THE IMPACT OF MENTAL HEALTH EMERGENCY DEPARTMENT BOARDING ON SPENDING AND FOLLOW-UP CARE

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INTRODUCTION

Emergency departments are designed to quickly triage and stabilize patients. Mental health emergency department (MH ED) boarding occurs when patients seeking care for a mental health condition in the ED are held there for an extended period of time awaiting the next step in their treatment (e.g. inpatient stay).

The Massachusetts Health Policy Commission (HPC) has been tracking MH ED boarding for a decade to better understand this crisis because ED boarding is harmful not only for patients and their families, but also for hospital staff as EDs become overcrowded. Furthermore, research has shown that length of ED boarding is associated with slight increases in overall lengths of stay.[1] While MH ED boarding has been tracked as a measure of hospital capacity and patient access to MH care, the HPC further examined the impact of MH ED boarding on length of stay, health care spending, and subsequent follow-up care.

OBJECTIVES

This study aims to evaluate the impact of MH ED boarding on spending and follow-up care. Specifically, the HPC aims to understand if MH ED boarding is associated with higher spending, longer lengths of stay for those who end up being admitted to an inpatient stay, and more follow-up care after the ED visit or inpatient hospitalization.

STUDY DESIGN

This study examined Massachusetts residents with commercial or Medicaid insurance that had an ED visit with a primary MH diagnosis between January 2022 and December 2022.

MH ED visits were identified using the Center for Health Information and Analysis' (CHIA) Acute Hospital Case-Mix Databases (ED, Observation, Inpatient) and were defined as any ED visit with a primary diagnosis code classified as "mental disorders" using Agency for Health Care Research and Quality (AHRQ) Clinical Classification Software Refined (CCSR). Visits were defined as "boarded" if their ED length of stay was ≥ 12 hours. MH ED visits in the sample were then linked to commercial and Medicaid medical claims data for 2022 from the CHIA's Massachusetts All-Payer Claims Database to estimate spending for the entire episode of care (e.g., ED admission through psychiatric inpatient discharge). Overall, about 21% of eligible commercial and 99% of eligible MassHealth ED visits were matched to the claims.[i] This linking process resulted in 1,965 commercial MH ED visits that ended in the ED (21% experienced boarding) and 1,146 commercial MH ED visits that resulted in an inpatient stay (76% which had experienced boarding). For Medicaid, the final data set contained 16,066 ED visits that ended with the ED visit (51% experienced boarding) and 3,671 ED visits that resulted in an inpatient stay (77% of which experienced boarding). In addition to spending, the HPC examined follow-up care in the claims data for both commercially-insured and Medicaid-insured patients in the sample.

i Eligible stays were stays that only included a primary diagnosis with a mental health diagnosis and no secondary diagnosis of substance use disorder (SUD). The HPC excluded any analyses with SUD as the claims data was restricted to claims without any SUD diagnoses. While the Acute Care Hospital Discharge Databases have all hospital inpatient stays, observation stays, and ED stays in the commonwealth, the APCD has 100 percent of state Medicaid claims but significantly less commercial claims due to the Gobeille v Liberty Mutual ruling.

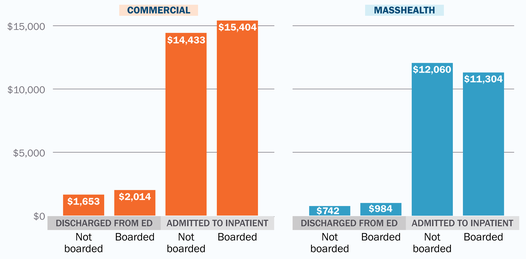
RESULTS

For MH ED visits among commercially-insured and Medicaid-insured residents in 2022, both payers paid more for episodes that boarded and were ultimately discharged from the ED ($2,014 and $984, respectively), compared to episodes that did not board ($1,653 and $742, respectively) (**Exhibit 1**). For episodes that were ultimately admitted to an inpatient stay, boarded commercially-insured patients had slightly higher average spending ($15,404) than non-boarded patients ($14,433). However, Medicaid-insured residents had slightly less spending among those who experienced boarding ($12,060 non-boarded vs $11,304 boarded). Overall, patients with commercial insurance had an average length of stay of fourteen days, regardless of boarding status. However, patients with Medicaid who experienced boarding spent an average of four days longer in an inpatient setting compared to those who did not board (17 versus 13 days).

Researchers ran linear regression analyses to understand the differences in spending for MH ED episodes that boarded versus did not (**Exhibit 2**). Among commercial patients who were discharged from the ED, those who boarded still had higher spending after accounting for patient characteristics (e.g., patient age, sex, race/ethnicity), episode characteristics, and specific hospital ($200.49, 95% CI: [$79.53, $321.45]). After accounting for the same covariates, among commercial patients who were admitted to an inpatient stay, those who boarded had lower spending (-$1,017.20, 95% CI: [-$1,775.52, -$258.88]).

Regardless of boarding status or payer, patients with an MH ED visit who were discharged from the ED were more likely to receive additional services within seven days of their discharge (72% for commercial, 71% for Medicaid), than those who were admitted to an inpatient stay (66% for commercial, 60% for Medicaid).

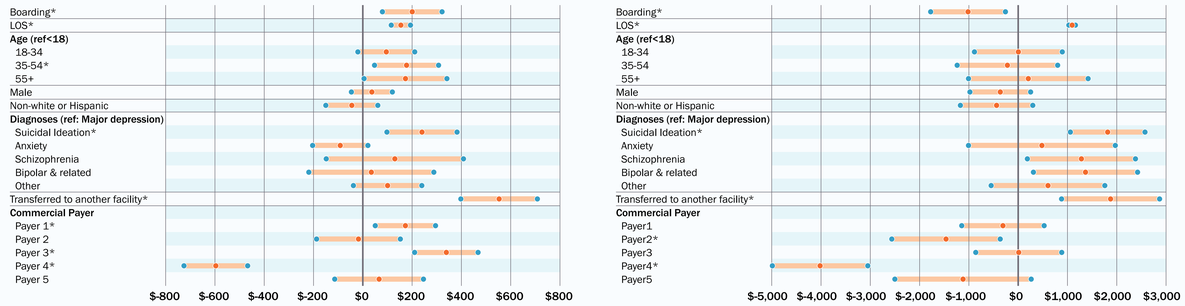
EXHIBIT 1. Average allowed amounts for mental health-related ED episodes among commercially-insured and MassHealth-insured residents by admission and boarding status, 2022



Notes: Excludes episodes with duration and/or spending greater than the 90th percentile duration for the overall category (i.e., discharged from the ED or admitted to inpatient). The HPC defines ED boarding as greater than or equal to 12 hours in the hospital ED. Mental health-related emergency department visits were defined as any ED visit or observation or inpatient stay that resulted from an ED visit with a primary diagnosis code in AHRQ CCSR categories MBD001-MBD013 or MBD027 in the Case Mix datasets. Data shown are for ED visits from the Case Mix databases that were matched (same person, same date) to commercial or MassHealth APCD claims data.

Sources: HPC analysis of Massachusetts Acute Case-Mix Databases, CY2022, All-Payer Claims Database, V2022, 2022.

EXHIBIT 2. Impact of boarding and other characteristics on allowed amount for mental health-related ED episodes that were discharged from the ED (left) or admitted to inpatient (right), 2022



Notes: * indicates significance at the p < 0.01 level. Hospitals included were those with more than 20 inpatient mental health-related episodes in 2022. Reference for "Diagnosis" category is all other mental health-related disorders. Mental health-related emergency department visits were defined as any ED visit or observation or inpatient stay that resulted from an ED visit with a primary diagnosis code in AHRQ CCSR categories MBD001-MBD013 or MBD027 in the Case Mix EDD, OOD, or HIDD datasets. Data shown are for ED visits from the Case Mix databases that were matched (same person, same date) to commercial or MassHealth APCD claims data. Shaded portion represents 95% confidence interval.

Sources: HPC analysis of Massachusetts All-Payer Claims Database, V2022, 2022.

CONCLUSIONS

In 2022, average spending between boarded and non-boarded MH ED visits differed for both commercial payers and Medicaid. After adjusting for covariates, commercial patients who boarded and were discharged from the ED had higher spending. This indicates that boarding for patients who ultimately did not receive an inpatient level of care resulted in more spending than for patients who were discharged from the ED within 12 hours of arrival. However, among patients that were admitted to an inpatient stay, those who experienced boarding actually had lower spending. This was a surprising finding given that patients who experienced boarding but were admitted spent a similar amount of time overall in the hospital as patients who did not board but were admitted to the hospital (14 days). This may indicate extra payments for additional days or services in the ED. Regardless of boarding status or payer, patients discharged from the ED were more likely to receive additional services within a week than those admitted to an inpatient stay.

There are several limitations to this study. This data does not include any visits with a primary or secondary diagnosis of substance use, so the findings should not be considered generalizable to those populations. During the time this study takes place there were many policy interventions aimed at decreasing BH ED boarding, including changes in how hospitals use "observation" status. If more patients are subsequently ending their acute care stay in observation status, the HPC may have missed important information on a subset of hospitals that place these patients into observation.

POLICY IMPLICATIONS

Various Massachusetts state policies have been implemented to increase payments and services for patients experiencing ED boarding. Some of these policies are aimed at incentivizing psychiatric facilities to find inpatient placements for harder to place patients (e.g. those with medical needs, youth, or those who are currently unhoused). Additional payment incentives focus on time during the ED stay, and some allow additional services to be billed (e.g. crisis stabilization services for commercially-insured patients). These policies may help reduce the various impacts of MH ED boarding, but more study is necessary to understand which policies are the most impactful.

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1. Lane, Daniel J et al. "Association of emergency department boarding times on hospital length of stay for patients with psychiatric illness." Emergency Medicine Journal vol. 39,7 (2022): 494-500. doi:10.1136/emermed-2020-210610