Analysis of Emergency Department Length of Stay for Mental Health Patients at Ten Massachusetts Emergency Departments

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Study objective: Prolonged boarding times in the emergency department (ED) disproportionately affect mental health patients, resulting in patient and provider dissatisfaction and increased patient morbidity and mortality. Our objective is to quantify the burden of mental health boarding and to elucidate the effect of insurance together with demographic, social, and comorbid factors on length of stay.

Methods: We conducted a cross-sectional observational study of 871 consecutive patients requiring an ED mental health evaluation at one of 10 unaffiliated Massachusetts hospitals. Demographics; insurance; length of stay; medical, psychiatric, and social history; and disposition data were collected. We evaluated the effect of these characteristics on boarding time.

Results: ED median length of stay varied greatly by disposition, driven primarily by ED boarding time. Admitted and transferred patients had longer delays than discharged patients (5.63, 9.32, and 1.23 hours, respectively). Medical clearance time (1.40 hours) composed only 10.5% of total ED length of stay and varied little by insurance. In our multivariate analyses, patients with Medicaid and the uninsured had significantly longer total lengths of stay and were more than twice as likely to remain in the ED for 24 hours or greater compared with privately insured patients.

Conclusion: Mental health patients in Massachusetts have lengthy ED visits, particularly those requiring inpatient admission. Boarding time accounts for the majority of total ED length of stay and varies by insurance, even when other factors known to affect ED length of stay are controlled. Efforts to improve timeliness of care for mental health emergencies should focus on reducing ED boarding and eliminating disparities in care by insurance status. [Ann Emerg Med. 2016;■:1-10.]

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INTRODUCTION

Background

Emergency department (ED) boarding, the practice of prolonged waiting in the ED for an inpatient hospital bed or transfer to another inpatient facility, is a pervasive public health problem.[1] Boarding has been shown to lead to ED crowding, poor patient experience and lower quality of care,[2,3] delays in treatment, with increased morbidity and mortality,[4] and lost revenue.[5] Although overall boarding is a common problem nationwide, patients with mental health emergencies are disproportionately affected.[5-7] Mental health patients wait more than 3 times longer for an inpatient bed than nonmental health admissions.[5] Mental health boarding consumes scarce ED resources and worsens crowding so that other patients with undifferentiated, potentially life-threatening conditions wait longer to be seen and treated.[8] One study demonstrated that every mental health admission prevented 2.2 bed turnovers and cost the ED on average $2,264.[5] This is exacerbated by the fact that mental health patients are more than 2.5 times more likely to require admission (41%) than patients with other conditions[9] and are routinely held in EDs for days or even weeks without access to definitive psychiatric care.[10] Prolonged boarding times for mental health patients can lead to increased medication errors and adverse outcomes.[11,12] Additionally, mental health boarding has a negative effect on nursing and physician job satisfaction.[13]

Importance

Mental health emergencies represent a growing proportion of ED visits nationally, increasing from 5.4% in 2000 to approximately 12.5% as recently as 2007.[9] Mental health boarding has been the subject of ongoing policy discussions in Massachusetts, involving multiple

Editor's Capsule Summary

What is already known on this topic

Patients with psychiatric emergencies have longer emergency department (ED) length of stay than other patients.

What question this study addressed

This cross-sectional study examined potential patient- and administrative-level correlates of ED length of stay among 885 consecutive patients requiring mental health evaluation at a nonrandom but diverse sample of 10 Massachusetts EDs.

What this study adds to our knowledge

Patients requiring psychiatric admission or transfer had significantly longer length of stay than those discharged. Most of this difference was due to wait for a bed, not due to evaluation time; this wait was significantly longer for Medicaid and uninsured patients.

How this is relevant to clinical practice

This study provides further evidence that the wait for inpatient psychiatric beds, particularly for Medicaid or uninsured patients in Massachusetts, is the primary driver of ED psychiatric boarding.

governmental, regulatory, provider, and consumer stakeholders. There has been significant discussion about the factors that lead to prolonged ED stays for mental health patients, including which portion of the visit leads to the greatest delays (eg, medical clearance versus boarding time). In Massachusetts, the Department of Mental Health and the Division of Insurance[14] have questioned whether medical clearance is a significant contributor to prolonged length of stay. However, clinician experience and existing literature suggest that boarding time is a greater contributor to prolonged ED length of stay for mental health patients.[15] Furthermore, there has been a perception among emergency care providers that demographics, social factors, and insurance status may explain some of the differences in boarding times for ED patients. A 2012 study of 5 hospitals within a single health system in Massachusetts found prolonged total ED length of stay for uninsured relative to commercially insured patients, but no difference in boarding times after a disposition decision was made for admitted or transferred patients.[16] The study also found that public insurance was associated with an ED stay of greater than 24 hours.[17]

Goals of This Investigation

The objective of this study was to quantify the burden of mental health boarding in EDs across Massachusetts and to assess for variation in ED length of stay for mental health patients by insurance type. We sought to specifically assess the effect of health insurance status on the various components of ED length of stay (medical clearance, mental health response time, mental health evaluation, and boarding times) while taking into account other demographic variables and comorbidities that are believed to affect boarding times. Finally, we investigated which factors are specifically associated with prolonged ED boarding times greater than 24 hours in a diverse group of Massachusetts hospitals.

MATERIALS AND METHODS

Study Design

We performed a cross-sectional observational study of all patients requiring a mental health consultation in the ED who were treated during a 2-week period at one of 10 nonaffiliated preselected Massachusetts study hospitals.

Data abstraction forms were completed for the 885 consecutively enrolled patients; 14 patients were excluded because of incomplete interval data. Recorded data elements included demographic information, insurance carrier, length of stay, medical treatment and assessment, medical history, psychiatric diagnosis, and treatment and disposition (Appendix E1, available online at http://www.annemergmed.com). Additionally, data were collected on ED total length of stay and its component intervals: patient arrival to mental health evaluation request (medical clearance), mental health request to consultant arrival (mental health response time), arrival to completion of mental health evaluation (mental health evaluation), and completion of mental health evaluation to patient departure from the ED (boarding time). One individual from each site was trained and performed the chart abstraction, using a data abstraction manual (Appendix E2, available online at http://www.annemergmed.com). Time logs were kept on each patient, and when necessary, data were also collected from or verified by chart review. The same individual abstractor also completed the aggregate abstraction form, using the aggregate abstraction manual (Appendixes E3 and E4, available online at http://www.annemergmed.com).

Study Setting

All hospitals in Massachusetts were offered the chance to participate in the study, and the hospitals selected were those that expressed interest and were collectively reflective of the various ED treatment settings throughout the state, with the