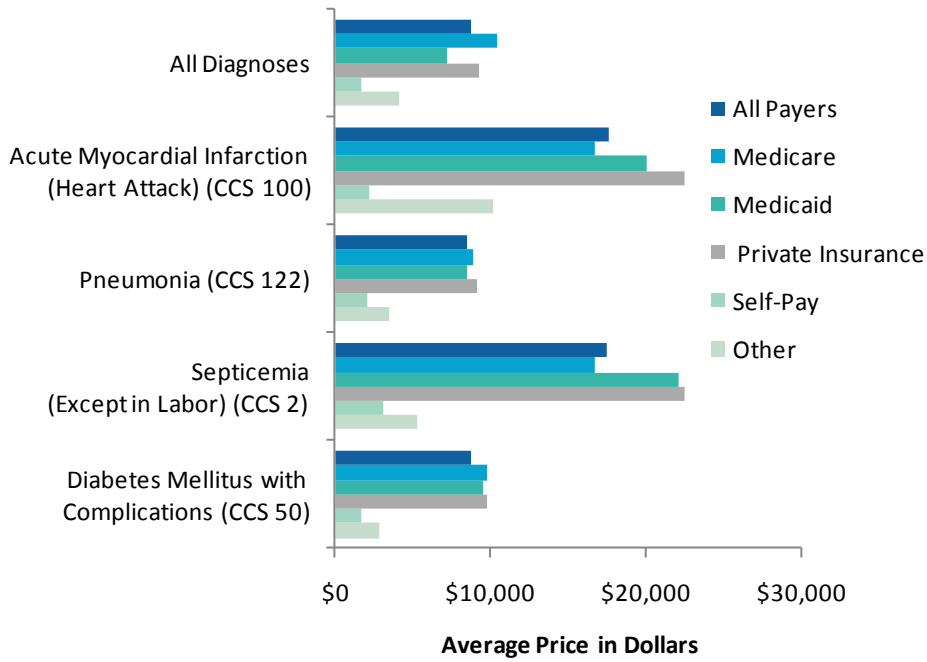
<sup>§</sup> Includes only the New Jersey portion of the CBSA.

<sup>†</sup> Includes only the Virginia portion of the CBSA.

<sup>‡</sup> Includes only the Wisconsin portion of the CBSA.

<sup>#</sup> Includes only the West Virginia portion of the CBSA.

**Figure 1. Average Price Paid for a Hospital Stay by Selected Condition and Payer in Ten HCUP States, 2006**



Sources: Hospital financial data from ten HCUP Partner states; Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Survey, State Inpatient Databases for ten States.