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FACTORS ASSOCIATED WITH LONGER LENGTH OF STAY FOR MENTAL HEALTH EMERGENCY DEPARTMENT PATIENTS

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☐ **Abstract—Background: Mental health patients can experience long lengths of stay in the emergency department (ED). Reducing boarding times for mental health patients might improve care for all ED patients. Objective: The objective of this study was to identify patient factors that are correlated with extremely long lengths of stay (EL-LOS) for mental health patients in the ED. Methods: A retrospective, case-control study compared mental health patients experiencing lengths of stay longer than 24 h to those with lengths of stay <24 h. The study was conducted at an urban, academic ED and Level I trauma center. Sequential chi-squared tests were used to detect significant differences on the outcome measure. Logistic regression was used to determine factors that made significant contributions to predicting EL-LOS. The outcome measure was patients' length of stay in the ED. The factors analyzed were patient demographics, insurance status, day of arrival and departure, placement (admitted locally, admitted remotely, or discharged), chief complaint, and diagnostic category. Results: Patient-level factors associated with EL-LOS were self-pay status, admission to inpatient care, transfer to a remote facility, and suicidal ideation. Admission to inpatient care and self-pay status made significant nonredundant contributions to predicting EL-LOS. In addition, mental health patients arriving on a weekday were significantly more likely to be admitted to inpatient care than those arriving on weekends. Conclusions: Factors were identified that correlated with long lengths of stay in the ED for mental health patients. Increasing timely access to inpatient beds for mental health patients, in particular by improving access to insurance that covers inpatient psychiatric care and eliminating unique mental health requirements to obtain prior authorization for placement, would likely reduce these patients' lengths of stay.** © 2014 Elsevier Inc.

☐ **Keywords—boarding; mental health; length of stay; disposition; patient safety; psychiatric emergency**

INTRODUCTION

Length of stay (LOS) has been identified as one of the primary measures of emergency department (ED) quality of care (1). Long LOS, particularly when due to extended boarding of admitted patients in the ED, has been implicated as a major contributor to ED overcrowding, a national crisis that threatens the quality, safety, and timeliness of ED care in the United States (2–6).

Mental health patients, a growing cohort in the ED, have been reported to experience long LOS more frequently than other patient cohorts (7,8). Mental health patients experiencing overnight, extremely long length of stay (LOS > 24 h) may have a larger detrimental effect on the ED than mental health patients who stay for less time. These patients consume more ED resources, such as the requirement for dedicated "sitters" for patients who may attempt suicide. In addition, over a longer period of time, they become equivalent to several "normal" LOS patients, resulting

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in subsequent increases in patient wait times, provider workload, and physical ED space usage (9,10).

Furthermore, delays to admission of mental health patients directly contribute to delays in their care, because EDs are often not equipped to treat them (11,12). Long LOS for mental health patients can result in increased threats to provider safety due to agitation and anxiety associated with long wait times, as well as reduced access to coping mechanisms and possibly medications to address psychosis (4,9). Nonspecialized ED rooms also contain a number of hazards unique to mental health patients, such as cords and sharp medical instruments, to which these patients are exposed for longer periods of time. Conversely, timely access to inpatient care for mental health patients can reduce the risk of suicide, danger to others in the waiting room, and avoid gaps in administration of medications to address psychosis (10,13,14).

OBJECTIVE

The study objective was to identify patient factors that are correlated with long lengths of stay (>24 h) for mental health patients in the ED.

Interventions to reduce LOS could reduce crowding and boarding, and thus improve patient safety for all ED patients, as well as improve quality of care for mental health patients. The generation and selection of potential interventions can be informed by a better understanding of which patients are most likely to be affected by long LOS.

METHODS

Study Design

A retrospective case-control design was used to study the association of patient-level factors in the mental health patient cohort with extremely long length of stay (EL-LOS), which was defined as a total length of stay (from registration to leaving the ED) of >24 h. Patients placed into observation status were excluded from the analysis, because these patients typically received care in another unit and the type of care was qualitatively different. This definition was selected to ensure that the patient stayed overnight and was based upon the LOS being approximately 1.5 SDs from the average for mental health patients at the study site. The case-control design with time-matched controls was selected to control for the effect of time of arrival and triage on ED LOS, as patient-level factors were the target of this study. Exemption from review by the Institutional Review Board approval was obtained for this study.

Setting and Population

The study site is an ED within a major urban academic hospital and is a Level I trauma center. The ED sees approximately 75,000 patients per year, and has approximately 25 main unit beds (varying by one to three beds over the study period due to construction and maintenance), six additional capacity beds, two trauma bays, and hallway space for 10+ additional patients. The ED is normally staffed by two attending physicians, four residents, 8–12 staff registered nurses, one charge nurse, and four patient care technicians. In addition, a social worker and a specialist physician are often present, and psychiatric consults can be requested.

The study hospital is a major urban academic medical center, with specialized cardiac, oncology, medical and surgical intensive care, and psychiatric care centers. It has 932 regular floor beds and 55 psychiatric beds, and has about 44,000 admissions per year. In addition, patients from the ED are regularly transferred to a public off-site psychiatric service responsible for placing patients in the care of public psychiatric hospitals not directly affiliated with the study site hospital.

Records included in the study were taken from a sample of records for patients seen between October 2009 and May 2010. The data obtained include all patients seen by the study site ED during that period. As displayed in Table 1, inclusion criteria for the mental health cohort were based upon documented chief complaints or diagnoses such as alcohol withdrawal, depression, drug ingestion, psychosis, and suicide that were included in the mental health cohort. Exclusion criteria were a final patient status other than admission, transfer, or discharge

Table 1. Criteria for Inclusion as Mental Health Patient

Complaint or diagnosis includes…	
Alcohol Withdrawal	Mood disorder
Anxiety	OD
Behavior	Off meds
Bipolar	Overdose
Combative	Panic attack
Depression	Pink slipped
Detox	Psych
Drug ingestion	Psychiatric
Drug overdose	Psychosis
ETOH	PTSD
Hallucinations	Self-injury
Hanging	SI
Hearing voices	Social service issue
HI	Suicidal
Homicidal	Suicide
Intoxication	Swallowed [dangerous item]
Manic	Withdrawal

OD = overdose; ETOH = ethyl alcohol abuse; PTSD = posttraumatic stress disorder; SI = suicidal ideation; HI = homicidal ideation.