Massachusetts Health Care Cost Trends Final Report

Appendix B: Report Issued by the Office of the Attorney General Martha Coakley

Report for Annual Hearing with Appendices on Examination of Health Care Cost Trends and Cost Drivers Pursuant to M.G.L. c. 118G, § 6½(b)

April 2010
(Preliminary report issued March 16, 2010)

Deval L. Patrick, Governor
Commonwealth of Massachusetts

Timothy P. Murray
Lieutenant Governor

JudyAnn Bigby, Secretary
Executive Office of Health and Human Services

David Morales, Commissioner
Division of Health Care Finance and Policy

This page is intentionally blank.

Examination of Health Care Cost Trends and Cost Drivers

Pursuant to G.L. c. 118G, § 6½(b)

Report for Annual Public Hearing

March 16, 2010

OFFICE OF ATTORNEY GENERAL MARTHA COAKLEY
ONE ASHBURTON PLACE o BOSTON, MA 02108

OFFICE OF ATTORNEY GENERAL MARTHA COAKLEY

Examination of Health Care Cost Trends and Cost Drivers
Pursuant to G.L. c. 118G, § 6½(b)

REPORT FOR ANNUAL PUBLIC HEARING UNDER G.L. c. 118G, § 6½

March 16, 2010

I. EXECUTIVE SUMMARY

The Office of the Attorney General (AGO) is pleased to submit this report on its examination of health care cost trends and cost drivers in the Massachusetts health care market. In 2008, the Massachusetts Legislature passed *An Act to Promote Cost Containment, Transparency and Efficiency in the Delivery of Quality Health Care*, which authorized the Attorney General to review and analyze the reasons why health care costs continue to increase faster than general inflation. Rising health care costs are a serious concern, and the AGO worked diligently to meet its statutory charge to identify, understand, and explain the reasons behind escalation of costs. This report reflects that work.

This report is designed to advance the analysis reflected in the AGO's Preliminary Report on Health Care Cost Trends and Cost Drivers, issued on January 29, 2010. Since issuing that report, the AGO has continued to refine its analysis and discuss its preliminary findings and conclusions with health providers, insurers, and other stakeholders. Those discussions have confirmed our initial analysis. This report also discloses limited nonpublic information received by the AGO in the course of its examination, as authorized by Chapter 118G. We determined that transparency of the health care market information contained in this report was vital to providing policymakers, stakeholders, and the public with the information necessary to develop successful cost containment initiatives.[1] We are pleased that so many health insurers and providers also appreciate the value of market transparency, and have submitted detailed information into the record of this Annual Public Hearing. Together, this information and the work of the AGO and Division of Health Care Finance and Policy have resulted in a powerful record.

Indeed, the wealth of information submitted in this Annual Public Hearing concerning how health care is paid for is unprecedented in Massachusetts, and unique in the nation. It likewise presents a unique opportunity. Full transparency in how our health care market works will enable the government and all stakeholders to chart a course toward health care that is both high quality and affordable.

[1] Pursuant to the requirements of G.L. c. 118G, § 6½(b), the Attorney General has determined that disclosure of nonpublic information contained in this report will further the health care cost containment goals of the Commonwealth and should be made in the public interest, and is not outweighed by any privacy, trade secret, or anti-competitive considerations.

This Executive Summary explains how the AGO approached its examination of health cost drivers, highlights the AGO's principal findings that resulted from its review and analysis, and identifies the implications of those findings for policy efforts aimed at restraining costs while maintaining access to quality health services.

The Challenge of Rising Health Care Costs

Whether measured by what employers and consumers pay in health insurance premiums, what insurers pay to doctors and hospitals for services, or society's overall health care expenditures, the costs of health care have risen significantly. These cost increases consistently outpace growth in the economy, gross domestic production (GDP), and wages. Such increases, if unchecked, threaten the financial ability of employers and individuals to pay for health insurance, which could ultimately pose a risk to the Commonwealth's historic gains in health care access.

Massachusetts is a national leader in health care. In the Commonwealth, we benefit from highly ranked health plans, physicians, and hospitals, and we have enacted market reforms that protect access to health care and are a national model. As a result of Chapter 58 of the Acts of 2006, *An Act Providing Access to Affordable, Quality, Accountable Health Care*, Massachusetts has expanded coverage to 97% of the population through the shared responsibility of individuals and employers. As we acknowledge the strengths of the Massachusetts health care system, however, we cannot afford to ignore the risks posed by unsustainable cost escalation.

Understanding How Health Care "Prices" Are Set

The Legislature instructed the AGO to examine cost drivers in the Massachusetts health care market. As a starting point, it was essential to understand how prices are established for health services. In Massachusetts, where insurance coverage is mandated, the cost of health care to individuals (or their employers who provide or subsidize health insurance) is reflected in the cost of health insurance premiums paid to a health insurer. These premium costs have risen significantly, mainly because of increases in prices insurers have negotiated in numerous contracts with health care providers for services.[2]

Because prices result from many separate contract negotiations, the prices paid by insurers to providers vary. Historically, there has been little or no transparency with respect to prices paid by insurers to providers. Because prices are established by private contract, providers do not necessarily know how their prices compare to other providers, and insurers do not necessarily know how the prices they pay compare to other insurers. Perhaps more important to the market as a whole, the businesses and individuals who pay health insurance premiums have little or no information on the price paid to a provider for a given service, how those prices are

[2] This describes the way prices are established in the private, or "commercial," market for insurance. This report, and the AGO's examination, concern only that commercial market, and do not concern prices paid by government payers, namely Medicare and Medicaid. The government payer market undeniably is an important part of the Massachusetts health care market. However, the central question examined in this report – identifying and seeking to explain wide price variations – is not posed with respect to government paid prices. Those government prices are established by regulators and, though interested persons debate the adequacy of those prices, the process for establishing government prices is public and transparent.

determined, how and why prices may vary among providers, or the effect of increased prices on their premium rates.

This report begins to bring transparency to the prices paid for health care in order to provide an informational baseline for the discussion of how to contain health care costs. We first examined how negotiations between insurers and providers have resulted in disparate prices for health care services, and then we examined the basis for disparate prices paid for the same type of services.

On the first point, the prices paid to providers are the result of many discrete negotiations. Each insurer negotiates a "price" with each hospital and large physician group in its network. The AGO reviewed scores of insurer-provider contracts and financial data to learn the prices paid and the bundle of contract rights that attach to those payments. Among other findings, this report describes the wide variation in prices paid by insurers to providers for the same or similar services.

The next, more challenging task was to learn what drove those negotiations, and what ultimately explained the variation in prices paid. This analysis was both qualitative and quantitative: we spoke to the parties who negotiated the contracts, and we analyzed data that might help explain disparate prices. Our overarching inquiry was to determine whether the differences in prices paid could be explained by a difference in measurable "value." For instance, in a market that works well, one could expect that a higher price could be explained by some characteristic such as better quality, increased complexity of services provided, or some other rational explanation justifying a higher price. In this report, we refer to a "value-based" system as one where differences in price paid can be explained by something that consumers value (such as superior quality or high complexity), or perhaps that society values (such as serving a needy population or training new doctors). Especially in the health care market, where rising costs pose a risk to the Commonwealth's mission of universal access, it is both reasonable and important to strive for a value-based system.

Summary of Findings

Our examination identified several factors that we believe should be considered when analyzing cost drivers and pursuing cost containment. We found:

A. Prices paid by health insurers to hospitals and physician groups vary significantly within the same geographic area and amongst providers offering similar levels of service.

B. Price variations <u>are not correlated</u> to (1) quality of care, (2) the sickness of the population served or complexity of the services provided, (3) the extent to which a provider cares for a large portion of patients on Medicare or Medicaid, or (4) whether a provider is an academic teaching or research facility. Moreover, (5) price variations are not adequately explained by differences in hospital costs of delivering similar services at similar facilities.

C. Price variations are correlated to market leverage as measured by the relative market position of the hospital or provider group compared with other hospitals or provider groups within a geographic region or within a group of academic medical centers.

D. Variation in total medical expenses on a per member per month basis is not correlated to the methodology used to pay for health care, with total medical expenses sometimes higher for risk-sharing providers than for providers paid on a fee-for-service basis.

E. Price increases, not increases in utilization, caused most of the increases in health care costs during the past few years in Massachusetts.

F. Higher priced hospitals are gaining market share at the expense of lower priced hospitals, which are losing volume.

G. The commercial health care marketplace has been distorted by contracting practices that reinforce and perpetuate disparities in pricing.

Each of these findings is detailed in the report.

Implications of These Findings for Cost Containment

These findings have meaningful implications for efforts to control health care costs. One threshold question is whether we can expect the existing health care market in Massachusetts to successfully contain health care costs. To date, the answer is an unequivocal "no." The market players – whether insurers, providers, or the businesses and consumers who pay for health insurance – have not effectively controlled costs in recent years. If we accept that our health care system can be improved by better aligning payment incentives and controlling cost growth, then we must begin to shift how we purchase health care to align payments with "value," measured by those factors the health care market should justly reward, such as better quality.

Until now, only insurers have been privy to information on price differences and total medical expenses across their entire network. Insurers are in the best position to align price with quality, complexity, or other rational values.

Health care providers have much less information on a network-wide basis and naturally focus on their own delivery of health care services. Although hospitals in Massachusetts are predominantly not-for-profit, because they are mission-driven to provide high quality health care, they seek to increase their volume and prices to increase their resources to provide those services.

Those who purchase health insurance – the businesses and individuals subject to ever-increasing premiums – should care deeply about controlling costs. But the current market is not well aligned to promote cost containment. Insurance buyers have little information on prices paid and the reasons behind price disparities; nor do consumers generally have sufficient information, insurance product options, or incentives to make value-based health care decisions. The increased transparency about pricing and health care cost drivers reflected in this report is an

important starting point to empower consumers in cost containment efforts. Such informational tools can only make a difference, however, if health insurance buyers seriously engage in the process of cost containment. We as health care consumers cannot demand that costs stabilize without recognizing our role in the health care market. It is essential that businesses and consumers be engaged in efforts to promote a value-based health care market. Without the participation of all market players, the goal of cost containment is unlikely to be attained.

Moving Forward on Cost Containment

The market dynamics and distortions reflected in this report should be considered as the Commonwealth and market participants pursue strategies to contain health care costs. Based on our review and analysis, we recommend:

1. Increasing transparency and standardization in both health care payment and health care quality to promote market effectiveness and value-based purchasing by employers and consumers, including:

    - Tracking and publishing total medical expenses (TME) for all providers;
    - Promoting uniform quality measurement and reporting; and
    - Promoting standardization of units of payment and other administrative processes;

2. Consideration of steps to improve market function, including:

    - Adopting payment reform measures that account for and do not exacerbate existing market dynamics and distortions;
    - Developing legislative or regulatory proposals to mitigate health care market dysfunction and price disparities;

3. Engaging all participants in the development of a value-based health care market by promoting creation of insurance products and decision-making tools that allow and encourage employers and consumers to make prudent health care decisions;

4. Prompt consideration of legislative or administrative action to discourage or prohibit insurer-provider contract provisions that perpetuate market disparities and inhibit product innovation.

The Office of the Attorney General looks forward to collaborating with the Legislature, policymakers, insurers, hospitals, all other health care providers, businesses, municipalities, and consumers in promoting a value-based health care market that controls future health care cost growth while maintaining quality and access. We will strive to illuminate facts about the Massachusetts health care market that should be considered as those efforts proceed.

II. OFFICE OF THE ATTORNEY GENERAL'S REVIEW UNDER § 6½(b)

A. Statutory Authority

The Legislature, through Section 24 of Chapter 305 of the Acts of 2008, *An Act to Promote Cost Containment, Transparency and Efficiency in the Delivery of Quality Health Care*, directed the Division of Health Care Finance and Policy (DHCFP) to hold annual public hearings "concerning health care provider and private and public health care payer costs and cost trends, with particular attention to factors that contribute to cost growth within the commonwealth's health care system and to the relationship between provider costs and payer premium rates." The statute authorizes the Attorney General to intervene in these hearings and, with specific authority to compel the production of information from payers and providers, to examine the factors that contribute to health care cost growth and the relationship between provider costs and payer premium rates.[3]

B. Goals of the AGO Review

To fulfill her responsibility under the statute, the Attorney General directed her Health Care Division to conduct a thorough review of how health care is paid for in the Commonwealth, focusing in particular on commercial health plan payments to health care providers. Through our review, we sought to understand how commercial health insurance companies (referred to as "insurers," "health plans," or "payers") and health care providers (e.g., hospitals, physician groups) contract, how insurers measure and evaluate the quality of providers, and how insurers and providers negotiate payment rates. In particular, we sought to determine whether the contracting process ultimately supports or impedes the delivery of quality health care at an affordable price.

C. Information Gathered and Reviewed

Beginning in April of 2009, the AGO issued civil investigative demands (CIDs) pursuant to § 6½(b) to five major Massachusetts health plans as well as to fifteen providers representing a geographical cross-section of academic medical centers, community and disproportionate share hospitals,[4] physician groups, and an ancillary service provider. The information we gathered

---

[3] G.L. c. 118G, §6½(b) provides:

> The attorney general may review and analyze any information submitted to the division under section 6 and 6A. The attorney general may require that any provider or payer produce documents and testimony under oath related to health care costs and cost trends or documents that the attorney general deems necessary to evaluate factors that contribute to cost growth within the commonwealth's health care system and to the relationship between provider costs and payer premium rates. The attorney general shall keep confidential all nonpublic information and documents obtained under this section and shall not disclose such information or documents to any person without the consent of the provider or payer that produced the information or documents except in a public hearing under this section, a rate hearing before the division of insurance, or in a case brought by the attorney general, if the attorney general believes that such disclosure will promote the health care cost containment goals of the commonwealth and that such disclosure should be made in the public interest after taking into account any privacy, trade secret or anti-competitive considerations. Such confidential information and documents shall not be public records and shall be exempt from disclosure under section 10 of chapter 66.

[4] The Division of Health Care Finance and Policy (DHCFP) defines "disproportionate share hospitals" (DSHs) as those hospitals with a large percentage (63% or more) of patient charges attributed to Medicare, Medicaid, other

pursuant to the CIDs includes contract documents, financial and operational strategy documents, as well as detailed cost and quality data discussed in this report.

In addition, we conducted more than three dozen interviews and meetings with providers, insurers, health care experts, consumer advocates, and other key stakeholders. To assist in its review, the AGO engaged consultants with extensive experience in the Massachusetts health care market, including an actuary and experts in the areas of health care quality measurement and evaluation, and insurer-provider contracting.

We focused on documents and information reflecting how Massachusetts health plans and providers assess cost and quality and, in particular, how they compare payment rates and evaluate quality performance. Our goal was not to independently assess whether a provider is "good quality" or "poor quality" (and we make no such judgments in this report), but to determine how the market participants themselves approach these questions. We sought to assess the current functioning of the health care marketplace and, specifically, whether insurers and providers are engaged in "value-based" contract negotiations that pay providers based on the quality and complexity of the services being delivered.

1. Health Care Pricing and Cost Data

We obtained and analyzed detailed information from health plans and providers regarding: (a) price – the rate at which health plans pay providers for each health care service, (b) total medical expenses – the per member per month medical spending attributed to each member's primary care provider or provider group, and (c) unit cost – the cost to a health care provider to deliver particular health care services.

a. Price

Price is the contractually negotiated amount (or reimbursement rate) that an insurer agrees to pay a particular hospital or health care provider for health care services. This is the "price tag" that a given insurer has agreed it will pay each time one of its members incurs a covered expense.

We obtained detailed information from the major health plans on comparative pricing for the Massachusetts hospitals and affiliated physician groups in each plan's network. While the comparison of prices for specific services or procedures may be useful for consumers,[5] analysis of the entire payment rate structure more accurately reflects the way health plans and providers negotiate and set prices.

Typically, major health plans and hospitals negotiate prices for inpatient health care services using a base case rate. The base case rate represents a severity-neutral base price that is then adjusted by a set of standard "weights" that reflect the complexity of each case and may be

---

government payers, and free care. DHCFP defines "teaching hospitals" according to the Medicare Payment Advisory Commission's (MedPAC) definition of a major teaching hospital: At least 25 fulltime equivalent medical school residents per one hundred inpatient beds.

[5] See the Health Care Quality and Cost Council's website: http://www.mass.gov/myhealthcareoptions.

further modified if the case becomes atypical or an "outlier." Additional prices are negotiated for a limited set of other inpatient services such as very high-cost or experimental procedures. For hospital outpatient services, health plans have established standard fee schedules (e.g., standard fees are set for radiology, laboratory work, observation, behavioral health). The plans and hospitals negotiate a specific multiplier to each of these standard fees; for example, a provider with a 1.2 multiplier for radiology services would be paid 120% of the standard fee schedule rate for covered radiology services. Similarly, physicians and plans typically negotiate a multiplier to be applied to each plan's standard fee schedule for professional services.[6]

In response to our CIDs, health plans provided detailed information regarding the variation in prices in their networks. Two major health plans provided information on the variation in payments made to each hospital and physician group in their network, as compared to the network-wide average, with no additional calculation required on our part. These plans calculated a "payment relativity factor" taking into account volume, product mix, service mix, and other factors particular to a hospital or physician group's payment history. Both plans adjusted their hospital inpatient payments to account for differences in the sickness of the patients served at that hospital and the complexity of the services provided. The information provided by these two health plans allowed us to measure the variation in hospital and physician payments in each health plan's network.

Another major health plan provided us with detailed information on hospital inpatient and outpatient prices, rather than information on relative payments. Unlike payment information, price information does not reflect volume, product mix, service mix, or other factors particular to a provider's payment history. With this price information, we were able to calculate the relative price paid to each hospital for the same basket of services by weighting each hospital's inpatient and outpatient prices by the health plan's network-wide average mix of inpatient and outpatient services. Since this approach controls for differentiating factors such as volume, product mix, and service mix, we were able to compare the "pure price" that insurers negotiate with different hospitals for all inpatient and outpatient services. This health plan also provided us with detailed information on relative prices for all primary and multispecialty care physician groups in its Massachusetts network, which allowed us to measure the variation in prices that this plan has negotiated with the physicians in its network.

b. Total Medical Expenses

In addition to price and payment information, health plans track the total medical expenses (TME) incurred for each health plan member back to that member's primary care provider or provider group. TME is expressed as a "per member per month" dollar figure based on allowed claims. TME accounts for *all* of the medical expenses associated with a member regardless of where those expenses are incurred (i.e., it includes physician visits as well as all hospital, laboratory, imaging, and other services, wherever those services occur). As such, TME reflects both the volume of services used by each member (utilization), as well as the price paid for each service (unit price).

---

[6] Our analysis accounts for variations in units of payment, such as payments based on per diems or a percent of charges, where possible based on data received.

Two health plans provided us with data comparing the TME of different provider groups in their respective networks based on claims data for more than one million Massachusetts members.[7] As is industry practice, the health plans adjusted their TME data with standardized health status scores to account for the demographics and sickness of the populations cared for by each provider group. This enables an "apples-to-apples" comparison of relative spending per patient, and ensures that groups caring for a sicker population will not inaccurately appear as higher spending solely for that reason.

c. Unit Cost

In addition to price, payment, and total medical expense information, we obtained detailed information from a number of hospitals regarding their internal costs for inpatient services as tracked through their own cost-accounting systems. Hospitals typically track their inpatient costs by 500 or more diagnostic related groups (DRGs), and break out the costs associated with each admission or discharge by the direct costs (such as the labor, equipment, and materials used directly in the patient's medical care), and indirect costs (such as any teaching that the hospital engages in as part of its mission, or the salaries of its management staff that are not attributable to any one admission or discharge). We also obtained some providers' internal analyses that compare certain hospital costs on a case mix adjusted discharge basis, and examined hospital unit cost information collected by DHCFP that is publicly available on the Executive Office of Health and Human Services' website.[8]

2. Quality Data

We reviewed numerous quality measures that assess the performance of hospitals and physician groups. First, we obtained data collected by health plans using their own aggregate measures of quality for both physicians and hospitals. While we found that each health plan takes a unique approach to evaluating provider quality, the major plans generally select quality measures from national government and non-profit organizations that are well-vetted and widely accepted, including: Centers for Medicare and Medicaid Services (CMS); Agency for Healthcare Research & Quality (AHRQ); National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS); Massachusetts Health Quality Partners (MHQP); and the Leapfrog Group. Second, we examined publicly reported quality measures and results for Massachusetts hospitals and physicians, including Massachusetts Data Analysis Center (Mass-DAC) data and CMS measures of patient experience and hospital performance.

We have learned that different health plans and providers view different quality measures more or less favorably for a variety of reasons. We do not reach any conclusions regarding the

---

[7] While TME can only be calculated for HMO and point of service (POS) members, whose expenses can be attributed to a particular primary care provider, the large numbers of patients insured under HMO and POS products in Massachusetts means that TME is a useful metric for comparing the varying levels of expenses incurred by different provider groups per patient.

[8] See HSD10, available at http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Researcher&L2=Physical+Health+and+Treatment&L3=Health+Care+Delivery+System&L4=DHCFP+Data+Resources&L5=Hospital+Summary+Utilization+Data&sid=Eeohhs2&b=terminalcontent&f=dhcfp_researcher_hsudf_hsudf_08&csid=Eeohhs2.

accuracy, statistical significance, or appropriateness of the quality measures we reviewed. Rather, our focus was to identify the quality measures that health plans use and to then determine whether those measures influence contract negotiations such that prices paid to health care providers correlate positively with quality as measured by those health plans. In other words, we sought to gauge whether health plans paid more to providers who provide higher quality care, as measured by the health plans themselves.

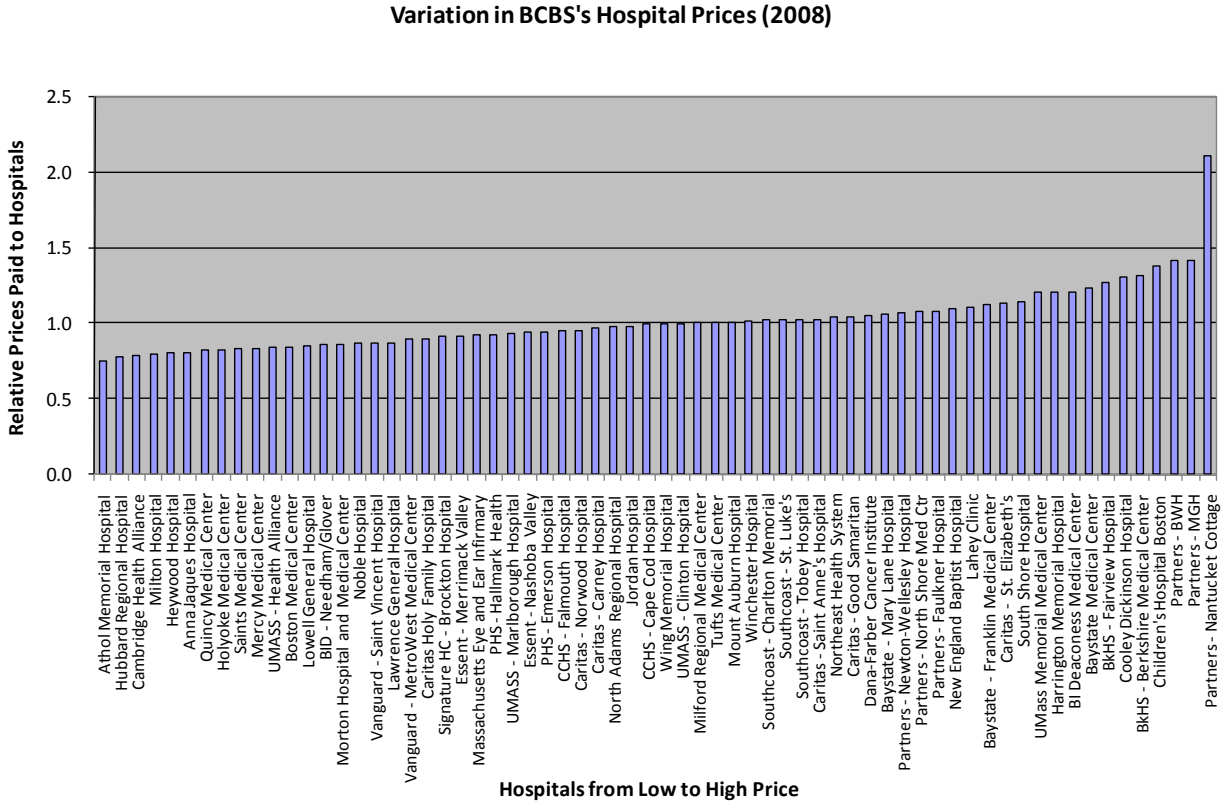
III. FINDINGS

A. Prices paid by health insurance companies to hospitals and physician groups vary significantly within the same geographic area and amongst providers offering similar levels of service.

Health insurers in Massachusetts pay health care providers at significantly different levels. As shown below, the difference in prices paid to the lowest paid provider versus the highest paid provider can exceed 100% (i.e., the highest paid provider can be paid more than twice the rate of the lowest paid provider). We found wide disparities in both prices and payments.

1. Variation in Hospital Prices

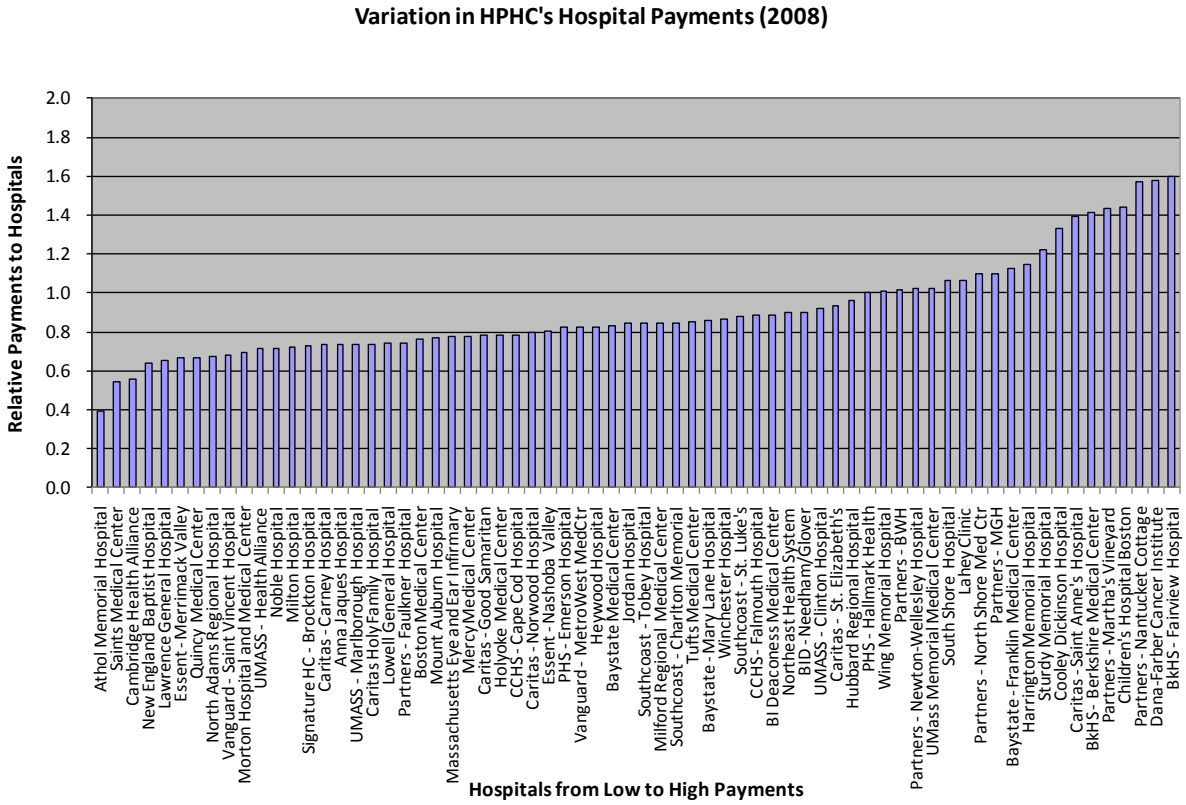
The following graph shows the variation in prices paid by one major insurer to Massachusetts hospitals for the same market basket of services.



NOTE: Payments made to hospitals on a discount-off-of-charges basis are not reflected in this graph.

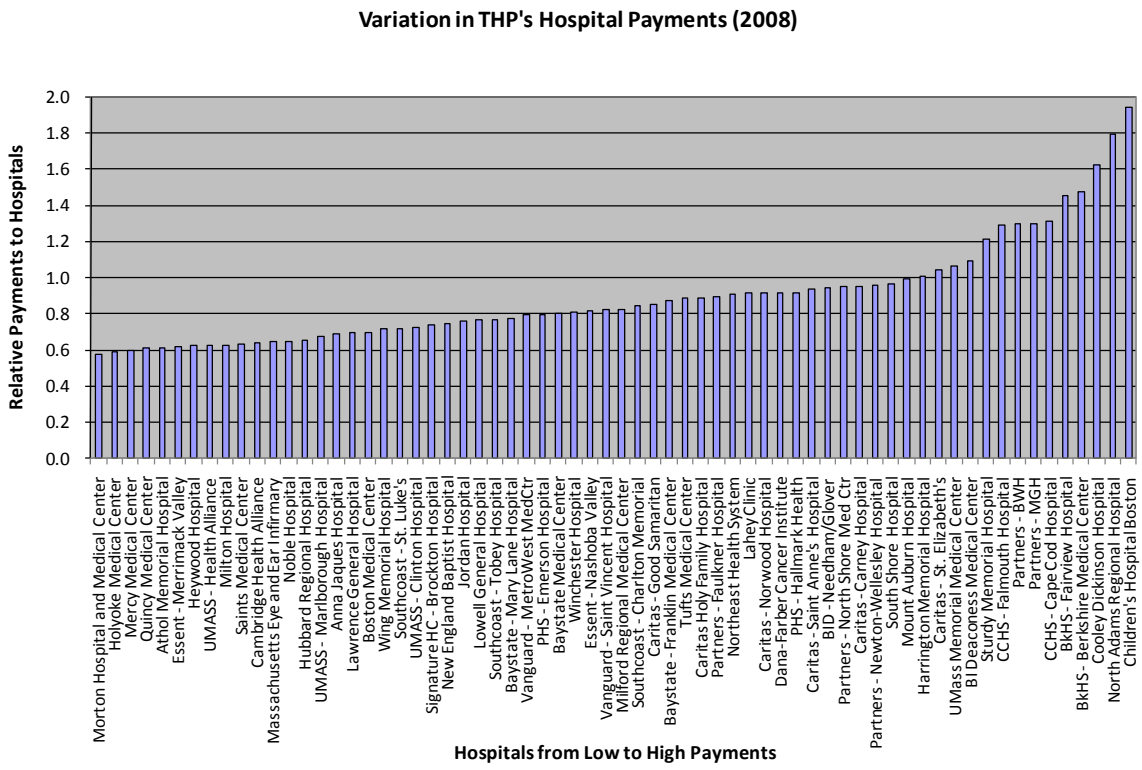
There is roughly a 90% difference in the price this insurer pays to the lowest paid hospital in its network and the price it pays to the *second* highest paid hospital (relative prices of about 0.75 v. 1.4).[9]

The next two graphs show the variation in payments made by two major insurers to hospitals in Massachusetts, taking into account volume, product mix, service mix, and other factors particular to each hospital's payment history.



The difference in payments made to the lowest paid versus highest paid hospital in this insurer's network exceeds 300% (relative payments ranging from just under 0.4 to 1.6).

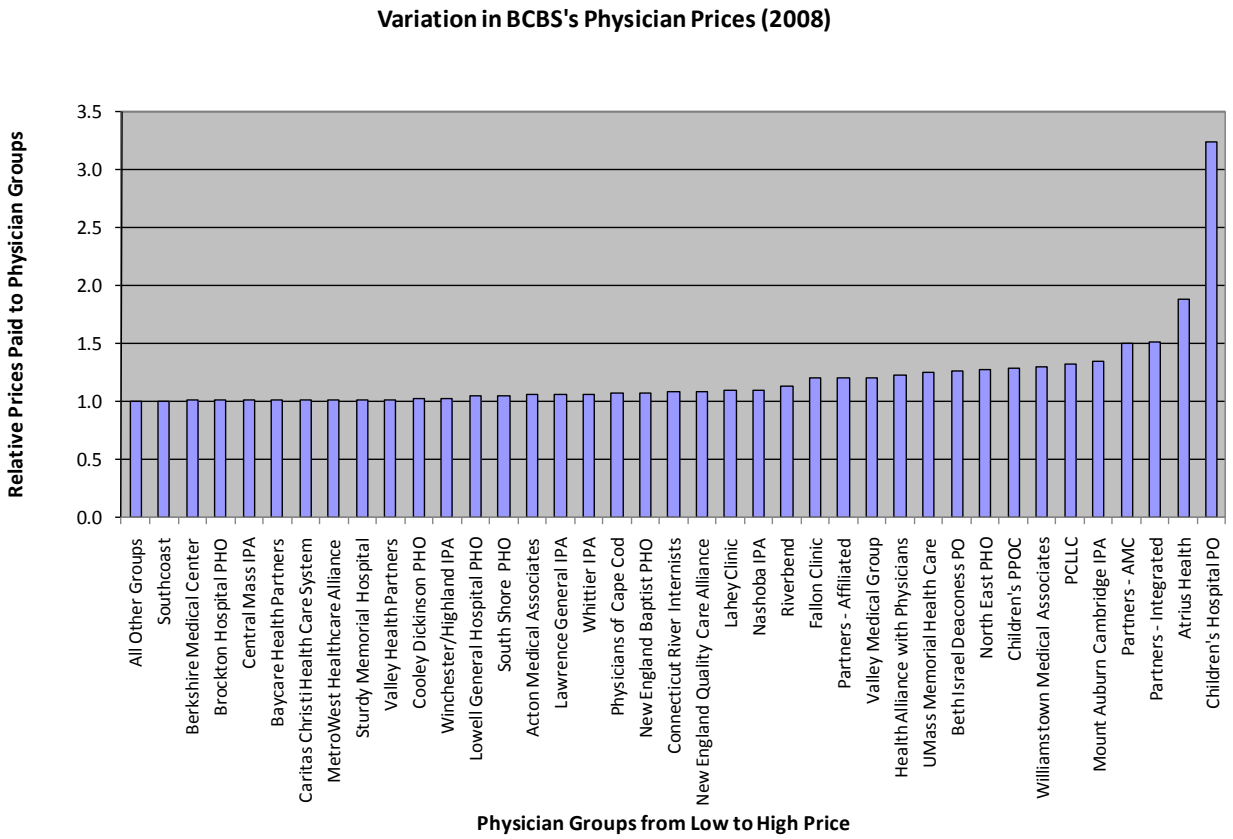
[9] The price differential is about 180% between the lowest and very highest paid hospital, which is a community hospital with negotiated prices that appear to be significantly higher than all other hospitals.



The difference in payments made to the lowest paid versus highest paid hospital in this insurer's network is about 240% (relative payments ranging from just under 0.6 to almost 2.0).

2. Variation in Physician Prices

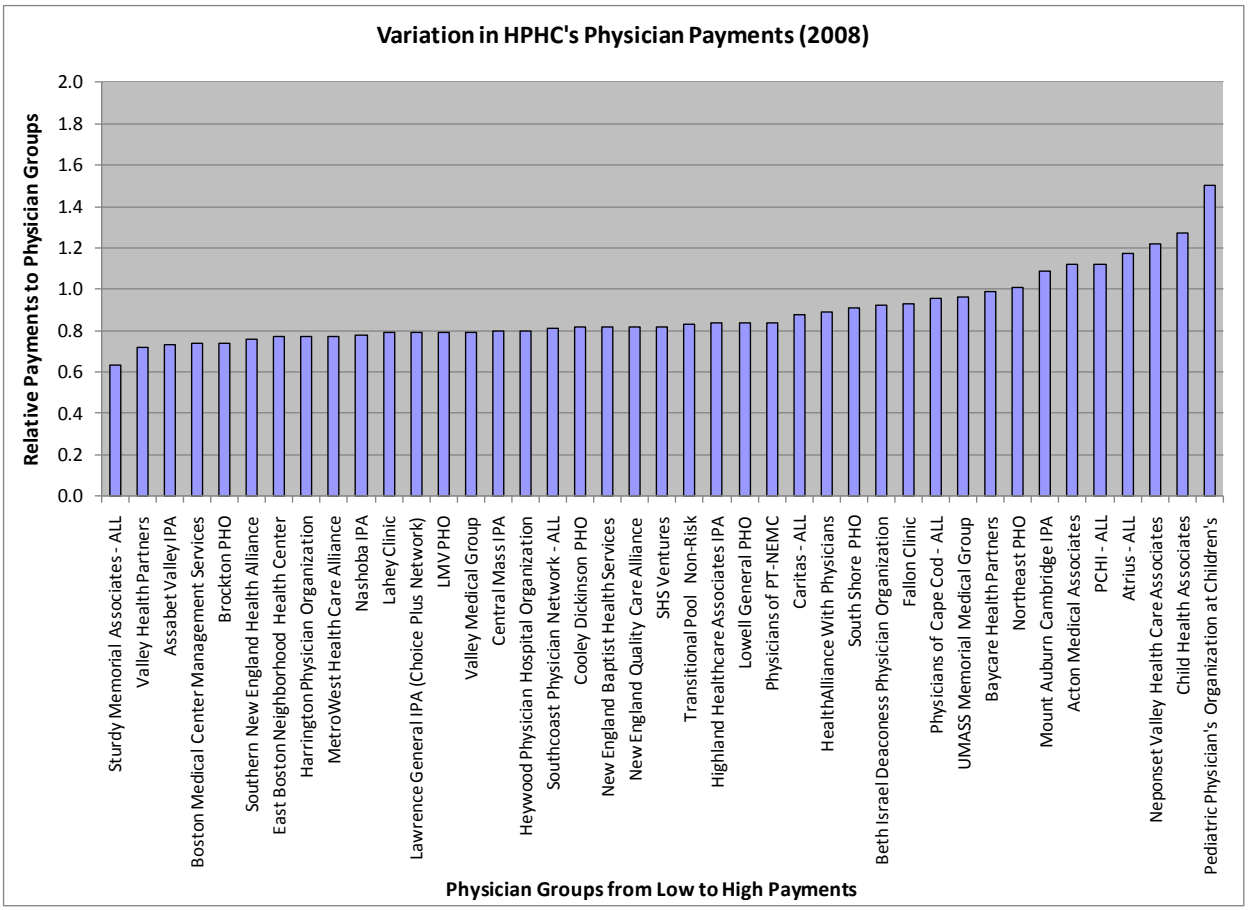
This next graph shows the significant variation in prices paid by one major insurer to the physician groups in its network.



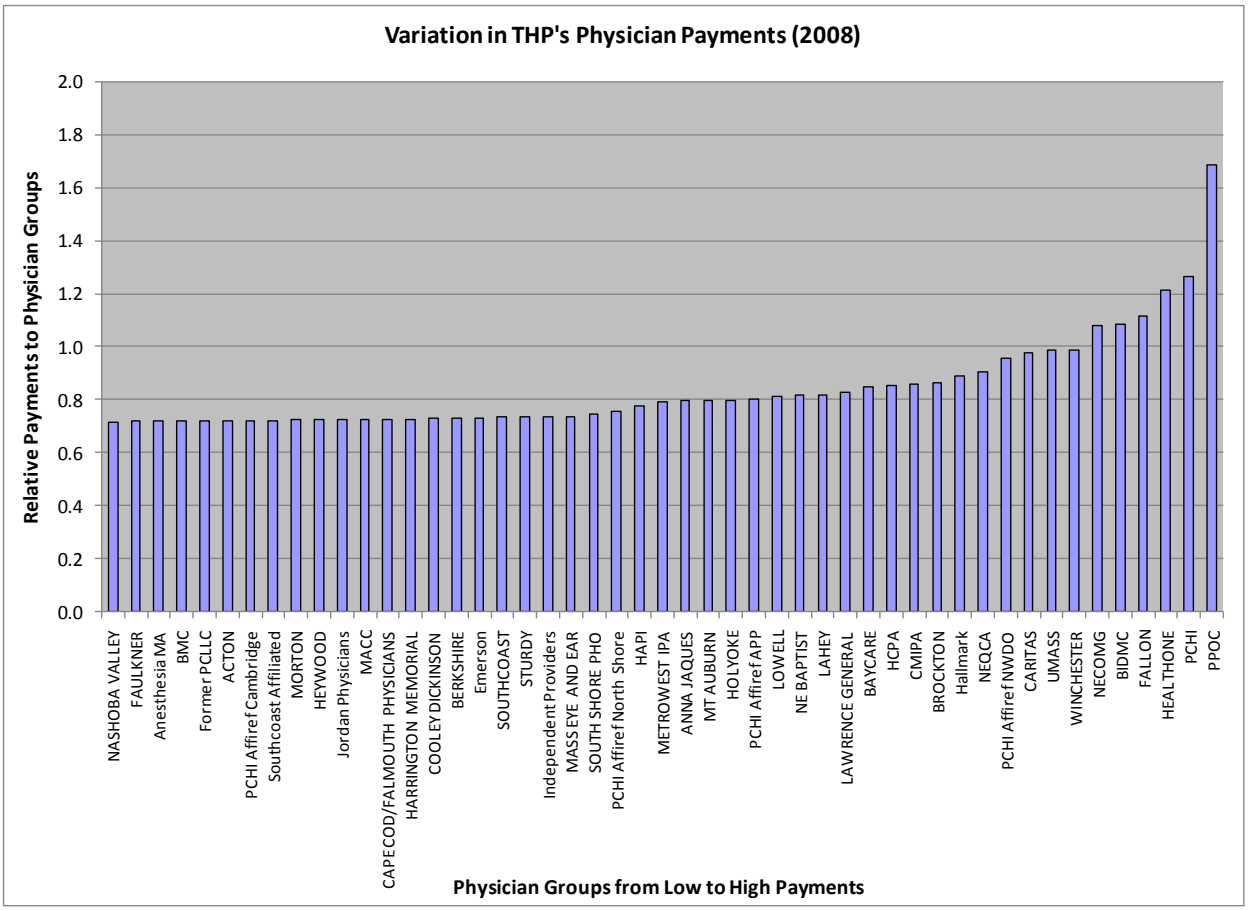
NOTE: Data from Blue Cross Blue Shield's supplemental written testimony for the Annual Public Hearing, available at http://www.mass.gov/Eeohhs2/docs/dhcfp/cost_trend_docs/testimony_bcbs_supplemental.pdf (p. 9).

The difference in prices this insurer pays its lowest paid groups ("All Other Groups" at far left of graph) and its second highest paid group is about 90% (1.0 v. 1.89). The price of the very highest paid group (3.24) is 224% higher than the price of the lowest paid groups (1.0).

The next two graphs show the significant variation in payments made by two major insurers to physician groups in Massachusetts, taking into account volume and other factors particular to each group's payment history.



The difference in payments made to the lowest paid physician group versus the highest paid physician group in this insurer's network exceeds 130% (relative payments ranging from just over 0.6 to 1.5).



NOTE: Graph does not show groups with less than $1 million in amounts allowed in 2008 (the contracted amount the provider receives for its services, which includes the portions paid by both the insurer and the consumer). The groups shown represent 95.8% of the allowed dollars in THP's network in 2008.

The difference in payments made to the lowest paid physician group versus the highest paid physician group in this insurer's network exceeds 130% (relative payments ranging from about 0.7 to 1.7).

This comparative price information and comparative payment information show the same results: Insurers are paying hospitals and physician groups in their networks at widely varying levels.

3. Continuing Variation in Prices

We found wide variation in hospital and physician prices that persist in our current health care market. The table below shows that the difference in prices paid by one major insurer to Massachusetts hospitals from 2004 to 2008 decreased modestly from 103% in 2004 to 80% in 2008.[10]

[10] This table, available at http://www.mass.gov/Eeohhs2/docs/dhcfp/cost_trend_docs/testimony_BCBSMA_AG.pdf (p. 21), was calculated for hospitals that are paid through inpatient base case rates and outpatient fee schedules. It does not include hospital services that are paid for on a discount-off-of charges basis, or through some other method.

Range of Payments for Acute Care Hospitals Paid on BCBSMA DRGs and Outpatient Fee Schedules

	All Products Blended IP/OP*	
	Low	High
FY04	1.00	2.03
FY05	1.00	1.99
FY06	1.00	1.89
FY07	1.00	1.84
FY08	1.00	1.80

*1.0 = Lowest rate in network for that service category and that product
*2004 All Products category [reflects] inpatient only

From 2004 to 2008, the variation in prices paid to physician groups in this insurer's network widened, with the difference in prices paid to the lowest paid versus highest paid group increasing from 102% in FY2004 to 230% in FY2008.

Range of Payments for Large Physician Groups

	All Products	
	Low	High
FY04	1.00	2.02
FY05	1.00	2.57
FY06	1.00	2.91
FY07	1.00	3.18
FY08	1.00	3.30

*1.0 = Network Fee Schedule

As the above tables show, insurer and provider contract negotiations continue to produce prices for hospitals and physician groups that vary widely. Because of these existing wide variations, even if hospitals and physician groups were held to identical rate increases going forward, prices disparities would remain and, in fact, the price gap would grow over time.

B. Price variations are <u>not</u> correlated to (1) quality of care, (2) the sickness of the population served or complexity of the services provided, (3) the extent to which a provider cares for a large portion of patients on Medicare or Medicaid, or (4) whether a provider is an academic teaching or research facility. Moreover, (5) price variations are not adequately explained by differences in hospital costs of delivering similar services at similar facilities.

1. Wide disparities in price are not explained by differences in quality of care

Wide variations in price are unexplained by differences in quality of care as measured by the insurers themselves. We compared price and quality data using dozens of graphs and statistical calculations to determine whether there is a correlation between price paid and quality measured. These graphs include comparisons of physician and hospital prices to insurers' own

overall quality and mortality scores for those providers, as well as to process and patient experience scores publicly available through the Center for Medicare and Medicaid Services (CMS).

Our results indicate that there is no correlation between price and quality, and certainly not the positive correlation between price and quality we would expect to see in a rational, value-based health care market. We interviewed numerous providers and insurers who confirm that there is no correlation between price paid to providers and the quality of the providers' services.

Our review also shows that providers in Massachusetts deliver excellent care with little material variation in the quality of care delivered. For example, the quality review undertaken at the Massachusetts Data Analysis Center (Mass-DAC) is considered to be among the most rigorous in its field, relying on individual medical record review and state-of-the-art risk adjustment. For the past four years, all 14 hospitals evaluated by Mass-DAC on coronary artery bypass surgery (CABG) have been statistically identical. In 2008, Mass-DAC results also show no statistical differences among hospitals for percutaneous coronary intervention (PCI). Other measures that we examined, such as CMS process measures and BCBS Healthcare Effectiveness Data and Information Set (HEDIS) scores,[11] show the same trend: little variation in the measured quality performance of providers, and high quality care from all providers. While there are nuanced differences in provider quality measures, and room for improvement in certain areas of performance, our review does not suggest that any provider is consistently better or worse quality than any other.

Insurers track price, relative payments, and total medical expenses (TME). They also measure the quality performance of providers in their networks. Yet they do not pay providers based on the differences in performance that they measure, and they are aware that providers they measure as high quality are often paid at a lower level than providers they measure as poor quality.[12]

2. Wide disparities in prices and total medical expenses are not explained by the relative sickness of the population being served or the complexity of the care provided

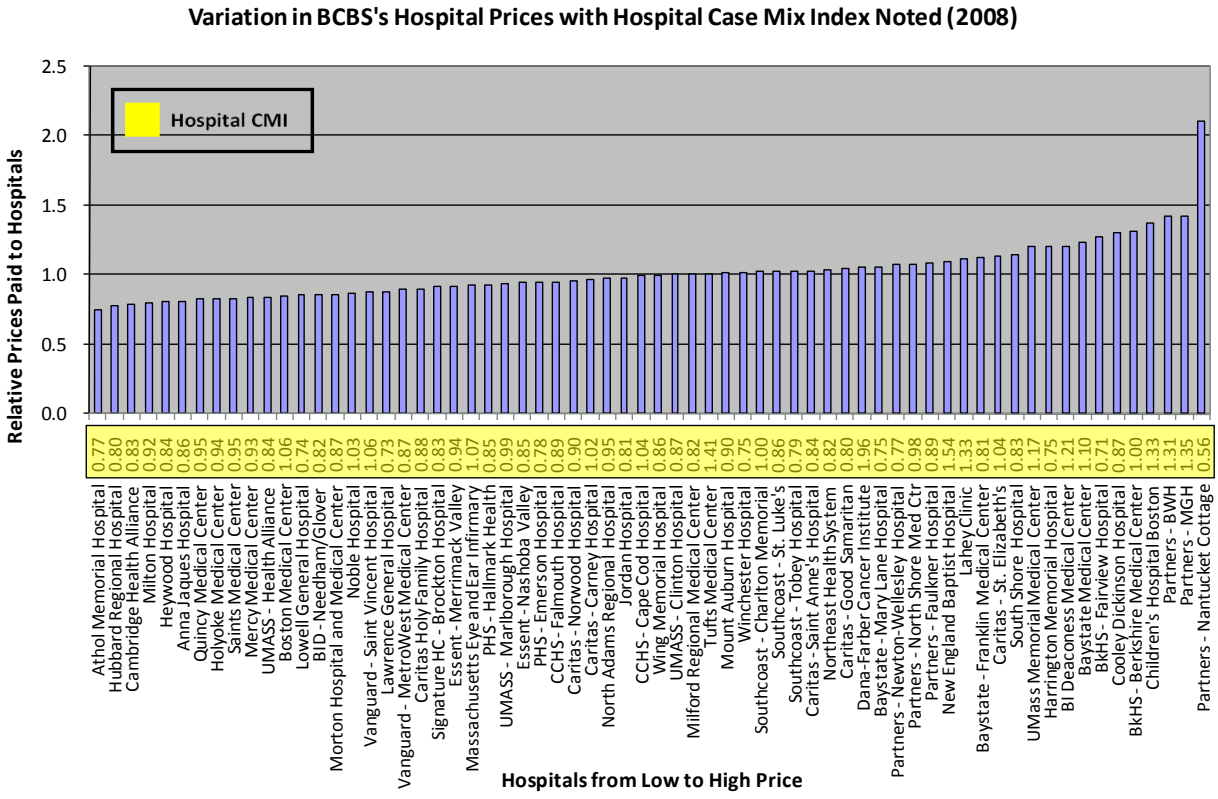
a. Hospitals

We have found that the prices paid to hospitals do not correlate to the acuity or complexity of the cases handled by the hospital as measured by the hospital case mix index (CMI), which is calculated for each hospital in Massachusetts by the Division of Health Care

[11] The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by more than 90 percent of health plans in the nation to measure performance on important dimensions of care and service.

[12] Our analysis suggests that the pay-for-performance (P4P) programs implemented by all major insurers have been inadequate to align payment with quality outcomes. First, the amount at risk in typical P4P programs is limited. Our review indicates the amount of payment at risk in typical P4P programs is never more than 10% of a provider's total reimbursement, with one major insurer's programs ranging from 1-5% of total reimbursement. The vast majority of reimbursement is therefore unrelated to quality performance. Second, because P4P measures, targets, and payouts are negotiated between insurers and providers, market leverage (see Section III.C below) factors into the design of these programs.

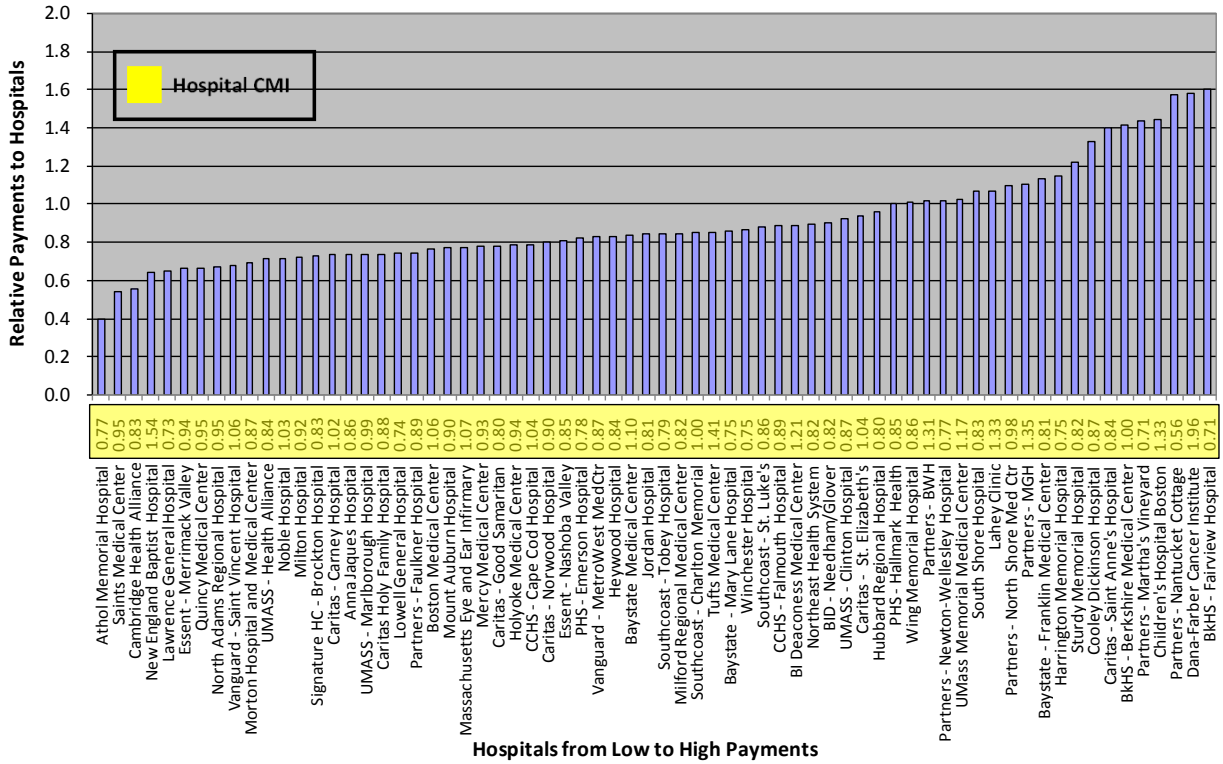
Finance and Policy and publicly available on the Executive Office of Health and Human Services' website.[13] A CMI of 1.0 is average and hospitals with a higher CMI (above 1.0) serve a more complex or sicker population on average. The next three graphs show hospitals in Massachusetts sorted from lowest to highest paid based on the prices or relative payments of three major health plans. The highest paid hospitals do not have the highest CMIs and some hospitals with a CMI above 1.0 are paid less than dozens of hospitals with CMIs below 1.0.



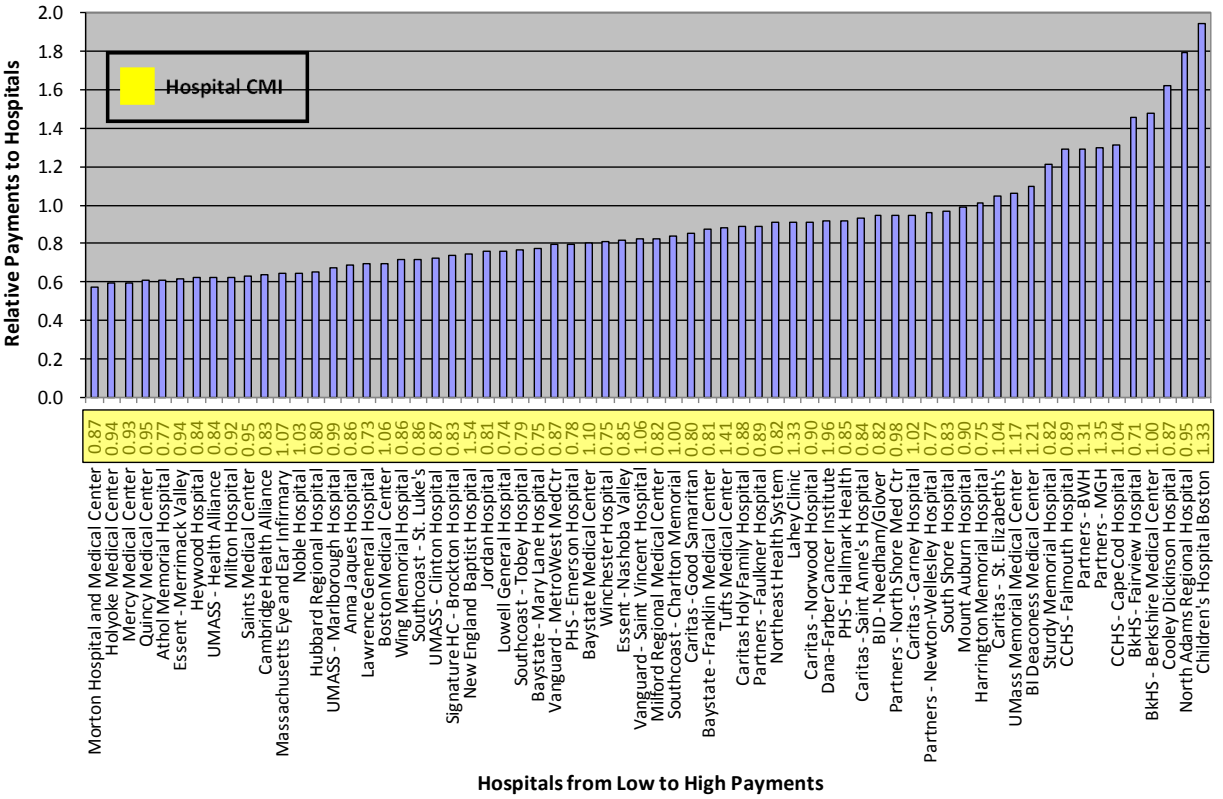
NOTE: Where DHCFP reported CMI separately for related hospitals or hospital campuses, we blended the CMIs of the hospital campuses on a weighted basis using the number of admissions at each campus.

[13] See HSD04, available at http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Researcher&L2=Physical+Health+and+Treatment&L3=Health+Care+Delivery+System&L4=DHCFP+Data+Resources&L5=Hospital+Summary+Utilization+Data&sid=Eeohhs2&b=terminalcontent&f=dhcfp_researcher_hsudf_hsudf_08&csid=Eeohhs2

Variation in HPHC's Hospital Payments with Hospital Case Mix Index Noted (2008)



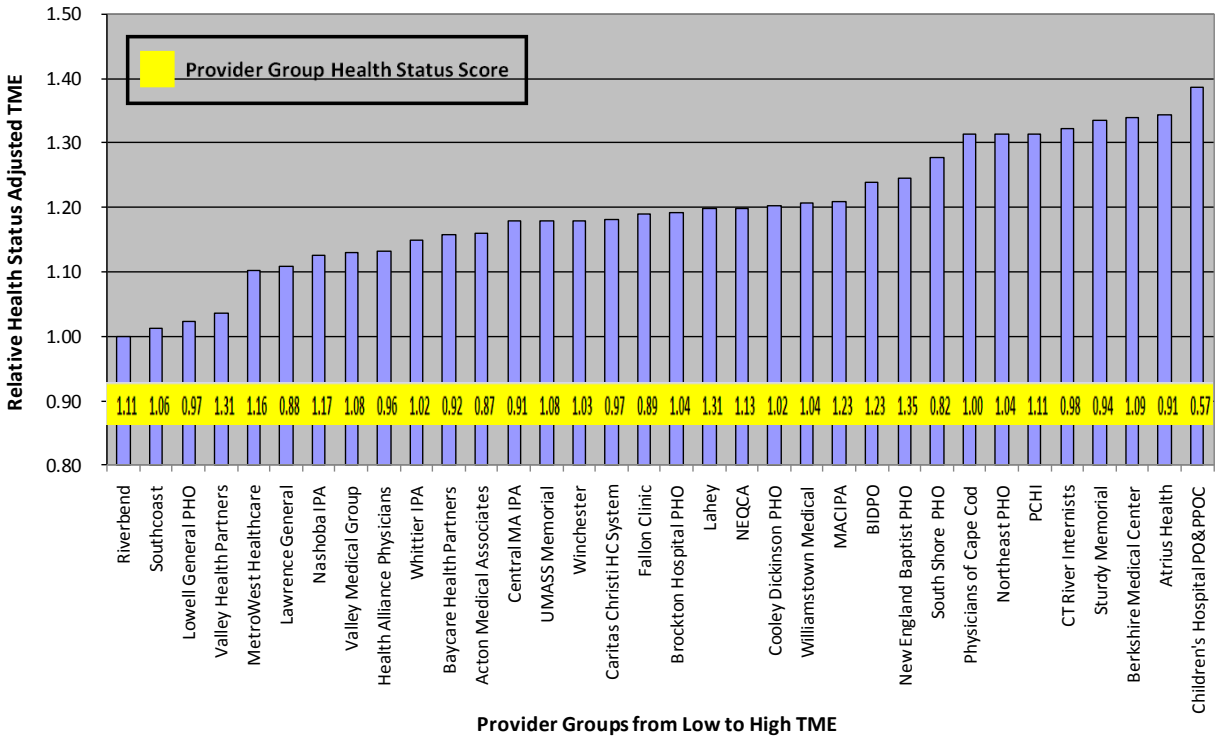
Variation in THP's Hospital Payments with Hospital Case Mix Index Noted (2008)



b. Provider Groups

We also found that the total medical expenses (TME) associated with each provider group do not correlate to the acuity or complexity of the populations served as measured by the health status score provided to us by health plans. Plans use health status scores to adjust TME data to reflect differences in the acuity of the populations served by particular provider groups. We examined whether high-spending providers – those who have a higher TME per patient than their peers (whether due to higher prices, higher utilization, or a combination thereof) – tend to care for sicker (i.e., higher acuity) populations. We found no correlation between the per member amount paid to providers and the acuity of the populations that the providers serve. Providers caring for populations that are relatively healthy (i.e., health status score of less than 1.0) are sometimes high spenders and sometimes low spenders. It appears the higher expenses of some provider groups cannot reliably be explained by the fact that these groups care for sicker populations.

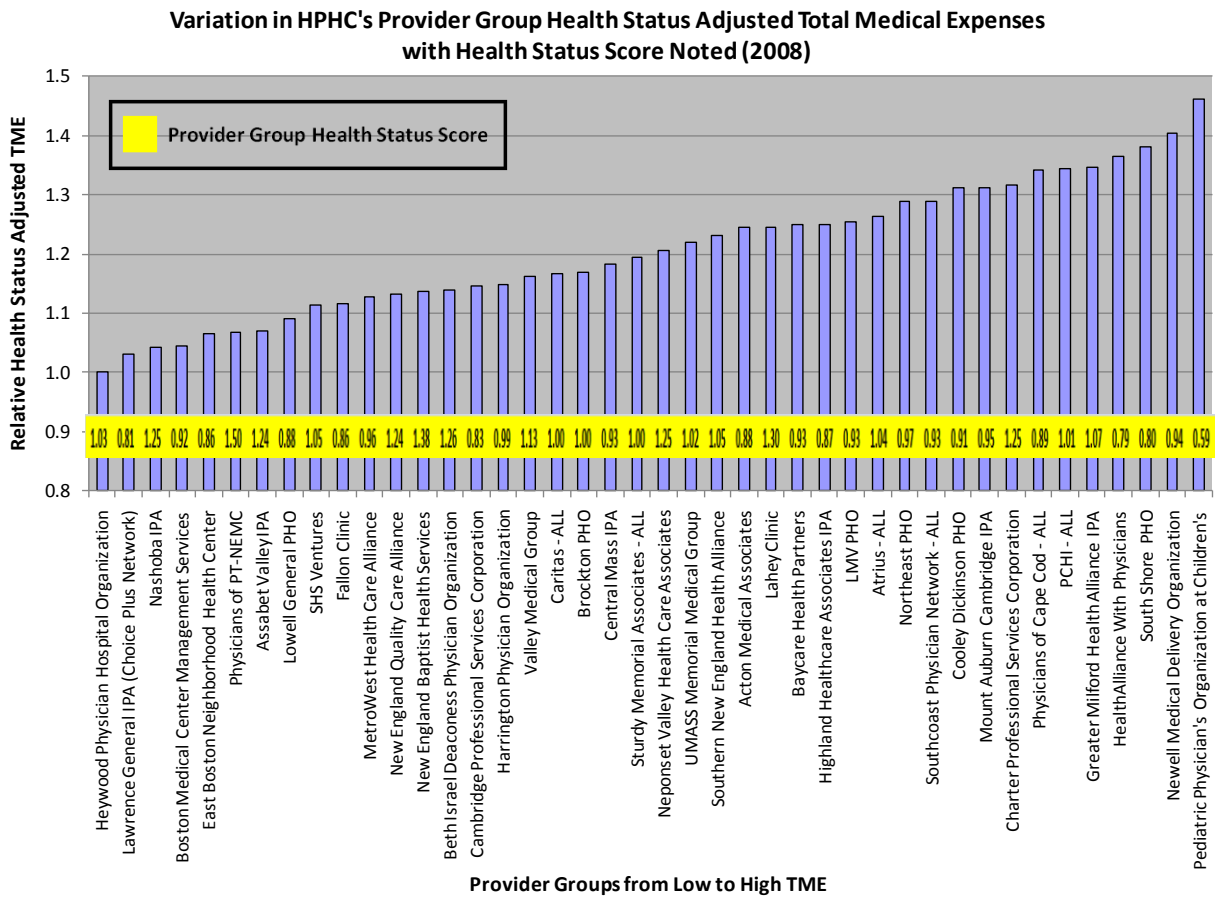
Variation in BCBS's Provider Group Health Status Adjusted Total Medical Expenses with Health Status Score Noted (2008)



NOTES:

(1) Graph includes all provider groups with at least 18,000 BCBS HMO/POS member months (1,500 members).

(2) We received separate TME for Children's PPOC and Children's Hospital PO, which we blended into a single TME figure for Children's by weighting by each group's membership. In general, pediatric providers have lower health status scores than adult providers since children, on average, have fewer health care needs than adults.



NOTES:

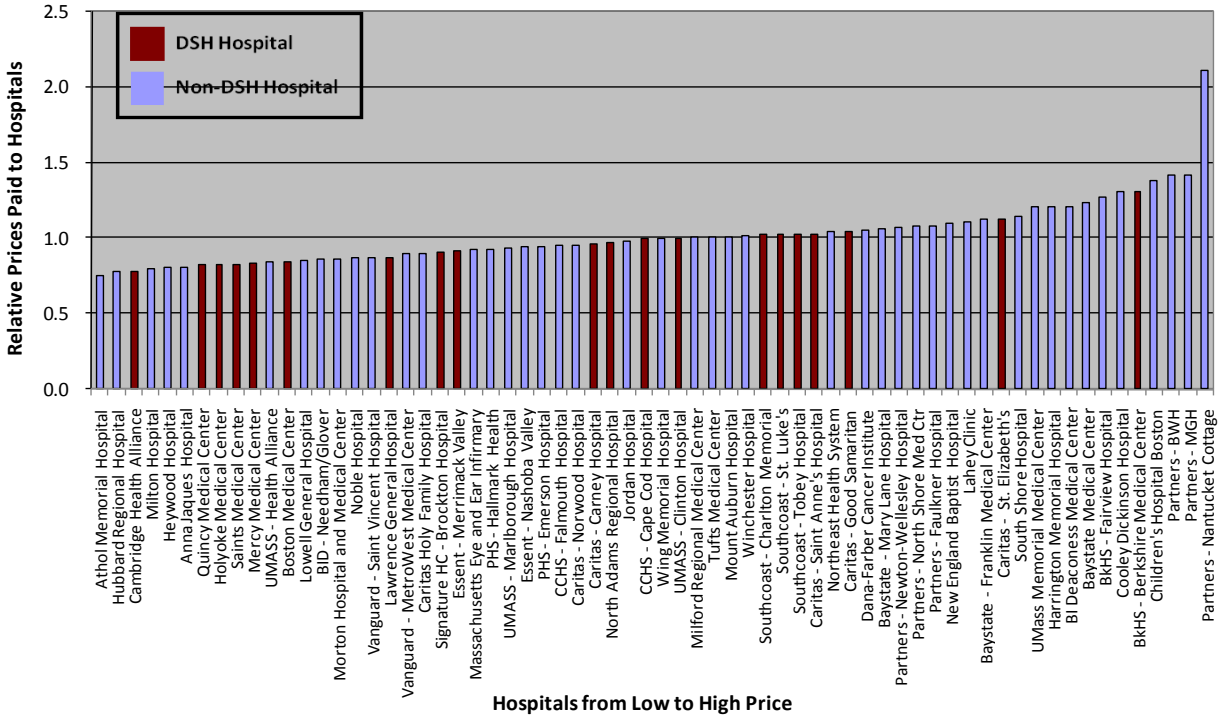
(1) Graph includes all provider groups with at least 5,000 Harvard Pilgrim HMO/POS member months.

(2) In limited instances where we received separate TME for subgroups comprising a provider group, we blended the subgroups' respective TME into a single TME figure for the entire provider group by weighting by each subgroup's membership.

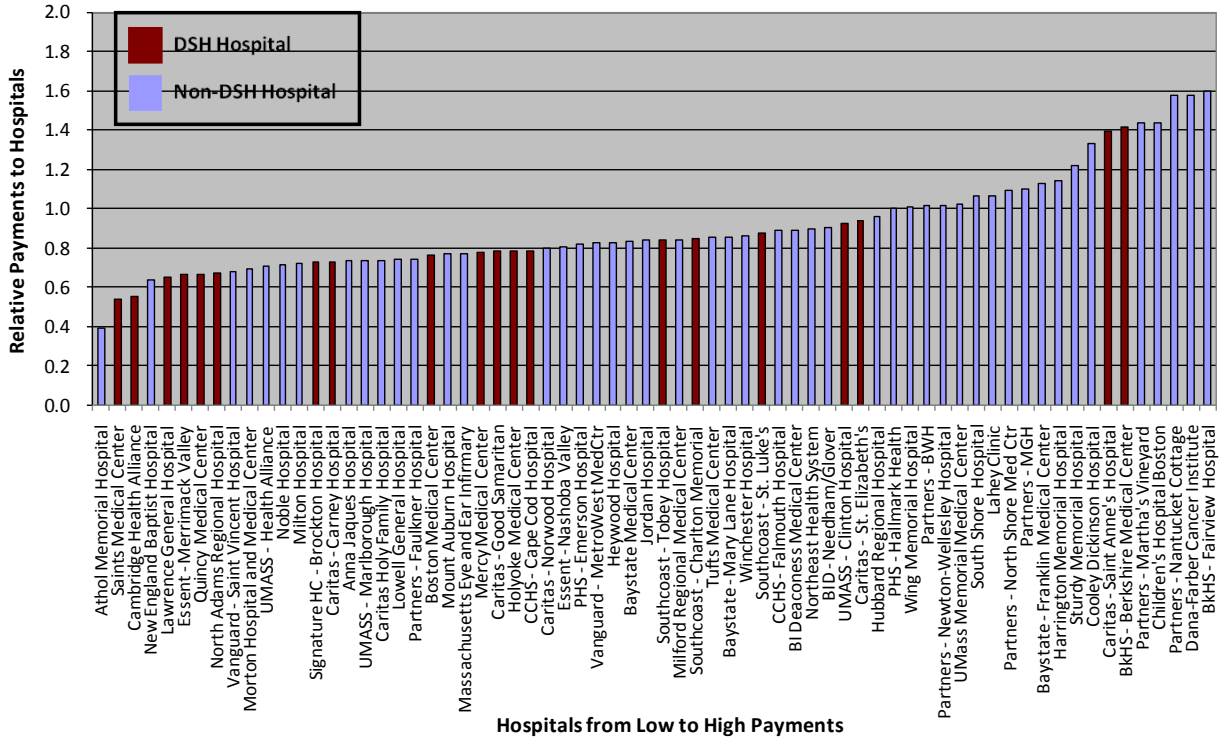
3. Wide disparities in prices are not explained by the extent to which a provider cares for a large portion of patients on Medicare or Medicaid

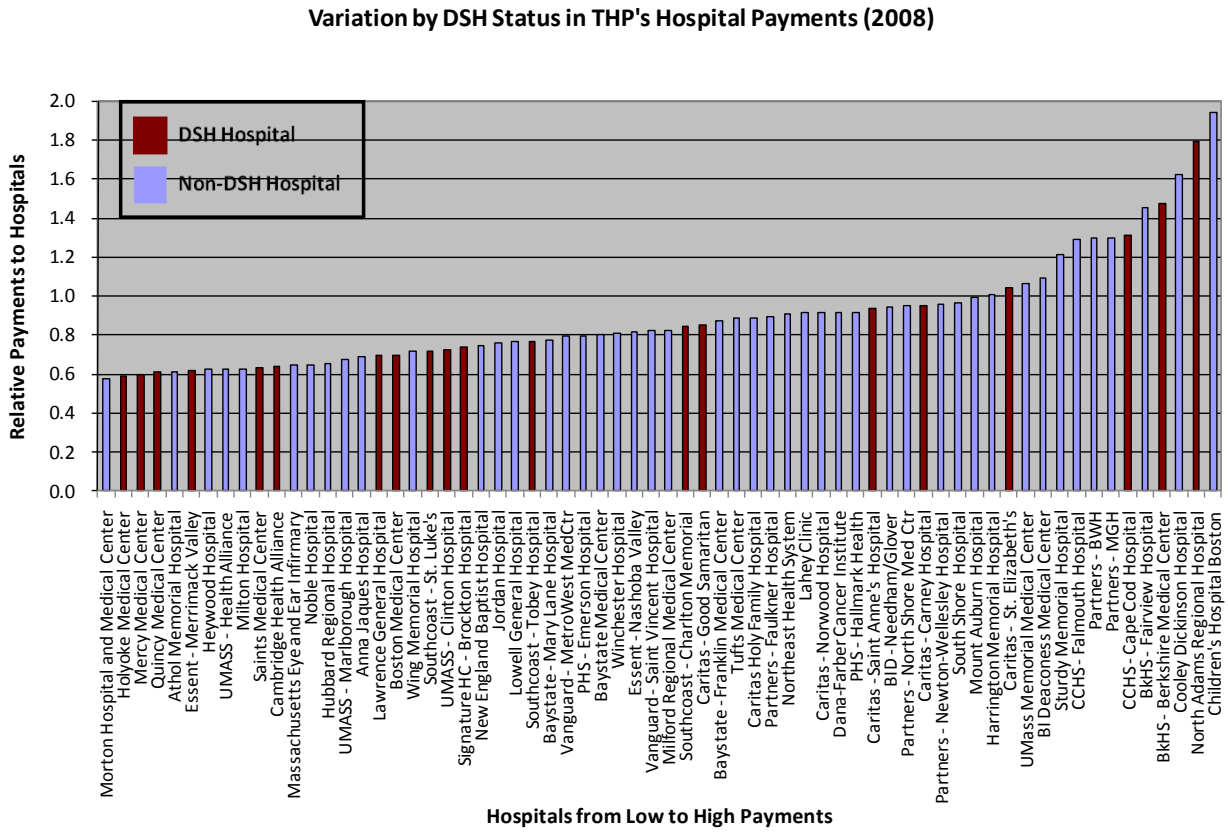
Commercial insurers generally pay lower prices to disproportionate share hospitals (DSHs), which have a large percentage (e.g., 63% or more) of patient charges attributed to Medicare, Medicaid, other government payers, and/or free care. The three graphs below show three major health plans' relative prices or payments to Massachusetts hospitals with hospitals identified by DHCFP as DSH (shown in red) generally on the lower end of the payment spectrum.

Variation by DSH Status in BCBS's Hospital Prices (2008)



Variation by DSH Status in HPHC's Hospital Payments (2008)





As shown in the table below, information from these three health plans shows that on average, these plans pay non-DSH hospitals prices or payments that are about 9 to 26% higher than those paid to DSH hospitals.

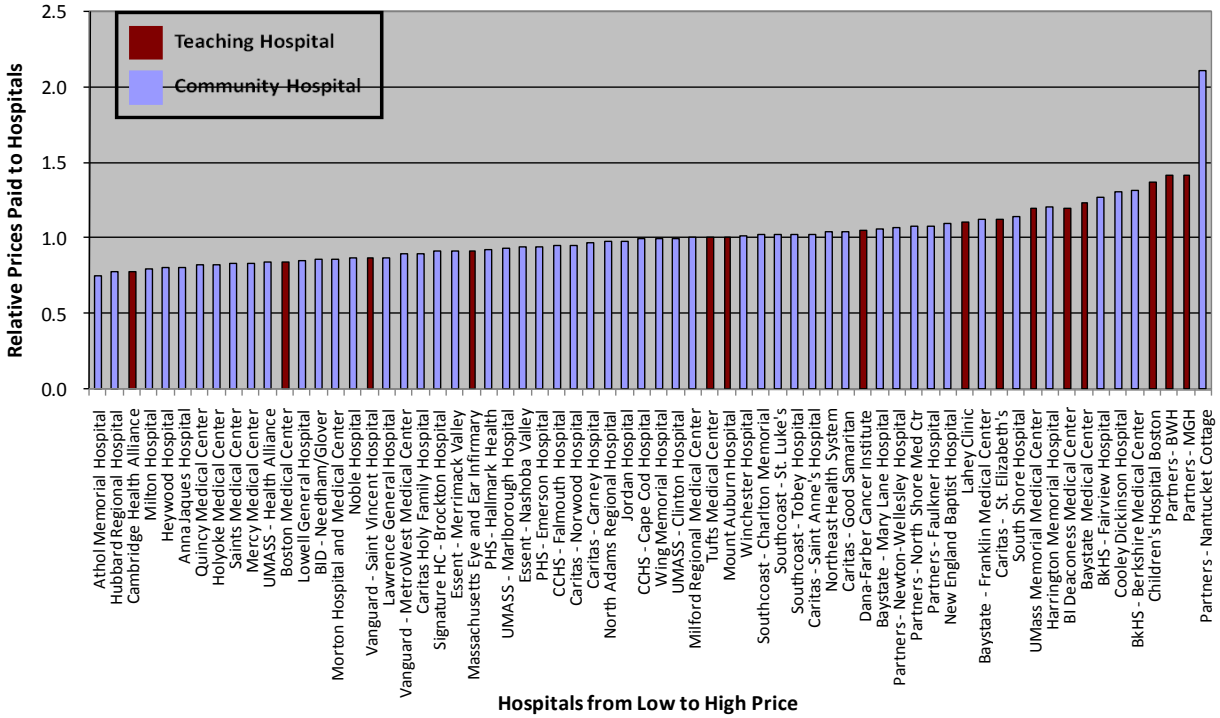
	Percent of Plan's Network-Wide Average Price/Payment		
	BCBS Price	HPHC Payment	THP Payment
DSH	95.7%	81.6%	90.3%
Non-DSH	104.2%	102.6%	101.5%
Percent Difference in Price/ Payment	8.9%	25.7%	12.4%

NOTE: The calculation of average differences in payments made by HPHC and THP is weighted by hospital volume, since the payment information provided by HPHC and THP factors in volume. The calculation of average differences in prices paid by BCBS is not weighted, since price does not take hospital volume into account. If the BCBS calculation was weighted by hospital volume, the percent difference in prices paid by BCBS to DSH versus non-DSH hospitals would increase from 8.9% to 19.1% (with DSH paid at 85.9% of network average and non-DSH at 102.3%).

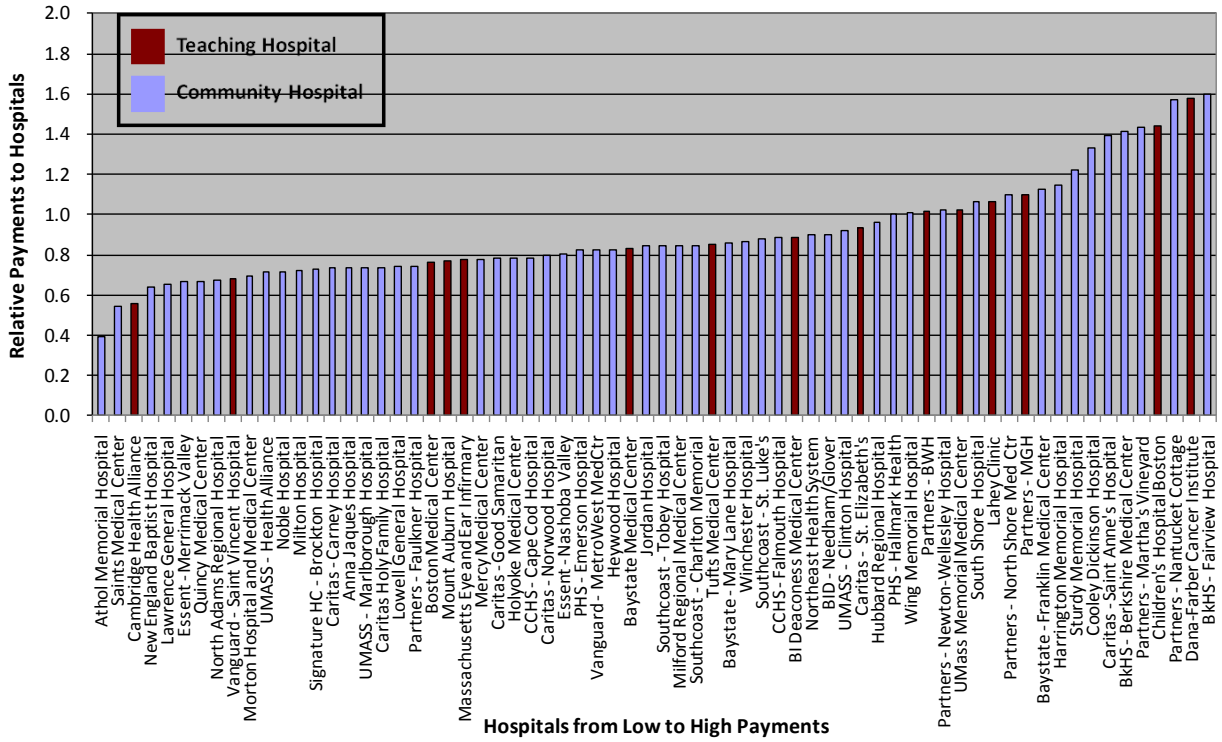
4. Wide disparities in prices are not explained by whether a provider is an academic teaching or research facility

Insurers do not consistently pay higher prices to hospitals that provide academic teaching and research services. As shown in the three graphs below, which illustrate three major health plans' relative prices or payments to Massachusetts hospitals, those hospitals identified by DHCFP as teaching hospitals (shown in red) are paid at widely varying levels. While some teaching hospitals command above-average rates, others are paid significantly less than dozens of community hospitals that are not academic teaching or research facilities.

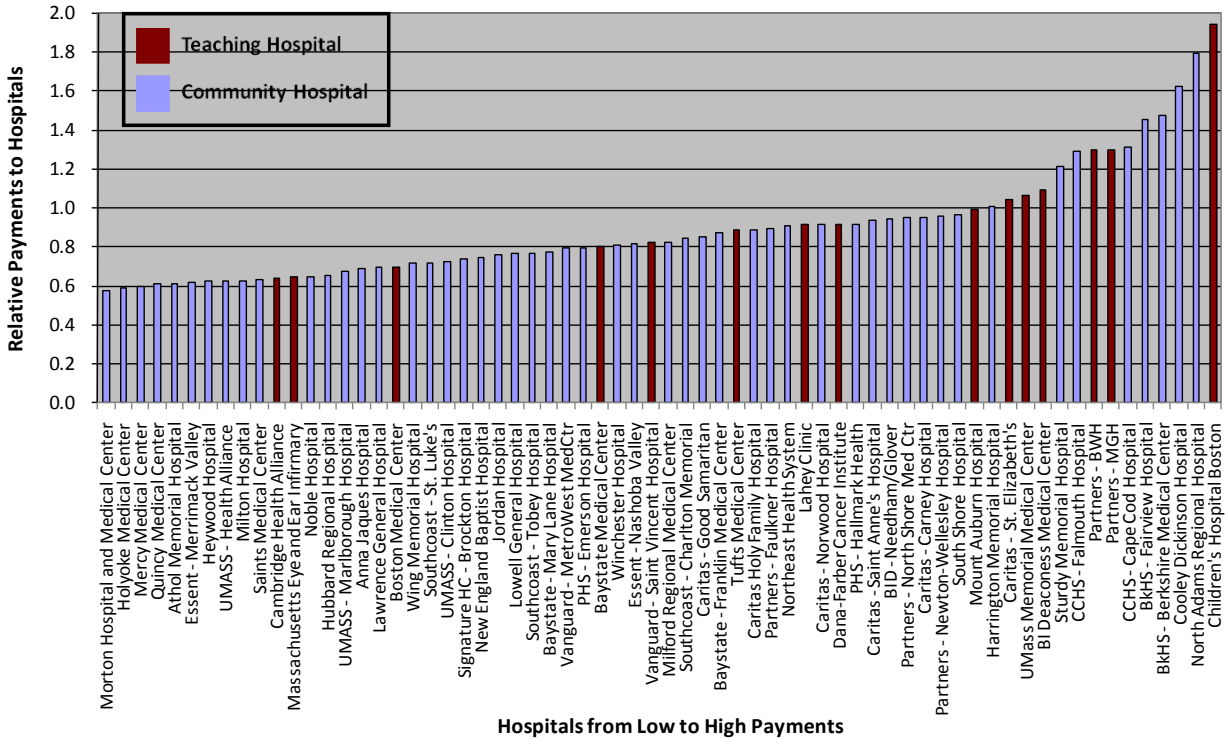
Variation by Teaching Status in BCBS's Hospital Prices (2008)



Variation by Teaching Status in HPHC's Hospital Payments (2008)



Variation by Teaching Status in THP's Hospital Payments (2008)

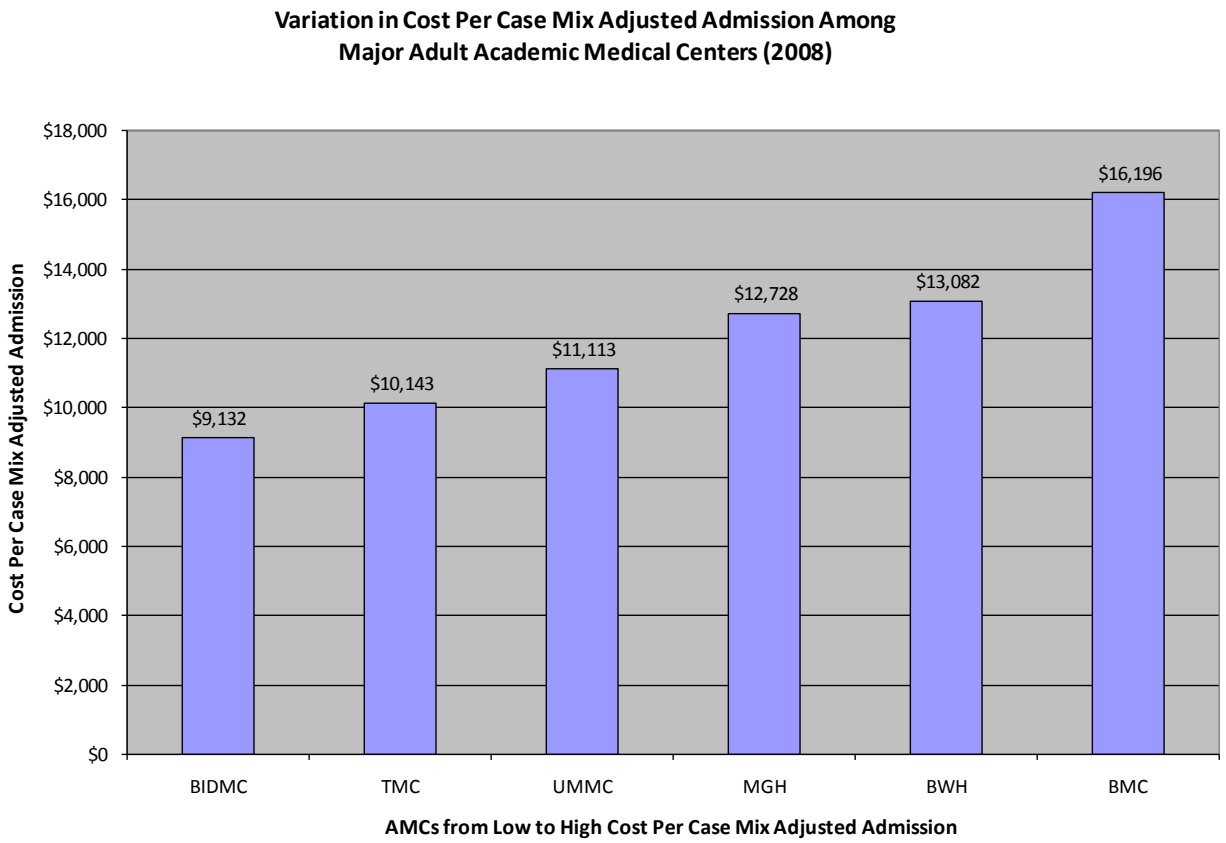


5. Wide disparities in prices are not explained by differences in hospital costs of delivering similar services at similar facilities

Disparities in hospital prices are not adequately explained by differences in hospital unit costs. Unit costs are the costs incurred by a hospital for the delivery of services, including direct and indirect expenses such as labor costs, supplies, overhead, costs associated with medical education, and capital expenditures. It appears that higher prices are reflected in higher cost structures, but are not *caused* by them. We reviewed information showing wide variations in hospital costs that appear to track the amount the hospitals are paid rather than the acuity, complexity, or quality of the hospital's services. Our analysis suggests that hospitals may manage costs, including capital expenditures, to budgets based on their anticipated revenue from insurers and any other sources of income. Over time, hospitals receiving greater revenue from higher prices expend more on direct and indirect costs and capital investment while hospitals receiving less revenue struggle to manage their cost structure to make ends meet.

One method of comparing hospital cost structures is to compare hospital unit costs on a per admission or per discharge basis. Using publicly available DHCFP 403 Cost Report data, we compared hospital inpatient costs per admission at six major adult academic medical centers (AMCs) that offer similar services at similar intensities: Beth Israel Deaconess Medical Center (BIDMC), Boston Medical Center (BMC), Brigham & Women's Hospital (BWH), Massachusetts General Hospital (MGH), Tufts Medical Center (TMC), and UMass Memorial Medical Center (UMMC). These major adult AMCs are characterized by (1) extensive research and teaching programs and (2) extensive resources for tertiary and quaternary care, and are (3) principal teaching hospitals for their respective medical schools and (4) full service hospitals with a case mix intensity greater than 5% above the statewide average.[14] We calculated a case mix adjusted cost per admission by dividing each hospital's total reported costs by its total reported admissions. Then, to account for acuity and complexity differences, we divided that number by the hospital's CMI. As the following graph shows, there is wide variation in the cost of providing services at these hospitals, with costs per admission ranging from a low of $9,132 to a high of $16,196, a 77% differential.

[14] While we believe it is appropriate to compare these hospitals, note that no two hospitals provide the same set of services to the same patient population.



Because the costs shown in this graph are case mix adjusted, differences in the costs cannot be explained by the fact that the costlier hospitals are caring for sicker patients or offering more complex services. This raises the important question of why it costs more for certain hospitals to provide the same types of services to similar populations at similar quality as those services provided by other hospitals at a lower cost.

One provider's own analyses using publicly available DHCFP 403 Cost Report data also show widely varying internal costs among hospitals that the provider viewed as competitors. For example, an analysis comparing severity adjusted inpatient costs for select academic medical centers showed that the highest cost hospital, at $8,000 per case mix adjusted discharge (CMAD), was 100% higher in cost than the lowest cost hospital, at $4,000 per CMAD.[15] Similarly, in a community hospital peer group, the highest cost hospital was 58% higher than the lowest cost hospital at $6,050 and $3,800 per CMAD, respectively.

Our review also suggests there is significant need for increased transparency and standardization in how hospital costs are tracked, allocated, and reported. We found that some hospitals maintain internal cost accounting systems, while others do not. For those that do not, it is difficult to track costs, and even more difficult to negotiate payments from insurers that are based on those costs. For hospitals that do maintain cost accounting systems, there is significant variation in the approach each hospital takes to tracking costs and attributing them to cost centers. Given this variation, we found it difficult to rely on this information to compare costs across providers and to meaningfully understand cost differences. In addition, we learned that

[15] Whether average costs are compared using admissions or discharges has no material effect on this analysis.

there are certain categories of hospital costs that are excluded from the DHCFP 403 Cost Report, such as bad debt and marketing costs. Therefore, while the 403 Report may provide a more consistent framework through which costs can be reported and compared, it does not appear to capture important cost information that would be useful to assist policymakers and stakeholders in understanding health care costs and in developing successful cost containment solutions.

C. Price variations <u>are correlated</u> to market leverage – the relative market position of the hospital or provider group compared with other hospitals or provider groups within a geographic region or within a group of academic medical centers.

Our review shows that there is a strong correlation between the price insurers pay to providers and providers' market leverage. We define "leverage" as a measure of the ability to influence the other side during negotiations. Both providers and insurers can bring leverage into contract negotiations. For providers, the source of leverage varies from provider to provider. Typically, leverage results from variables such as: size, geographic location, "brand name," and/or niche or specialty service lines offered. For insurers, leverage tends to result from size and penetration into a geographic area. For example, if an insurer has many members in a geographic area, a provider in that area is likely to have a strong incentive to be part of the insurer's network, providing leverage to the insurer. We focused on two measures of leverage: (1) provider size, and (2) the relative leverage between insurers and providers in a geographic region.

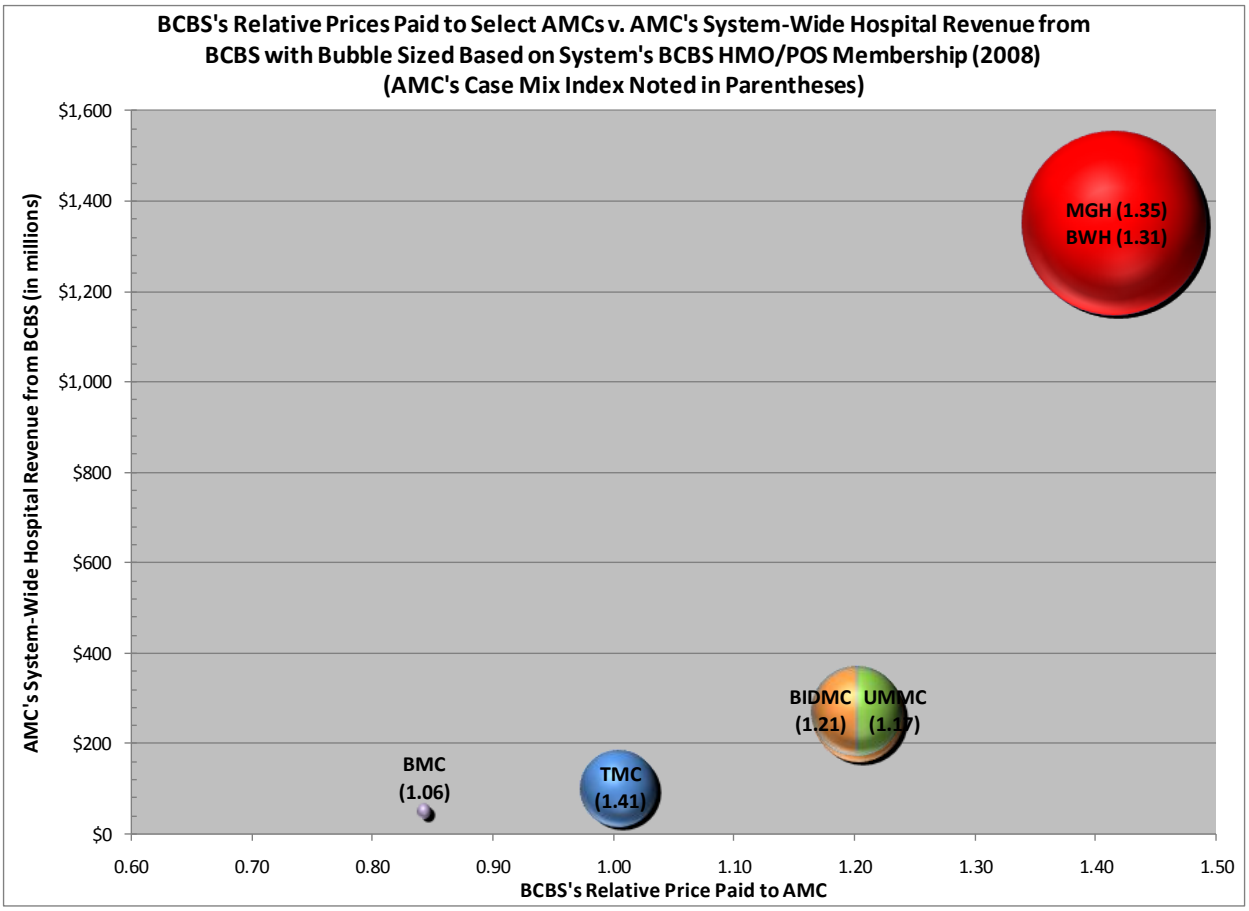
1. Provider Size

Large health care providers have a great deal of leverage in negotiations because insurers must maintain stable, broad provider networks. Insurers have explained to us that the failure to contract with a large provider organization would cause serious network disruption, not only because a large percentage of their members would be forced to seek care elsewhere, but because employers and others are less interested in purchasing products that do not include the largest providers.

Two ways to illustrate the size of a provider include measuring (1) the total revenue paid by an insurer to the provider system, and (2) the total number of the insurer's members who are associated with (have a primary care provider within) the provider system. Both figures are a proxy for the size or leverage of the provider system within a given insurer's network, and therefore the amount of disruption the insurer would face if the provider were not in its network.

a. Hospitals

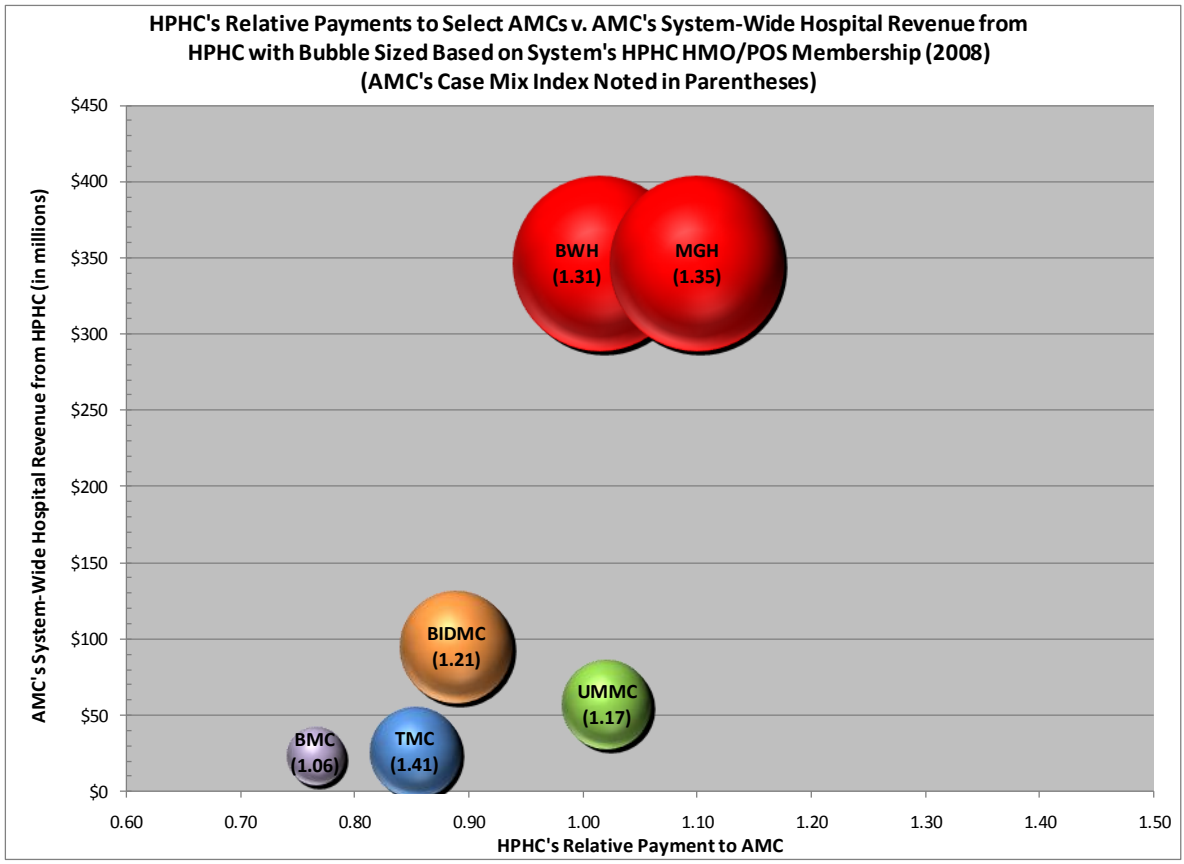
The following three graphs show that hospitals with greater leverage, as measured by system-wide hospital revenue and number of insurer members, are generally paid at a higher rate compared to similar hospitals with less revenue or members.

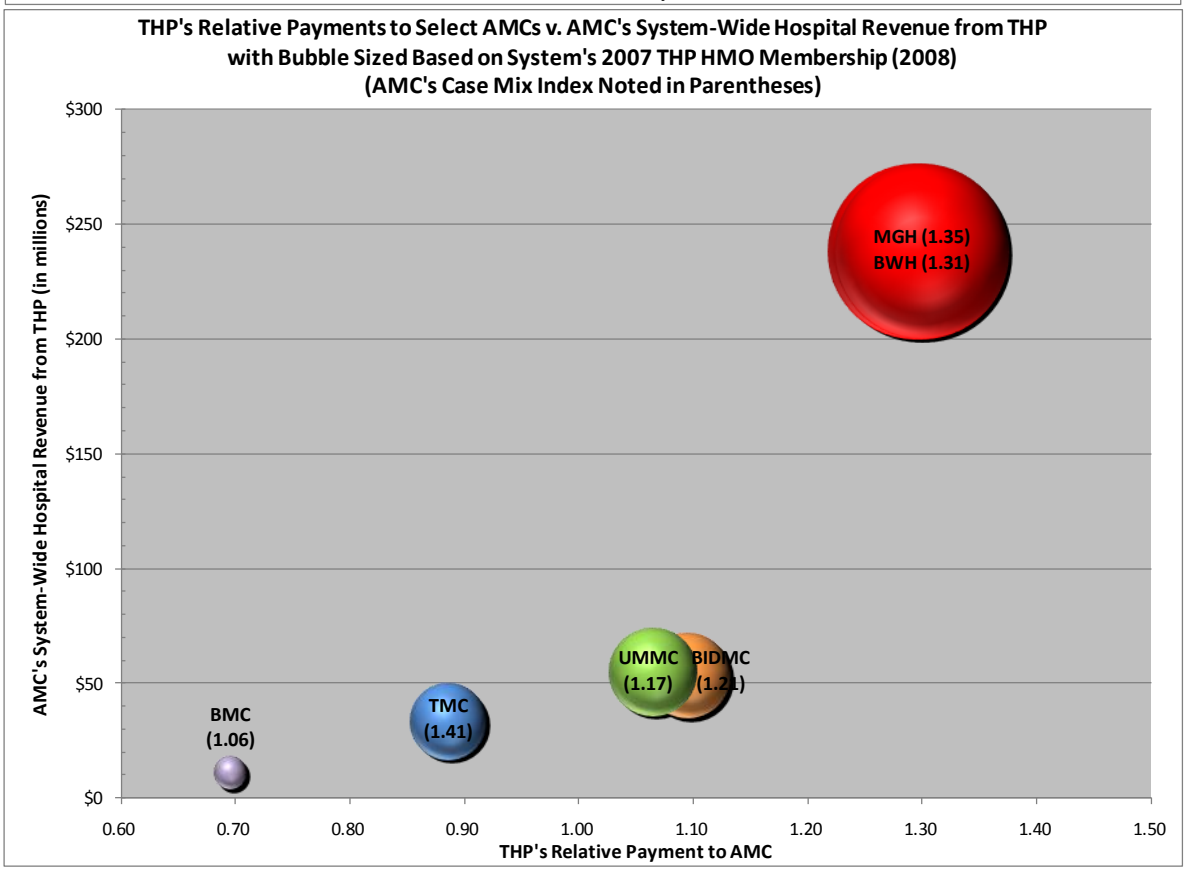


NOTES:

(1) Beth Israel Deaconess Medical Center (BIDMC) and UMass Memorial Medical Center (UMMC) are very similar in size (as measured by revenue and BCBS membership) and in price received from BCBS. We therefore split the color of their bubble in half to show that two AMCs are plotted on that position in the graph.

(2) BCBS did not produce separate membership data for the Boston Medical Center system, but instead indicated the system fell into an "All Other" category of providers with 1,500 or fewer BCBS members. We therefore conservatively sized the purple BMC bubble using a figure of 1,500 members, which makes the bubble as large as it could possibly be.


HPHC's Relative Payments to Select AMCs v. AMC's System-Wide Hospital Revenue from HPHC with Bubble Sized Based on System's HPHC HMO/POS Membership (2008)
(AMC's Case Mix Index Noted in Parentheses)
AMC's System-Wide Hospital Revenue from HPHC (in millions)
$450
$400
$350
$300
$250
$200
$150
$100
$50
$0
BWH (1.31)
MGH (1.35)
BIDMC (1.21)
UMMC (1.17)
BMC (1.06)
TMC (1.41)
0.60
0.70
0.80
0.90
1.00
1.10
1.20
1.30
1.40
1.50
HPHC's Relative Payment to AMC


THP's Relative Payments to Select AMCs v. AMC's System-Wide Hospital Revenue from THP with Bubble Sized Based on System's 2007 THP HMO Membership (2008)
(AMC's Case Mix Index Noted in Parentheses)
AMC's System-Wide Hospital Revenue from THP (in millions)
$300
$250
$200
$150
$100
$50
$0
MGH (1.35)
BWH (1.31)
UMMC (1.17)
BIDMC (1.21)
BMC (1.06)
TMC (1.41)
0.60
0.70
0.80
0.90
1.00
1.10
1.20
1.30
1.40
1.50
THP's Relative Payment to AMC

In the above graphs, the x-axis shows the variation in price or payment to the six major adult AMCs that we examined in the previous section of this report (on hospital unit costs). As noted earlier, these six major adult AMCs are characterized by (1) extensive research and teaching programs and (2) extensive resources for tertiary and quaternary care, and are (3) principal teaching hospitals for their respective medical schools and (4) full service hospitals with a case mix intensity greater than 5% above the statewide average.[16]

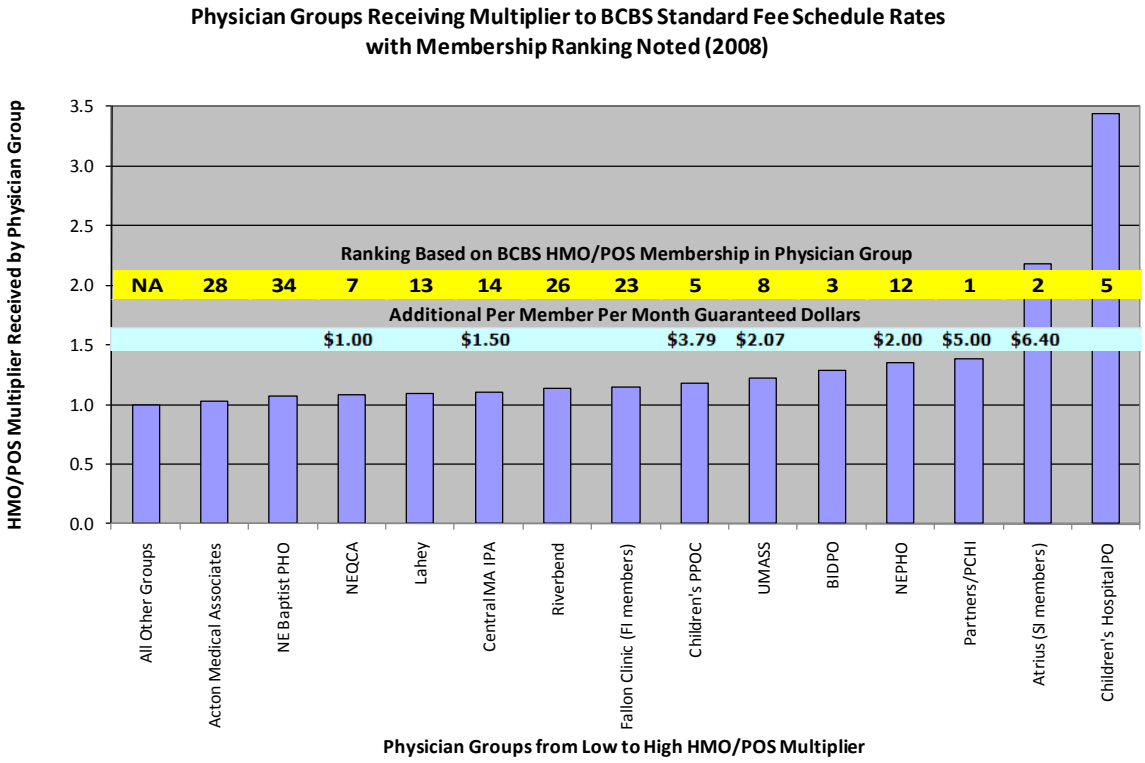
The y-axis shows the total revenue received by all hospitals in the AMC provider system, while the size of the bubble reflects the number of insurer members associated with the provider system. While some hospitals contract with insurers on their own, others contract jointly with hospitals and/or physicians on a system-wide basis. For these hospitals, showing the total revenue and total insurer members for *all* hospitals within the contracting system is a better proxy of the hospital's leverage since that hospital contracts as part of a system rather than as a single hospital. Note that the y-axis shows total revenue for the hospitals in a system, and does not include revenue for the physician groups in the same system.

b. Physician Groups

Our review suggests that physician groups who care for more members in an insurer's network, and therefore have greater leverage with respect to that insurer, are generally able to negotiate higher rates compared to physician groups who care for fewer of the insurer's members. As described on page 7 of this report, health plans and providers typically negotiate physician fees by starting with the standard fee schedule for physician services established by the health plan, and then negotiating a "multiplier" to that fee schedule. For example, a provider who negotiates a 1.2 multiplier for physician services would be paid 120% of the standard fee schedule rate for covered physician services.

We reviewed information for all of the primary and multispecialty care physician groups in one insurer's network and found, as shown in the graph below, that there were only 14 groups that received enhancements, or multipliers, to the insurer's standard physician fee schedule rates. The remaining groups in this insurer's network were all paid standard fee schedule rates (see "All Other Groups" on the far left of the graph showing a multiplier value of 1.0). Of the 14 groups who received multipliers, seven were among the insurer's top ten groups by membership size (see membership ranking on yellow tape across graph). The remaining seven groups each had market leverage based on other notable factors. For example, three of the groups are large providers in certain geographic locations, and therefore have important regional leverage. Another physician group provides specialty services.

[16] As noted earlier, while we believe it is appropriate to compare these six major adult AMCs, no two AMCs provide the same set of services to the same patient population.



NOTES:

(1) Multipliers shown are for services to HMO/POS patients. Where a physician group had more than one multiplier or more than one guaranteed per member per month (PMPM) payment in effect in 2008, we calculated a blended multiplier or PMPM payment by weighting by the number of months in 2008 for which each multiplier or PMPM payment was in effect.

(2) Multipliers shown for Children's Hospital PO and Atrius were in effect from 2008-09.

(3) Harvard Vanguard Medical Associates (part of Atrius) received $7.40 PMPM in guaranteed payments.

(4) Fourteen of the 15 multipliers shown are benchmarked against BCBS's standard physician fee schedule. PCHI has negotiated its own fee schedule, which BCBS represented to us varies from the standard fee schedule for certain physician codes, such as lab codes and temporary codes.

(5) The combined membership of Children's PPOC and Children's Hospital PO is used in ranking how "big" Children's is within BCBS's network (i.e., how many BCBS members receive care through Children's physicians).

The turquoise tape across the graph illustrates additional per member per month payments (PMPM) that the insurer made to certain physician groups, which are not captured in the multiplier the group received to the insurer's standard fee schedule, and are therefore not reflected in the height of the bar. These guaranteed PMPM dollars further enhance the total payments the insurer made to these physician groups as compared to the other groups in its network. Of the seven physician groups that received PMPM payments in 2008 in addition to a multiplier to the insurer's fee schedule, five were among the insurer's top ten groups by membership size.

2. Relative Leverage of Insurers and Providers in a Geographic Region

Providers and insurers both bring leverage into contract negotiations. The amount of leverage depends on a variety of factors, as discussed above. In order to understand how insurer

leverage and provider leverage can interact to affect payment rates, we examined the relative leverage of insurers and providers within certain illustrative geographic regions. Our premise was that hospitals tend to compete regionally, and that it would be illustrative to examine the relative leverage of hospitals and insurers in regions across the state (e.g., Berkshire, Hampden). This ratio of insurer to provider leverage by region is not a scientific equation; rather, it is one way we sought to examine how market forces may influence contract negotiations.

We defined "insurer's leverage" as the proportion of a hospital's total revenue (or, in the event the hospital belongs to a larger provider system, the total revenue received by all hospitals in that provider system) that came from an insurer.[17] This is a non-scientific proxy for how dependent a hospital is upon patients (and payments) from that insurer. We defined "provider's leverage" as the proportion of an insurer's payments to all hospitals within a region that were made to the hospital in question (or, in the event the hospital belongs to a larger provider system, to all hospitals in the provider system).[18] This is a non-scientific proxy for the market position of a hospital within its region, and how dependent that insurer is on that hospital when its members in that region need care. We then created a ratio of these two measures of leverage (insurer leverage to provider leverage, or a "relative leverage ratio") to examine insurer and provider leverage within a region.[19]

For illustrative purposes, we grouped Massachusetts hospitals into regions and calculated the above "relative leverage ratio" for the hospitals in each region relative to one insurer.[20] We found that when that insurer has more leverage over a hospital (as compared to other hospitals in the region), the hospital tended to get lower prices compared to other hospitals in the region; and, when a hospital has more leverage over that insurer, it tended to get higher prices. Our review suggests that market leverage is affected by the relative leverage of insurers and providers within a geographic region.

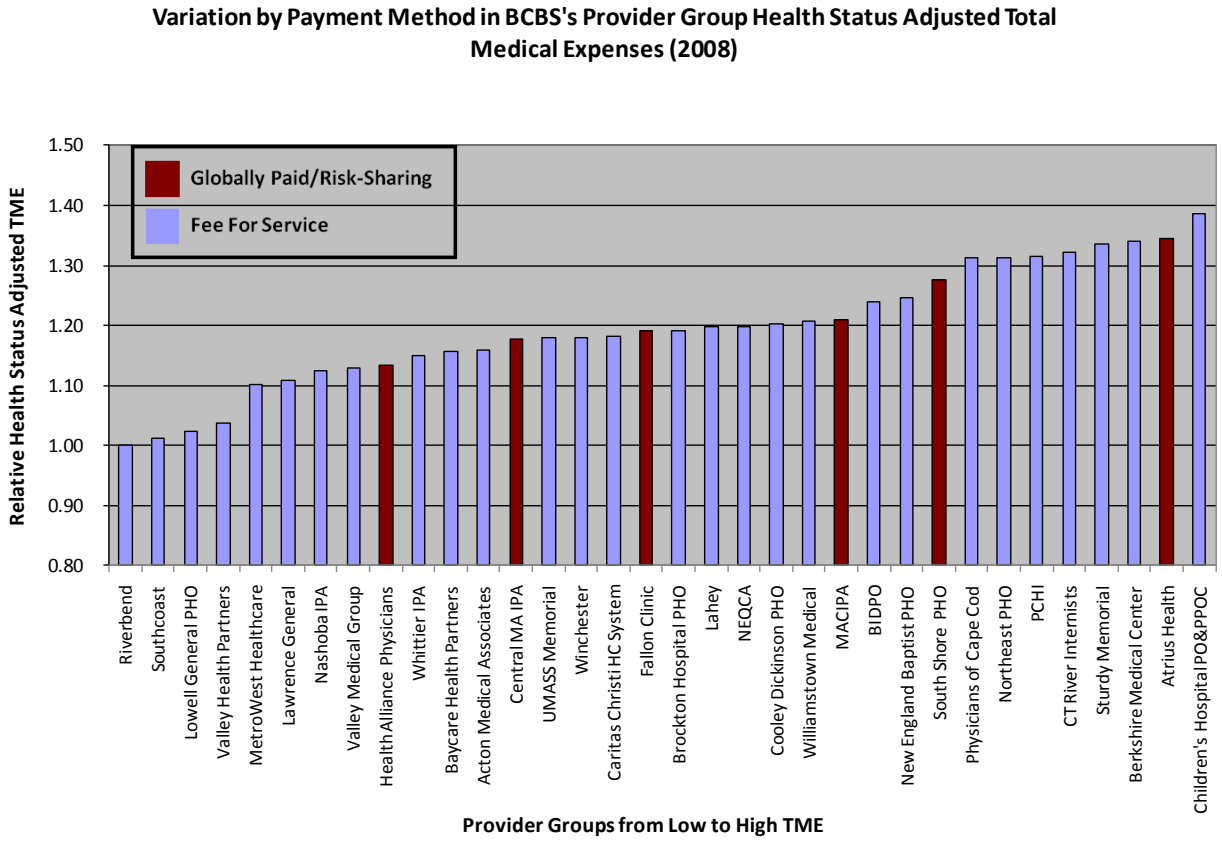
We have found that the prices that insurers and providers negotiate for health care services tend to reflect market leverage. Although this report does not purport to explain all reasons for provider price disparities, our review shows that those disparities are not adequately explained by quality of care, patient severity, or the status of a hospital as a teaching or disproportionate share hospital.

D. Variation in total medical expenses on a per member per month basis is not correlated to the methodology used to pay for health care, with total medical expenses sometimes higher for risk-sharing providers than for providers paid on a fee-for-service basis.

Our examination did not uncover any relationship between payment methodology and the total medical expenses (TME) associated with a provider group. The following two graphs

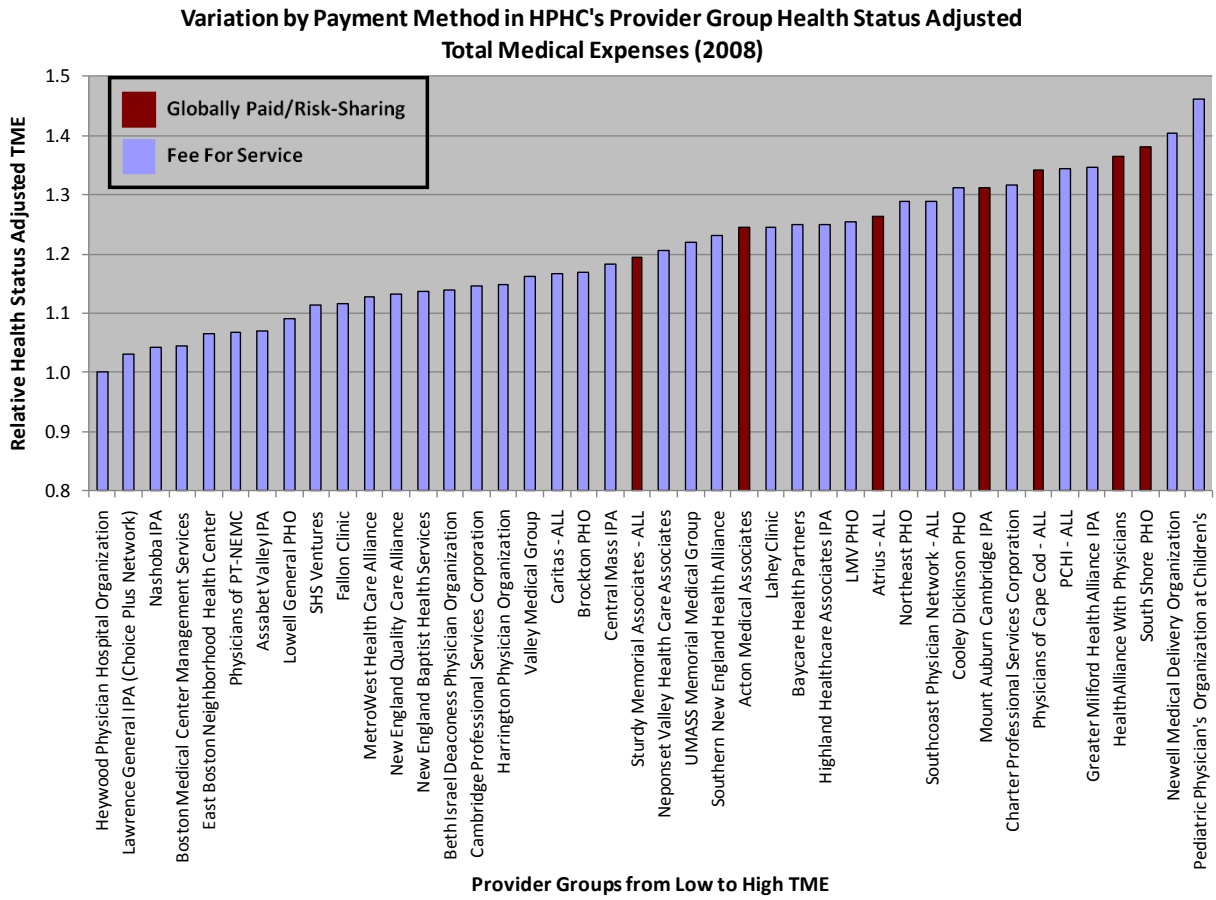
[17] Insurer's Leverage = Provider System's Revenue from Insurer ÷ Provider System's Total Revenue
[18] Provider's Leverage = Insurer's Revenue to Provider System ÷ Insurer's Total Revenue to Region
[19] Relative Leverage Ratio = Insurer's Leverage ÷ Provider's Leverage
[20] This discussion is for policy purposes; it should not be confused with a detailed analysis of "market definition" that might be undertaken in an inquiry under antitrust law.

illustrate the per member per month TME of major provider groups with those groups paid on a global budget or otherwise sharing risk shown in red.[21]



NOTE: In 2008, New England Quality Care Alliance (NEQCA) had a risk-sharing contract for one-third of BCBS's members with primary care providers at NEQCA (those members with providers at Primary Care LLC, a subgroup of NEQCA).

[21] We reflect insurers' own identification of those providers paid on a fee-for-service basis versus those paid globally or otherwise sharing risk. While there are many types of risk-sharing contracts in the Commonwealth, in general, risk-sharing agreements create incentives for provider groups to reduce their total medical expenses because the amount the group earns is linked to the level of TME the group achieves for its patients. By contrast, fee-for-service arrangements do not provide any direct incentives for providers to reduce TME.



Contrary to what one might expect in a risk-sharing contract, some risk-sharing provider groups are among the highest cost providers in the state.[22] The lack of correlation between payment methodology (e.g., fee-for-service versus risk-sharing payments) and TME has important implications for payment reform initiatives. Payment reform, such as the global payment methodology recommended by the Special Commission on the Health Care Payment System, should result in system benefits such as better integration of care. But, in order for a shift to global payments to help control costs, it should be coupled with steps to address the dynamics and distortions of the current marketplace.

E. Price increases, not increases in utilization, caused most of the increases in health care costs during the past few years in Massachusetts.

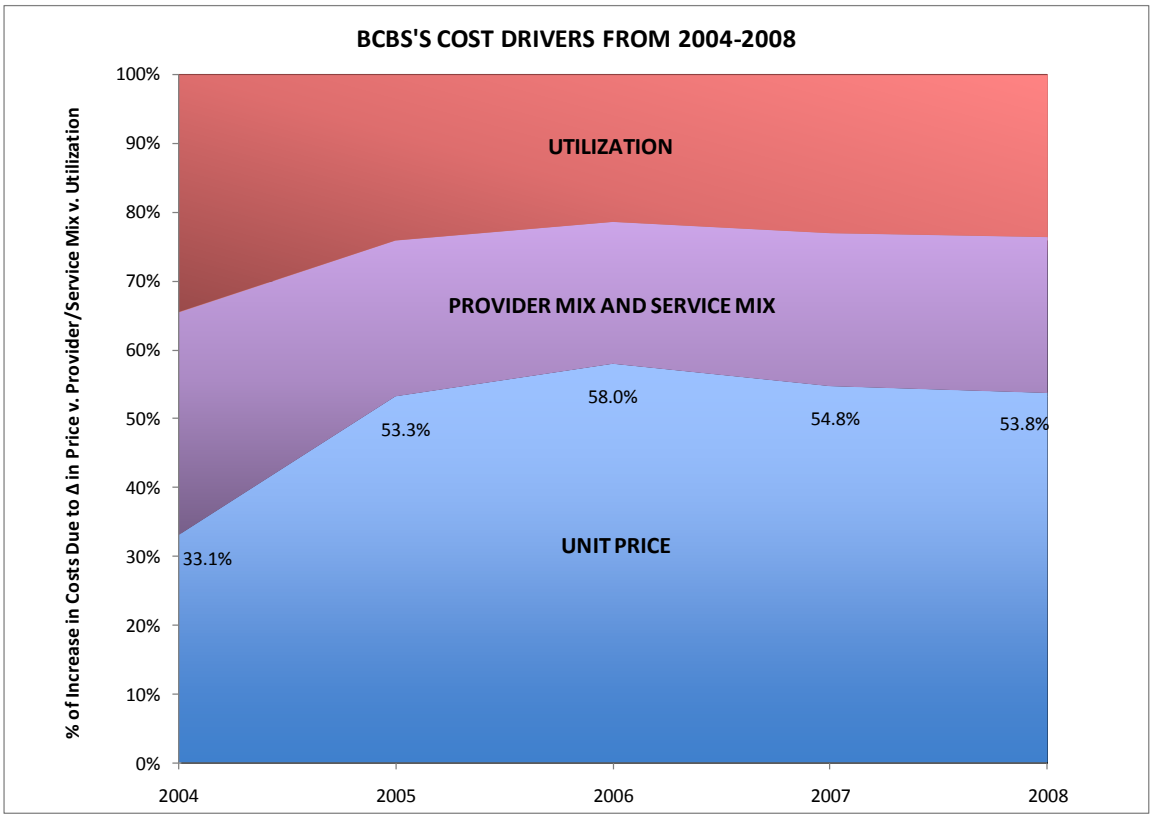
Data from the three largest health plans in Massachusetts show that increases in prices paid for medical services were primarily responsible for the overall increases in medical spending in the past few years.[23] The below graph, reflecting data submitted by Blue Cross Blue

[22] Note that all risk-sharing providers are reimbursed for some portion of their services on a fee-for-service basis, most notably the care they render to patients insured through PPO products.

[23] Health plans track the growth of allowed medical claims. From this, they can determine the amount of growth in spending that is attributable to increases in unit price as compared to other factors, including utilization, provider mix, service mix, demographics, and benefit design.

Shield of Massachusetts (BCBS) into this annual hearing process under G.L. c. 118G, § 6½,[24] shows that increases in unit price – defined by BCBS as the negotiated annual increases for specific services – have been the single biggest driver of increases in medical cost trend at BCBS from 2004-2008.

Two other significant components of medical cost trend at BCBS have been: (1) changes in provider mix (i.e., a shift in the location of care from less expensive to more expensive providers) and (2) changes in the intensity or complexity of services (i.e., substituting more expensive, intensive treatments for less expensive treatments). The impact of provider mix on overall health care costs can be understood to be a "price" issue: when patients obtain the same care at more expensive locations, costs go up because the price of the care increases – without any change in the number of services delivered, or the intensity of those services. In its written testimony, BCBS identified changes in provider mix as accounting for 20% of the increases in health care costs in recent years, increases in unit price accounting for another 50%, and the remainder attributable to increases in utilization and to a mix of costlier, or more intensive, services.



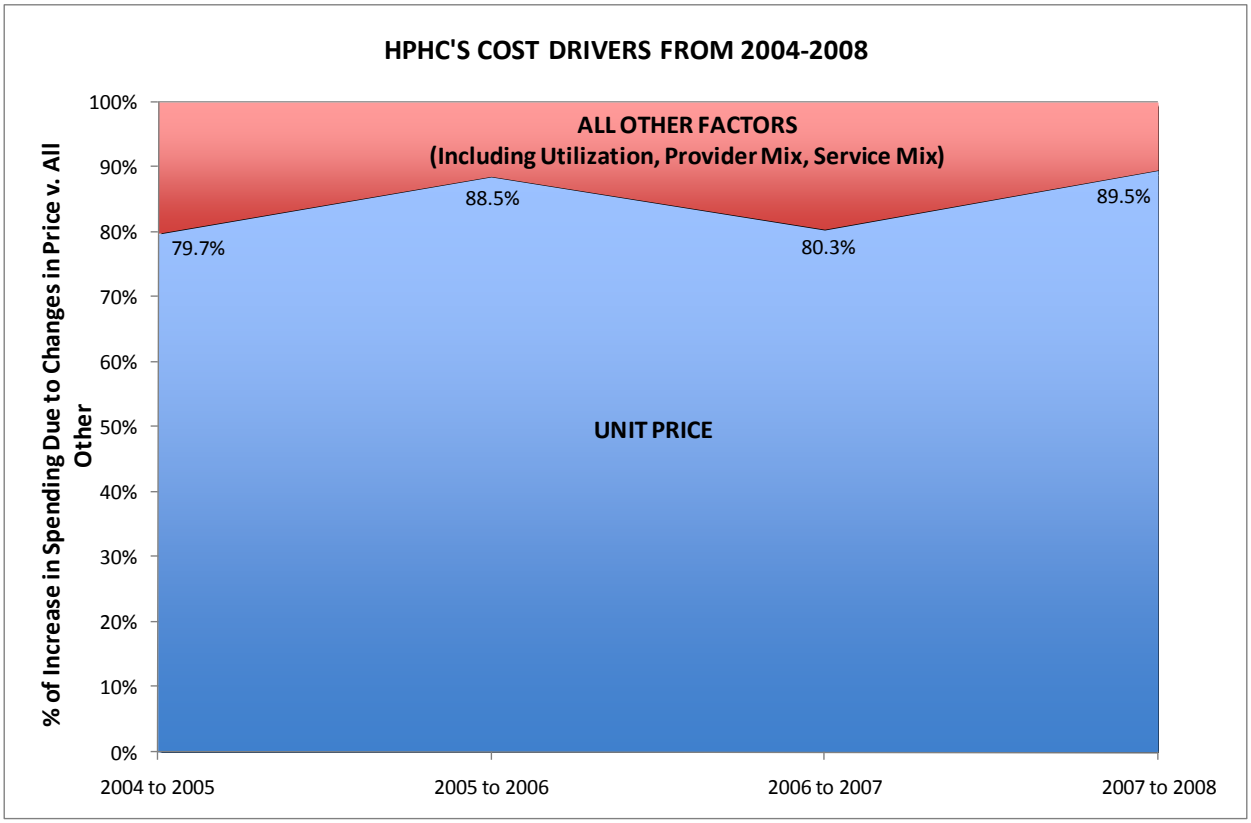
Notes:

(1) Reflects fully-insured commercial trend.

(2) "Unit price" reflects increases in provider rates. "Provider Mix and Service Mix" reflect changes in the location of care (shift to more expensive providers) and the intensity of services provided. "Utilization" reflects increases in the number or units of services provided.

[24] See BCBS's written testimony for the Annual Public Hearing, available at http://www.mass.gov/Eeohhs2/docs/dhcfp/cost_trend_docs/testimony_BCBSMA_AG.pdf (p. 24). In the table on page 24, BCBS also produced trend information in an "all other" category, which contains some trend data that is part of medical trend, such as demographic trends. That information is not reflected in this graph.

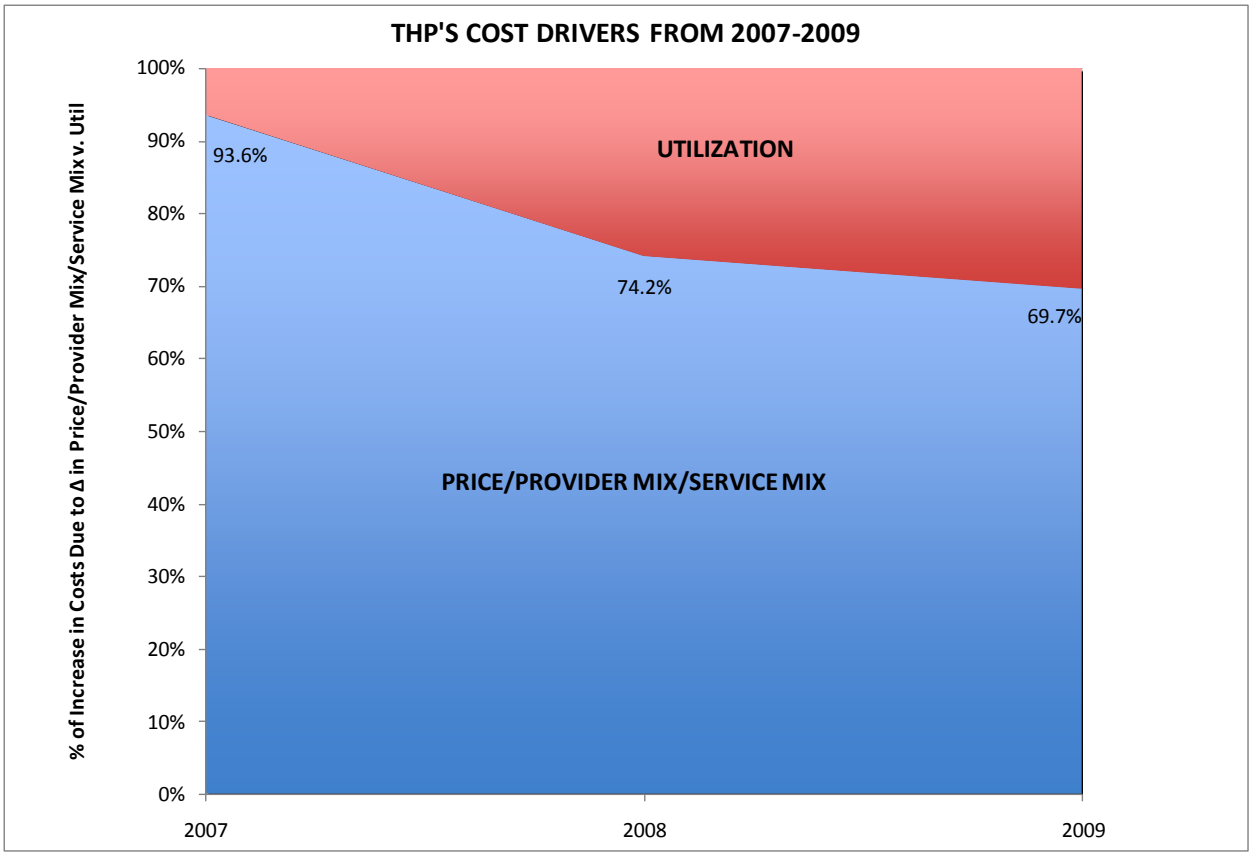
The next two graphs show that unit price increases – rather than increases in utilization – were also the major drivers of medical cost trend at two other health plans. For example, changes in unit price alone, before factoring in changes in provider mix or intensity of care, were responsible for, on average, 80% of cost growth at Harvard Pilgrim Health Care (HPHC) from 2004-2008. At Tufts Health Plan (THP), changes in price, provider mix, and intensity of care accounted for more than 90% of growth in total medical spending in 2007.



Notes:

(1) Reflects fully-insured HMO/POS trend.

(2) "Unit price" reflects contractual increases in provider rates. "All Other" reflects all other factors that increased health care costs at HPHC, including greater utilization, shifts in location to more expensive sites of care, and changes in the intensity of services provided.



Note: Reflects HMO fee-for-service trend.

The Massachusetts Association of Health Plans also determined that approximately 75% of total health care cost increases are attributable to price rather than utilization.[25] The fact that price is such a significant cost driver in Massachusetts has direct implications for statewide cost containment efforts and policy development. While addressing the utilization component of the cost growth problem is essential, any successful cost containment initiative must take into account the significant role of unit price in driving costs. Bending the cost curve will require tackling the growth in price and the market dynamics that perpetuate price inflation and lead to irrational price disparities.

F. Higher priced hospitals are gaining market share at the expense of lower priced hospitals, which are losing volume.

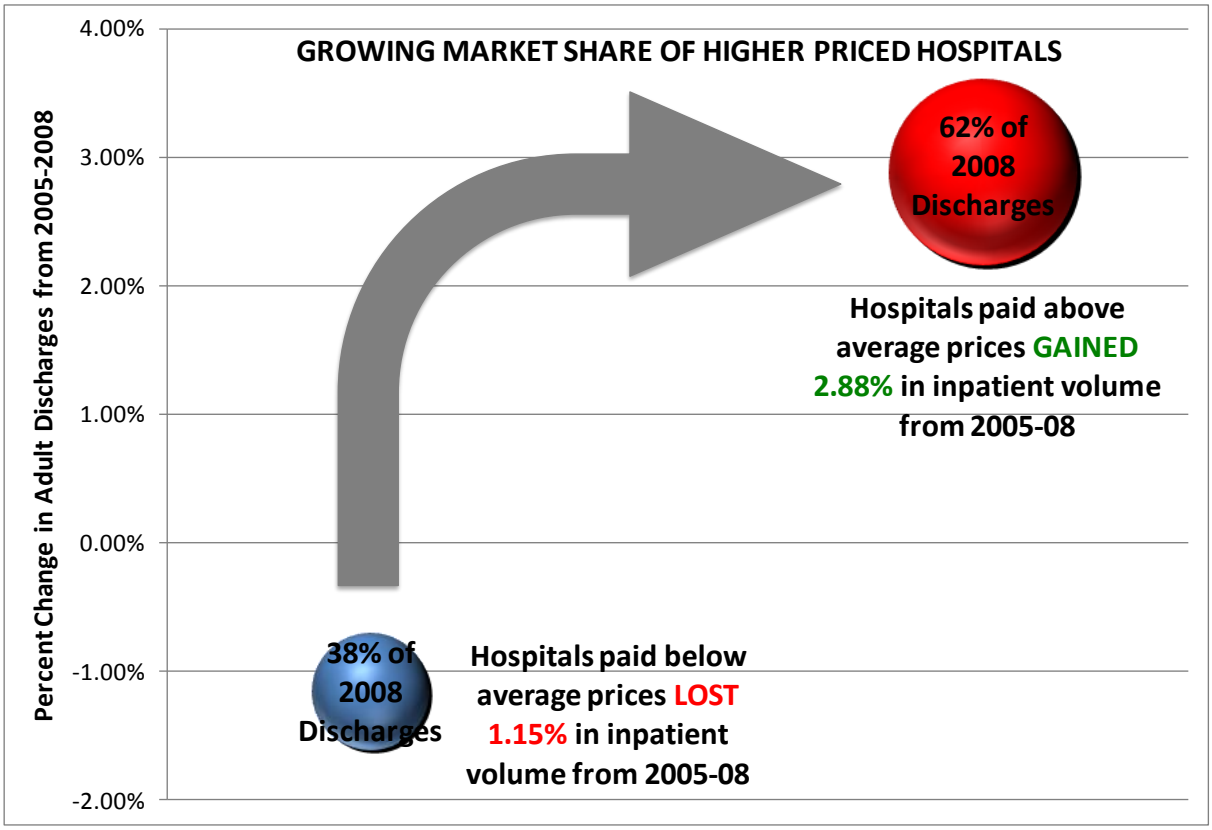
One telling measure of a provider's fiscal health and ability to compete in the market is its ability to obtain price increases and to build patient volume. A provider's ability to increase prices and volume in turn allow it to capitalize, improve its facilities, invest in new equipment, recruit physicians, and attract more patient volume.

A review of hospital capital ratios over the past five years suggests that, while ratios can vary year to year, more highly paid providers are able to fund depreciation consistently at or

[25] Testimony at Division of Insurance Special Session on Small Business, Docket No. G2009-07, November 4, 2009.

above industry standard. These hospitals are able to build new buildings, purchase new equipment and technology, and add to their cost structure. In contrast, hospitals with lower prices are unable to put comparable resources toward building maintenance or equipment acquisition, and in turn are disadvantaged in their endeavors to gain leverage, attract more patients, and preserve market share and revenue. This results in a loss of volume to better capitalized, more expensive hospitals.

The following graph shows the growing market share of more expensive providers from 2005-2008. We obtained data from the Massachusetts Health Data Consortium on the total number of adult discharges at each Massachusetts hospital for each year 2005 through 2008. Tracking the increase or decrease in discharges at a hospital tells us whether that hospital is gaining or losing volume. Then, using BCBS's 2008 hospital prices, we grouped the hospitals into two categories: (1) hospitals which were paid more than the statewide average price (32 hospitals), and (2) those which were paid at or below the statewide average price (37 hospitals). We compared the total number of discharges received by the lower-priced hospitals in 2005 to the total number of discharges they received in 2008, and found that these lower-priced hospitals lost discharges, for a total percent decrease in volume of 1.15% (a loss of more than 3,100 discharges). We then examined the percent change in discharges for the group of hospitals that was paid above average prices, and found that volume at these hospitals grew by 2.88% over this four year period (a gain in more than 12,200 discharges).



NOTES:

(1) Data from Massachusetts Health Data Consortium; excludes normal newborn discharges (which double count normal obstetrical deliveries since the mother is already counted in the discharge data).

(2) Statewide, total discharges for all hospitals increased by 1.3% from 2005 to 2008.

Statewide, total discharges for all hospitals increased 1.3% from 2005 to 2008. Therefore, while some of the increase in volume at the higher-priced hospitals resulted from overall growth in discharges since 2008, the balance came from a shift in volume from lower-priced hospitals to higher-priced hospitals. Overall, between 2005 and 2008, the 37 lower-priced hospitals lost 0.9% of their market share of total discharges, while the 32 higher-priced hospitals gained 0.9% in total market share. In 2008, the 37 lower-priced hospitals accounted for 38% of all discharges in Massachusetts, while the 32 higher-priced hospitals accounted for 62%.

As patient volume shifts from lower-priced to higher-priced hospitals, overall health care costs increase because those patients are now receiving their care in the higher-priced setting. The relationship between higher prices and more volume makes it difficult for providers with lower prices to compensate for those low prices with increased volume. Instead, these providers continue to lose volume to higher-priced hospitals, making it increasingly difficult for them to remain competitive, or sometimes even viable. Even if hospitals were held to identical rate increases going forward, prices disparities would continue to increase over time, and we would continue to see an increase in overall costs due to volume shifting to more expensive sites.

G. The commercial health care marketplace has been distorted by contracting practices that reinforce and perpetuate disparities in pricing.[26]

In our review of thousands of contract documents from insurers and providers, we have identified a number of contracting practices in effect during the period 2004 to 2008 that reflect and perpetuate the market dynamics and pricing disparities described in this report. While these provisions vary by contract and may or may not still be in effect, they do exemplify a contracting dynamic that obscures transparency, perpetuates market leverage, and prioritizes competitive position (parity) over consumer value.

1. Payment Parity Agreements

Payment parity agreements are agreements in which a provider agrees not to charge an insurer more than the price that it charges that insurer's competitors. Our review has shown that parity agreements are pervasive in the industry, and have been used by several major health plans in Massachusetts. The following is an example of one such provision:

> [Provider] shall represent and warrant that as of the effective date of this amendment and for the term of this Agreement, the terms of compensation paid by [Insurer] to [Provider] will not be any more than the compensation paid by the above described health plan competitors after adjusting for differences in the size of such competitor's membership…. [Insurer] reserves the right to engage an independent third party auditor, to be mutually agreed upon by the Parties, to verify the representation and warranty made by [Provider] with regard to this section.

[26] Through our examination of how insurers and providers contract and negotiate payment rates, we have indentified numerous administrative inefficiencies that contribute to overall health care costs. There is a startling level of variation that can only contribute to administrative expenses for both health plans and providers. The tremendous variation in methods (or units) of payment creates unwarranted administrative complexity. While most major health plans pay on a DRG basis, one major health plan pays per diem rates. Some providers are paid on a discount-off-of charges basis, while others are paid on a fee schedule with inflators and still others are paid on a percent of premium basis. Likewise, there is no standardization in quality measures. Each plan uses and requires reporting on different quality metrics, especially for the specific measures and targets selected for P4P programs.

While insurance companies seek payment parity to remain competitive and gain market share, such agreements may lock in payment levels and prevent innovation and competition based on pricing. Parity clauses may decrease competition among providers by reducing their incentive to offer lower prices to insurers. Likewise, parity clauses may reduce insurers' incentive to bargain with providers, since rival insurance companies with parity provisions would obtain any price savings. Parity clauses may also deter entry to the marketplace since any discount would have to be passed on to insurers already in the market.

Parity agreements can be used by insurers to guarantee that they will not be competitively disadvantaged by giving rate increases to providers. For example, if Insurer A agrees to give a provider a rate increase – presumably resulting in a corresponding increase in Insurer A's premium rates – Insurer A wants to make sure that the provider will require its competitors to pay the same rate increase, so that all premiums will rise together and Insurer A will not be at a competitive disadvantage. Therefore, these agreements may have the net effect of allowing insurers to increase payment to providers without concern that they will be at a competitive disadvantage to other insurers.

2. Product Participation Provisions

Product participation clauses are used to dictate the terms under which a provider may (or must) participate in an insurer's new product offerings. We have found a significant number of these provisions, such as "anti-steering," "guaranteed inclusion," and "product participation parity" clauses, which inhibit the innovation in product design that could lead to better value for consumers.[27]

For example, providers with market leverage are able to obtain contractual provisions that prohibit or inhibit insurers from creating limited network products and/or tiered products that might steer patients away from them. Even clauses that guarantee participation in a limited network so long as the provider meets certain criteria may inhibit the creation of limited network products. Product participation provisions may discourage insurers from seeking to create innovative new products if they believe that their competitors will automatically be able to market the very same product. They may likewise discourage providers from participating in new products if the provider would be willing to participate with one insurer, but not with all insurers.

Here are three examples of product participation clauses:

> [Physician hospital organization (PHO)] acknowledges that the Plan may design and offer products that involve Limited Networks…. [T]he Plan agrees to provide [PHO] sixty (60) days prior to written notice of the establishment of any Limited Network, including the details of the products to which the Limited Network will be applicable, and to invite participation by [PHO] in all Limited Network products for which they qualify on the basis of service array, quality, cost or

[27] "Anti-steering" provisions prohibit insurers, in whole or in part, from creating products that might steer patients away from certain providers. "Guaranteed inclusion" provisions guarantee the participation of certain providers in certain products – for example, an insurer's limited network product – so long as the provider meets certain criteria. "Product participation parity" provisions require a provider to participate in an insurer's product if that provider agrees to participate in a similar product offered by a competing insurer.

> other criteria. The Plan agrees not to discriminate against [PHO] in determining the applicable service, quality, cost or other criteria for participation in any Limited Network product. If [Insurer] invites [PHO] to participate, [Insurer] must include all of [PHO] Participating Providers and [PHO] shall, at its election to do so, be included in any such Limited Network products or benefit designs on the terms and conditions set forth in the Existing Agreement….
>
> In no event will [hospital] providers be singled out in a tier, limited network, or other product design arrangement that might provide incentives to steer patients away from [hospital] providers solely by reason of their being a [hospital] provider.
>
> The Parties acknowledge that, from time to time, [Insurer] may offer products or benefit design changes that have the effect of redirecting Members from one or more specific hospital or provider organizations to others in the [Insurer] network. Provider Organization and Hospital agree that they will participate in all such products or benefit design changes that redirect Members as just described provided that the new product or benefit design change is applied uniformly to other tertiary medical centers within [Insurer's] network.

3. Supplemental Payments

We have found a widespread practice of major insurers making supplemental payments to providers. These are payments that are in addition to contracted or scheduled prices. These payments, which do not include pay-for-performance quality or utilization bonuses, take the form of lump sum cash payments, signing bonuses, infrastructure payments, as well as bad debt or government payer shortfall payments.

As is the case with payment rates, it appears that market leverage dictates the amount and type of supplemental payments paid to providers. Although the total amount of supplemental payments has declined overall since 2004, certain providers – notably those with the strongest market leverage – continue to receive substantial amounts of money through supplemental payments.

Use of supplemental payments contributes to the lack of transparency in payment rates. Because supplemental payments are not "loaded" into unit prices and can obscure price outliers, it makes it difficult for regulators, market entities, or others to make valid comparisons of provider rates, and further complicates the ability of providers to contract for value-based, market appropriate prices. The indefinite and flexible nature of supplemental payments also raises questions regarding how such payments affect insurers' margins from year to year.

4. Growth Caps

Growth caps are contractual provisions that limit provider growth. These clauses, which we found in contracts of a limited number of provider groups with high physician payment rates, set a limit or "cap" on the number of newly added physicians who can be paid at the higher rate. The caps, which can be expressed as numbers of physicians or a percentage of the total or net number of physicians, target either overall physician growth or growth in specific areas, such as growth of specialty services or acquisition of practices over a certain size. For example:

> The performance multiplier applies to [physician organization] PO PCPs up to a maximum number of physicians "growth cap") which shall equal (1) Base Number of PO PCPs…plus (2) an increase of 6% per Physician Contract Year….

> The "Permitted Number of Network PCPs" shall mean…for the Contract Year beginning January 1, 2007, the Permitted Number of Network PCPs for the prior Contract Year plus an increase of two percent (2%).

While growth caps can be seen as a reasonable attempt by insurers to save costs by limiting the growth of their most highly-paid provider groups, given the market dynamics and price disparities we have documented, we are concerned that growth caps may have the deleterious effect of freezing disparities in the market place. In practice, the growth caps can prevent smaller physician groups from meaningfully competing with the largest provider organizations.

IV. CONCLUSION AND RECOMMENDATIONS

Our findings show that the current system of health care payment is not value-based – that is, wide disparities in prices are not explained by differences in quality, complexity of services, or other characteristics that justify a different price. These findings have powerful implications for ongoing policy discussions about ways to contain health care costs, reform payment methodologies, and control health insurance premiums. If we accept that our health care system can be improved by better aligning payment incentives and controlling cost growth, then we must begin to shift how we purchase health care to align payments with "value," measured by those factors the health care market should justly reward, such as better quality.

Prices paid for health care services reflect market leverage. As a greater portion of the commercial health care dollar shifts, for reasons other than quality or complexity, to those systems with higher payment rates and leverage, costs to the overall system will increase and hospitals with lower payment rates and leverage will continue to be disadvantaged. If left unchecked, there is a risk that these systemic disparities will, over time, create a provider marketplace dominated by very expensive "haves" as the lower and more moderately priced "have nots" are forced to close or consolidate with higher paid systems.

The present health care market does not allow employers and consumers to make value-based purchasing decisions. The market currently lacks transparency in both price and quality information, and other tools that allow employers and consumers to be prudent purchasers. We should expect employers and consumers to be seriously engaged in cost containment, and making the health care market more transparent is a critical step to enlist their participation.

These market dynamics and distortions must be addressed in any successful cost containment strategy. Payment reform, such as the global payment methodology recommended by the Special Commission on the Health Care Payment System, should result in system benefits such as better integration of care and better alignment of system incentives. In order for a shift to global payments to help control costs, it should be coupled with steps to address the dynamics and distortions of the current marketplace.

This report does not point to any simple solutions, and comprehensive and sustainable system improvements will require significant collective effort. The Office of the Attorney General is committed to working with the Legislature, the Patrick administration, health insurers, hospitals, all other health care providers, the business community, municipalities, and consumer

groups to develop cost containment strategies that promote value-based purchasing and ensure consumer access to high quality, affordable health care. We stand ready to assist the Legislature, the Administration, and other policymakers as the Commonwealth develops cost containment solutions that account for current system dynamics and refocus the system towards value.

Based on our examination, we make the following recommendations to advance the goal of improving our health care system to provide universal access to affordable, quality health care services:

1. Increasing transparency and standardization in both health care payment and health care quality measures to promote market effectiveness and value-based purchasing by employers and consumers, including:

    - Tracking and publishing total medical expenses for all providers;
    - Promoting uniform quality measurement and reporting; and
    - Promoting standardization of units of payment and other administrative processes;

2. Consideration of steps to improve market function, including:

    - Adopting payment reform measures that account for and do not exacerbate existing market dynamics and distortions;
    - Developing legislative or regulatory proposals to mitigate health care market dysfunction and price disparities. These proposals would be designed to promote convergence of prices where there are no differences in quality or other value-based factors;

3. Engaging all participants in the development of a value-based health care market by promoting creation of insurance products and decision-making tools that allow and encourage employers and consumers to make prudent health care decisions;

4. Prompt consideration of legislative and administrative action to discourage or prohibit insurer-provider contract provisions that perpetuate market disparities and inhibit product innovation.

Massachusetts is a national leader in providing access to health care. We can also be a leader in keeping health care affordable while maintaining high quality. Working together, policymakers, health plans, all health care providers, businesses, municipalities, and consumers will be able to deliver the health care quality and value that the people of Massachusetts deserve.

OFFICE OF ATTORNEY GENERAL MARTHA COAKLEY

Examination of Health Care Cost Trends and Cost Drivers
Pursuant to G.L. c. 118G, § 6½(b)

General Appendix

I. PRICE DATA

In our examination of how health insurers pay health care providers, we considered the same financial data that the insurers maintain in the normal course of their business to track the relative prices they pay to providers. There are two metrics that the major insurers in Massachusetts use to track the relative prices that they pay to providers: "relative price" and/or "relative payment." We asked the insurers to produce the relative prices paid to providers in their network so that we could analyze the variation in provider prices. Based on the data produced by each insurer, we were able to review "price" relativities for BCBS and "payment" relativities for HPHC and THP.[1] BCBS, HPHC, and THP have recently filed this important financial information with the DHCFP in response to a request for written testimony made by the AGO. Some of the written filings are different, in approach and/or content, from the information produced to the AGO during our examination. As a result, some of the price relativities in the written filings are slightly different than those presented in this report, although the written filings are directionally consistent with and supportive of the results of the AGO examination. We used information from the written filings where noted.

"Price relativity" is a metric for comparing how much higher or lower a provider's price is than the average price paid to other providers in an insurer's network for the same set of services. Price relativities are calculated based on a standard set of services that are not specific to any provider, and as such do not reflect the insurance product mix, service mix, or other factors that are particular to an individual hospital's payment history. Since this approach controls for those differentiating factors, we were able to compare the pure "price" that insurers negotiate with different hospitals.

"Payment relativity" is a metric for comparing the payment to a provider to the network-wide average payment made all providers in an insurer's network. Unlike "price relativity," payment relativities for hospitals reflect provider-specific differences in insurance product mix, service mix, and other factors particular to a hospital's payment experience rather than a standard market basket of services. Payment relativities for inpatient services are adjusted for acuity and complexity. However, the adjustment may not fully account for differences in product and service mix.

Payment and price relativities both represent the *aggregate* amount paid to hospitals and physicians. While the comparison of individual service or procedure pricing may be useful for consumer comparison, as provided by the Health Care Quality and Cost Council's website http://www.mass.gov/myhealthcareoptions, analysis of the entire payment rate structure more

[1] Because of the differences in methodologies used by the insurers, we did not think that it was appropriate to compare price and payment relativities across insurers.

accurately reflects the way health plans and providers negotiate and set prices. Our review indicates that prices of specific services do not reflect the actual costs of those services, but rather reflect the need for providers and payers to arrive at a rate structure that will cover the overall costs of the provider entity. Therefore, in response to our CIDs, health plans provided detailed information regarding the variation in *aggregate* prices and payments in their networks.

A. Hospital Price/Payment Data

Typically, major health plans and hospitals negotiate prices for inpatient health care services using a base case rate. The base case rate represents a severity-neutral price that is then adjusted by a set of standard "weights" that reflect the complexity of each case and may be further modified if the case becomes atypical or an "outlier." Additional prices are negotiated for a limited set of other inpatient services such as very high-cost or experimental procedures. For hospital outpatient services, health plans have established standard fee schedules (e.g., standard fees are set for radiology, laboratory work, observation, behavioral health). The insurers and hospitals negotiate a specific multiplier to each of these standard fees; for example, a provider with a 1.2 multiplier for radiology services would be paid 120% of the standard fee schedule rate for covered radiology services.

1. BCBS Hospital Price Relativity

BCBS provided us with its 2008 (1) standard inpatient base DRG rates and (2) outpatient fee schedule multipliers for 13 categories of services for 74 hospitals, for HMO, PPO, and indemnity products. BCBS also provided us with inpatient revenue and outpatient revenue – by service line and in total – for all hospitals, for HMO, PPO, and indemnity products. We aggregated BCBS's inpatient and outpatient pricing data, using the revenue information to appropriately weight the data, in order to compare the prices that BCBS paid to hospitals based on a network-wide average mix of business.

First, we created an inpatient pricing index for each hospital. Using the standard 2008 base DRG rate paid to each hospital in Massachusetts for indemnity, PPO, and HMO products, we calculated a network average base DRG rate for each product. The data submitted by BCBS took into account adjustments to the DRG rates to reflect payments made to providers outside of the standard base DRG rate (i.e., short term inpatient rate multipliers). Using network-wide HMO, PPO, and indemnity revenue mix, we calculated network-wide inpatient product revenue mix. We then calculated a product-blended DRG rate that is weighted using calculated network-wide product revenue weights. Finally, we created an inpatient "index" for each hospital by dividing each individual hospital's "product-blended" DRG rate by the statewide hospital base DRG average. Because this is a base DRG rate, it is case mix neutral because all base rates are adjusted by a standard case weight for each admission.[2,3,4]

---

[2] Note that for hospitals that had two sets of base DRG rates indicated for the HMO product – one for their in-system business and one for their out-of-system business – we calculated a 50/50 blend of the HMO base rates and used that figure in the product-blended rate index. We believe this weighting likely understates the relative pricing of the HMO pricing since more business is likely in-system and the in-system pricing is higher than the out-of-system pricing. Affected hospitals include: Emerson Hospital, Hallmark Health System, and South Shore Hospital.
[3] The Massachusetts Eye and Ear Institute and Morton Hospital both had two sets of base DRG rates for unspecified reasons. As a result, those rates were averaged and used to calculate the product-blended DRG-Rate.

Next, we created a hospital outpatient fee schedule pricing index. For HMO, PPO, and indemnity products, using 10 major outpatient fee schedule categories, we calculated BCBS network-wide revenue mix percentages. The 10 categories include: 1) Ambulatory Surgery, 2) Outpatient Laboratory, 3) Radiology, 4) Other Diagnostic, 5) Therapies, 6) Outpatient Mental Health, 7) Clinic-technical, 8) ER – technical, 9) Clinic & ER – professional and 10) Certain Pharmacy. Those 10 categories account for 84% of all hospital outpatient revenue. Then we created a single blended hospital outpatient multiplier for each product by weighting the fee schedule multiplier for each of the 10 categories by the category weights. We calculated the network-wide hospital outpatient revenue mix by product based on product outpatient totals for those categories, and calculated a product-blended outpatient multiplier for each hospital based on network-wide outpatient product mix percentages. Finally, we calculated an outpatient "index" for each hospital as a percent of the state-wide hospital outpatient multiplier average. The blended outpatient multiplier is an outpatient snapshot taken during 2008. Because the multiplier is for all fee-scheduled services, it is case mix neutral for intensity of services.[5,6,7,8]

We then created an observation price (bedded outpatient) index. First, for HMO, PPO and indemnity products, we calculated the network-wide revenue mix for observation services using revenues. Then we calculated a product-blended observation rate average, using network-wide revenue weights. Finally, we calculated an observation index for each hospital as a percent of the state-wide blended observation rate average.[9]

Finally, we created a blended (inpatient, outpatient, and observation) hospital price index. We first calculated the percent of revenue from all products that goes to inpatient, outpatient fee schedule, and observation. We then weighted the inpatient index, outpatient index, and

---

[4] Outlier payments and transfer pricing are not included in this inpatient pricing snapshot.

[5] Massachusetts General Hospital, Brigham & Women's Hospital, and South Shore Hospital were paid on a discount-off-of charges arrangement for indemnity product hospital outpatient services. As a result, their blended hospital outpatient multipliers are based on only their HMO and PPO rates. Because discount-of-off-charges arrangements generally reflect higher-end pricing, it is our belief that excluding the indemnity pricing likely understates the overall outpatient relative pricing**.**

[6] The following hospitals were paid on a discount-of-off-charges arrangement for "Certain Pharmacy" for PPO and indemnity business: Faulkner, Newton Wellesley, North Shore Medical Center, and Massachusetts Eye & Ear Infirmary. As a result, the "Certain Pharmacy" category was excluded from their PPO and indemnity outpatient index calculations. Because discount-of-off-charges arrangements generally reflect higher-end pricing, it is our belief that excluding the pricing from this category likely results in somewhat understating the overall outpatient relative pricing.

[7] Massachusetts General Hospital, Brigham & Women's Hospital, Newton Wellesley Hospital, and North Shore Medical Center were paid on a discount-of-off-charges arrangement for outpatient mental health for all products. As a result, their outpatient pricing index excludes this category. Because discount-of-off-charges arrangements generally reflect higher-end pricing, it is our belief that excluding the pricing from this category likely results in somewhat understating the overall outpatient relative pricing.

[8] The Massachusetts Eye and Ear Institute and Morton Hospital both had two sets of hospital outpatient multipliers indicated for unspecified reasons. As a result, those rates were averaged and used to calculate the product-blended outpatient multiplier rate.

[9] Massachusetts General Hospital, Brigham & Women's Hospital, and South Shore Hospital are paid for observation services on discount-of-off-charges arrangement for their indemnity business. As a result, their observation index is based on HMO and PPO only. Because discount-of-off-charges arrangements generally reflect higher-end pricing, it is our belief that excluding the pricing from this category likely results in somewhat understating their observation relative pricing.

observation index for each hospital by the network-wide percent of revenue that comes from each of those three categories.[10,11,12] The resultant blended hospital price index reflects a product-adjusted, case-mix neutral marker for approximately 90% of the services delivered by hospitals. The remaining 10% of services are paid on a discount-off-of-charges basis and cannot be compared or indexed with the information that we received.[13]

2. HPHC and THP Hospital Payment Relativities

HPHC and THP maintain hospital payment relativities. Both insurers provided information on the variation in payments made to each hospital in its network, as compared to the network-wide average. HPHC and THP calculated a "payment relativity factor" for hospitals taking into account volume, product mix, service mix, and other factors particular to a hospital's payment history. They both case mix adjusted their hospital inpatient payments for the acuity of the patients served at that hospital. In response to a request from the AGO, HPHC and THP submitted pre-filed testimony containing hospital payment relativity information. We used that information in our report.[14]

B. Physician Price/Payment Data

Health plans set standard fee schedules for physician groups. The physician groups and hospitals sometimes negotiate a specific multiplier to each of these standard fees; for example, a physician group with a 1.2 multiplier for professional services would be paid 120% of the standard fee schedule rate.

1. BCBS Physician Price Relativity

BCBS negotiates fee schedule multipliers for 14 primary or multispecialty care provider groups that have enhanced fee arrangements. All other BCBS primary or multispecialty care provider groups are paid at the "standard" or "base" fee schedule. In addition, BCBS negotiates additional supplemental payments with certain physician groups. In response to a request from the AGO, BCBS submitted pre-filed testimony containing physician price relativity information. We used that information in our report.[15]

---

[10] The following hospitals are paid on a discount-of-off-charges basis for their hospital outpatient services for all products: Cape Cod Hospital, Falmouth Hospital, Berkshire Hospital, Fairview Hospital, Dana Farber Cancer Institute, and Children's Hospital. As a result, the overall price relativities for these hospitals were based only on inpatient pricing. Because discount-of-off-charges arrangements generally reflect higher-end pricing, it is our belief that the inpatient pricing likely understates the overall relative pricing.

[11] Nantucket Cottage Hospital is paid on a discount-of-off-charges basis for its hospital inpatient services for all products. As a result, the overall relative pricing is based on outpatient pricing. Because discount-of-off-charges arrangements generally reflect higher-end pricing, it is our belief that the outpatient pricing likely understates the overall relative pricing.

[12] Sturdy Memorial Hospital and Martha's Vineyard Hospital are paid entirely on a discount-of-off-charges basis and are not included in our analysis.

[13] Insurers pay providers on a discount-off-of-charges basis by paying the provider a percentage off of its charge master. Because provider charge masters generally contain extremely high prices, discount-of-off-charges arrangements generally reflect higher-end pricing than either standard fee schedules or multipliers on fee schedules.

[14] Pre-filed testimony is available on DHCFP's website.

[15] Pre-filed testimony is available on DHCFP's website.

2. HPHC and THP Physician Payment Relativities

HPHC and THP both maintain calculated physician payment relativities for physician groups in their networks. Based on the data that they provided to us, we believe that HPHC and THP calculated their physician relativities by comparing what services would have cost using a network-wide average fee schedule to actual paid dollars. The average payment of each physician group reflects its volume, product mix, service mix, and other factors particular to a physician group's payment history. Neither HPHC nor THP physician relativity factors are adjusted for acuity.

HPHC maintains its payment relativity information by physician group.[16] HPHC provided us with "mapping" information that attributed certain physician groups to larger provider systems. For example, Dedham Medical Associates, Granite Medical, Harvard Vanguard Medical Associates, South Shore Medical Center, and Southboro Medical Group can all be rolled up to represent the Atrius system. Using HPHC's mapping information, we rolled-up and calculated relativity factors for the following provider systems:

- Atrius Health
- Caritas Christi Network Services
- Partners HealthCare System, Inc. ("Partners") and Partners Community HealthCare, Inc. ("PCHI")
- Physicians of Cape Cod
- Southcoast Physician Network

In order to calculate relativity factors for those provider systems, we summed total paid dollars to the provider system and compared it to what total paid dollars would be under HPHC's standard fee schedule. We then compared the resultant fee schedule multiplier (or enhancement) to HPHC's average multiplier to calculate a payment relativity factor.

THP maintains physician relativity factors for a large number of physician groups. For purposes of presenting the information in a chart, we reduced THP's list by excluding those groups with less than $1 million amount allowed claims (which includes both THP payments to providers as well as member cost sharing, or patient payments to providers). The resulting 49 provider systems that appear on the bar chart account for 95.8% of THP's allowed network dollars.

II. TOTAL MEDICAL EXPENSES

Insurers track the total medical expenses (TME) incurred for each of its members back to that member's primary care provider and/or physician group.[17] TME accounts for *all* of the medical expenses associated with an insurer's member, regardless of where those expenses are incurred (i.e., it includes physician visits as well as all hospital, laboratory, imaging, physician

[16] We excluded Harvard Pilgrim No Risk, Individual Harvard Pilgrim Non Risk and RI CONTRACTED PCP entities from our graph since they are either not physician groups or are outside of Massachusetts.
[17] TME is expressed as a per member per month dollar figure based on allowed claims.

therapy and other medical expenses, wherever those services occur).[18,19] As such, TME reflects both the volume of services used by each member (utilization), as well as the price paid for each service (unit price). TME can be adjusted for acuity to enable an "apples-to-apples" comparison across provider groups. Insurers maintain this information to monitor and compare the total medical expenses of provider organizations in their networks. Some insurers consider TME to be the best available measure of a provider's overall cost efficiency. BCBS, THP and HPHC have publicly filed this important financial information with the DHCFP in response to a pre-file testimony request made by the AGO. These public filings demonstrate the validity of the data and approach used by the AGO.

TME is the most comprehensive available measure of cost of health care. Unlike other measures, such as inpatient days per 1000 members, radiology units per 1000, or pharmacy per member per month, TME captures both the price *and* utilization components of cost and encompasses *all* categories of service.[20]

We received TME data held by BCBS and HPHC. HPHC provided us with TME for individual physician groups. For nearly all of the groups we simply used the reported health status adjusted TME value. As with the HPHC payment relativity data, above, HPHC provided us with "mapping" information that attributed certain physician groups to larger provider systems. Using that information, we rolled up physician groups into provider systems and aggregated the TMEs of those physician groups into a single provider system TME. Acuity adjusted TMEs were calculated for the following rolled-up systems:

- Atrius Health, Inc.
- Caritas Christi Network Services, Inc.
- Northeast Health Systems Physician Hospital Organization, Inc.
- Partners HealthCare System, Inc. ("Partners") and Partners Community HealthCare, Inc. ("PCHI")
- Physicians of Cape Cod, Inc.
- Southcoast Physician Network, Inc.
- Sturdy Memorial Associates

For these select systems, the health status adjusted TME was calculated by taking a weighted average of the physician group's acuity adjusted TME, based on member month data provided by HPHC. For the purposes of presenting the information in a bar chart, acuity adjusted TME

---

[18] TME can only be calculated for HMO and point of service (POS) members, whose expenses can be attributed to a particular primary care provider. The large numbers of patients insured under HMO and POS products in Massachusetts mean that TME is a useful metric for comparing the varying levels of expenses incurred by different provider systems per patient.

[19] Some components of TME are beyond a PCP's ability to control, such as pharmacy unit pricing, benefit design differences, and patient utilization of health services outside of the recommendation of the PCP.

[20] Some health care entities consider provider medical loss ratio, or provider MLR, as another measure of cost efficiency. Provider MLR is equal to an insurer's payments to a provider divided by the premiums collected by that insurer from that provider's patient population. Because patient premiums vary by employer, and therefore also vary by provider, provider MLR is a less useful tool for comparing the cost efficiency of various providers. For example, one provider's MLR could be 100/120, while another's could be 100/110. In this example, the insurer pays both providers the same amount of money for the same services, yet one provider appears less efficient because premiums in its area are lower. In addition, provider MLR tracks providers' costs as a function of insurer revenue, while TME focuses solely on price and utilization.

values for physician groups with less than 5,000 member months were excluded.[21] We then converted TME to relativities by dividing all TME data by the lowest TME (which then equaled "1" on our graph). HPHC includes supplemental payments in its TME, and reports TME based on claims paid to providers (which only reflects HPHC payments, not patient payments).

BCBS provided us with TME for individual physician groups. We used the reported health status adjusted TME value as maintained by BCBS with a single modification: we calculated a weighted average TME based on membership for Children's PPOC and Children's Hospital PO. As with HPHC data, we then converted TMEs to relativities by dividing all TME data by the lowest TME (which then equaled "1" on our graph). BCBS produced TME information for all provider groups with more than 18,000 member months, which resulted in 35 groups. BCBS includes supplemental payments in its TME and calculates its TME based on allowed claims (which include both BCBS payments to providers as well as member cost sharing, or patient payments to providers).

III. MARKET LEVERAGE

We define "leverage" as a measure of the ability of insurers and providers to influence each other during contract negotiations. As discussed in our report, both providers and insurers can bring leverage into contract negotiations.

In our provider leverage analysis, we examined (1) the total revenue paid by an insurer to an entire provider system, and/or (2) the total number of an insurer's HMO or POS members cared for by a provider system. Both figures create a proxy for the size of a provider system within a given insurer's network, and therefore the amount of disruption that the insurer would face if the provider were not in its network.

A. AMC Leverage Analysis

We compared the variation in payment rates to select academic medical centers (AMCs) to (1) the total revenue received by all hospitals in a given system and (2) the total number of covered lives associated with a given system. For the purpose of this analysis, we chose to compare six AMCs.[22]

HPHC and THP provided total hospital revenue amount for each hospital. BCBS provided total revenue for each hospital for HMO, PPO, and indemnity products, which we summed to total revenue for each hospital. Some hospitals contract individually with insurers, while other hospitals contract jointly as a provider system. To compare the relative leverage of hospitals' systems, we aggregated the total revenue for *all* hospitals within a contracting system to reflect how those hospitals contract as a multi-provider system rather than as a single

[21] Also excluded are Harvard Pilgrim No Risk, Individual Harvard Pilgrim Non Risk, RI Contracted Specialist Groups, RI Contracted Specialists, since these entities are either not physician groups or are outside of Massachusetts.

[22] Using expert input, we chose six major adult hospitals that: 1) have extensive research and teaching programs; 2) are principal teaching hospitals for a medical school; 3) allocate extensive resources for tertiary and quaternary care; and 4) are full service hospitals with a CMI intensity that is more than 5% above the state average.

hospital.[23] To sum the total revenue paid by each insurer to each hospitals' provider system, we attributed hospitals to provider systems and then totaled the hospital revenue in each system.[24] If a hospital was not assigned to a provider system, then that hospital's own revenue was also used for system revenue.

We relied on the physician group member month data that BCBS, HPHC, and THP produced in relation to their TME data to determine the member lives associated with each AMC's provider system.[25] To sum the total number of insurer members in each provider system, we attributed physician groups to provider systems or their affiliated AMC, and then totaled the members in each system.[26,27,28]

B. Physician Leverage Analysis

We compared the physician groups that received enhancements, or multipliers, to BCBS's standard physician fee schedule to the total number of covered lives associated with each physician system. BCBS produced multiplier information for the 14 primary or multispecialty care provider groups that receive enhancements to BCBS's standard physician fee schedule.[29,30,31] BCBS pays all other primary or multispecialty care provider groups at the

---

[23] Based on the data that we collected, we could not include revenue for any physician groups that might also be included in the same system.

[24] Using expert input, we attributed hospitals to provider systems as follows: Nantucket Cottage Hospital, Martha's Vineyard Hospital, Faulkner Hospital, Emerson Hospital, North Shore Medical Center, Newton-Wellesley Hospital, Hallmark Health Systems, Massachusetts General Hospital and Brigham and Women's Hospital were all attributed to the Partners provider system; Beth Israel Deaconess Medical Center and Beth Israel Deaconess Needham were attributed to the Beth Israel provider system; and Marlborough Hospital, Clinton Hospital, Health Alliance Hospitals, Inc., Wing Memorial Hospital, and University of Massachusetts Memorial Center were attributed to the UMass provider system. Tufts Medical Center and Boston Medical Center are not members of a provider system with any other hospital.

[25] For the sake of presentation, we divided member months by 12 to arrive at total members.

[26] Using expert input, we attributed physician groups to provider systems as follows: PCHI physicians were associated with the Partners provider system; the Beth Israel Deaconess Physician Organization physician were associated with the Beth Israel provider system; the University of Massachusetts Memorial Group and Health Alliance Physicians Inc. were associated with the UMass provider system; NEQCA & the Physicians Organization of Tufts New England Medical Center was associated with Tufts Medical Center; and Boston Medical Center Management Services was associated with Boston Medical Center.

[27] Note that BCBS did not produce member month data for BMC, so we made a conservative estimate of 18000 member months (1500 members), which is the largest size group for which BCBS produced member month data; smaller group data was produced as a consolidated "all other" category.

[28] BCBS and HPHC member month data is from 2008, while THP member month data is from 2007. BCBS and HPHC data reflects both HMO and POS membership information, while THP data reflects only HMO members.

[29] Of the 14 groups that receive a multiplier off of the standard fee schedule, 13 have the same fee schedule. BCBS and PCHI negotiated a separate fee schedule for PCHI, which we understand varies from the standard network fee schedule for certain physician codes, such as lab codes and temporary codes. In addition, both Children's and PCHI are paid on a discount-of-off-charges basis for "Not Otherwise Classified" (NOC) codes. BCBS does not pay any other physician group for service that physicians classify as NOC codes. The fact that PCHI and Children's are paid for NOC codes increases their price in a way we cannot capture with this analysis.

[30] We used BCBS's CY2008 multiplier information for 12 of the 14 physician groups. For Atrius and Children's PO, we used information from 2008 and 2009 because physician groups within Atrius (5 groups) and Children's PO (20 groups) each received different multiplier in CY2008 that we could not blend. UMass, PCHI, Lahey, and Children's PPOC had more than one multiplier in effect throughout CY2008. We blended their multipliers to arrive at one multiplier for each of those providers in the CY2008 time period.

"standard" or "base" fee schedule.[32] BCBS also produced information regarding the per member per month payments that BCBS pays to the physician groups that also receive multipliers and the number of BCBS member lives associated with each of those groups. We included that information with no additional calculations required.

IV. HOSPITAL VARIABLES

Case Mix Index

DHCFP calculates a case mix index (CMI) for each hospital in Massachusetts and publishes it publicly on the Executive Office of Health and Human Services' website.[33] CMI is used to assess and adjust for the complexity and/or sickness of a hospital's patient population. A CMI of 1.0 is average and hospitals with a higher CMI (above 1.0) serve a more complex and/or sicker population on average. We used DHCFP's CMIs to compare the prices paid to hospitals to the acuity or complexity of the cases handled by the hospital as measured by the hospital's CMI. Where DHCFP reported CMI separately for related hospitals or hospital campuses, we blended the CMIs of the hospital campuses on a weighted basis using the number of admissions at each campus.[34] Note that CMI is based on information from all insurers, not just commercial insurers. [35]

Disproportionate Share Hospitals

DHCFP identifies Massachusetts hospitals that receive a disproportionate share of their revenue from government payers. DHCFP defines disproportionate share hospitals (DSH) "as those hospitals with a large percentage (63% or more) of patient charges attributed to Medicare, Medicaid, other government payers, and free care." DHCFP's DSH designations can be found on slide 24 of its report, "Massachusetts Acute Hospital Financial Performance: Fiscal Year 2008," which is located on its website. Using DHCFP's DSH designations, we compared DSH hospital status to hospitals' price or payment relativity. We also sought to determine whether, on average, insurers pay DSH hospitals more or less than non-DSH hospitals. For HPHC and THP,

---

[31] Atrius obtains the same price for its commercial negotiated fee-for-service business as it does for its commercial HMO capitated business.

[32] BCBS negotiates a multiplier on the base fee schedule with only 14 physician groups. In addition, BCBS may negotiate supplemental payments to providers that are not reflected in their base fee schedule rates, meaning that those physician groups are also paid above the network average although they do not receive any multipliers to the standard fee schedule. Those groups are not reflected in this analysis, but are reflected in the graph illustrating the relative prices paid to BCBS physician groups.

[33] See http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Researcher&L2=Physical+Health+and+Treatment&L3=Health+Care+Delivery+System&L4=DHCFP+Data+Resources&L5=Hospital+Summary+Utilization+Data&sid=Eeohhs2&b=terminalcontent&f=dhcfp_researcher_hsudf_hsudf_08&csid=Eeohhs2

[34] We blended the CMIs of the hospital campuses: Berkshire Medical Center / Berkshire and Hillcrest; Boston Medical Center's East Newton and Harrison Avenue sites; Good Samaritan Brockton and NORCAP Lodge sites; Cambridge Health Alliance's Cambridge, Somerville and Whidden sites; UMASS Health Alliance Burbank and Leominster sites; Hallmark Health's Lawrence Memorial Hospital and Melrose-Wakefield Hospital; Lahey Clinic's Burlington and North Shore sites; Mercy Medical Center's Providence and Springfield sites; North Shore Medical Center's Salem Hospital and Union Hospital; and UMass Memorial's University and Memorial sites. Metrowest Medical Center's Framingham and Leonard Morse sites

[35] CMI calculated using commercial population only is not available.

we calculated a weighted average of payment rates for DSH and non-DSH hospitals. For BCBS, we calculated a straight-line average of price for BCBS DSH and non-DSH hospitals.[36]

Teaching Hospitals

DHCFP identifies certain Massachusetts hospitals as "teaching" hospitals. DHCFP defines teaching hospitals using the Medicare Payment Advisory Commission's (MedPAC) definition of a major teaching hospital as having "at least 25 full-time equivalent medical school residents per one hundred inpatient beds." DHCFP's teaching hospital designations can be found on slide 11 of its report, "Massachusetts Acute Hospital Financial Performance: Fiscal Year 2008," which is located on its website. Using DHCFP's teaching designations, we compared teaching hospital status to hospitals' price or payment relativity.

Internal Unit Costs

DHCFP publishes hospital unit cost data in its 403 Cost Report (HSD10).[37] DHCFP's report contains inpatient patient expense (including capital expenses) and total admissions for each hospital in Massachusetts. Using DHCFP's published CMI for each hospital (discussed above), we calculated a Case Mix Adjusted Cost Per Admission for a select group of six academic medical centers (AMCs) by dividing the reported total inpatient costs (including capital expenses) by the number of admissions to get an average cost per admission and then dividing by the hospital CMI.[38]

Risk-Sharing Contracts

BCBS, HPHC, and THP all pay certain providers in their network under some type of risk-sharing contract.[39] There are a wide number of payment methodologies in place in the Massachusetts health care market, ranging from straight fee-for-service payments and various "pay-for-performance" structures to 100% global capitation.[40] We used TME to comprehensively compare the efficiency of providers that are paid under these different payment

---

[36] Note that, as discussed above in the price relativities section, BCBS provided us with price information for hospitals, while THP and HPHC provided payment information. Payment information includes volume, while price information does not. When volume is introduced to the BCBS data, the average DSH payment goes down from 96% to only 86% and the average non-DSH payment goes from 104% to 102%. Therefore, when volume is factored in, BCBS pays non-DSH hospitals *19% more* than non-DSH hospitals.

[37] DHCFP's 403 Cost Report (HSD10) is available at: http://www.mass.gov/?pageID=eohhs2terminal&L=6&L0=Home&L1=Researcher&L2=Physical+Health+and+Treatment&L3=Health+Care+Delivery+System&L4=DHCFP+Data+Resources&L5=Hospital+Summary+Utilization+Data&sid=Eeohhs2&b=terminalcontent&f=dhcfp_researcher_hsudf_hsudf_08&csid=Eeohhs2

[38] Using expert input, we chose to compare unit costs for the major adult hospitals that: 1) have extensive research and teaching programs; 2) are principal teaching hospitals for a medical school; 3) allocate extensive resources for tertiary and quaternary care; and 4) are full service hospitals with a CMI intensity that is more than 5% above the state average.

[39] No provider group is reimbursed exclusively through a risk-sharing contract; all have some component of fee-for-service reimbursement. In addition, based upon information produced by the insurers, our examination has shown that there are many different types of risk-sharing contracts in the Commonwealth.

[40] Risk-sharing contracts vary within the market place. For example, some have withhold structures, others do not. Some arrangements have a virtually unlimited amount of "surplus" or "upside" potential, while others limit that amount to approximately 5-10% of total earnings. The target health status adjusted level of TME varies dramatically between provider groups, which further impact the effective level of "risk" each group faces. Various other differences in risk structure exist in the current market.

methodologies because TME is health status adjusted and reflects both the use patterns (utilization) and price of the services rendered.

For our analysis, we identified two groups of providers: those who are paid strictly on a fee-for-service basis and those who are paid under some form of risk-sharing contract where the amount the provider group ultimately earns depends on achieving a certain level of TME for the group of patients they serve. Insurers issue "settlement reports" to providers with risk-sharing contracts that reflect the end-of-year reconciliation between the amount under which the provider was capitated and the amount that the provider actually spent on care. We reviewed BCBS's settlement reports to determine which provider organizations in its network operated under a risk-sharing contract. HPHC provided us with a list of providers that it considers to be operating under risk-sharing contracts.[41] Using the insurer's designations of providers with risk-sharing contracts, we compared contract type to the TME for each provider group.[42]

[41] HPHC identified 8 providers, including Harbor Medical Associates, Inc, who operate under some type of risk-sharing contract. HPHC did not produce separate TME information for Harbor Medical Associates, which is a member of South Shore PHO (for which HPHC did produce TME information). Therefore, we did not include Harbor Medical on our graph.

[42] We could not perform this analysis for THP providers because we do not have THP TME data.

OFFICE OF ATTORNEY GENERAL MARTHA COAKLEY

Examination of Health Care Cost Trends and Cost Drivers
Pursuant to G.L. c. 118G, § 6½(b)

Quality Appendix

I. Overview

There are a wide variety of physician and hospital quality metrics in the current health care marketplace. We retained Dr. John Freedman, Principal at Freedman Healthcare, LLC, who has 18 years' experience in quality measurement and quality improvement, to advise us on how to conduct our quality analysis. With Dr. Freedman's guidance, we identified both publicly available and confidentially held quality metrics to review in our examination. First, we obtained insurers' own aggregate measures of quality for physicians and hospitals. While we found that each insurer takes a unique approach to evaluating provider quality, the major plans generally select quality measures from national government and non-profit organizations that are well-vetted and widely accepted, including: Centers for Medicare and Medicaid Services (CMS); Agency for Healthcare Research & Quality (AHRQ); National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS); Massachusetts Health Quality Partners (MHQP); and the Leapfrog Group. Second, we examined publicly reported quality metrics and results for Massachusetts hospitals and physicians, including CMS measures of patient experience and hospital performance and Massachusetts Data Analysis Center (Mass-DAC) cardiac care quality data. These measures provide a broad look at various quality measures available in the market place.[1]

II. Data Reviewed

A. BCBS Hospital AHRQ Measures

BCBS created Hospital Outcome Indicator Reports for FY 2005, FY 2006 and FY 2007. These reports include hospital performance data on measures of clinical quality.[2] Dr. Freedman reviewed the Reports and found that the measures appear to be taken from AHRQ quality measure sets, and are individually valid and statistically tested.

Using data exactly as presented in the reports, we tallied the performance of each hospital. First, we counted the number of times a hospital was rated above average or below average at the 95% confidence interval (as indicated on the report). Then, using that

[1] We have learned through our examination that health plans and providers view different quality measures more or less favorably for a variety of reasons. We do not reach any conclusions regarding the accuracy, statistical significance, or appropriateness of the quality measures reviewed. Rather, our focus was to identify the quality measures that health plans use and to then determine whether those measures influenced contract negotiations such that prices paid to health care providers correlated positively with quality as measured by those health plans (i.e., are health plans paying more to providers who provide higher quality care as measured by the health plans themselves).
[2] The reports included 14 measures of clinical quality in FY05, 13 in FY06 and 14 in FY07.

information, we calculated the net number of times a hospital was rated above average as the number of times above average minus the number of times below average. To increase the stability of the results, we combined the data for three fiscal years. Following BCBS's format, we divided hospitals into 4 groups: twelve academic medical centers, 18 large community hospitals, 20 mid-size community hospitals, and 19 small community hospitals, as follows:

Academic Medical Centers	Large Community Hospitals	Mid Size Community Hospitals	Small Community Hospitals
Baystate Medical Center	Brockton	Anna Jaques	Athol
Berkshire Med. Center	Cape Cod	Caritas-Carney	BIDMC-Needham
BIDMC	Caritas-Good Samaritan	Caritas-St. Anne's	Clinton
Boston Medical Center	Caritas-Holy Family	Cooley Dickinson	Fairview
Caritas - St Elizabeth	Caritas-Norwood	Emerson	Franklin
Lahey Clinic	Cambridge Health Alliance	Falmouth	Harrington
Mount Auburn	Hallmark-Melrose	Faulkner	Hubbard
Partners - BWH	Lawrence General	Hallmark-Lawrence	Marlborough
Partners - MGH	Lowell	Heywood	Martha's Vineyard
Tufts Medical Center	Mercy-Springfield	Health Alliance	Mary Lane
UMass Memorial	MetroWest/Framingham	Holyoke	Merrimack Valley
Vanguard - St. Vincent's	NorthEast-Beverly	Jordan	Milton
	North Shore Salem	MetroWest/LM	Nantucket
	NWH	Milford	Nashoba Valley
	SouthCoast-Charlton	Morton	NorthEast-Addison
	SouthCoast-St. Luke's	New England Baptist	Noble
	South Shore	North Shore Union	North Adams
	Winchester	Quincy	SouthCoast-Tobey
		Saints Memorial	Wing
		Sturdy	

Measures used by BCBS in its Hospital Outcome Indicator Reports include:

Measures	Fiscal Year
Pneumonia after major surgery	2005, 2007
Diabetes short term complications	2005, 2006
Failure to rescue	2005, 2006
Infection due to medical care*	2005, 2006, 2007
Postoperative pulmonary embolism or deep vein thrombosis (clot)*	2005, 2006, 2007
Postoperative sepsis	2005, 2006
Obstetrics trauma – vaginal delivery w/instrument	2005, 2006, 2007
Obstetrics trauma – vaginal delivery w/o instrument*	2005, 2006, 2007
Mortality following acute myocardial infarction (heart attack)	2005, 2006, 2007
Mortality following congestive heart failure	2005, 2006, 2007
Mortality following acute stroke	2005, 2006, 2007
Mortality following pneumonia	2005, 2006, 2007
Pediatric asthma admission excl newborn	2005, 2006
Mortality following coronary artery bypass graft (heart bypass)	2005, 2006, 2007
Birth trauma – injury to neonate*	2007

Overall mortality*	2007
Acute myocardial infarction (heart attack) after major surgery*	2007
Wound infection*	2007

Note: Seven observations (3 measures for 3, 3, and 1 years each) are related to obstetrics, two observations (1 measure for 2 years) are related to pediatrics, and three observations (1 measures for 3 years) are related to cardiac bypass surgery. These measures therefore do not apply to hospitals that do not offer these services.
*Fifteen observations relate to the eight of these measures which are included in BCBS's AQC quality financial incentives.

B. BCBS Hospital Mortality Rate

One of the AHRQ measures that BCBS measures in its Hospital Outcome Indicator Reports is mortality. We used the mortality data exactly as presented in the FY07 BCBS Hospital Outcome Indicator Reports, using the APO rate on measure "QI1 Overall Mortality" for all MA hospitals. This measure appears only in the reports for FY 2007, limiting our analysis to that year.

C. BCBS Physician Quality Metrics

BCBS collected quality data for 27 "integrated medical groups" in 2007. The 27 groups are: Acton, Atrius, Baycare, Berkshire, BIDPO, Caritas, CMIPA, Fallon, Hampden, HAPI, Lahey, Lawrence, Lowell, MACIPA, Metrowest, Nashoba, NEPHO, NEQCA, PCHI, POCC, Riverbend, Signature, SSPHO, UMass, Valley Health, Williamstown and Winchester. BCBS used 33 HEDIS measures, including both adult and pediatric measures and 9 patient experience measures.

Using BCBS's data, we calculated the case mix adjusted average of the HEDIS measures for each physician group. To do this, we first calculated network average performance for each of the 29 non-redundant measures. We then calculated each group's expected performance as the network average times the group's denominator, for each measure. Next, we summed up each group's total numerator (sum of its actual numerator for each measure) and divided that by the total of the expected performance (sum of the expected performance for each measure), which resulted in the observed-to-expected (O:E) ratio. The O:E ratio is 1.0 for the network as a whole. Better than average performance results in an O:E ratio >1.0. Worse than average performance results in an O:E ratio <1.0. Finally, we multiplied the O:E ratios times the overall network average performance on all the measures to get each group's case-mix adjusted HEDIS performance. Both the O:E ratio and the adjusted average are equivalent for the purposes of showing performance, but the case mix adjusted performance gives a percentage value that is more easily understood in comparison to reported HEDIS rates.

BCBS HEDIS measures included:

- Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis
- Follow-Up of Care of Children Prescribed ADHD Medications - Continuation and Maintenance Phase
- Follow-Up of Care of Children Prescribed ADHD Medications - Initiation Phase
- Antidepressant Medication Management - Effective Acute Phase Treatment

- Antidepressant Medication Management - Effective Continuation Phase Treatment
- Disease-Modifying Anti-Rheumatic Drug Therapy for Rheumatoid Arthritis
- Use of Appropriate Medications for People with Asthma: Adults Ages 18 to 56
- Use of Appropriate Medications for People with Asthma: Children Ages 5 to 17
- Breast Cancer Screening
- Controlling High Blood Pressure (<140/90)
- Cervical Cancer Screening
- Comprehensive Diabetes Care - HbA1c Control
- Comprehensive Diabetes Care - HbA1c Testing
- Comprehensive Diabetes Care - Medical Attention for Nephropathy
- Comprehensive Diabetes Care - Blood Pressure Control <140/90 mm Hg
- Comprehensive Diabetes Care - Blood Pressure Control <130/80 mm Hg
- Chlamydia Screening in Women Ages 16 to 20
- Chlamydia Screening in Women Ages 21 to 24 (new upper age limit)
- Colorectal Cancer Screening (eligible for rotation)
- Appropriate Testing for Children with Pharyngitis
- Use of Imaging Studies for Low Back Pain
- *Annual Monitoring for Patients on Persistent Medications - ACE inhibitors or ARBs
- *Annual Monitoring for Patients on Persistent Medications - Anticonvulsants
- *Annual Monitoring for Patients on Persistent Medications - Digoxin
- *Annual Monitoring for Patients on Persistent Medications - Diuretics
- Annual Monitoring for Patients on Persistent Medications - Total rate
- Persistent Beta Blocker Treatment After Heart Attack
- Pharmacotherapy of COPD Exacerbation - Dispensed a bronchodilator within 30 days of the event
- Pharmacotherapy of COPD Exacerbation - Dispensed a systemic corticosteroid within 14 days of the event
- Use of Spirometry Testing in the Assessment and Diagnosis of COPD
- Appropriate Treatment for Children with URI
- Well-Child Visits first 15 Months of Life (eligible for rotation)
- Well-Child Visits Ages 3 to 6 (eligible for rotation)

*Note: 4 of the 33 are redundant (Annual Monitoring of Persistent Meds for 4 specific classes), so we used the Total Rate to avoid double counting. Thus, we used scores from 29 measures (the 4 that were excluded still have their results included within the Total Rate measure).

BCBS provided separate patient experience scores for adults and pediatrics in nine categories (communication, integration of care, knowledge of patient, health promotion, organizational access, visit-based continuity, clinical team, office staff, and willingness to recommend). We created an adult score for each physician group by averaging each physician group's scores in the nine categories for adult patients. Similarly, we created a pediatric score from the pediatric categories.

D. HPHC Hospital Honor Roll and Quality Rankings

HPHC maintains a hospital "Honor Roll" and also creates a hospital Quality Report. HPHC provided us with data that it used to compile hospital performance reports on six measures, which HPHC counts up to determine if a hospital earns HPHC's "Honor Roll" status. The Honor Roll measures include both CMS and Leapfrog Group data. In order to achieve a position on the HPHC Honor Roll, a hospital must be in the top 25% in at least 3 of 4 process measure sets (heart attack, heart failure, pneumonia, and surgical care improvement) and must either score above the national average on patient experience HCAHPS scores, or must be in the top 25% in four New England states across four Leapfrog Group "leaps." HPHC also creates a Hospital Quality Report based on the 6 measures, which include:

- National top 25% in the CMS process measure for heart attack
- National top 25% in the CMS process measure for heart failure
- National top 25% in the CMS process measure for pneumonia
- National top 25% in the CMS process measure for surgical care improvement
- HCAHPS scores above the national average on 6 of 8 questions and the "highest rating" question.
- Regional Top 25% (4 NE states) across 4 "Leaps," which is achieving at least 11 of 16 quadrants.

A hospital is not eligible for credit from HPHC if they do not report these measures or if they have too few patients to measure.[3] Using the HPHC Hospital Quality Report, we added up the number of credits earned by each hospital, with the lowest score being 0 and the highest being 6.

E. HPHC Physician Group Honor Roll

HPHC awards Honor Roll status to about half of their physician groups (46% on Adult Honor Roll and 54% on Pediatric Honor Roll in MA in 2008) based on a physician group's HEDIS performance in comparison to national benchmarks. HPHC provided us with Honor Roll status information by physician group. HPHC provided us with a map that allowed us to attribute those physician groups to provider systems. Using that map, we added the number of groups for each provider system (denominator) and the number of those groups that were awarded Honor Roll status (numerator). This result is not weighted for membership or other measure of volume, so it is a rough index of the performance of the provider system.

F. THP Hospital Navigator Score and Adult Mortality Rate

THP uses a detailed mathematical formula that it uses to measure hospital quality for its Navigator product, a tiered network product. THP calculates an adult Navigator score for hospitals based on mortality rate, CMS process measures, and Leapfrog Group score.[4,5] For our

---

[3] We believe CMS has a minimum number to report performance on the 4 process measures. Not reporting or having too small a volume works against the hospital, counting as if it failed on that measure. This would have a negative effect on smaller hospitals, but we could not estimate the size of the effect. Similarly, the scoring works against hospitals that decline to complete the Leapfrog survey.

[4] For details of the THP Navigator methodology, see their website: http://www.tuftshealthplan.com/providers/pdf/hospital_methodology_2009.pdf .

[5] To briefly summarize the method, THP calculates inpatient mortality using the MA DHCFP hospital discharge dataset, limited to adult patients, and excluding certain types of cases (eg, obstetrics, organ transplants). They risk

analysis, we used two THP scores applied to adult inpatients: overall quality z-score and mortality rate. We chose the mortality rate because it is a critically important outcome measure and is a continuous variable. We used the overall adult quality score because it is the score that THP uses as the quality measure of the hospital for purposes of assigning the tier placement in its Navigator product. Further, the z-score itself represents the degree of statistical significance of the hospital's performance.

G. THP Medical Group Blue Ribbon Scores

THP calculates Blue Ribbon quality ratings for 157 medical groups based on MHQP data and medical group designations. The Blue Ribbon quality score is based on a weighted average of 15 HEDIS measures.[6] THP provided us with a map of MHQP group designations that enabled us to roll up the individual medical group scores into scores for larger provider systems. THP did not provide us with membership or revenue data for the individual medical groups. Therefore, we performed a simple average of the scores for the groups within each integrated delivery network. This result is not weighted for membership or other measure of volume, so it is a rough index of the performance of the contracting group.

H. CMS Hospital Quality Measures

CMS collects and publicly reports various quality measures. We obtained CMS measures from the CMS Hospital Compare website on August 10, 2009. We calculated the simple average of the patient experience measures and process measures reported by CMS for each hospital. Any scores for a hospital that were not reported on Hospital Compare (whether due to low volume, not being applicable, or other reasons) were excluded. We also examined CMS readmission rate and mortality rate data. Hospital Compare does not report the actual rates for either measure, but does report whether a hospital is above or below average on each. Since few hospitals are identified as different from average on these measures, they are of limited usefulness and were not used in further analysis. The data reflect hospital performance from January through December 2008.

The CMS patient experience measures included in the calculation are:

- Percent of patients who reported that their nurses "Always" communicated well.
- Percent of patients who reported that their doctors "Always" communicated well.
- Percent of patients who reported that they "Always" received help as soon as they wanted.
- Percent of patients who reported that their pain was "Always" well controlled.
- Percent of patients who reported that staff "Always" explained about medicines before giving it to them.
- Percent of patients who reported that their room and bathroom were "Always" clean.

---

adjust using APR-DRGs. We used the calculated mortality rates. THP also calculates an overall adult hospital quality rating by combining, equally weighted, each hospital's score on mortality, Leapfrog Group rating, and CMS process of care measures.

[6] See http://www.tuftshealthplan.com/providers/pdf/2009%20blue%20ribbon%20methodology.pdf for details of THP's method.

- Percent of patients who reported that the area around their room was “Always” quiet at night.
- Percent of patients at each hospital who reported that YES, they were given information about what to do during their recovery at home.
- Percent of patients who gave their hospital a rating of 9 or 10 on a scale from 0 (lowest) to 10 (highest).
- Percent of patients who reported YES, they would definitely recommend the hospital.

The CMS process measures included in the calculation are:

- Percent of surgery patients who were given an antibiotic at the right time (within one hour before surgery) to help prevent infection
- Percent of surgery patients who were given the right kind of antibiotic to help prevent infection
- Percent of surgery patients whose preventive antibiotics were stopped at the right time (within 24 hours after surgery)
- Percent of all heart surgery patients whose blood sugar (blood glucose) is kept under good control in the days right after surgery
- Percent of surgery patients needing hair removed from the surgical area before surgery, who had hair removed using a safer method (electric clippers or hair removal cream – not a razor)
- Percent of surgery patients whose doctors ordered treatments to prevent blood clots after certain types of surgeries
- Percent of patients who got treatment at the right time (within 24 hours before or after their surgery) to help prevent blood clots after certain types of surgery
- Percent of Heart Attack Patients Given Aspirin at Arrival
- Percent of Heart Attack Patients Given Aspirin at Discharge
- Percent of Heart Attack Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
- Percent of Heart Attack Patients Given Smoking Cessation Advice/Counseling
- Percent of Heart Attack Patients Given Beta Blocker at Discharge
- Percent of Heart Attack Patients Given Fibrinolytic Medication Within 30 Minutes Of Arrival
- Percent of Heart Attack Patients Given PCI Within 90 Minutes Of Arrival
- Percent of Pneumonia Patients Given Oxygenation Assessment
- Percent of Pneumonia Patients Assessed and Given Pneumococcal Vaccination
- Percent of Pneumonia Patients Whose Initial Emergency Room Blood Culture Was Performed Prior To The Administration Of The First Hospital Dose Of Antibiotics
- Percent of Pneumonia Patients Given Smoking Cessation Advice/Counseling
- Percent of Pneumonia Patients Given Initial Antibiotic(s) within 6 Hours After Arrival
- Percent of Pneumonia Patients Given the Most Appropriate Initial Antibiotic(s)
- Percent of Pneumonia Patients Assessed and Given Influenza Vaccination
- Percent of Heart Failure Patients Given Discharge Instructions

- Percent of Heart Failure Patients Given an Evaluation of Left Ventricular Systolic (LVS) Function
- Percent of Heart Failure Patients Given ACE Inhibitor or ARB for Left Ventricular Systolic Dysfunction (LVSD)
- Percent of Heart Failure Patients Given Smoking Cessation Advice/Counseling

I. Mass-DAC CABG and Mass-DAC PCI

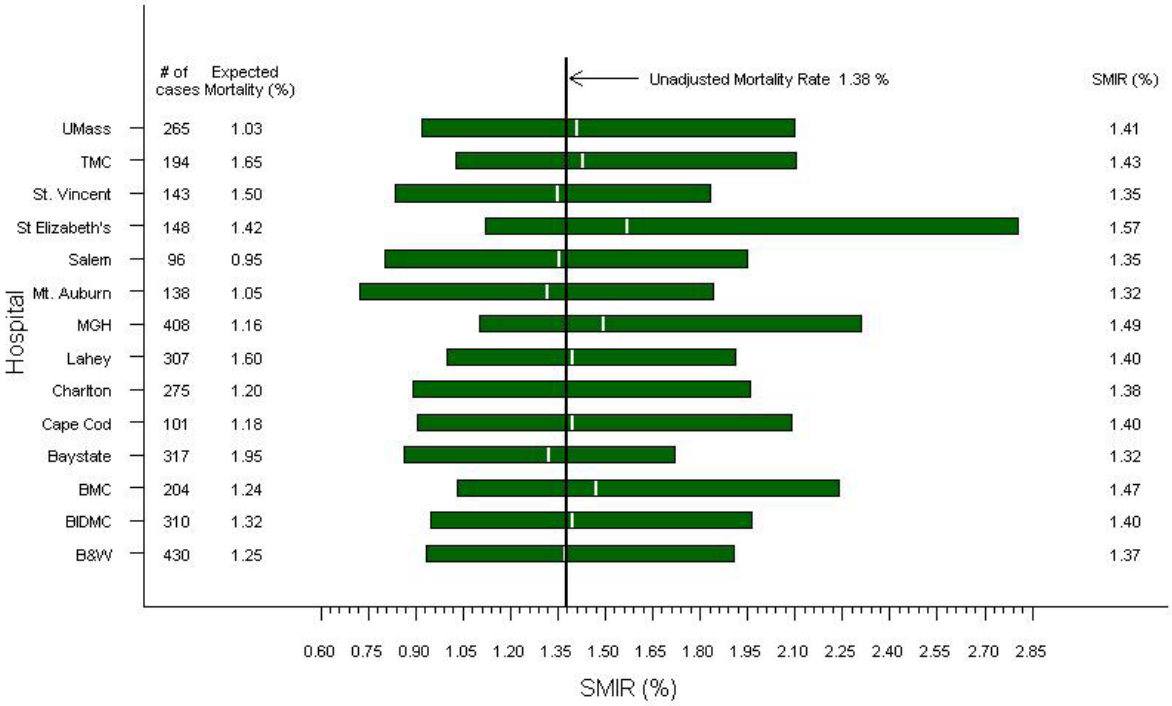
Mass-DAC was established under Massachusetts law to collect and analyze data on cardiac procedures (CABG and PCI). Their data collection and risk-adjustment methods are considered among the most thorough and rigorous available. We obtained Mass-DAC data for multiple years from the Mass-DAC website, www.massdac.org. We used Mass-DAC's standardized mortality incidence rates (SMIRs) for bypass surgery (CABG) and percutaneous coronary intervention (PCI) with no alteration.

III. Providers in Massachusetts Offer Similar High Quality of Care

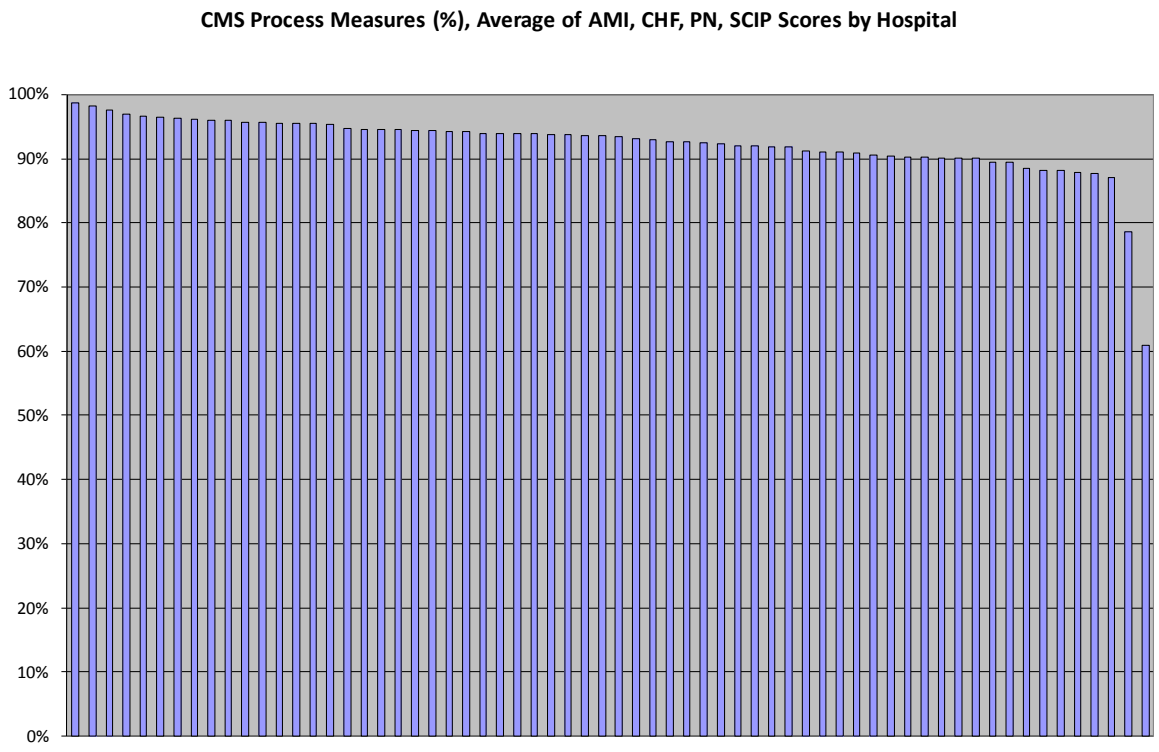
Our review of quality data shows that providers in Massachusetts generally deliver high quality care with little material variation in measured quality. While there are nuanced differences in provider quality measures, and room for improvement in certain areas of performance, no provider is uniformly better or worse than the others. Various health care entities that we spoke with agree that there is little difference in quality between providers.

Mass-DAC has reported cardiac outcomes from 2003 to 2008. While the state average mortality rate has declined nearly 40% over the six years of reports for CABG (heart bypass surgery), only two 2 hospitals were ever noted to have above average mortality. None have been below average. Mass-DAC PCI (percutaneous coronary intervention) data for 2008 (the most recent year available) no hospital is better or worse than average for either elective (14 hospitals) or emergency (22 hospitals) PCI. Over the six years of reporting, the average mortality rates for PCI have also declined. For elective (non-emergency) PCI over the past six years, only once has a hospital been different than average. This suggests remarkably consistent performance across hospitals over time. Although more variability is seen in the mortality rates for emergency PCI (5 outliers over 6 years), this still suggests that the vast majority of hospitals are indistinguishable from average, year after year. Further, each hospital that was an outlier for any of these three procedures was only an outlier for that procedure once. Only two hospitals were outliers for more than one procedure (one high for CABG in 2003 and emergency PCI in 2005; another high for emergency PCI, elective PCI and CABG in 2007). Over time, based on the Mass-DAC data, no hospital has been consistently above or below average for CABG or PCI. Below is one publicly available Mass-DAC graph showing (1) that the mortality rate for all MA hospitals (indicated by the white line within the green bars) are closely clustered and (2) that the likely range of performance (as indicted by the green bars) all show considerable overlap, suggesting that any real differences in mortality rate between hospitals is unlikely.

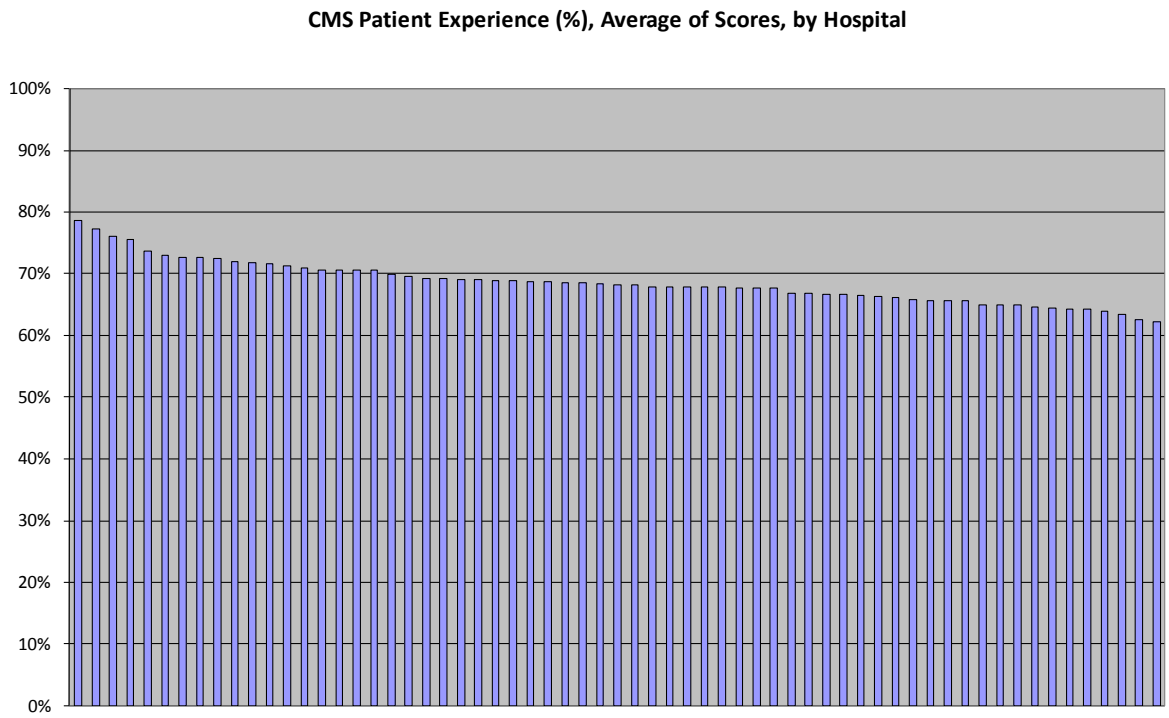
Mass-DAC CABG Mortality Rates with 95% Confidence Intervals, FY 2008



For CMS process of care measures, we compared hospitals by averaging together their rates for each measure. The process measures, with the exception of two low performing outliers, demonstrated strong performance across hospitals.

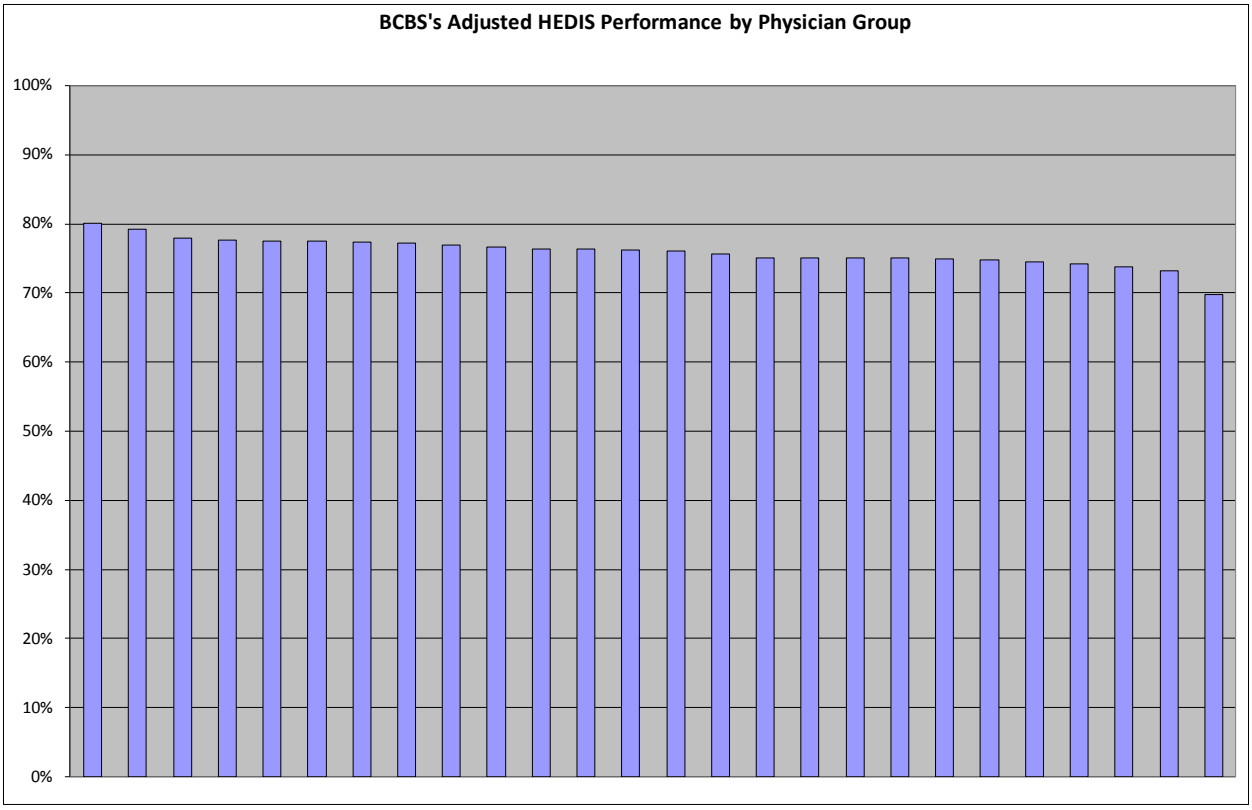


Performance on CMS patient experience did not have any clear outliers. This metric shows consistent performance, with patients responding that patient experience standards were met at the highest levels 62% to 79% of the time.



THP hospital quality scores show similar lack of variation. The THP formula is designed to give each hospital a numerical score (z score) that can be used both for rating and for determining statistical significance. Z scores above +2.0 are significantly better than average, and z scores below -2.0 are significantly below average. Only two of the 124 z scores (62 for adult mortality and 62 for overall adult quality) were significantly different than normal. All other measurements, according to THP Navigator's methodology, were not different than average.

Looking at physician group quality, BCBS's adjusted HEDIS scores show similar results. All physician groups scored between 70 and 80% compliance with HEDIS standards.



IV. Wide Disparities in Price are Not Explained by Differences in Quality of Care

While quality of care appears to vary modestly, price differences are considerable. We sought to determine whether price disparities between hospitals and physician groups could be explained by the fact that providers who receive higher commercial payments offer higher quality of care.

Our analysis shows that wide variations in price are unexplained by differences in quality of care as measured by the insurers or CMS. We compared price and quality data through graphs and statistical calculations to determine whether there is a correlation between price paid and

quality measured. These graphs include comparisons of physician and hospital prices and payment rates to insurers' quality ratings for those providers, as well as to publicly available CMS process and patient experience scores for those providers.

Using the various price markers described in our report and quality measures described above, we created many different types of comparisons, outlined in the table below. In some instances there is some slight correlation between price and quality, both positive and negative. Nonetheless, our results in aggregate show that there is no relationship between the price paid to providers and quality of provider services. Further, our results show that there is no positive correlation between price and quality, as we would hope to see in a rationale, value-based health care market.

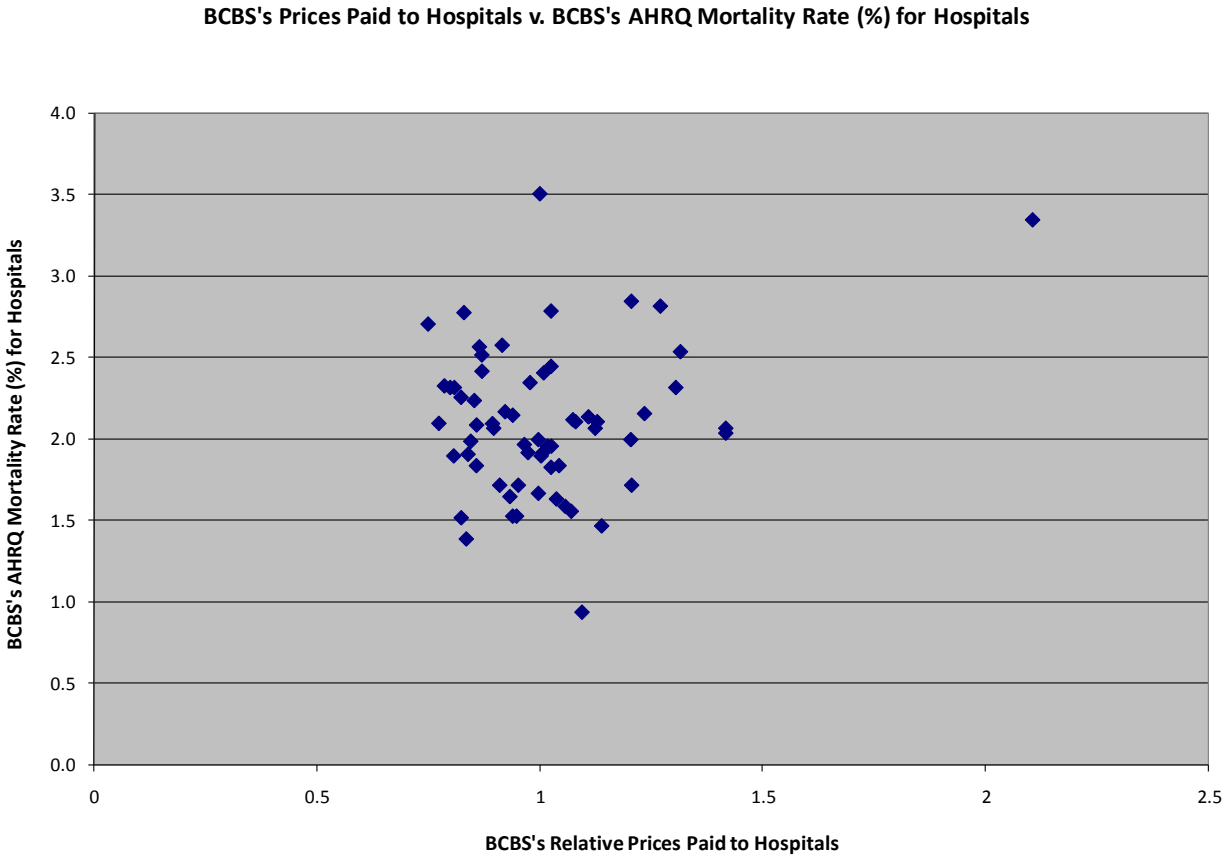
Price and quality comparisons that we performed include:

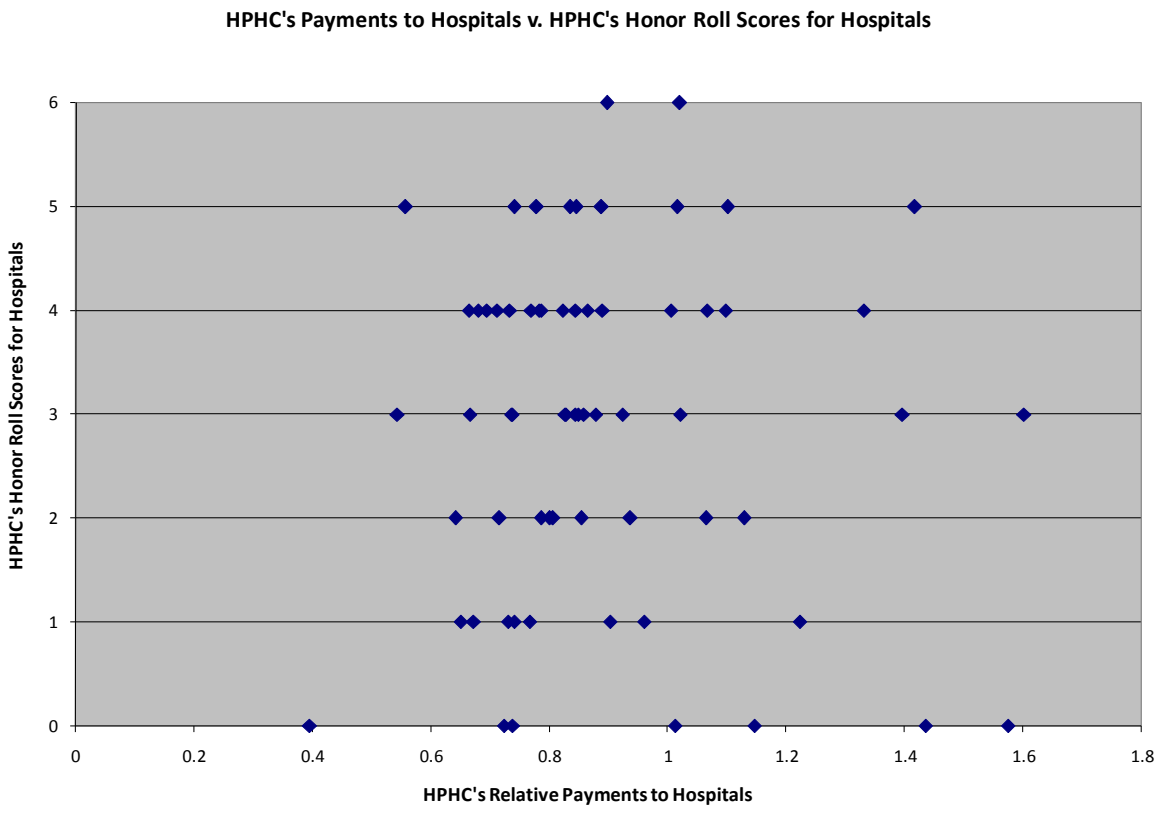
Price Metric	Quality Metric	R^2	Correlation
BCBS Hospital Price Relativity for All Hospitals	BCBS AHRQ 2007 Mortality Rate	0.0546	None
BCBS Hospital Price Relativity for Academic Medical Centers	BCBS AHRQ Net Better/Worse than Average Scores for AMCs	0.1043	Slight, negative
BCBS Hospital Price Relativity for Large Community Hospitals	BCBS AHRQ Net Better/Worse than Average Scores for Large Community Hospitals	0.2085	Slight, positive
BCBS Hospital Price Relativity for Mid-Size Community Hospitals	BCBS AHRQ Net Better/Worse than Average Scores for Mid-Size Community Hospitals	0.0002	None
BCBS Hospital Price Relativity for Small Community Hospitals	BCBS AHRQ Net Better/Worse than Average Scores for Small Community Hospitals	0.0388	None
HPHC Hospital Payment Relativity	HPHC Hospital Honor Roll Score	0.0013	None
THP Hospital Payment Relativity	THP Navigator Adult Mortality Rate	0.0045	None
THP Hospital Payment Relativity	THP Navigator Adult Quality Score	0.0756	None
BCBS Hospital Price Relativity	CMS Patient Experience Average Scores	0.0774	None
HPHC Hospital Payment Relativity	CMS Patient Experience Average Scores	0.0279	None
THP Hospital Payment Relativity	CMS Patient Experience Average Scores	0.0430	None
BCBS Hospital Price Relativity	CMS Process Measures Average Scores	0.1992	Slight, negative
HPHC Hospital Payment Relativity	CMS Process Measures Average Scores	0.1123	Slight, negative

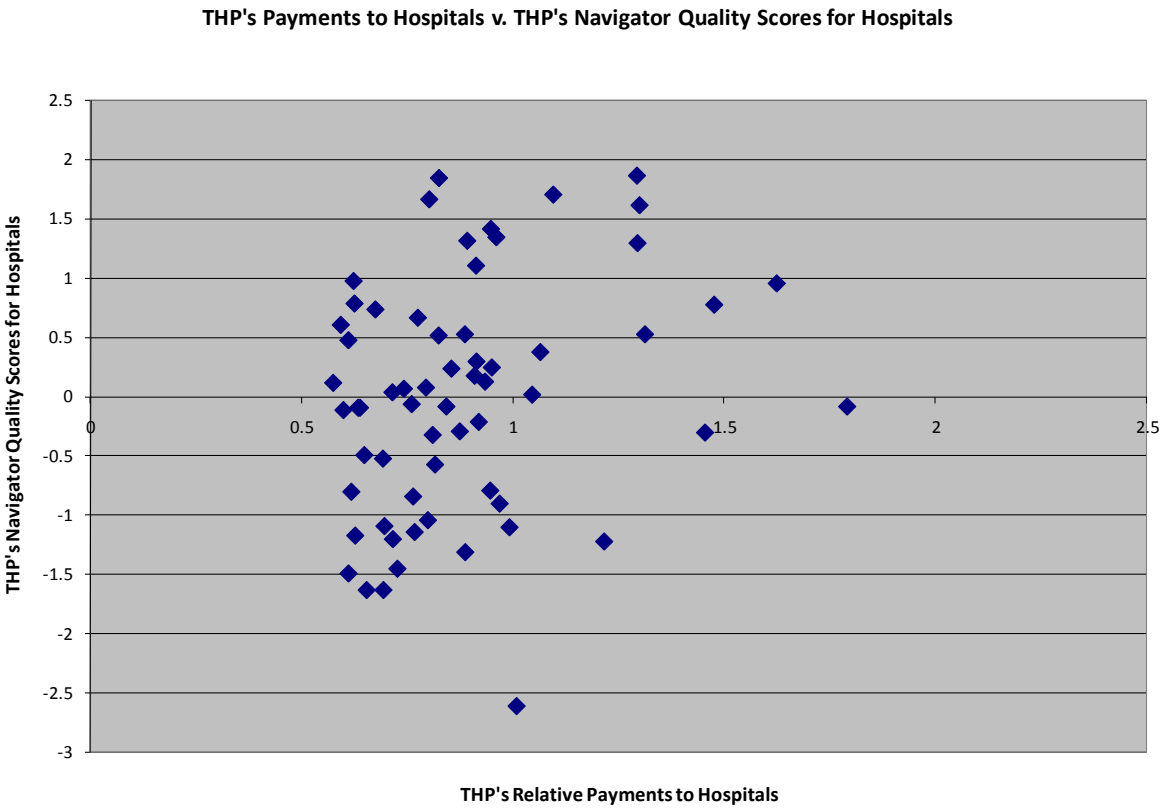
THP Hospital Payment Relativity	CMS Process Measures Average Scores	0.0030	None
BCBS Physician Payment Relativity*	BCBS Adult Patient Experience Average	0.0114	None
BCBS Physician Payment Relativity*	BCBS Pediatric Patient Experience Average	0.0424	None
BCBS Physician Payment Relativity*	BCBS HEDIS Average	0.3753	Moderate, positive

Note: THP and HPHC provided physician quality scores broken down by physician groups. THP and HPHC provided relative payment rates at the provider system level. We were therefore unable to compare THP and HPHC physician quality scores to THP and HPHC physician payment relativities.
*BCBS's pre-filed testimony provided 3 relative price indexes for PCHI physician groups: 1.52, 1.50, and 1.20. However, BCBS assigns only one quality score for all PCHI physicians. Therefore, we used the middle relative price paid to PCHI (1.50), for the purpose of this analysis.

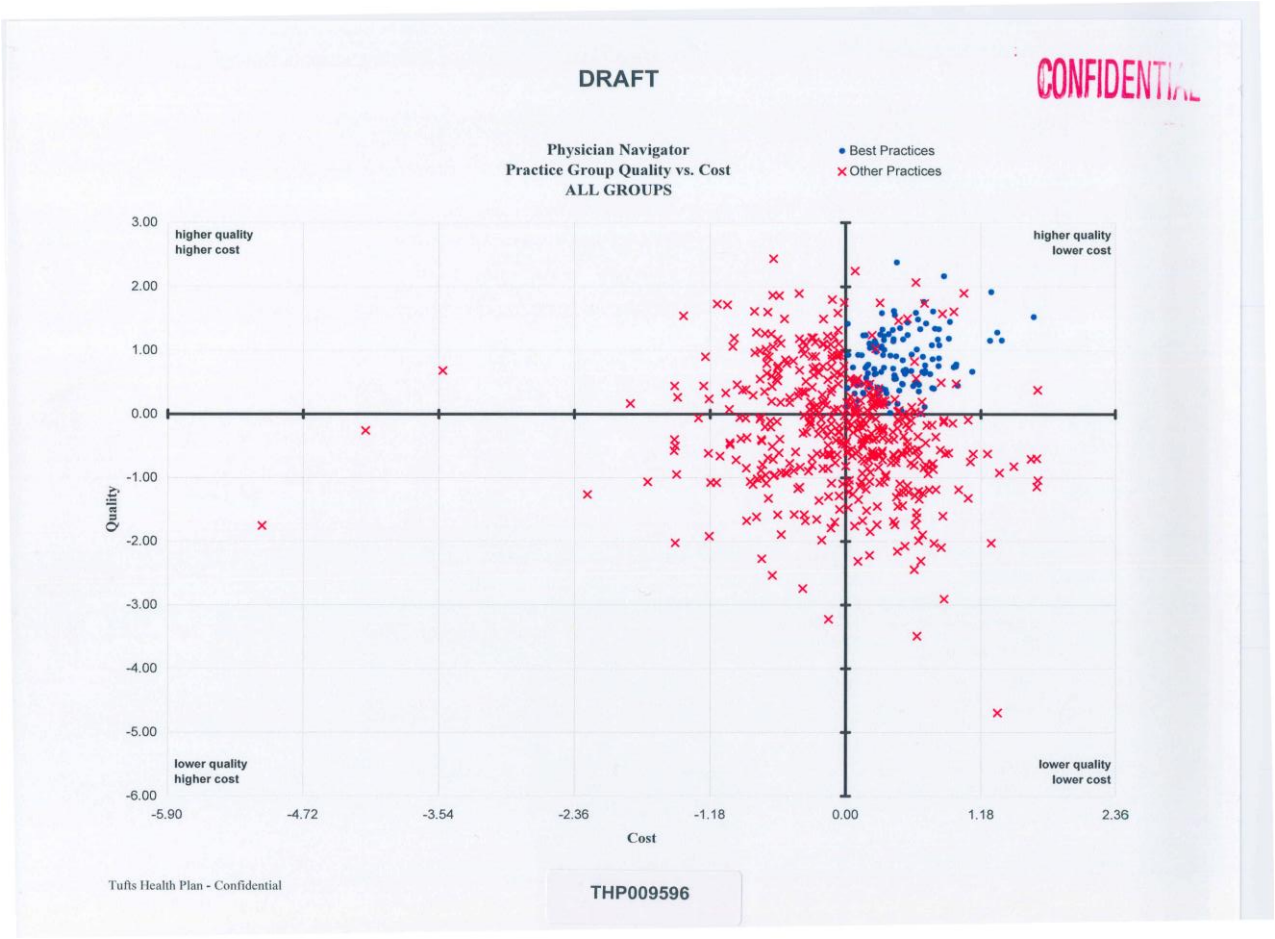
Below, we have illustrated three examples of comparisons that show no correlation between hospital price or payment relativity and a hospital quality metric:



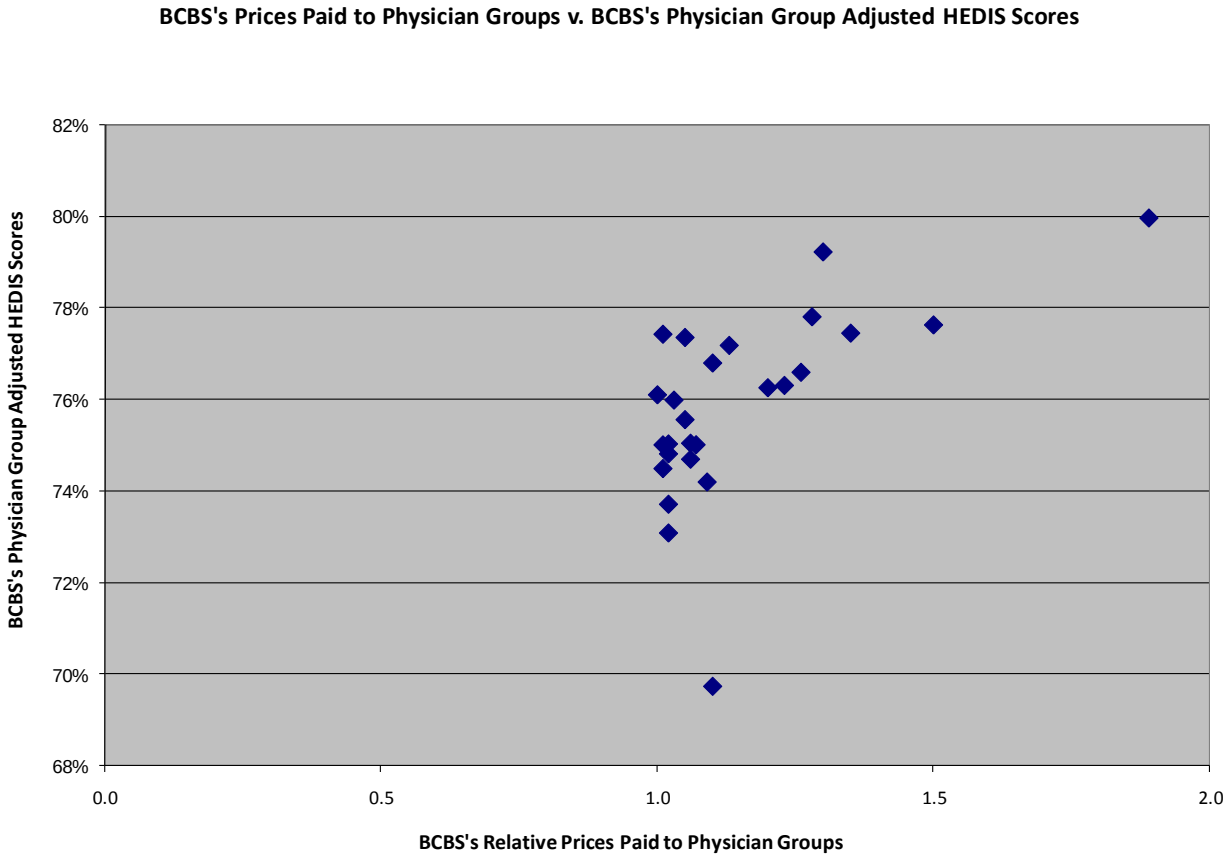

HPHC's Payments to Hospitals v. HPHC's Honor Roll Scores for Hospitals
HPHC's Honor Roll Scores for Hospitals
HPHC's Relative Payments to Hospitals
0
1
2
3
4
5
6
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8


THP's Payments to Hospitals v. THP's Navigator Quality Scores for Hospitals
THP's Navigator Quality Scores for Hospitals
THP's Relative Payments to Hospitals
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
0
0.5
1
1.5
2
2.5

We found a similar lack of correlation between price and quality when we examined physician groups. The next graph was produced by THP and compares physician group cost to the THP quality score for all Massachusetts physician groups.



Similarly, our review of BCBS physician HEDIS quality measures and BCBS price relativities revealed only moderate correlation.



Our examination indicates that there is no correlation between price and quality, and certainly not the positive correlation between price and quality we would hope to see in a rational, value-based health care market. This conclusion is consistent with pre-filed testimony of payers and conversations that we have had with health care entities in the market.

OFFICE OF ATTORNEY GENERAL MARTHA COAKLEY

Examination of Health Care Cost Trends and Cost Drivers
Pursuant to G.L. c. 118G, § 6½(b)

Glossary

Academic Medical Center (AMC) – For the purposes of our report, unless otherwise noted, we define an AMC as a major adult hospital that 1) has extensive research and teaching programs; 2) is a principal teaching hospitals for a medical school; 3) allocates extensive resources for tertiary and quaternary care; and 4) is a full service hospital with a CMI intensity that is more than 5% above the state average.

Acuity – A measurement that characterizes the health status or relative sickness of a patient population.

Agency for Healthcare Research & Quality (AHRQ) – The lead federal agency charged with improving the quality, safety, efficiency, and effectiveness of health care for all Americans. Among other roles, AHRQ develops and supports the use of measures of quality and safety.

Amount Allowed or **Allowed Amount** – The total contractually negotiated amount a provider receives for a given health care service delivered to an insured patient, reflecting the sum of the amount paid by the insurer, and the amount paid by the patient directly to the provider (the "member cost sharing" portion of the total amount allowed).

BCBS – Blue Cross Blue Shield of Massachusetts

Case Mix Adjusted Cost Per Admission – A measure of a hospital's average cost per admission, adjusted for complexity, equal to a hospital's total reported costs divided by its total reported admissions divided by the hospital's CMI.

Case Mix Adjusted Cost Per Discharge (CMAD) – A measure of a hospital's average cost per discharge, adjusted for complexity. CMAD is equal to a hospital's total reported costs divided by its total reported discharges divided by the hospital's CMI.

Case Mix Index (CMI) – The average of the DRG relative case weights for all of a hospital's volume.

Case Weight or **Relative Case Weight** – A figure assigned to each DRG code which represents the expected resource utilization for that patient group compared to the average resource utilization for all patients. For instance, a relatively uncomplicated hospital admission such as Pulmonary Embolism would have a weighting of approximately 1 while a more complex admission such as Respiratory Neoplasm, would have a case weight of over 2.0.

Centers for Medicare and Medicaid Services (CMS) – The federal government agency responsible for administering the Medicare and Medicaid programs, including payment and quality assurance. CMS publishes Hospital Compare, which rates hospitals on their clinical processes and patient experience.

Commercial Insurer – A non-government health insurance company.

Complexity and/or **Service mix** – A measurement that characterizes the intensity of resources required to care for a hospital's cases.

Department of Health Care Finance and Policy (DHCFP) – The state agency whose mission is to improve health care quality and contain health care costs by critically examining the Massachusetts health care delivery system and providing objective information, developing and recommending policies, and implementing strategies that benefit the people of the Commonwealth.

Diagnosis Related Group (DRG) – A method used to pay hospital inpatient cases by classifying different types of admissions into one of approximately 500 codes (DRGs). Providers typically bill insurers based on DRG codes.

Disproportionate Share Hospital (DSH) – A hospital that receives a disproportionate share of its revenue from government payers. As defined by DHCFP, DSH hospitals are those hospitals with a large percentage (63% or more) of patient charges attributed to Medicare, Medicaid, other government payers, and/or free care.

Fee Schedule – An insurer's list of prices for hospital outpatient services (e.g., fees are set for radiology, laboratory work, observation, behavioral health, etc.) and/or physician professional and technical services. Most insurers have a "base" or "standard" fee schedule. Insurers and providers negotiate "multipliers" or "enhancements" to the base fee schedule; for example, a provider with a 1.2 multiplier for radiology services would be paid 120% of the standard fee schedule rate for covered radiology services.

Health Plan – A payer or insurer that provides some form of health care coverage to patients.

HMO – For the purposes of this report, HMO refers to a type of health insurance product offered by insurers in Massachusetts that requires consumers to select a primary care physician and obtain referrals to other participating health care providers through that primary care physician. "HMO" can also refer to a health maintenance organization, a type of managed care organization that provides health care coverage, but we do not use the term for that purpose in our report.

Hospital Admission – An inpatient case at an acute care hospital.

HPHC – Harvard Pilgrim Health Care

Indemnity – An insurance product that provides benefit coverage to members regardless of whether the servicing provider is contracted with the insurer.

Inpatient Services – Care provided to patients at a hospital who are admitted to stay overnight.

Insurer – A payer or health plan that contracts with providers to deliver health care coverage to its members. Insurers may also be referred to as "payers" or "health plans."

Leapfrog Group – A national consortium of large employers working to improve patient safety in hospitals. The Leapfrog Group rates hospitals on quality and safety and publishes the results online.

Massachusetts Data Analysis Center (Mass-DAC) – A cardiac care quality measurement and reporting organization based at Harvard Medical School. Massachusetts hospitals performing cardiac interventions (PCI and CABG) are required to submit data for Mass-DAC analysis. Mass-DAC annually publishes reports on hospital and surgeon outcomes.

Massachusetts Health Quality Partners (MHQP) – A Massachusetts coalition that promotes health care quality improvement. MHQP collects and reports quality measures of clinical care and patient experience for medical groups in the state.

Medical Loss Ratio (MLR) – The ratio of medical claims expenses paid out by an insurer divided by the total premiums earned by the insurer. This ratio can be calculated for the entire patient population insured by the insurer, or for a subpopulation.

Medical Trend – Changes in the cost of medical services. Medical trend is impacted by such factors as unit price (sometimes also referred to as unit cost), resource utilization, and severity.

Member Months – The number of lives that a health insurer covers, expressed in months. If an insurer covers 1,000 members for a year (12 months), then it covers 12,000 member months per year.

Multispecialty Care Group – A group of physicians that includes a variety of specialties and subspecialty types.

National Committee for Quality Assurance's Healthcare Effectiveness Data and Information Set (HEDIS) – A standardized set of quality measures to evaluate of health plans and medical groups.

Network – The universe of providers, including acute hospitals and subacute facilities, physicians, and ancillary providers, that an insurer contracts with to provide medical services to its members.

Payer – An insurer or health plan that provides some form of health care coverage to patients.

Payment Method – The structure than an insurer uses to reimburse health care providers. A variety of payment methodologies exists, such as fee-for-service, per-diem, and capitation.

Payment Relativity – The relative variation in unit payments from an insurer to hospitals or physicians as compared to the network-wide average. Unlike "price relativity," payment relativity reflects provider-specific differences in insurance product mix, service mix, or other factors particular to a provider's payment experience rather than a standard market basket of services.

PMPM – Per member per month.

Point-of-Service (POS) – For the purposes of this report, POS refers to a type of health insurance product offered by insurers in Massachusetts that requires consumers to select a primary care physician and, in order to obtain the maximum financial insurance benefit, obtain referrals to other participating health care providers through that primary care physician.

Price Relativity – A metric for comparing how much higher or lower a provider's price is than the average price paid to other providers in an insurer's network for the same set of services. Price relativity is calculated based on a standard set of services that is not specific to any provider, and as such does not reflect the insurance product mix, service mix, or other factors that are particular to an individual provider's payment history.

Primary Care Provider (PCP) – A primary care provider provides primary health care services. In some insurance products, patients are required to obtain a referral from a PCP in order to obtain care from a specialist or other health care providers.

Product Mix – The distribution of insurer members among the insurer's products, such as HMO, Point-of-Service, Preferred Provider Organization, and Indemnity products, through which the population served by a particular Insurer has insurance coverage. Products may vary in their prices, co-payment and deductible levels, coverage, and medical management requirements.

Provider – For the purposes of our report, "provider" refers to physicians or hospitals that provide medical services to patients.

Provider Mix - The distribution of insurer members among the providers within an insurer's network.

Provider MLR – The ratio of claims paid out by an insurer to a specific provider divided by the premiums collected by that insurer from that provider's patient population.

Provider System – A group of physicians and/or hospitals that jointly contract with health insurers.

RBRVS (Resource-Based Relative Value Scale) – A method for paying physicians developed by Medicare based on the intensity of cognitive, technical, and other resources or 'work units' required to care for a particular patient visit type.

Risk-Sharing Contract – A contract between a health insurer and a provider that puts the provider at risk for some or all of the costs of care associated with the provision of medical care for a particular population. There are various types of risk-based contracts, such as capitated or globally paid contracts and withhold arrangements where return of withheld amounts depends on keeping TME below a certain level. For the purposes of our report, we do not consider pay-for-performance programs as risk-sharing contracts.

Service Mix – The range, intensity, and types of medical care offered by a hospital or physician group.

Teaching Hospital – As defined by DHCFP, a teaching hospital has at least 25 full time equivalent medical school residents per one hundred inpatient beds.

THP– Tufts Health Plan

Total Medical Expenses (TME) – The total cost of care for the patient population that is associated with a group of primary care providers, usually expressed as a dollar amount per patient (or member) per month. TME includes all of the medical expenses incurred by those member patients, regardless of where they are incurred (i.e., it includes physician visits as well as all hospital, laboratory, imaging, pharmacy costs, and other services, wherever those services occur). TME reflects both the price of those service and their frequency (i.e., "utilization").

Unit Cost – For the purpose of our report, we use "unit cost" to mean the amount of money that it costs a health care provider to deliver a unit of service. Wherever possible, we use the terms "price," "unit price," or "payment" to refer to the rate, or amount, that an insurer pays a provider for medical services, and reserve the term "unit cost" for a hospital's own internal cost of delivering medical services.

Unit Price or Price – The contractually negotiated amount (or reimbursement rate) that an insurer agrees to pay a particular hospital, physician, or other health care provider for a given health care service. This is the "price tag" that the insurer agrees it will pay each time one of its members incurs a covered expense.

Utilization – The amount or number of medical services or units of service used by a given population over a period of time.

This page is intentionally blank.

Division of Health Care Finance and Policy
Two Boylston Street
Boston, Massachusetts 02116

Phone: (617) 988-3100
Fax: (617) 727-7662

Website: www.mass.gov/dhcfp

Publication Number: 10-116-HCF-03
Authorized by Ellen Bickelman, State Purchasing Agent

Printed on Recycled Paper