Commonwealth of Massachusetts

Center for Health Information and Analysis

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Health Care Provider Price Variation in the Massachusetts Commercial Market

Technical Appendix

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Center for Health Information and Analysis

Table A-1: CY 2011 Acute Hospital Healthcare System Affiliation

System	Acute Hospitals
Partners HealthCare (n=7)	Massachusetts General Hospital
	Brigham and Women's Hospital
	Newton-Wellesley Hospital
	North Shore Medical Center
	Brigham and Women's Faulkner Hospital
	Martha's Vineyard Hospital
	Nantucket Cottage Hospital
CareGroup (n=4)	Beth Israel Deaconess Hospital
	Mount Auburn Hospital
	New England Baptist Hospital
	Beth Israel Deaconess Medical Center - Needham
Steward Health Care (n=10)	Steward St. Elizabeth's Medical Center
	Steward Norwood Hospital
	Steward Good Samaritan Medical
	Steward Holy Family Hospital
	Steward St. Anne's Hospital
	Steward Quincy Medical Center
	Steward Carney Hospital
	Morton Hospital and Medical Center
	Merrimack Valley Hospital
	Nashoba Valley Medical Center
Baystate Health (n=3)	Baystate Medical Center
	Baystate Franklin Medical Center
	Baystate Mary Lane Hospital
Vanguard Health Systems (n=2)	St. Vincent Hospital
	MetroWest Medical Center
Cape Cod HealthCare (n=2)	Cape Cod Hospital
	Falmouth Hospital
UMass Memorial Health Care (n=5)	UMass Memorial Medical Center
	Health Alliance Hospital
	Marlborough Hospital
	Wing Memorial Hospital
	Clinton Hospital
Berkshire Health Systems (n=2)	Berkshire Medical Center
	Fairview Hospital

Table A-2: Proportion of Total Physician Group Payments Reported by Payers

Payer	% Reporting
Aetna	3%*
Blue Cross Blue Shield	86%
Fallon	50%*
Harvard Pilgrim	100%
Health New England	85%
Neighborhood Health	80%
Tufts	94%
UniCare	53%*
United	95%
Total	86%

*The Center requires commercial payers to submit relative price information for its top 30 physician groups based on the share of total payments within each payer's network. Certain payers also reported the information on the remaining physician groups' total payments in aggregate. The asterisked payers tended to contract with individual physicians or smaller/local practice groups instead of contracting with larger/parent physician groups, resulting in a higher proportion of total payments in their networks made to physician and physician groups that were not the top 30 physician groups in the payers' networks.

Relative Price Data and Methodology

The Center for Health Information and Analysis (Center) annually collects the relative price data from the ten largest payers in the Massachusetts commercial health insurance market as determined by the Center based on Massachusetts health care payments, and commercial payers that contract with MassHealth (the Commonwealth's Medicaid program), the Commonwealth Health Insurance Connector Authority, the Group Insurance Commission, or Medicare.

Table A-3: List of Commercial Payers Reporting Relative Price Data

Payer	Insurance Category
Aetna Health Insurance Company (Aetna)	Commercial (Self and Fully Insured) Medicare Advantage
Blue Cross Blue Shield of Massachusetts (BCBS)	Commercial (Self and Fully Insured) Medicare Advantage
Fallon Health and Life Assurance Company (Fallon)	Commercial (Self and Fully Insured) Medicare Advantage Medicaid Managed Care Organization (MCO) Commonwealth Care
Harvard Pilgrim Health Care (HPHC)	Commercial (Self and Fully Insured)
Health New England (HNE)	Commercial (Self and Fully Insured) Medicare Advantage Medicaid Managed Care Organization (MCO)
Neighborhood Health Plan (NHP)	Commercial (Self and Fully Insured) Medicaid Managed Care Organization (MCO) Commonwealth Care
Tufts Health Plan (Tufts)	Commercial (Self and Fully Insured) Medicare Advantage
UniCare Life and Health Insurance Company (UniCare)	Commercial (Self and Fully Insured)
United Healthcare Insurance Company (United)	Commercial (Self and Fully Insured) Medicare Advantage
BMC HealthNet (BMC)	Medicaid Managed Care Organization (MCO) Commonwealth Care
Network Health Medicaid MCO (Network Health)	Medicaid Managed Care Organization (MCO) Commonwealth Care

Note: The relative price data for hospital inpatient and outpatient services, physician groups, and other providers reported by Connecticut General Life Insurance Company (CIGA) and Celticare Health Plan (Celticare) was not included in this report due to the concern of data quality.

Hospital Inpatient:

Hospital inpatient relative price data is reported separately for four types of hospitals: acute hospitals, chronic hospitals, psychiatric hospitals (including substance abuse hospitals and behavioral health hospitals), and rehabilitation hospitals. Hospital inpatient relative price data was provided for calendar year 2011. For each hospital, the reported data includes number of discharges, case mix score (which represents the relative health of the population that was treated), hospital base rate, total claim payments and total non-claim payments. For each applicable hospital, an adjusted base rate for each product type (i.e. product-specific adjusted base rate) was calculated for each insurance category by summing the claim and non-claim payments, and dividing the total payments by the product of the number of discharges and the case mix score. For those payers that reported hospital base rates on a per diem basis, the adjusted base rate was calculated by summing the claim and non-claim payments, multiplying the total payments by the hospital base rate and then dividing by the claim payments. The payers' network average product weights (i.e. the proportion of inpatient revenue for each product) for the applicable hospital type and insurance category were then applied to the product-specific adjusted base rates to develop a product-blended adjusted base rate for each hospital. The product-specific adjusted base rate of each hospital was also divided by the simple average of all the payers' reported hospitals' product-specific adjusted base rates to determine the product-specific relative price of each hospital. The product-blended adjusted base rate of each hospital was divided by the simple average of all of the payers' reported hospitals' product-blended adjusted base rates to determine the product-blended relative price of each hospital. Only the product-specific relative prices of those hospitals that had annual revenue in a product exceeding $10,000 are reported.

Several adjustments were made to the filed data. Most of the adjustments were made after consultation with payers to correct minor errors in the data that they submitted. When the calculated adjusted base rate exceeded $100,000, the adjusted base rate was truncated at $100,000 to avoid outlier payments skewing the results. Blue Cross Blue Shield of Massachusetts and Tufts Health Plan reported psychiatric hospital inpatient data in the format used for hospital outpatient data due to their contracting structures. Therefore, the analysis was conducted in a manner similar to the outpatient analysis described in the next section.

Hospital Outpatient:

Outpatient relative price data was reported for the same four hospital types as were reported for hospital inpatient: acute hospitals, chronic hospitals, psychiatric hospitals (including substance abuse hospitals and behavioral health hospitals), and rehabilitation hospitals. Hospital outpatient relative price data was provided for calendar year 2011. Relative price metrics were calculated by the payers and reported separately by service category where the service categories were defined by the payers to most closely match how prices were negotiated with the hospitals for outpatient services. Thus, the classifications of service categories may vary by payers. Payers reported hospital-specific service category weights (i.e. the proportion of outpatient revenue for each service category) by insurance category and product type. Payers also reported both claim and non-claim payments made to the hospitals for outpatient services. These payments were used to develop network average service category weights and network average product type weights for each insurance category within a payer's network.

Hospital-specific service multipliers are the negotiated service-specific mark-up from the standard fee schedule, reported for each hospital, by insurance category and product type. If a hospital was not paid on a fee-for-service basis (e.g. percent of charge basis), the multiplier used was the ratio of actual paid claims for a given service line to the network average payment for that service line.

Using the hospital-specific service multiplier for each service category within a payer's network, the Center calculated a base service and product-adjusted multiplier for each hospital, which was adjusted for network average service mix and network average product mix within each insurance category. The Center also calculated base service product-specific multipliers for each hospital, which were adjusted for network average product-specific service mix within each insurance category. Product-specific and product-adjusted non-claims multipliers were also calculated for each hospital. The base service product-specific adjusted multiplier was then summed with the product-specific non-claims multiplier to produce an adjusted product-specific rate for each product type of each hospital. The hospital's adjusted product-specific blended rate was then divided by the simple average of the adjusted product-specific rates of all reported hospitals to arrive at the hospital's product-specific relative price for each product. Similarly, the base service and product-adjusted multiplier was summed with the product-adjusted non-claims multiplier to produce an adjusted product-blended rate for each hospital. The hospital's adjusted product-blended rate was then divided by the simple average of the adjusted product-blended rates of all reported hospitals to arrive at that hospital's product-blended relative price.

Several adjustments were made to the data to correct minor errors in the values submitted by the payers. In addition, some calculations were revised as needed for payers that reported relative price using two types of calculation methods. The two possible calculation methods were calculated payment-derived and negotiated. When a payer used both methods, calculations were included to appropriately combine the results. A $5,000 payer revenue threshold was used for reporting hospital outpatient product-specific relative prices for all insurance types.

Hospital Inpatient and Outpatient Blend:

Blended hospital inpatient and outpatient results are reported only for those hospitals with payments that exceeded both the inpatient and outpatient reporting thresholds as specified above. The inpatient data are still truncated as specified above. The inpatient and outpatient relative price results were blended using network average inpatient and outpatient weights. The inpatient weight was determined by the percent of the payer's revenue attributed to hospital inpatient services. Likewise, the outpatient weight was determined by the percent of the payer's revenue attributed to hospital outpatient services. Adjustments were made to the revenue of each hospital to reduce the impact of price variation in determining the revenue for blending.

Physician Group:

Physician group data was provided for the parent physician groups that were the largest based on revenue volume within a payer's network for calendar year 2010. Once the physician groups were identified, the data for the physician groups was provided in a manner analogous to the hospital outpatient data. The method for calculating relative prices for physician groups was similar to the method used for hospital outpatient services.

For all insurance types, only those physician groups whose annual product-specific revenue from a payer exceeding a $1,000 payer revenue threshold amount were included in the product-specific analysis.

Other Provider:

Other provider data was provided for calendar year 2011. The services provided within each provider type may have differed substantially between providers. This may have limited comparisons of providers within the same provider type. Other providers were reported in the following categories:

Ambulatory Surgical Centers

Community Health Centers

Community Mental Health Centers

Freestanding Clinical Laboratories

Freestanding Diagnostic Imaging Centers

Home Health Agencies

Skilled Nursing Facilities

The data and analysis were similar to those described for hospital outpatient and physician groups. Adjustments were made to the data to correct minor reporting errors by the payers.

For all insurance types, only those providers that had annual product-specific revenue from a payer exceeding a $1,000 threshold amount were included in the analysis.

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