INCREASES IN CODING INTENSITY FOR INPATIENT STAYS

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INTRODUCTION

In Massachusetts, inpatient spending continues to grow while the volume of inpatient stays remains flat. Prior analyses on a commercial population indicated that this increase in spending per discharge (5.2% annually from 2013 to 2018) was roughly equally attributable to an increase in price for a given discharge and to an increase in the recorded acuity of inpatient discharges over this period. The acuity of hospitalized patients is a critical factor in hospital spending because of how hospitals are paid. The vast majority of hospital stays, including those covered by Medicare, MassHealth and commercial payers, are classified and paid for according to the diagnosis related group (DRG) system. This payment system was designed to reduce the degree to which payment depends on hospitals' reported costs, which hospitals have some ability to control, in favor of standard measures of resources need to treat inpatients. Nevertheless, the current system is based on diagnoses, co-morbidities, and clinical indicators of severity, all of which can also be influenced by clinical judgment and hospital technology and processes.

OBJECTIVES

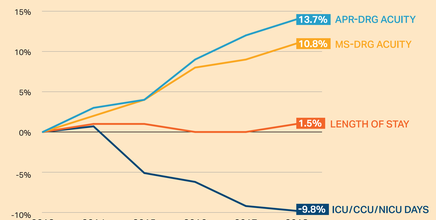
While there can be clinical benefits to more complete documentation of patients' health status and histories in their medical records, hospitals also have a financial interest in classifying a given patient into the highest-paying category and in understanding the algorithms at work that translate clinical data into DRG/severity classifications. Prior literature has shown that hospitals are able to modify their coding practices to increase payments while the underlying severity of the patient population remains the same (Silverman & Skinner, 2004; Dafny 2005; Geruso & Layton 2015). This study aims to understand if the increase in inpatient acuity represents a real increase in the severity of inpatient stays or a change in coding practices.

STUDY DESIGN

To better understand the acuity increase, the Massachusetts Health Policy Commission (HPC) examined changes in inpatient acuity using the Center for Health Information and Analysis Massachusetts Hospital Inpatient Discharge Database (CHIA HIDD) from 2010-2018 and payments using the All-Payer Claims Database v6.0. Medicare reimburses providers for inpatient stays based on the Medicare system (MS-DRG), while MassHealth and most commercial plans reimburse on the 3M All-Patients Refined Diagnosis Related Groups (APR-DRG) system.[1] Both systems assign a weight to each combination of a DRG (e.g. COPD) and a severity level (e.g. with/without complications). These weights are directly proportional to amounts paid per discharge. Using the CHIA HIDD, the HPC tracked changes in acuity using DRG weights as well as utilization measures that should be highly correlated with the severity, such as length of stay and intensive care days. All medical inpatient stays among Massachusetts residents at acute care hospitals were included in this study. Behavioral health stays and admissions with outlying lengths of stay that were outliers were excluded from these analyses as these stays often are not paid based on DRG.

FINDINGS

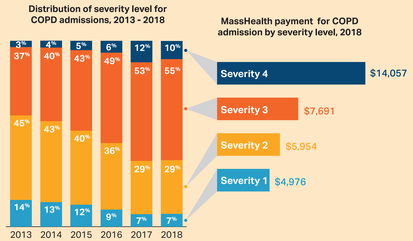
FIGURE 1: Percent increase in overall DRG weight, patient length of stay, and use of intensive care settings, 2013-2018



Notes: ICU = intensive care unit; CCU = cardiac care unit; NICU = neonatal intensive care unit. This curve represents days in any of these settings combined.

Sources: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2013-FY2018; MS-DRG classification system for each year (weights updated each year). 3M APR™DRG classification system v30.0 using MassHealth weights (weights held constant)

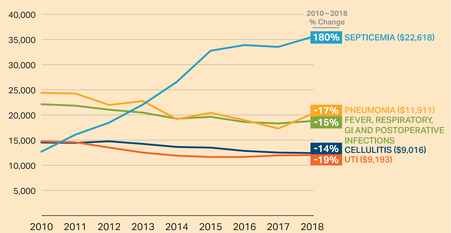
FIGURE 2: Distribution of COPD severity levels, all-payer, 2013-2018 and payment for each severity level, 2018



Notes: Distribution of severity level from 2013 to 2018 uses 3M APR™DRG v.30. The DRG payment example is from MassHealth payments in 2018 based on v.34.

Sources: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2013-FY2018; 3M APR™DRG classification system v30.0; Acute Hospital MassHealth DRG Weights for 2018

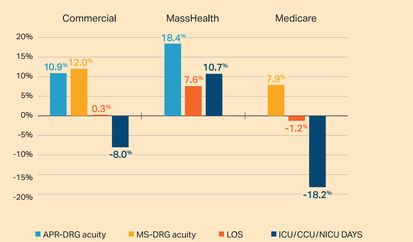
FIGURE 3: Volume of inpatient stays for septicemia and select substitutable conditions for all payers, 2010-2018



Notes: Septicemia is 3M APR™DRG 720. Selection of conditions based on literature and clinical input and confirmed by examining secondary diagnosis codes in stays with septicemia DRG. Payment is the average payment for that DRG based on HPC's analysis of claims in the Massachusetts All-Payer Claims Database v6.0 for 2016.

Sources: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2010-FY2018 and All-Payer Claims Database v6.0; 3M APR™DRG classification system v26.0.

FIGURE 4: Changes in acuity, length of stay, and intensive care days by payer, 2013-2018



Notes: Both 3M APR™DRG v30.0 and MS-DRG acuity changes are shown for commercial payers because some payers use MS-DRG weights for their commercial payments, although APR-DRG weights are more commonly used.

Sources: HPC analysis of Center for Health Information and Analysis Hospital Inpatient Discharge Database, FY2013-FY2018; MS-DRG classification system updated annually, 3M APR™DRG classification system v30.0 using 3M APR™DRG weights for commercial and MassHealth v30.0 weights for MassHealth.

From 2013 to 2018, the average statewide MS-DRG weight, when applied to all discharges, increased 10.8% while the APR-DRG weight increased 13.7%. At the same time, average discharge length of stay only grew 1.5% and the total number of all types of intensive care days per discharge decreased by 9.8% (**Figure 1**). Other explanations for the increase such as population aging, an increase in the burden of disease, or a shift of less complex cases from inpatient to outpatient settings do not explain the acuity increase. The HPC found that increases in measured acuity could occur due to shifts from low- to high-severity classifications within a given DRG (e.g. from COPD without complications to COPD with complications) or from shifts in assignment from one DRG to another related DRG (e.g., from asthma to COPD). In the former instance, the percent of COPD admissions that were in the two highest severity categories increased from 40% in 2013 to 65% in 2018 (**Figure 2**). This increase is not due to lower-severity cases being treated outside of the hospital while only higher-severity cases remain – the absolute volume of the highest two severity levels increased by over 3,000 discharges over this period. As for shifts in DRG assignment, **Figure 3** shows the number of inpatient stays coded with the septicemia DRG increased by 22,806 cases from 2010 to 2018, while those with pneumonia, UTI, cellulitis, fever, respiratory, GI or post-operative infections combined declined by 12,353. Given the efforts to increase recognition of septicemia, this increase likely includes patients for whom the diagnosis of septicemia reflects receipt of appropriate treatment for this serious condition. The magnitude of the increase, however, suggests that coding of borderline cases as septicemia also contributes to the trend. Finally, HPC examined acuity trends by market sector (**Figure 4**). While all payers saw an increase in acuity, only MassHealth saw a corresponding increase in length of stay and ICU days indicating that acuity may truly have been increasing for MassHealth patients.

CONCLUSION

It is impossible to fully account for the underlying causes of the increase in recorded patient acuity, although changes in coding practices likely have played a large role. HPC explored additional alternative explanations such as shifts of less acute patients to observation status or outpatient settings and changes in technology that may have allowed treatment of sicker patients without increasing length of stay, and did not find evidence for these or other explanations. To the extent that increases in recorded patient acuity are due to coding practices and not underlying health status changes, there are several implications that follow.

First, higher acuity leads to higher payments for hospital care than would otherwise be made. This is not uniform across payers in Massachusetts. If patient acuity had remained at 2013 levels in 2018, Medicare payments would have been roughly $358 million lower in 2018 and $280 million less in 2018 for commercial payments. The implications for MassHealth are less clear because the program updated its inpatient payment systems and MassHealth patients overall experienced an increased length of stay and more intensive care use during this period suggesting a true increase in acuity.

Second, the considerable investment in and attention to coding by clinicians and administrative personnel represents effort not devoted to patient care and thus may not represent an optimal use of resources from a health system perspective. Finally, such changes in patient acuity divorced from corresponding changes in underlying health status leads to artificial improvements in quality and spending measures that are risk or acuity-adjusted.

POLICY IMPLICATIONS

For the commercial sector these negative consequences could be minimized, but not eliminated, by routinely adjusting APR-DRG weights (and payments) to align with true acuity and patient resource needs. However, hospitals that lack the resources devoted to improving coding could end up with lower payments as a result. As another example critical to Massachusetts, the performance improvement plan (PIP) process established by Chapter 224 is triggered by health-status adjusted spending growth that exceeds the state's benchmark. Due to increases in coding intensity, using health-status adjusted spending growth as the metric for the benchmark may reward providers that invest more in coding.

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