

METHODS OF COMPARING INPATIENT PRICES ACROSS HOSPITALS: USE OF MEDICARE AND MEDICAID BENCHMARKING

KATYA FONKYCH, PhD; DAVID AUERBACH, PhD; LAURA NASUTI, MPH, PhD

INTRODUCTION

In order to compare commercial prices across hospitals, researchers and policymakers often use Medicare prices as a common reference point, referring to commercial prices as a percentage of what Medicare would have paid the same hospital. This can be challenging when cross-walking between two payment systems that are not always comparable. Most commercial plans employ the all-payer APR-DRG system to bundle inpatient stays into DRG groups. Payments for inpatient stays are then paid in proportion to complexity weight for a specific DRG and a severity level. Medicare uses a related but different

payment system, the MS-DRG system, to categorize and attach complexity weights to inpatient stays. Applying the Medicare payment system to make relevant comparisons of prices in the commercial population can create distortions and inaccuracies that systematically differ by hospital type. The Medicare Inpatient Prospective Payment system also includes additional payments for teaching and disproportionate share hospitals, which can introduce further distortions in price measurements when used as a reference point for commercial payments.

OBJECTIVES

The Massachusetts Health Policy Commission (HPC) explored the impact of different DRG classification systems and weighting

methods on commercial price comparisons across hospitals.

STUDY DESIGN

The HPC used alternative systems (3M™ APR-DRG weight v38 and Medicare MS-DRG weight v39) to assign severity weights to commercial discharges from the Massachusetts All Payer Claims Database and Hospital Discharge Data, which are classified according to the APR-DRG system as well as the MS-DRG system. The research findings included within this report were produced using the 3M™ APR DRG software. The HPC normalized both APR-DRG and MS-DRG weights, dividing them by their respective mean value for the Massachusetts discharges to make them comparable (such that case-mix index (CMI) for the entire sample was = 1 regardless of the system chosen). These comparable weights were then used to calculate average weight by type of admission: tertiary care, mental health & substance use disorder (SUD), maternity, newborn, other pediatric,

and other adult. To enhance comparability across hospitals, the sample excludes newborns, psychiatric admissions, transfers, and extreme length-of-stay outliers.

Next, the HPC used Medicare inpatient pricing rules for 2022 to estimate the facility price that Medicare would pay for each of the commercial discharges in our sample. The average commercial facility payment for the non-maternity adult subsample was then compared to the estimated Medicare base price (without teaching and disproportionate share hospital (DSH) adjustments), the Medicare full price (with additional payments for DSH and teaching hospitals) and to the median acuity-adjusted commercial price itself.

Casemix index captures the complexity and resource-intensiveness of a set of admissions and is often used in adjusting hospitals’ costs or revenues per discharge.

CMI
(Casemix
index)

=

Sum of severity weights
(APR-DRG or MS-DRG)

N of Discharges

Severity
adjusted
price

=

Inpatient payment per discharge

Severity weight
(APR-DRG or MS-DRG)

RESULTS

EXHIBIT 1. Estimated Casemix Index (average weight) by type of admission, 2022

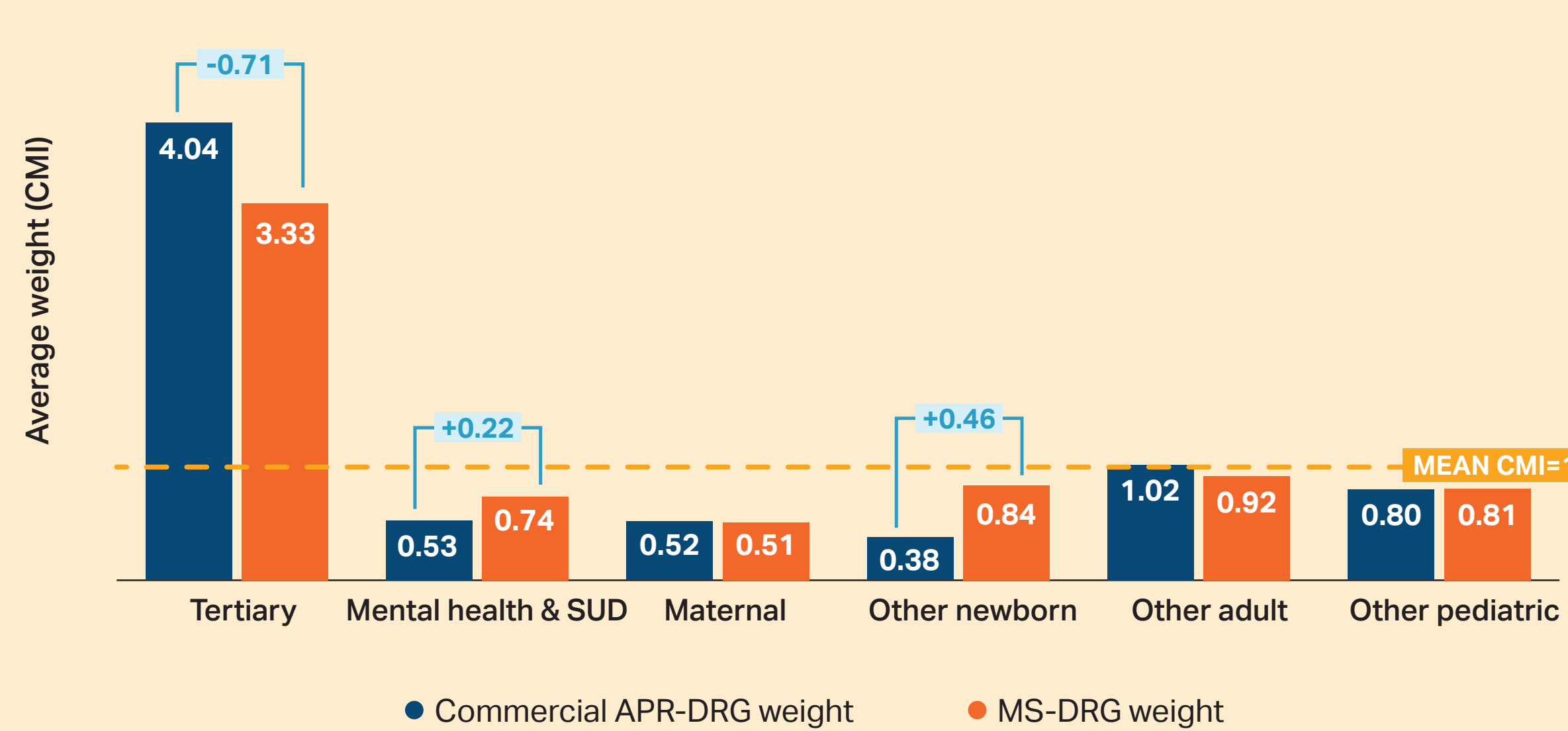


EXHIBIT 2. Acuity-adjusted hospital prices relative to the median Massachusetts hospital price using commercial APR-DRG weights versus Medicare MS-DRG severity weights, 2022

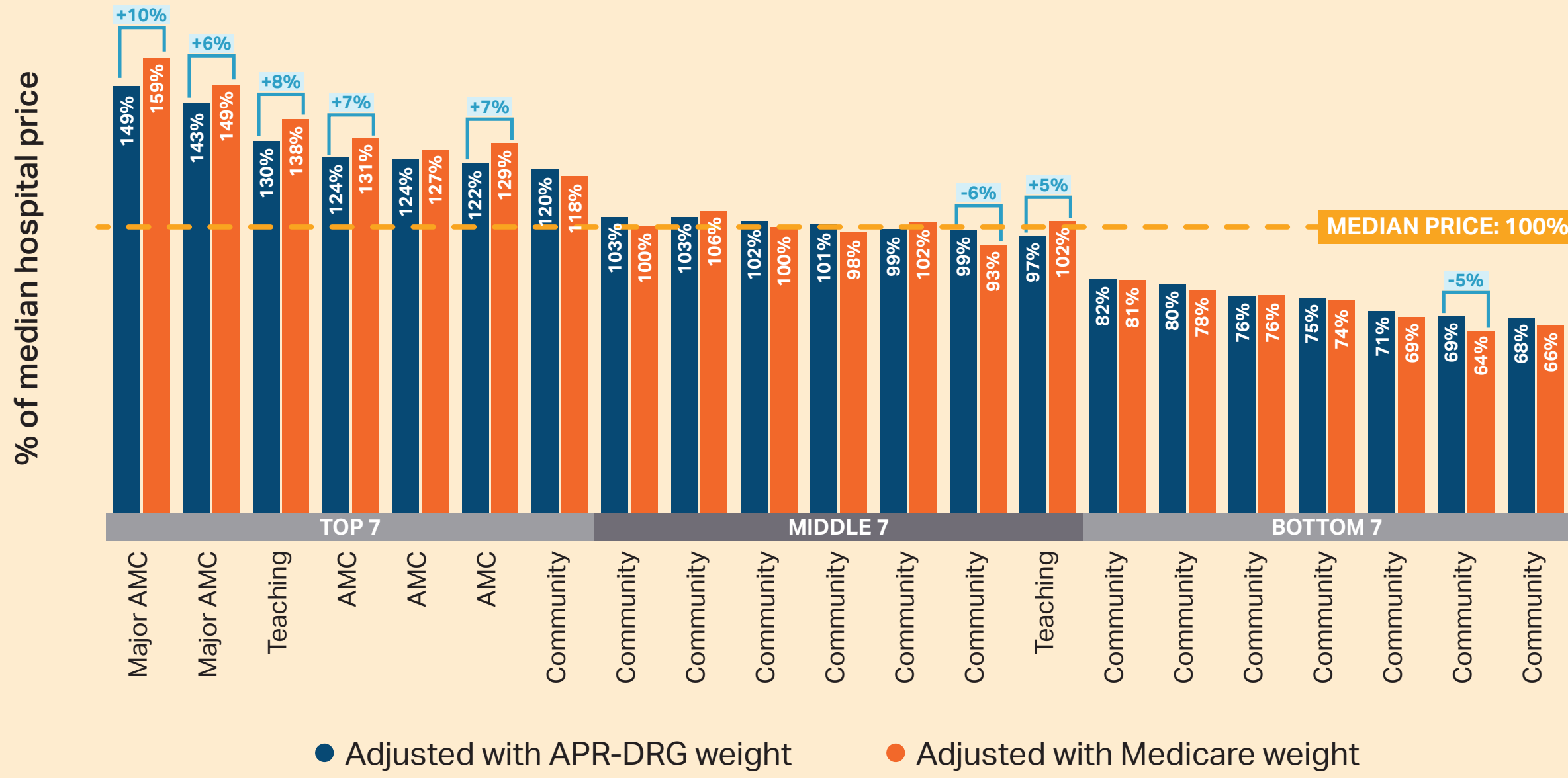
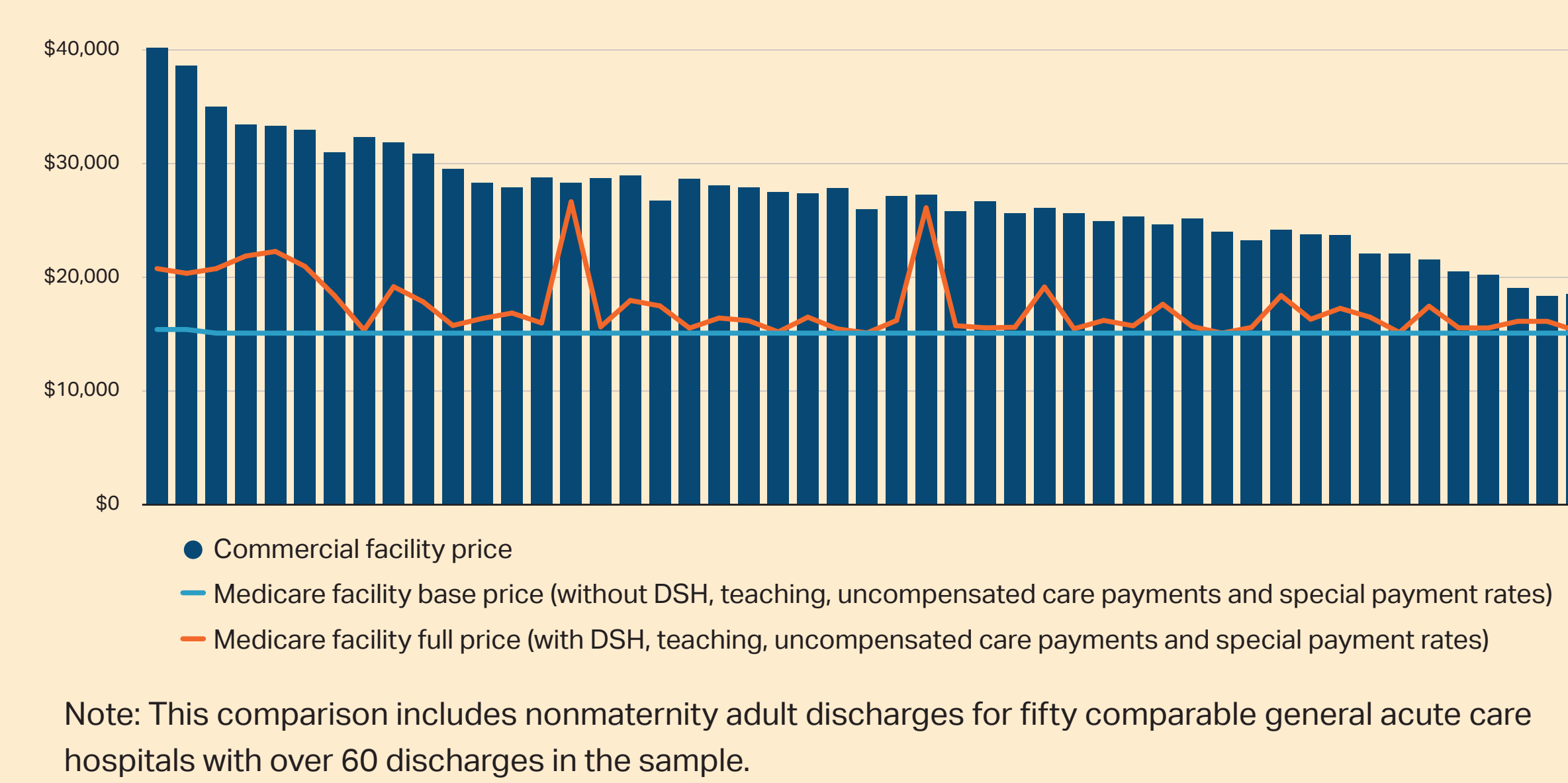


EXHIBIT 3. Commercial price for an average complexity discharge versus an estimate of Medicare’s base and Medicare’s full payment in acute care non-specialty Massachusetts hospitals, 2022



First, the HPC confirmed that the APR-DRG commercial weight was more strongly associated with the ultimate commercial payment (correlation coefficient = 0.93) than was the Medicare MS-DRG weight (correlation coefficient = 0.82).

Next, the HPC grouped discharges by category and compared the APR-DRG weight with the MS-DRG weight.

Medicare assigns lower weight to high-acuity or tertiary care than commercial payers do when using the APR-DRG system. This means that for a given discharge in this category, commercial payers would pay relatively more than Medicare and therefore, **hospitals with a high share of high-acuity discharges will appear to have higher prices relative to Medicare.**

Medicare assigns relatively higher acuity to psychiatric and SUD admissions and much higher acuity to newborns (which are rare in the Medicare program). Thus, **hospitals that provide a high proportion of psychiatric and SUD discharges and maternity discharges will appear to have a lower commercial price relative to Medicare.**

The implications of differences in the pricing of nonmaternity services are shown by illustrating commercial prices relative to the median Massachusetts hospital for selected hospitals using 1) commercial APR-DRG weights and 2) Medicare MS-DRG weights.

This exhibit demonstrates that using Medicare weights to adjust prices results in Academic Medical Centers (AMCs) appearing relatively higher-priced. The top-priced hospital has prices 59% above the median hospital when Medicare weights are used, but only 49% when APR-DRG weights are used.

Medicare’s base payment is proportional to the Medicare MS-DRG weight and is further adjusted for an area’s wage index, which is currently the same for most providers in Massachusetts. Medicare then adds extra policy-related teaching, DSH, and uncompensated care payments, which together can increase the base Medicare price by as much as 55% in some hospitals. Commercial payers do not typically make similar adjustments. These adjustments create substantial variation in Medicare payment levels for Massachusetts hospitals.

There are 8 hospitals in Massachusetts (primarily AMCs and large teaching hospitals) that receive commercial prices that exceed 200% of the Medicare base rate. However, only one hospital has commercial prices exceeding 200% of Medicare’s full rate including DSH and teaching payments.

CONCLUSIONS

1. The APR-DRG system and corresponding weights is a better predictor of variation in commercial price paid than the MS-DRG system, as it was designed for the general population and is being used by commercial payers for pricing.
2. Relative to the APR-DRG system, the MS-DRG system assigns higher severity to newborn discharges and lower severity to tertiary care (e.g. cancer, organ transplantation, and complex surgeries), leading to distorted price comparisons if MS-DRG weights are applied to payments for all commercial patients.
 - Excluding newborns from the sample used in calculation of hospitals’ case-mix indices and adjusted commercial prices could improve the accuracy of pricing in maternity hospitals whenever MS-DRG weights are used.
 - When prices of AMCs and major teaching hospitals are compared to the Medicare DRG system, one should account for the fact that Medicare’s DRG system may not fully capture the severity of the admission (as Medicare relies heavily on additional outlier payments to reimburse for high-complexity care that have costs beyond typical cost of a given DRG).
3. Medicare’s base price (without DSH & teaching payments) could serve as a more robust benchmark for comparing commercial prices across hospitals.

POLICY IMPLICATIONS

It is important to add APR-DRGs to the public discharge datasets produced by state health information agencies to enable the computation of comparable adjusted price for all categories of commercial patients. In the absence of APR-DRGs, policymakers and researchers should account for potential biases that could be caused by using MS-DRG based adjustments to derive accurate relative prices in maternity hospitals and tertiary care providers.

When considering commercial prices relative to Medicare in policy contexts, policymakers should affirmatively decide whether commercial payers should be required to replicate the additional Medicare payment adjustments, which can be substantial.

CONTACT

Katya Fonkych, PhD
Senior Researcher
Research and Cost Trends,
Health Policy Commission
katya.fonkych@mass.gov

David Auerbach, PhD
Senior Director
Research and Cost Trends,
Health Policy Commission
david.auerbach@mass.gov

www.mass.gov/HPC

