A 360° VIEW OF PSYCHIATRIC BOARDING IN THE EMERGENCY DEPARTMENT

by

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ABSTRACT

SHELBY DEHART VERI. A 360° View of Psychiatric Boarding in the Emergency Department.
(Under the direction of DR. ROBERT J. CRAMER)

This dissertation utilizes a three article approach to examine the current status of psychiatric boarding in the emergency department (ED). The number of ED visits for mental health concerns in the United States has been increasing for the past several decades as the number of inpatient psychiatric beds has decreased. This has created a psychiatric boarding crisis where patients are waiting in ED for extended periods of time across the country. This dissertation provides a 360° view of psychiatric boarding in the ED by critically examining the literature surrounding the effects of psychiatric boarding, analyzing the characteristics of patients undergoing psychiatric boarding through a large national dataset, and by analyzing mixed methods data from ED nurses who care for these patients.

The first article presents a systematic review of the status of psychiatric boarding while also addressing the involvement of civil commitment during a psychiatric boarding stay in the ED. Boarding times in the selected 31 articles varied greatly and patients were rarely started on new psychiatric drugs while in the ED. Common diagnoses for patients included suicidal ideations or suicidal behaviors.

The second article presents an analysis of the 2016-2017 combined Healthcare Cost and Utilization Project Nationwide Emergency Department Sample. Patients that had a psychiatric evaluation in the ED were considered at risk for psychiatric boarding. Patients that boarded for longer than one calendar day and had a psychiatric evaluation were compared to patients that had a psychiatric evaluation but it not ultimately board. Patients that boarded had a greater number of billable procedures performed compared to patients that did not board. The two most common diagnoses of patients undergoing psychiatric boarding for greater than one calendar day were chronic obstructive pulmonary disease with major complication or comorbidity and diabetes.

The final article utilizes data gathered from ED nurses about their experience with psychiatric boarding at their hospital. Nurses that had greater positive attitudes toward patients undergoing

psychiatric boarding were associated with greater perceived competency for providing care for persons with mental illness, and fewer stigmatizing attitudes of patients with mental illness. Through a mixed method approach, this study found that nurses perceptions of psychiatric boarding as a problem varied greatly as well as the different practices that can occur during a psychiatric boarding stay. Suggestions for improvement centered on improving the physical environment because of the high pressure and chaotic nature of the ED.

Overall, the details about what occurs during psychiatric boarding in the ED are still poorly described. The lack of research on the short-term and long-term effects of spending extended periods of time in the ED is also concerning, given that this dissertation found that 54.55% of nurses believe that psychiatric boarding is currently a problem at their hospital. Future research that focuses on creating a best practices protocol for patients spending more than 24 hours in the ED is greatly needed to improve the experience and safety of psychiatric boarding for both patients and ED staff members.

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LIST OF ABBREVIATIONS

ACA	Affordable Care Act
ACEP	American College of Emergency Physicians
ANA	American Nurses Association
BHCC	Behavioral Health Care Competency
BSN	Bachelor of Science in Nursing
CEN	Certified Emergency Nurse
CINAHL	Cumulative Index to Nursing and Allied Health Literature
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease 19
CPT	Current Procedural Terminology
DNP	Doctor of Nursing Practice
ED	Emergency Department
EMTALA	Emergency Medical Treatment and Active Labor Act of 1986
ER	Emergency Room
HCUP	Healthcare Cost and Utilization Project
ICD-10-CM	International Classification of Disease -10-Clinical Modification
IRB	Institutional Review Board
IVC	Involuntary Commitment
LPS	Lanterman-Petris-Short
MeSH	Medical Subject Headings
MCC	Major Complication or Comorbidity
MSN	Master of Science in Nursing
NEDS	National Emergency Department Sample
NHAMCS	National Hospital Ambulatory Medical Care Survey

NP	Nurse Practitioner
OIG	Office of the Inspector General
OMS-HC	Opening Minds Scale for Health Care Providers
PCA	Patient Care Assistant
PES	Psychiatric Emergency Services
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RN	Registered Nurse
SAMHSA	Substance Abuse and Mental Health Services Administration
SMI	Serious Mental Illness
SPSS	Statistical Package for the Social Sciences
UNCC	The University of North Carolina at Charlotte
VA	United States Department of Affairs
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

1.1. Importance of Psychiatric Boarding to Health Services Research

Emergency departments (EDs) provide emergency medical care and evaluation for a myriad of medical conditions and concerns. EDs are also frequently utilized by patients who are experiencing psychiatric distress as a last resort when community mental health services are inadequate or inaccessible (Alakeson et al., 2010; Clarke, Dusome, & Hughes, 2007). When a patient presents to the ED, an ED provider provides an initial assessment and determines if the patient needs a psychiatric consultation. Although most EDs are open 7 days a week and for 24 hours a day, psychiatric consultations are often more challenging to obtain in a swift manner and particularly difficult in the evenings or on weekends (Clarke, Dusome, & Hughes, 2007). If the provider decides that the patient needs to be admitted to an inpatient facility, the patient must wait to be transferred and this waiting time period is called boarding. Any patient that is waiting to be transferred in the ED because an inpatient bed is not available is considered to be boarding but if they are waiting to be transferred to a behavioral health facility, they are considered to be psychiatric boarding (Appelbaum, 2015).

Boarding in the ED is defined as when a decision has been made to transfer a patient out of the ED but the transfer cannot occur due to a myriad of factors including the admitting unit where the patient needs to be transferred to is full. The number of overall inpatient hospital beds has been declining and the number of inpatient psychiatric beds has been declining at a faster rate (Nolan et al., 2015). When the patient is waiting to be transferred to an inpatient psychiatric unit or hospital, the patient is considered to be psychiatric boarding. This is of particular concern because psychiatric boarding is an endemic problem in the United States (Nolan et al., 2015).

Long psychiatric boarding times result in part due to the changing practices in psychiatric care throughout the past century. Due to the long history of institutionalization, deinstitutionalization, and transinstitutionalization in the United States, the number of inpatient psychiatric beds needed is vastly greater than the number of beds available (Appelbaum, 2015; LaFond & Durham, 1992). Therefore,

boarding times are prolonged as patients must wait until an inpatient bed becomes available. This problem is endemic across the United States and over 80% of EDs have psychiatric boarders in their hospitals (Nolan et al., 2015; ACEP, 2008; Appelbaum, 2015). The boarding process can be lengthy and boarding times are difficult to predict because the data surrounding both the prevalence and effects of psychiatric boarding on patients are lacking (Appelbaum, 2015). Estimates from the 2008 National Hospital Ambulatory Medical Care Survey (NHAMCS) indicate that 11% of all ED visits resulted in boarding but 21.5% of patients seen for psychiatric concerns resulted in boarding (Nolan et al., 2015). After controlling for relevant confounders, psychiatric patients were 4.78 times more likely to board compared to non-psychiatric patients (Nolan et al., 2015). The high rate in which patients needing psychiatric care are boarding is an important problem and more research is needed to fully understand what is happening to patients during this prolonged boarding time.

These numerous factors contribute to an intense situation and this is occurring in EDs all over the United States. The excerpt below describes a typical situation in which a patient is psychiatric boarding in the ED and the many complicated issues that typically arise during a typical psychiatric boarding (McClure, 2016, p. 198).

> Police escort Jane to the emergency room and report that she shows signs of mania and suicidal ideation. The hospital admits her for emergency care at 7:40 p.m. Four hours later, at around 11:30 p.m., a doctor determines that Jane is a danger to herself. The doctor recommends immediate, involuntary commitment at the state psychiatric hospital.
>
> Jane prepares for her transfer, but a nurse tells her she cannot leave yet. The psychiatric hospital reports that no beds are available, and no other psychiatric facilities in the state have openings.
>
> Jane waits through the night, barely sleeping because of the bright lights and noises all around her. She receives minimal care from the well-meaning nurses and doctors, who do their best to stabilize her condition but must also tend to numerous other patients with pressing needs. Jane's condition worsens, and she becomes increasingly agitated.
>
> Five days pass. Jane becomes frustrated and lashes out, overwhelmed with anxiety. Security staff and paramedics are called fourteen times to restrain her. The hospital spends $26,000 on personnel for Jane's 130 hours of care.
>
> Finally, a bed opens up at the state psychiatric hospital, and Jane is transported there for specialized treatment. Her involuntary commitment has begun.

As demonstrated in the above illustration, EDs are loud and chaotic places that are not conducive to deescalating mental health crises and have limited resources to treat a high volume of patients with

mental health needs (Alakeson et al., 2010; Vidhya et al., 2010). Patients are often boarded in the ED for days at a time and some EDs frequently board a dozen patients at a time (Vidhya et al., 2010). Other EDs board patients for weeks at a time and this is a high risk and dangerous practice for all parties involved ("Inspector," 2017). EDs that have four or more patients undergoing psychiatric boarding are at an increased risk for assaults on staff (Costumbrado et al., 2018). Psychiatric boarding contributes to overcrowding in the ED and can lead to more hallway bed utilization and fewer rooms to treat new patients, which leads to lower bed turnover and decreased ED throughput times (Parwani et al., 2017; Nicks & Manthey, 2012). It can also lead to symptom exacerbation, medication errors, increased patient dissatisfaction and slower response rates for physician assessment (Hodgins et al., 2010; Parwani et al., 2017). The various problems involved in psychiatric boarding necessitate more research on psychiatric boarding to better understand the characteristics of patients that are undergoing psychiatric boarding, the short-term and long-term effects of psychiatric boarding, and better understand ED staff members' attitudes and beliefs about patients that are undergoing psychiatric boarding.

1.2. Significance of Research

When changes are made in the healthcare system in the United States, the ED is often one of the first entities to experience the intended and unintended consequences of these changes (Sauser et al., 2015). The issue of psychiatric boarding is a symptom of a broader problem and results in part because of the decreasing number of inpatient behavioral health beds available and the lack of appropriate community acute mental health care (Sauser et al., 2015). Increases in psychiatric boarding can act as an indicator for the overall failure of providing adequate mental health treatment to those in need (Appelbaum, 2015). Washington's state Supreme Court has even made policy decisions that attempted to end psychiatric boarding completely in 2014, but without an adequate supply of inpatient psychiatric beds, boarding continued despite its illegality (Appelbaum, 2015). This further suggests that psychiatric boarding does not occur in isolation and the extenuating circumstances causing psychiatric boarding need

to be addressed to fix the cause of the issue. A critically important step to fixing psychiatric boarding is a fuller understanding of the patient characteristics, experiences, and attitudes and beliefs of staff members that care for patients that are undergoing psychiatric boarding.

Over 12 million patients seek mental health care in the ED each year and this accounts for 5-10% of all ED visits (Clarke, Dusome, & Hughes, 2007; Owens, Mutter, & Stocks, 2006). Between 2009 to 2015, the number of ED visits for mental health concerns among adults increased by 40.8% and over 90% of EDs have patients undergoing psychiatric boarding every week (ACEP, 2008; Santillanes, Lam, Axeen, & Menchine, 2018). The complexity of treating psychiatric emergencies in the ED for extended periods of time poses risks to both patients and providers, and yet some of the biggest issues involving psychiatric boarding are difficult to accurately describe because they have not been extensively studied nor documented. This dissertation represents an important step toward filling this gap by better understanding the characteristics of patient that undergo psychiatric boarding so EDs can better care for these patients. My dissertation will also address psychiatric boarding from the patient's nurse perspective to better understand the challenges and opportunities when caring for patients undergoing psychiatric boarding in the ED.

1.3. Literature Review

Psychiatric boarding is the largest contributing factor to ED crowding (Nolan et al., 2015). As demonstrated, psychiatric boarding is a problem in our healthcare systems and it puts patients and staff at risk. In order to fully understand the context of this dissertation, I will review how surrounding contextual factors contribute to psychiatric boarding today beginning with deinstitutionalization in the late nineteenth century. This spurred many changes in the treatment of psychiatric conditions with varying involvement with the legal system through civil commitments. The resulting laws and policies will be reviewed as related to civil commitments but since many civil commitments are initiated in the ED and result in psychiatric boarding, I will discuss the major legal decisions of civil commitments. Questions remain whether the same legal issues surrounding civil commitment in inpatient facilities are also occurring during the psychiatric boarding time-period in the ED before the involuntary commitment officially begins. Collectively, de-institutionalization, civil commitment laws, and involuntary commitment provide necessary context to establish the importance of this three article dissertation.

History of Deinstitutionalization

Mental hospitals were the pillar of mental health care in the United States throughout the nineteenth and until the mid-twentieth century. In 1890, most patients requiring mental health care were treated in mental hospitals on a short term basis with an average length of stay of less than 12 months but from 1890 to 1940, the number of long term patients increased dramatically (Grob, 1983). By 1937, the average length of stay for patients living in a mental hospital increased to 9.7 years (Grob, 1983). By 1940, there were 410,000 patients in public mental hospitals and over 98% of these patients were institutionalized in public facilities. However, by the end of the 1960s, there was a movement towards community care instead of long term inpatient commitment (Grob, 1987). This was spurred in part by the introduction of assertive community treatment programs, psychotherapy programs, and the introduction

of antipsychotic drugs, such as Thorazine and chlorpromazine, in the 1950s that led to improved management of several psychiatric conditions (LaFond & Durham, 1992; Nordstrom et al., 2019).

1972 is considered to be the official beginning of deinstitutionalization with the passing of the Lanterman-Petris-Short (LPS) in California (Lanterman Petris Short Act, 1969). This resulted in many state mental hospitals closing or downsizing as care was to be transferred from state mental hospitals to community care (Scheff, 2014). Former patients were released and many became homeless as a result due to inadequate access and availability of community mental health services (Scheff, 2014). Fewer patients had extended stays in mental hospitals but more patients were being civilly committed to mental hospitals for shorter and less frequent hospitalizations and this was called the revolving-door phenomenon (Brooks, 2007; Rachlin, 1983). Psychiatric boarding is a natural byproduct of deinstitutionalization because patients were forced to turn to EDs when they required care that was either inaccessible or absent in the community (Abid et al., 2014). The ED became the safety net for patients that were experiencing homelessness, have a serious mental illness (SMI) because of the lack of inpatient care (Scheff, 2014; Canady, 2019).

Psychiatric boarding was first documented in 2003 (Mansbach et al., 2003). Psychiatric boarding results if a patient needs inpatient psychiatric services but an inpatient bed is not available. The scarcity of psychiatric beds has created a dependence on the civil commitment process where the most intensive psychiatric resources are given first to the patients that are civilly committed because they would not be able to access outpatient treatment otherwise (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019).

Civil Commitment Entanglement with Psychiatric Boarding

During a civil commitment, a patient temporarily loses their liberty and personal rights due to their risk of harm to themselves or others, the severity of their mental illness, and one's ability to care for themselves (Sattar et al., 2006). In 1972, the only criteria needed to initiate a civil commitment was

whether the patient had a mental illness and needed treatment (Brooks, 2007). Each state has its own laws and regulations for the criteria need for civil commitment. For example, Alaska permits commitments only if the patient is a danger to both themselves and others due to their mental illness or if the patient is gravely disabled (Hedman et al., 2016). However, Arkansas allows for a commitment if the patient is a danger to themselves or others but the without specifically addressing that the patient is a danger due to a mental illness. In addition, the person who is legally allowed to initiates the emergency commitment vastly differs and in North Carolina, any interested person is allowed to initiate proceedings. Police officers, social workers, physicians, psychologists, and mental health professionals are also commonly allowed to initiate proceedings in other states. In 22 states, patients undergoing an emergency commitment are not explicitly given the right to know the reason for the commitment while only 9 states allow the patient to appeal the commitment (Hedman et al., 2016).

Policy changes surrounding civil commitment over the past 200 years in the United States have been largely influenced by changing social values and attitudes and each state has its own civil commitment laws and criteria (Anfang & Appelbaum, 2006; Brooks, 2007). During a civil commitment, an initial evaluation of the patient is completed in the ED based on the state's civil commitment laws and statutes (Segal et al., 1988). Although psychiatric boarding can occur in isolation, many of the patients that undergo psychiatric boarding are also involved in the civil commitment process (Bhalla & Donovitch, 2019). Psychiatric boarding is often a first step in the civil commitment process as logistics are sorted out to transfer the patient from the ED to an acceptable location such as a state mental hospital.

Civil Commitment Legislation

The first civil commitment laws in the United States were enacted in the late nineteenth century and have been subject to Supreme Court oversight in *O'Connor v. Donaldson, Addington v. Texas,* and *Lake v. Cameron* that address civil commitment and well as involuntary hospitalization (Testa & West, 2010; LaFond & Durham, 1992). In *Lake v. Cameron*, a 60-year-old patient from the District of Columbia

was civilly committed to a hospital even though she was not a danger to others and was found to not be a risk for intentionally hurting herself. Nevertheless, she had initially been found wandering around the streets a night by a police officer and she was taken to a hospital for observation (*Lake v. Cameron*, 1966). She filed a petition for a writ of habeas corpus which refers to a custodian that brings a confined person in front of a court and the reason for their confinement must be explained (Federal Judicial Center, n.d.). The court found that the patient should not carry the burden of providing alternatives to the place of confinement because the government has both the means and knowledge of community resources that would be appropriate for care and they should assist the court when gathering this information in any court proceeding. This established that the "least restrictive alternative" where the civil commitment should not infringe on the liberty of the patient (Lafond & Durham, 1992). However, the lack of appropriate least restrictive alternatives leads to increased psychiatric boarding in the ED and can extend the length of a civil commitment (McClure, 2016). A number of critical factors in civil commitment have been decided through additional case law.

Adequate Living Conditions. The right to adequate living conditions during a commitment was addressed in *Wyatt v. Stickney* when an Alabama judge ruled that patients in state hospitals that are mentally ill or mentally retarded have a constitutional right to adequate living conditions. The plaintiffs had experienced living conditions at the state hospital that were considered to be "grossly substandard and hazardous to psychological integrity, to health, and in some cases even to life" (*Wyatt v. Stickney*, 1972). However, the living conditions of patients undergoing psychiatric boarding in the emergency department have not been addressed (McClure, 2016). Literature is lacking on where exactly patients are living for extended periods of time in the chaotic emergency department environment. However, first hand reports from EDs strongly suggest that the living conditions for patients that are undergoing psychiatric boarding are not only inadequate but downright dangerous for the patient as demonstrated in the excerpt of a patient undergoing psychiatric boarding below (McClure, 2016; LaFrance & Walsh, 2013, p. 4).

> "A middle-age man diagnosed with schizophrenia and bi-polar disease came to our ED. He required an involuntary emergency admission to the state hospital. With no room available for three days, he was required to stay in the Emergency Department. Known to be violent—and

> becoming so more than once, punching the walls in his room— the patient was sequestered in a room with no window, a stretcher for a bed, and access to only books and magazines for recreation. A 24-hour police detail (costing $5,184) was required for his security, as well as for the safety of staff and other patients. Additionally, to use the bathroom or shower, he had to be escorted. The very nature of a busy Emergency Department was unsettling to the patient, leading to his violent outbursts which caused further turmoil for staff and other patients. His occupation did cause delays in treating other patients."

Right to Due Process. Emergency detainment was addressed in Wisconsin in 1972 as patients could be involuntarily detained for up to 145 days without having a hearing for probable cause. In *Lessard v. Schmidt*, a patient in Wisconsin was detained in a mental health center for an "Emergency Detention for Mental Observation" in 1972. The court found that the inpatient civil commitment and involuntary detention of the patient who was allegedly mentally ill had his right to due process violated. Patients could be involuntarily detained for up to 145 days and a hearing for probable cause was not required for their commitment (*Lessard v. Schmidt*, 1972). This constitutionally defective statute did not protect patients from self-incrimination and did not allow for the patient to be informed of the reasons for detainment. Also, the state of Wisconsin did not have to prove that the patient was dangerous and mentally ill beyond a reasonable doubt (*Lessard v. Schmidt*, 1972). This was a landmark case that found Wisconsin's civil commitment statute to be unconstitutional because it was broad enough to apply to all non-dangerous persons who were mentally ill while the least restrictive alternatives were not considered (LaFond, Durham, 1992). Many patients undergoing psychiatric boarding in the emergency department also risk not having their due process rights upheld despite the intentions of ED staff (SAMHSA, 2019).

Involuntarily Medicating Patients. The issue of involuntarily medicating patients that are living in a state mental hospital was addressed in *Rogers v. Okin* in 1979. A Massachusetts patient was involuntarily injected with medication and was secluded in non-emergency situations while he was being treated at a state mental hospital. The patient argued that patients with mental illness still have the constitutional right to refuse treatment but the physicians at the facility said that patients within the state mental hospital are inherently incompetent and do not have the constitutional right to refuse treatment or seclusion in both emergency and non-emergency situations. The court ruled in favor of the patient and agreed that under the current Massachusetts laws, patients with mental illness are assumed to be

competent and should have the right to refuse treatment and/or medications (*Rogers v. Okin*, 1979). When patients are boarding in the ED for days at a time, the issue of involuntarily medicating patients and the right to refuse treatment is still under debate.

However in New Jersey, a man was given antipsychotic drugs involuntarily while he was hospitalized several different times in a state mental hospital. The court ruled in *Rennie v. Kein,* that patients still have the right to refuse drugs that have severely disabling side effects, such as psychotropic drugs. However, the state may still force medication on patients when they are a danger to themselves or to others but this should only occur in emergency situations. Patients still have their constitutional right to refuse psychotropic medication in any non-emergency situations and should be given their right to due process (*Rennie v. Kein*, 1981). The issue of involuntary administering psychotropic drugs and other treatment during boarding in the ED is still an important issue without a clear legal consensus (Russ, Sisti, & Wilner, 2020). In addition, the COVID-19 pandemic has introduced new concerns with boarding and the ethical decisions made during the process. Ethical concerns over a patient's right to refuse a standard protocol COVID test have arisen in 2020 (Russ, Sisti, & Wilner, 2020). If a patient is unable to follow COVID-19 isolation, social distancing, or testing protocols and they may be at a high risk of contracting COVID-19.

Emergency Holds. The initiation of a civil commitment often includes an emergency hold that precedes the official civil commitment hearing (Hedman et al., 2016). Emergency holds usually occur in general hospital EDs before the civil commitment has officially begun. Once it has, the patient's mental illness is involuntarily treated. Currently, emergency hold laws vary widely in how long the hold can be, how involved the court system is in the process, and the patients' rights while they are being held. If there is not an available bed for the patient to be transferred, the emergency hold will take place in the ED and the patient is considered to be psychiatric boarding until they are transferred. Although the Supreme Court has addressed the rights of patients during their civil commitment, their rights during the emergency hold and psychiatric boarding time are less clear.

Much of what occurs during psychiatric boarding is unknown but it has been shown to have negative effects on patient safety, resource utilization, and cost (Campbell and Pierce, 2018; Clarke, Dusome, & Hughes, 2007). Many patients that are undergoing psychiatric boarding are involved in the civil commitment process and thus their commitment begins while the patient is in the ED. As demonstrated by the sampling of case law above, the living conditions of patients that are civilly committed have been historically violated and has required court oversight to guarantee safe conditions inside psychiatric hospitals. This oversight does not apply to the ED and although best practices dictate that a patient undergoing psychiatric boarding should be given a bed in a quiet and secluded area to decrease external stimuli, the use of these methods is understudied and unknown (Bennet et al., 2006). It is important to learn more about what happens during the boarding time period because longer delays in care have been associated negative outcomes including higher risk of eloping and attempting suicide while in the ED (Bennett et al., 2006).

The resulting psychiatric boarding from initiating a civil commitment proceeding is understudied and the prevalence of psychiatric boarding is currently unknown (Hedman et al., 2016). Attempts at abolishing psychiatric boarding have been made across the country and most notably in Washington State after patients were spending over 14 days in EDs without treatment for their mental health conditions (Appelbaum, 2015). As case studies and media reports have provided the bulk of evidence surrounding the experience of psychiatric boarding thus far, more empirical evidence is needed to help improve the quality of care provided to this vulnerable patient population.

CHAPTER 2: A SYSTEMATIC REVIEW OF THE PSYCHIATRIC BOARDING PROCESS IN THE EMERGENCY DEPARTMENT

Abstract

Objective. The specific research questions for this systematic review are (1) What is known regarding the process of psychiatric boarding in the ED with respect to wait times, wait period, and the process?; (2) What are the factors contributing to psychiatric boarding and the subsequent outcomes/consequences?

Data Sources. The following databases were searched: PubMed, PsychINFO, Cochrane Library, Cochrane Database of Systematic Reviews, Web of Science, Medline, and CINAHL. Studies were included if they focused on psychiatric boarding in the ED in some capacity between 1999 to 2020 and if they were completed in the United States. Each search included search terms related to the study located (ED) and the patient population of interest (patients undergoing psychiatric boarding).

Study Design. PRISMA guidelines were followed for this systematic review.

Extraction Methods. A total of 1,059 studies were initially gathered and 31 studies were identified for final review. Multiple coders rated study quality and major findings.

Principal Findings. Quality and rigor of the studies varied greatly. Reported psychiatric boarding times varied from 108 minutes to 103 days. The effects of boarding were rarely reported. Violence was a common theme and restraint use was common, but little else is known about the impact of a civil commitment during an episode of psychiatric boarding besides its association with significantly longer boarding times. Insurance status was significantly correlated with psychiatric boarding status and lengths in several studies. Patients with suicidal ideations or suicidal behaviors had a greater risk of boarding and significantly longer boarding lengths.

Conclusions. Psychiatric boarding practices seem to vary and also appear to be minimally monitored. Additional research is needed to determine reasons behind prolonged boarding times in the ED and the effects of this practice.

Introduction

In the United States, emergency departments (EDs) provide emergency medical care, evaluation, and stabilization for various medical and psychiatric concerns. Patients undergoing psychiatric distress also frequently utilize these services in either regular EDs or dedicated psychiatric EDs. Increasing numbers of patients are turning to EDs during a psychiatric emergency because of the inadequate or inaccessible mental health resources in the community [1]. The number of ED visits for psychiatric concerns has been increasing over the past decade and approximately 12.5% of all ED visits, or 12 million visits annually, are for mental health or substance use disorders [2-4].

Psychiatric boarding is a common ED practice when patients are admitted to a psychiatric unit or hospital after a psychiatric consultation, but there is no bed available to transfer the patient to [5]. This waiting period after an admitting decision is made and before the patient actually transfers is considered to be psychiatric boarding and it was first documented in 2003 [6]. Patients also are frequently boarded for days at a time in the ED and some EDs frequently have over 12 patients undergoing psychiatric boarding at any given time [1]. Many patients that are undergoing psychiatric boarding also are involved in the civil commitment process, which are given first access to intensive inpatient psychiatric services [7].

Over 90% of EDs have reported that they are treating patients that are undergoing psychiatric boarding every week [8]. Psychiatric boarding is considered the largest contributing factor to ED crowding [9]. Increases in psychiatric boarding can act as an indicator for the overall failure of providing adequate mental health treatment in the community [5]. The issue of psychiatric boarding results in part because of the decreasing number of inpatient psychiatric beds available and a lack of appropriate community acute mental health care [10]. Speaking to the seriousness of the problem, Washington's state Supreme Court upheld a policy decision that attempted to end psychiatric boarding completely in 2014, but due to an inadequate supply of inpatient psychiatric beds, psychiatric boarding continued despite its illegality [5]. This further suggests that psychiatric boarding does not occur in isolation and the extenuating circumstances causing psychiatric boarding need to be addressed to improve or refine the

process. A critically important step to improving the experience of psychiatric boarding is a fuller understanding of the process as well as short-term and long-term effects of psychiatric boarding.

This systematic literature review aims to understand what is known about psychiatric boarding in the ED. The specific research questions for this review are (1) What is known regarding the process of psychiatric boarding in the ED with respect to wait times, wait period, and the process?; (2) What are the factors contributing to psychiatric boarding and the subsequent outcomes/consequences? The purpose of this study is to better understand the practice of psychiatric boarding and to better understand the experience of psychiatric boarding in order to improve upon the process.

Methods

This systematic review was guided by the PRISMA checklist and organizational methods [11].

Search Terms and Strategy.

Due to the dearth of empirical research on psychiatric boarding, a broad database search was utilized and the following databases were searched: PubMed, PsychINFO, Cochrane Library, Cochrane Database of Systematic Reviews, Web of Science, Medline, and CINAHL. Each search included both the patient population of interest and the location where they were receiving treatment: 1.) Location: “Emergency Department” OR ED OR “Emergency room” OR ER OR Emergency OR “Secure unit” 2.) Patient Population: “Psychiatric boarding” OR Boarding OR Boarder OR Boarders OR “Involuntary commitment” OR IVC OR involuntary OR “involuntary treatment” OR “Involuntary hospitalization” OR commitment OR psychiatric OR “Civil commitment” OR “Psychiatric evaluation” OR “psychiatric hold.” Database specific MeSH terms were used when searching each of the respective databases to yield articles that were focused on our specific population of interest. The title and abstracts of articles in the aforementioned databases were searched and then screened for relevance to the research questions. A quality assessment tool was used to evaluate each article and is in Appendix A.

Inclusion and Exclusion Criteria.

Studies were included if they were conducted in the United States and were written in English. Only peer-reviewed studies that were completed between the years 1999-2020 were included due to the

Supreme Court case, *Olmstead v. L.C.* This was the first time that the Americans with Disabilities Act was applied to protect individuals from unjustified institutionalization and promoted that individuals with mental disabilities be treated in the least restrictive settings possible [12, 13]. The population of interest for reviewed studies comprised patients that were being boarded or participated in the boarding process for psychiatric-related admission.

Articles were excluded if were academic dissertations or were from non-academic or professional sources (e.g. trade magazines). Articles were also excluded if the population of interest included patients that were boarding for solely medical concerns. Articles written in languages other than English and were published prior to 1999 were not included. Studies focusing solely on patients involved in the forensic/legal-related hospitalizations were also excluded. A total of 31 articles were identified for review and the summary of the search is provided in Figure 1 in a PRISMA diagram.

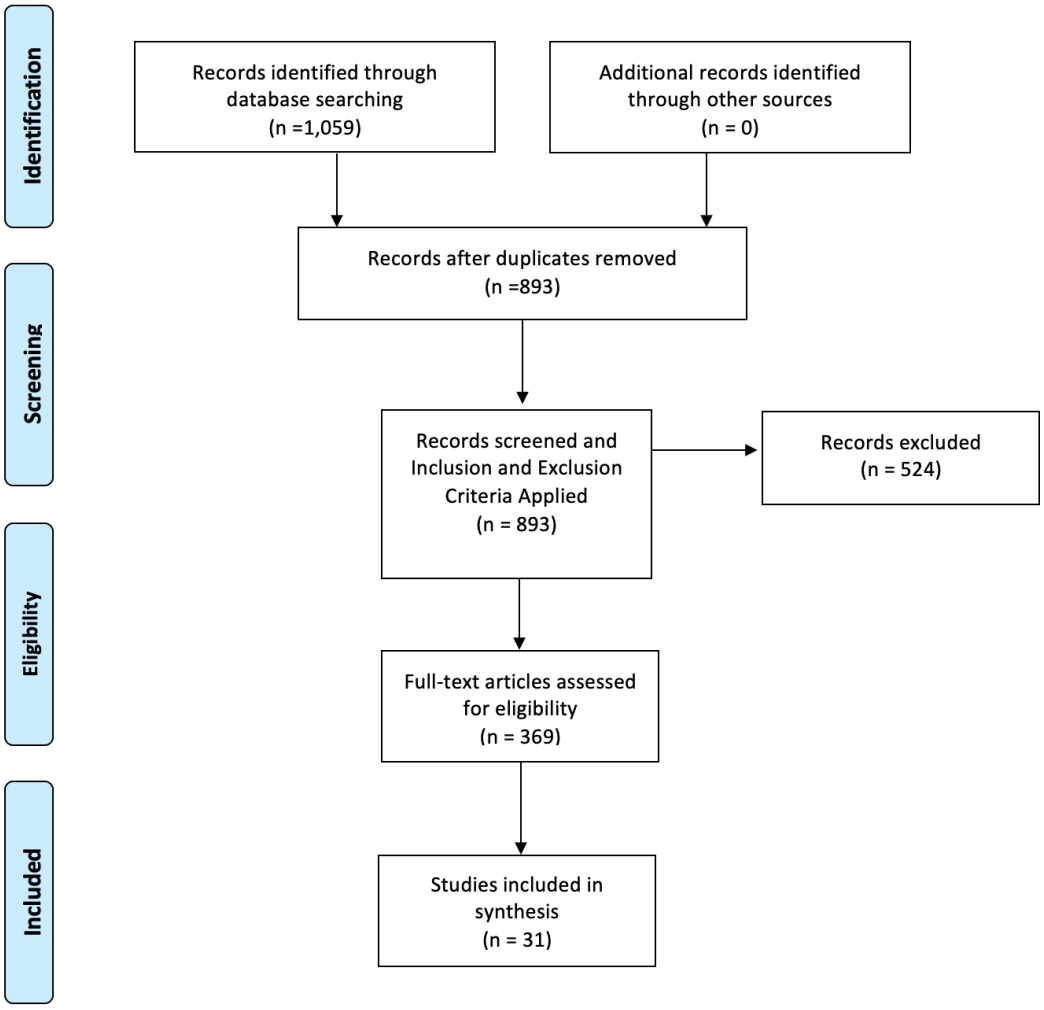

Figure 1.1: PRISMA diagram of search results

Quality Assessment Tool.

A quality assessment tool was developed based on other quality assessment examples in the literature (e.g. [14]) and it was used to evaluate the quality of the articles included in the systematic literature review. The quality assessment tool evaluated each section of the article including the introduction, methods, results, discussion/conclusion, and overall quality of each article. There are 21 items in the quality assessment tool and the number of questions for each section are as follows: introduction (1 question), methods (7 questions), results (9 questions), discussion/conclusion (3 questions), and overall quality (1 question). The quality assessment tool evaluates both the rigor of the

peer review of the article, the practice or policy implications, and the relevance of the research questions and data to psychiatric boarding in the ED. The quality assessment tool is in Appendix A.

A second coder was identified and both researchers rated the first five articles independently using Microsoft Excel. Inter-rater reliability was calculated for each quality assessment tool item using Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM Corp. Armonk, NY, USA). Inter-rater reliability was established using a kappa cut-off value of 0.7. For the items of the quality assessment tool that were lower than 0.7, both researchers discussed why they chose their particular answer and edited items of the quality assessment tool that were unclear or could have been interpreted in several different ways. Both researchers then independently re-rated the questions that had a low agreement. Inter-rater agreement of .7 or above was achieved on all quality assessment tool items. The rest of the articles were divided between the coders to be evaluated using the quality assessment tool.

Results

Quality Assessment - Methodological and Overall Rigor

Table 1 displays results from the quality assessment tool that was used to assess quality and overall rigor of the selected studies with a range of possible scores from 3-31. A total of 31 studies were identified and scores ranged between 12 [15] and 26 (e.g. [16]). This indicates a wide range of quality and relevance to the research questions examining psychiatric boarding in the ED.

Table 1: Quality Assessment Results

Quality Assessment Item	**No**	**Yes**		
Introduction				
1. Were the research questions/objectives/aims clearly stated?	3 (11%)	28 (90%)		
Methods				
2.What type of study design was used?	Case report/case study 3 (11%)	Review article 0 (0%)	Observational/retrospective study 23 (74%)	Prospective/ cohort study 5 (16%)
3. What methods were used in this study?	Descriptive 1 (3%)	Qual or Quant 30 (97%)	Mixed Methods 0 (0%)	
4. Were both the sample size and power addressed?	No	Yes (one or the other)	Yes (both)	

	13 (42%)	16 (52%)	2 (6%)
5. Were the data collection methods described in detail (i.e., data source and collection admin)(not just commented on)?	10 (32%)	21 (68%)	
6. Was the patient population described?	10 (32%)	21 (68%)	
7. How many hospitals/agencies were included?	One 19 (61%)	Two 2 (6%)	Three + 10 (32%)
8. Was this study a secondary data analysis?	20 (65%)	11 (35%)	
Results			
9. Are demographic results included?	10 (32%)	21 (68%)	
10. Does the topic of the article focus on psychiatric boarding in the hospital or ED?	1 (3%)	30 (97%)	
11. Does it describe the physical space where patients are being treated and held during the boarding/treatment process? (ie. hallway bed, private room in ED, in locked/secure behavioral health unit within ED, etc)	22 (71%)	9 (29%)	
12. Does it address if patients are being monitored? (ie. heart monitor, vital sign checks every 8 hours, sitter, 1:1 in person monitoring, virtual monitoring)	29 (94%)	2 (6%)	
13. Was electronic health record data used in the analysis?	12 (39%)	19 (61%)	
14. Are patients being boarded for psychiatric concerns?	0 (0%)	31 (100%)	
15. Is the nature of the boarding described (voluntary vs involuntary)?	19 (61%)	12 (39%)	
16. Are there patient-level results (ex. length of time patient boarded, comorbid conditions of patient, patient demographics)?	6 (19%)	25 (81%)	
17. Are there provider-level results (ex. number of IVCs by provider)?	26 (84%)	5 (16%)	
Discussion/Conclusion			
18. Are limitations or sources of bias addressed (could also be in methods section)?	7 (23%)	24 (77%)	
19. Are the research questions/objectives/aims clearly addressed?	3 (10%)	28 (90%)	
20. Are practice (change in treatment, change in treatment flow, standards of practice, etc) and/or policy (laws/statutes/legalities and does not include hospital policies) implications discussed?	No 4 (13%)	Policy only or practice only 18 (58%)	Yes, both are discussed 9 (29%)
Overall Rigor			
21. Rigor of peer-review	Thesis/dissertation	Abstract/letter/report	Peer Reviewed journal article

			24 (77%)
		0 (0%)	7 (23%)

† Note: Qualitative is abbreviated qual; quantitative is abbreviated quant

Methodological rigor varied. The majority of the 31 studies (n=23, 74%; e.g. [17]) utilized a retrospective or observational study design while five (16%; e.g. [16]) studies were prospective in nature. Three (11%; e.g. [7]) studies were case reports or case studies but the majority of studies (n=19, 61%; e.g. [18] only examined one hospital and 10 (32%; e.g. [19]) studies utilized three or more hospitals within their analyses. 11 (35%; e.g. [20]) studies utilized a secondary dataset. When assessing the rigor of peer review, 24 (77%) of studies were published in peer-reviewed journals while seven (23%; e.g. [21]) studies were in the form of an abstract, letter, or case report. One study utilized more in-depth qualitative interviewing (3%; [18]). Additional examples within study methods and results suggesting wide-ranging rigor include a case report [21] , a quasi-experimental retrospective cohort study [22], and a program description [23]. Articles consistently addressed key aspects of discussion section content such as study limitations and implications for policy or practice.

Overall Findings Related to Research Questions

Table 2 provides a detailed description of the studies and displays the overall findings related to the research questions. The length of psychiatric boarding varied greatly among studies. The longest reported boarding time was 103 days while the shortest boarding time reported was 107.56 minutes [24, 25]. 19 (61%; e.g. [26]) studies examined patients in regular EDs, 8 (26%; e.g. [27]) studies examined patients in pediatric psychiatric EDs, and one (3%; [28]) study was conducted in a psychiatric EDs.

Table 2: Study findings related to research questions

Citation	Quality Assessment Score ‡	Study Design	Study Location	Sample Characteristics	Main Outcome Variables	Key Findings Related to Study Outcomes	Psychiatric Boarding Correlates
Bakhsh et al. (2014)	20	Prospective observational study	Arizona	100 patients who were psychiatric boarding	Medication errors	65 out of 100 patients had at least one medication error and the most common error was omission There were 288 medication errors for the 100 patients and 77 were insignificant, 152 were significant, and 3 were serious medication errors 89% of errors were due to omission	Medication errors were associated with higher numbers of home medications and increased comorbidities
Bhalla & Danovitch (2019)	17	Case study	California	10 Emergency Departments (EDs)	Number of clinicians certified and trained to write an emergency hold	68% patients that were boarding and on a psychiatric hold were transferred to an inpatient psychiatric hospital within 24 hours	

Brennaman (2015)	23	Retrospective chart review	Florida	170 participants from two EDs and had a psychiatric evaluation and needed an involuntary examination	Boarding length	48.8% of participants waited in the ED for longer than the legally allowed 12 hour maximum length	Increased age, male gender, intoxication, and Medicare beneficiary status were associated with a longer wait times
Campbell & Pierce (2018)	20	Retrospective chart review	Florida	100 pediatric patients that were admitted to a pediatric ED for a perceived psychiatric crises	Boarding length	Patients experiencing a psychiatric crisis had an average boarding time of 5.11 hours (SD 2.07 hours)	Initiation of the involuntary commitment process, requiring a medical clearance that results in admission to a medical unit, and endorsing a plan to hurt either themselves or someone else was associated with significantly longer boarding times

Claudius et al. (2014)	20	Retrospective chart review	California	1108 pediatric patients that were admitted to a pediatric ED and were under an involuntary psychiatric hold	Rate of admission to an inpatient pediatric medical unit and length of boarding	50.1% of patients were admitted to a pediatric medical unit and 94.2% were boarding because there was not a psychiatric bed available 6.1% of patients had counseling and 20.1% were given psychiatric medications during boarding Average length of stay for patients boarding was 2 days with a range from 1-30 days and the average hospital cost was $4269 per boarded patient 16.6% of patients had the involuntary psychiatric hold overturned during their boarding	During boarding, psychiatric medications and counseling were significantly more likely to be given to patients that were transferred to an inpatient psychiatric unit compared to a pediatric inpatient medical unit for boarding
Costumbrado et al. (2018)	12	Retrospective	California	ED assault logs	Assaults on ED staff	94% of assaults occurred when the	Higher number of patients undergoing

						ED was boarding 4 or more patients on an involuntary psychiatric hold More assaults occurred within the last 10 days of the month and weather was not correlated with assaults	psychiatric boarding (4+) was associated with increased assaults on staff even when controlling for the ED census
Ding et al. (2010)	20	Retrospective cohort study	Unknown	216,039 ED visits to four academic EDs in one year	Service completion times	Patients with psychiatric concerns (ex. suicide ideation, depression, or alcohol abuse) had the longest wait times regardless of acuity level	
Flowers et al. (2018)	19	Retrospective cohort study	Minnesota	11,833 ED visits for behavioral health concerns	ED length of stay	A new law gave persons in jail priority access to state psychiatric facilities over persons in the ED and after the law was implemented, the median length of stay in ED for patients psychiatrically boarding	

						increased by 5.22 hours and the proportion of adults that had to wait more than 3 days and more that 15 days increased. Of the 13 patients that had lengths of stay over 15 days, 12 had a violent crime history and the one had a history of sex offense	
Garfinkel et al. (2019)	13	Case report	Maryland	52 year old male patient with history of schizophrenia	Morbidity and mortality from ED psychiatric boarding	The patient developed deep vein thrombosis or a pulmonary embolism while he was undergoing psychiatric boarding which led to cardiac arrest and ultimately discharge to a hospice facility	The patient's morbidity was attributed to prolonged psychiatric boarding
Hoffmann et al. (2019)	12	Retrospective cross-sectional	Massachusetts	1,746 pediatric ED visits for children ages 5-18 years old	Length of stay	22% of all visits for psychiatric concerns had a length of stay of 24 hours or more 9% of patients	Boarding was associated with insurance status, having autism or a developmental delay, prior psychiatric hospitalization, presenting during a

						were admitted to a medical ward (to continue boarding only) and for these patients, ED length of stay was 41.3 hours in the ED, followed by a mean stay on the medical ward of 4.1 days The longest boarding time on a medical floor for 45.9 days and the longest ED boarding time was 185 hours	school month, and the reason for ED presentation
Kroll et al. (2018)	19	Cross-sectional survey	Massachusetts	40 ED patients who needed inpatient psychiatric care due to suicide risk	Barriers to safe outpatient discharge	39 out of 40 patients had a least one nonclinical factor that could have helped enable safe outpatient treatment for the patient such as having a place to live or having support from family, partners, or close friends 25% of patients	The decision to admit a patient for inpatient psychiatric services for suicide risk was often driven by a lack of social resources such as insufficient housing, lack of family support, loneliness, and financial insecurity

						could have been discharged if the patient had social support according to admitting psychiatrists	
Mansbach et al. (2003)	23	Retrospective cohort study	Massachusetts	315 pediatric patients who presented at a pediatric ED and required an inpatient psychiatric admission	Admission to a psychiatric facility or admission for boarding on a medical ward	33% of patients who needed a psychiatric admission were boarded on a medical service and the median length of boarding was two days The range of boarding length on the medical floor was 1-51 days and most patients boarded for one day, while many waited 2-10 days, and one patient boarded for 51 days	Factors associated with an increased odds of boarding were being between the ages of 10-13, Black race, presenting to the ED on a weekend or holiday, quarter of presentation, suicidal ideation, and severity of homicidal ideation
Misek et al. (2015)	19	Retrospective cohort study	Illinois	671 ED patients who required inpatient psychiatric hospitalization	Length of stay; immediate psychiatric facility transfer or boarding status	95.4% of uninsured patients, 71.8% of patients with Medicare or Medicaid, and 78.3% of patients with private	Longer boarding times were associated with not having insurance and being transferred to a private facility

						insurance boarded in the ED prior to their inpatient psychiatric admission The mean time in the ED before transfer to a private facility was 705 minutes and 1661 minutes for a public facility	compared to a public facility
Misek et al. (2017)	20	Retrospective chart review	Illinois	1,107 ED patients who required inpatient psychiatric hospitalization	Length of boarding	After a state psychiatric facility with 497 beds closed, the length of psychiatric boarding increased for patients with private insurance, Medicare or Medicaid, and for patients that were waiting to be transferred to a private psychiatric hospital The ED length of stay was not significantly different for psychiatric patients	

						overall after the closure	
Moore et al. (2017)	14	Quasi-experimental retrospective cohort study	Illinois	1,674 patients who were admitted a psychiatric hospital from the ED	Length of psychiatric boarding	After Illinois Medicaid expansion (CountyCare) was implemented the mean psychiatric boarding times decreased for all patients as the number of CountyCare enrollees increased and CountyCare members experienced the shortest boarding times	After Medicaid expansion, boarding times significantly decreased and Medicaid enrollees had the shortest boarding times
Nicks & Manthey (2012)	19	Retrospective cohort study	North Carolina	505 ED patients who required a psychiatric admission	Length of ED stay; associated reimbursement	35.1% of psychiatry consultations resulted in a psychiatric admission The length of ED stay was significantly longer for patients that needed a psychiatric admissions compared to non-psychiatric admissions (1089 minutes vs. 340 minutes) Each patient	

						waiting for a psychiatric admission prevented 2.2 bed turnovers and accounted for a direct loss of $1,198 per patient undergoing psychiatric boarding	
Nolan et al. (2012)	16	Cross-sectional	National dataset	2008 National Hospital Ambulatory Medical Care Survey	ED length of stay	11% of all ED visits resulted in boarding but 21.5% of all psychiatric visits resulted in psychiatric boarding In the northeast, 30.6% of psychiatric visits resulted in boarding 29.6% of psychiatric visits in government non-Federal hospitals resulted in boarding and if ambulance diversion hours were over 500, 31.3% of psychiatric visits resulted in boarding	Significantly higher psychiatric boarding rates were observed in the Northeast, if hospital ownership was government/non-Federal, if ambulance diversion hours were over 500, if the ED was located in a large central/fringe metro location or in a metropolitan statistical area
Nolan et al. (2015)	21	Cross-sectional	National dataset	34,134 records	ED length of stay	11% of all ED visits	The odds of boarding for

				from the 2008 National Hospital Ambulatory Medical Care Survey		resulted in boarding but 21.5% of all psychiatric visits resulted in psychiatric boarding Among patients who boarded, patients undergoing psychiatric boarding boarded 2.78 hours longer compared to boarding for non-psychiatric concerns	psychiatric concerns were 4.78 times higher compared to patients non-psychiatric complaints
O'Donnell et al. (2020)	21	Retrospective cohort study	Maryland	573 pediatric ED patients ages of 3-18 with a psychiatric complaint and were recommended to have an inpatient hospitalization and who stayed in the ED for 24 hours	Boarding length	Average boarding time was 54 hours with a standard deviation of 36 hours but only 51.5% of boarding patients had a psychiatric consultation Most common chief complaints included suicidal ideation or suicidal attempt, followed by behavior disorders, and mood disorders	

						7.9% of patients were physically restrained and 27.2% were medicated for aggressive behavior during boarding	
Parwani et al. (2018)	19	Retrospective pre-post	Connecticut	3501 ED patients before the intervention and 3798 ED patients post-intervention	ED length of stay	After opening of the 12 bed locked psychiatric observation unit, the rate of psychiatric holds significantly increased from 42% to 50% but the psychiatric admission rate dropped from 42% to 25%	
Pearlmutter et al. (2016)	22	Cross-sectional	Massachusetts	871 ED patients who required a mental health evaluation	ED length of stay	The median boarding length for patients admitted to the same hospital was 6 hours and 9.2 hours if they required transfer Completing a medical clearance only accounted for 10.5% of the	Medicaid beneficiaries and uninsured patients had longer stays in the ED and were two times more likely to stay in the ED for 24 hours or more when compared to patients with private insurance Several other significant confounders were used in

						boarding length	several models including patient age, mode of ED arrival, aggression, homelessness, having a prearranged bed, and day of admission
Simpson et al. (2014)	23	Retrospective chart review	Washington	5,363 patient encounters with 3,681 different patients at a psychiatric emergency service	Length of stay; boarding status	9.7% of patient encounters resulted in boarding with a median boarding length of 27.2 hours and a range of 0.3-143 hours 74% of patients that boarded had a diagnosis of primary psychosis or a bipolar manic/mixed episode	Patients that boarded were less likely to use alcohol and less likely to be self-referred compared to referrals by providers, friends, or family; and were more likely to arrive in restraints, have seclusion or restraints utilized, arrive on a weekend, and use tobacco
Smith et al. (2016)	22	Retrospective cross-sectional	Florida	597,541 adult ED patient encounters for a psychiatric compliant	Length of stay	Average length of stay was 7.77 hours and among patients needing transfer, 73% resulted in psychiatric boarding	Boarding length was significantly associated with the patient's age, race/ethnicity, hospital ownership, patient disposition, patient suicidality, and hospital rural designation
Smith et al. (2019)	24	Retrospective cross-sectional	Florida	44,328 pediatric ED patient encounters	Length of stay	Average length of stay was 5.96 hours	Factors associated with a longer length of stay

				that had a primary psychiatric diagnosis		with a standard deviation of 8.64 hours 23% of patients waiting for transfer boarded for 12 hours or more	included self-harm behaviors, impulse control problems, female sex, Hispanic ethnicity, mood or psychotic disorders, Medicaid or VA/Tricare insurance, and being 15-17 years old
Terp et al. (2019)	19	Retrospective observational study	Multiple	44 civil monetary penalties related to EMTALA violations that involved psychiatric emergencies from 2002-2018 that were levied by the Office of the Inspector General (OIG)	Settlement cost	44 of the 230 EMTALA violation settlements (19%) involved psychiatric emergencies and the average settlements was $85,488 for cases involving psychiatric emergencies and $32,004 for cases not involving psychiatric emergencies 84% of EMTALA violations involving psychiatric emergencies involved failing to provide an appropriate medical screening, 68%	

						involved failing to provide stabilizing treatment, and 30% involved failing to arrange appropriate transfer	
Weiss et al. (2012)	26	Prospective cohort study	Massachusetts	1,092 ED patients who had a psychiatric consultation	Length of stay	The average ED length of stay was 11.5 hours overall and 15 hours for patients requiring transfer A positive toxicology screen was associated with a 6.2 hour longer length of stay and this mostly had an effect on the time before the disposition decision to admit or discharge the patient	Variables that had the greatest impact on the length of boarding were restraint use, diagnostic imaging, and the need for hospitalization Uninsured patients and older patients were associated with a longer length of stay in the ED but homelessness, sex, and race were not significantly associated with length of stay in the ED
Wharff et al. (2011)	23	Retrospective cohort study	Massachusetts	461 pediatric ED encounters that required a psychiatric admission	Psychiatric boarding status and placement	34.1% of patients psychiatrically boarded and the average boarding time was 22.7 hours with a standard deviation of 8.08 hours	The odds of boarding were higher for patients that had a diagnosis of autism, mental retardation, or a developmental delay, if the patient presented on a weekend and during

							months without a school vacation, and severe suicidal ideation
Winokur & Senteno (2009)	12	Program description	California	n/a	n/a	An ED opened up at guesting area outside of the ED for patients who were undergoing psychiatric boarding to wait in a separate room with loungers and televisions	
Wood et al. (2014)	22	Retrospective cross-sectional descriptive study	California	196 pediatric ED patient encounters from juvenile hall for urgent psychiatric evaluation	Cost of visit, length of stay	ED visits resulted in $1,357,884 charges 67% of the visits resulted in the patient being placed on an involuntary psychiatric hold with 63% of these patients were then boarded on a medical ward and 37% were transferred to a psychiatric facility Among patients that were boarded on a medical	

						ward, the median length of stay was 3 days with a range of 1-103 days	
Worsley et al. (2019)	22	Qualitative semi-structured interviews	Pennsylvania	27 adolescent patients to a pediatric ED who presented with suicidal ideation and/or suicide attempt	Length of stay, emerging themes	Median length of stay was 2 days Repetitive inquiries, activities and boredom, emotions, supportive clinical interactions, previous hospital experiences, information needs, safety, and physical comfort were themes that emerged among patients that boarded	
Zeller et al. (2014)	22	Prospective observational study	California	144 ED patients who were placed on an involuntary 5150 mental health hold	Boarding length, transfer status	Average boarding time was 107.56 minutes and 24.8% of patients were eventually admitted for an inpatient psychiatric hospitalization while 75.2% were eventually discharged	

‡ Quality Assessment Score possible score range = 3-31

What is known about psychiatric boarding patients?

Demographic results were provided in the majority of studies (n=21, 68%; e.g. [20]). 25 (81%; e.g. [27]) studies provided patient level results. One study found that among patients who experienced extended boarded stays (over 15 days), all patients had either a history of violent crime or sexual offense [29]. Patients that underwent psychiatric boarding were also more likely to arrive to the ED in restraints and also have seclusion or restraints utilized during their ED stay [28]. Another study found that patients that required physical restraints had longer boarding times [16].

Insurance status was correlated with psychiatric boarding in several studies. Medicare beneficiaries were associated with longer wait times in some studies (e.g. [30]), yet uninsured patients had the longest boarding times in other studies [31]. Another study found that after ACA related Medicaid expansion in Illinois, psychiatric boarding times decreased for all patients but Medicaid enrollees experienced the shortest boarding times [22]. Patients that were uninsured or enrolled in Medicaid were more than two times likely to board in the ED for over 24 hours [32]. Another study found that patients with VA/Tricare insurance or Medicaid had longer boarding times compared to other insurance types [20]. Generally, patients with commercial insurance had significantly shorter boarding times compared to other payment types [33].

Violence was a common theme in terms of outcomes related to psychiatric boarding. For example, patients were commonly given medications for aggression. One study found that during the boarding time period, 27.2% of patients undergoing psychiatric boarding were given additional medications for aggressive behavior and 7.9% of patients were physically restrained [34]. Having four or more patients undergoing psychiatric boarding was associated with an increased number of assaults on ED staff [15].

Known Processes and Effects Associated with Psychiatric Boarding

The known effects on patients within the selected studies were quite limited. One case study directly addressed morbidity and mortality resulting from psychiatric boarding [21]. A patient developed deep vein thrombosis or a pulmonary embolism during the boarding time period which ultimately led to

cardiac arrest that was attributed to the prolonged boarding time period [21]. Another study found that only 51.5% of patients undergoing psychiatric boarding had a formal psychiatric evaluation that resulted in treatment recommendations by a psychiatrist [34]. Psychiatric services were rarely provided during the psychiatric boarding stay and one study found that only 6.1% of patients received counseling during boarding and only 20.1% of patients were given psychiatric medications during the boarding time period [27].

The quality of patient care during psychiatric boarding was commonly subpar. One study found that 65% of patients undergoing psychiatric boarding had at least one medication error during their stay [26]. Another study examined Emergency Medical Treatment and Labor Act (EMTALA) violation settlements and found that 19% of EMTALA violations during the 16 year study length involved psychiatric emergencies [35]. The average settlement was $85,488 for these cases and the primary reason for these violations was failure to stabilize the patient [35]. These outcomes further indicate that the quality of care is not meeting legal standards of care.

Although the effects on patients were minimally described, the only qualitative study examining adolescent patients who underwent psychiatric boarding found that most patients felt safe during their hospitalization and thought positively about their hospitalization [18]. Adolescent patients were especially comforted by their 1:1 observer and expressed gratitude toward communication with their physicians saying that it contributed to feelings of safety and trust [18]. Costs endured by patients were not available, but one study found that when patients were psychiatric boarding in an ED, this accounted for a direct loss to the hospital of $1,198 and prevented 2.2 bed turnovers [36].

Role of Involuntary Civil Commitment during Psychiatric Boarding

Only 12 (39%; e.g. [30]) studies addressed whether the patients' psychiatric boarding was voluntary or involuntary in nature, indicating that little is known about the differential effects of psychiatric boarding during an involuntary ED visit or during civil commitment proceedings. However, involvement in the involuntary commitment process was associated with significantly longer psychiatric boarding times [17].

One study that examined patients during the civil commitment process found that among patients undergoing psychiatric boarding, 94.2% were boarding because there was not an available psychiatric bed for transfer [27]. One study found that 16.6% of involuntary psychiatric holds were overturned during the boarding process [27].

Correlates of Psychiatric Boarding

Certain diagnoses and patient attributes were associated with longer boarding times, especially with regards to suicidal and homicidal ideations. Patients experiencing suicidal ideations were associated with significantly longer boarding times [17] and a greater odds of boarding [6]. Suicidal ideation or a suicide attempt was the most common principal diagnosis among patients undergoing psychiatric boarding in a pediatric ED [34]. Patients with suicidality, intentional self-inflicted injuries, or self-harm had the longest boarding times in other studies [20, 33]. Homicidal ideations were also associated with significantly longer boarding times and an increased odds of boarding [6, 17].

Discussion

Psychiatric boarding in the ED is a common practice that is inconsistently described in the 31 selected studies. Principal conclusions for this review found that the average psychiatric boarding times varied greatly from 108 minutes [25] to 51 days [6]. The wide range in boarding times suggests that psychiatric boarding times are consistently longer in some hospitals and areas of the country (e.g., [37]). This could be due to civil commitment or involuntary hold laws, the availability and accessibility of psychiatrists in EDs, lack of access to community mental health services, state Medicaid expansion status, and the number of available public and private psychiatric inpatient beds.

Methodological rigor also varied. For instance, few studies were prospective in nature, and many studies defined psychiatric boarding with varying time specifications. There were also differences in the definition of psychiatric boarding. Some articles did not define when a length of stay was long enough to be considered boarding [38] while others defined boarding as a length of stay greater than six hours (e.g. [9]), 12 hours (e.g. [30]) or 24 hours (e.g. [34]). The study populations were also heterogenous and many studies excluded participants with special circumstances whom have historically had the longest boarding

times. One study excluded veterans who utilized the Veterans Health Administration facilities (e.g. [30]) while others excluded patients that required medical stabilization before their psychiatric boarding officially began (e.g. [6]). However, the source of the extended psychiatric boarding wait times were explored in nearly all of the selected studies. Yet reasons for extended wait times are either multi-causal or unclear.

Among the selected studies in this review, a consistent pattern between boarding times and insurance status was not observed for all insurance types. Medicaid beneficiaries experienced variable boarding times, but they were shorter after ACA related Medicaid expansion in Illinois [22]. Overall, uninsured patients had the longest boarding times and this is consistent with other studies looking at length of stay for psychiatric patients in the ED [22, 39]. This could be explained in part by the increasing percentage of patients who are Medicaid beneficiaries because between 2010-2014, the percentage of patients with Medicaid in the ED increased significantly from 25.3%-32.1% [4]. Prior studies have found that the most common payers for mental health visits in the ED is Medicare (37.2%), private insurance (27.5%), Medicaid (18.3%), and the uninsured (13.8%) [3]. A small number of patients had prolonged boarding times and this relationship could be related to uninsured patients having the longest boarding times due to inpatient placement issues related to insurance. However, this pattern was inconsistent across all of the selected studies in this review. The clear impact of insurance status on the patient begs for future healthcare finance or health economics studies to explore potential policy reform as a solution to disparate experiences of patients undergoing boarding.

Common conditions that precipitated patients undergoing psychiatric boarding in the selected studies were suicidal ideation, self-harm behaviors, anxiety, depression, and homicidal ideation. Patients with homicidal ideations and suicidal ideations were common and patients with severe suicidal ideation had consistently longer boarding lengths. This pattern is expected given that state civil commitment laws generally have specific criteria related to the patient being danger to themselves or others due to mental illness [40]. One of the largest risk factors for future suicide is being treated in the ED following a non-

fatal self-harm event [41] and the ED is in a unique position to intensively help patients who desperately need compassionate, competent, and accessible care following self-harm or a suicide attempt.

This review also supports prior literature examining experiences in the ED after a suicide attempt and found similar sentiments from patients about long ED wait times. One qualitative study that was not directly examining psychiatric boarding found similar experiences in the ED after a suicide attempt. “For two days I lay in the emergency room waiting for a psych bed.” “I didn’t see anyone [on staff] for 5 hours. I froze on the gurney.” [42 p. 345]. Patients also felt that that they were being stigmatized or directly punished by ED staff members [42]. When coupled with findings related to suicide, mental health and psychiatric boarding, these findings suggest a need to improve conditions of the process, especially for those with mental health or imminent self-harm related concerns. Given that approximately 12.5% of all ED visits are for mental health or substance use [3] and there are approximately 420,000 ED visits specifically for self-inflicted injury or attempted suicide every year [43], the ED represents a prime opportunity for further suicide prevention interventions in the ED. EDs are in a unique position where patients are spending extended periods of time with extremely high risk patients while the patient is undergoing psychiatric boarding. Using the psychiatric boarding time to initiate interventions in the ED may reduce suicidal behavior. Examples of these interventions could include targeted screenings for high risk patients, creating a safety plan with the patient, using telepsychiatry, or providing educational resources to the patient’s family members [44]. Combinations of these types of interventions show reduced suicide for ED patients (e.g., [45]), and therefore may also be applied following psychiatric boarding, regardless of whether a patient is admitted long-tern.

In most of the selected studies included in this review, it is still unknown what occurs during the psychiatric boarding period. Most studies (22, 71%; e.g. [37]) did not describe the physical space where patients undergoing psychiatric boarding were treated. Only two (6%; e.g. [21]) studies described how patients undergoing psychiatric boarding were being monitored. In one study that addressed patient monitoring, patients felt comforted by their 1:1 safety monitor and when their healthcare provider took time to speak with them directly [18]. However, there was scant evidence of any positive or negative

experiences in the selected studies. Given principles such as least restrictive environment and the protective role of social support, one avenue for enhancing psychiatric boarding process may be through hiring trained support staff specifically dedicated to working with this population.

The literature supports the notion that being physically restrained in the ED often causes feelings of violation and dehumanization [46]. Being physically restrained can also lead to avoidance and mistrust of the health care system in the future [46]. When a patient is restrained in the ED, the most common restraint technique involves two physical restraints cuffed to extremities with the addition of chemical restraints for a duration of nearly five hours [47]. Although direct evidence of the negative effects of psychiatric boarding was lacking, additional research is needed how restraint use affects patients that are undergoing psychiatric boarding. Also, longitudinal studies are needed to determine the long-term psychological impact of frequency, severity and types of restraint use during psychiatric boarding in the ED.

There is evidence that EDs are ill-equipped to treat patients going through extended psychiatric boarding stays, as demonstrated by the high number of EMTALA violations that involve psychiatric emergencies over recent years [35]. The most common reason for an EMTALA violation that involved psychiatric emergencies was due to the failure of the ED to provide stabilizing treatment to the patient [35]. This suggests that ED services are not meeting patient's mental health needs nor their physical health needs during a psychiatric emergency as required by EMTALA.

A number of research gaps were identified by this review, along with potential next steps toward understanding and improving psychiatric boarding. First, future research might examine if the location of psychiatric boarding is associated with differences in patient experiences or psychological effects of psychiatric boarding. For instance, boarding on a medical floor with a private room away from the commotion of an ED might provide a more relaxing environment for the patient and it may impact the frequency of restraint use. Second, additional research might examine the effects of a trained 1:1 observer on the experience of psychiatric boarding. Such social support professionals may improve the patient experience and deescalate risk of negative outcomes. Third, enhanced training evaluation studies on

topics related to psychiatric boarding such as suicide, violence, and mental illness are needed. Rigorous training evaluation can be linked to patient outcomes in order to assess the potential benefits of training ED staff on critical factors associated with psychiatric boarding. Finally, additional research is needed to determine the extent to which individual state laws surrounding emergency holds and civil commitment may impact the length of psychiatric boarding. Examining state policies surrounding civil commitment may help explain some of the regional variation in boarding lengths as noted in this review.

Limitations

The vast array of terminology used to describe psychiatric boarding made it difficult to fully capture all relevant literature describing extensive lengths of stay in the ED for patients with psychiatric concerns. It is possible that some studies may have been missed in other databases and similarly, non-empirical sources such as dissertations and news briefs were not included. Much of the most compelling and extreme reports of the experience of psychiatric boarding comes from the media and news articles. These sources were not included in the literature search and this could lead to an incomplete understanding about psychiatric boarding, especially from the patient's perspective. However, the contrast between first-hand accounts of psychiatric boarding in the media and the lack of empirical research describing the patient's experience during psychiatric boarding are troubling and represent a need for more psychiatric boarding research.

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APPENDIX A: QUALITY ASSESSMENT TOOL

Introduction

1. Were the research questions/objectives/aims clearly stated?
   - o No = 0
   - o Yes = 1

Methods

2. What type of study design was used?
   - o Case report/case study =1
   - o Review article =2
   - o Observational/retrospective study =3
   - o Prospective/Cohort study = 4

3. What methods were used in this study?
   - o Descriptive =1
   - o Qualitative or quantitative =2
   - o Mixed Methods=3

4. Were both the sample size and power addressed?
   - o No=0
   - o Yes (one or the other)=1
   - o Yes (both) =2

5. Were the data collection methods described in detail (ie. data source and collection admin)(not just commented on)?
   - o No=0
   - o Yes=1

6. Was the patient population described?
   - o No=0
   - o Yes=1

7. How many hospitals/agencies were included?
   - o 1 =1
   - o 2 =2
   - o 3+ =3

8. Was this study a secondary data analysis?
   - o No=0
   - o Yes=1

Results

9. Are demographic results included?
   - o No=0
   - o Yes=1

10. Does the topic of the article focus on psychiatric boarding in the hospital or ED?
    - o No=0
    - o Yes=1

11. Does it describe the physical space where patients are being treated and held during the boarding/treatment process? (ie. hallway bed, private room in ED, in locked/secure behavioral health unit within ED, etc)
    - o No=0
    - o Yes=1

12. Does it address if patients are being monitored? (ie. heart monitor, vital sign checks every 8 hours, sitter, 1:1 in person monitoring, virtual monitoring)
    - o No=0
    - o Yes =1

13. Was electronic health record data used in the analysis?
    - o No=0
    - o Yes=1

14. Are patients being boarded for psychiatric concerns?
    - o No=0
    - o Yes=1

15. Is the nature of the boarding described (voluntary vs involuntary)?
    - o No=0
    - o Yes=1

16. Are there patient-level results (ex. length of time patient boarded, comorbid conditions of patient, patient demographics)?
    - o No=0
    - o Yes=1

17. Are there provider-level results (ex. number of IVCs by provider)?
    - o No=0
    - o Yes=1

Discussion/Conclusion

18. Are limitations or sources of bias addressed (could also be in methods section)?
    - o No=0
    - o Yes=1

19. Are the research questions/objectives/aims clearly addressed?
    - o No=0
    - o Yes=1

20. Are practice (change in treatment, change in treatment flow, standards of practice, etc) and/or policy (laws/statutes/legalities and does not include hospital policies) implications discussed?
    - o No=0
    - o Policy only or practice only=1
    - o Yes, both are discussed =2

Overall Rigor

21. Rigor of peer-review

- 0 = thesis/dissertation
- 1 = abstract/letter/report
- 2 = peer-reviewed journal article

CHAPTER 3: AN ANALYSIS OF PATIENTS THAT ARE UNDERGOING PROLONGED PSYCHIATRIC BOARDING IN THE EMERGENCY DEPARTMENT

Abstract

Background: The emergency department (ED) acts as a gatekeeper to psychiatric care in much of the United States and patients frequently spend extended lengths of time in the ED waiting for transfer to an impatient psychiatric facility. Patients that remain in the ED waiting for transfer are considered to be psychiatric boarding.

Aims: This study examines patients that are undergoing psychiatric boarding in the ED. The specific aims are to quantify estimates of number of (1) patients that were undergoing psychiatric boarding in the ED and (2) physical restraint use among patients that are undergoing psychiatric boarding; and to determine the (3) bivariate and (4) best fitting model to determine the demographics, medical characteristics, and hospital characteristics for persons that are undergoing psychiatric boarding.

Methods: The 2016 and 2017 Healthcare Cost and Utilization Project's National Emergency Department Sample was utilized for analyses. 80,700 ED patients comprised the analyzable sample. A combination of International Classification of Disease Clinical Modification (10th edition) codes and Current Procedural Terminology (4th edition) codes were used to identify patients that were boarding in the ED for psychiatric concerns

Results: There were 47 (0.06%) patients that psychiatrically boarded in the United States in 2016 through 2017 and none of these patients were physically restrained. Characteristics that predicted increased odds of boarding were having a diagnosis related group of chronic obstructive pulmonary disorder or diabetes, if the ED was located in the Northeast compared to all other regions, and if the ED was located within a non-teaching hospital compared to a teaching hospital. The odds of boarding were also 2.62 times higher for patients that lived in a metropolitan area compared to all other city sizes.

Conclusion: The present study found patients with complex comorbidities pose a challenge when handling psychiatric emergencies in the ED and this may contribute to extended psychiatric boarding times. Standardization of the definition of psychiatric boarding is also needed in order to better identify

patients that undergo extended psychiatric boarding times in the ED and track their associated outcomes. Given the psychological distress that many patients undergoing psychiatric boarding experience, additional trainings for ED staff on how to build therapeutic relationships with patients spending extended lengths of time in the ED is also needed.

Introduction

Emergency departments (EDs) deliver a crucial service for the community by providing emergency evaluation and stabilization for a myriad of medical concerns. In the United States, hospitals that participate in Medicare must comply to the Emergency Medical Treatment and Labor Act (EMTALA) by providing these services to all patients that present to the ED regardless of their insurance status or ability to pay (Hsuan et al., 2017). Patients with psychiatric chief complaints must typically be medically cleared my ED physicians (Janiak & Atteberry, 2012). Patients often need a medical assessment and evaluation, or medical clearance, before they are considered medically approved for transfer or discharge (Santiago et al., 2006). When patients with psychiatric complaints present to the ED, ED providers typically run routine laboratory tests as part of a medical assessment before a psychiatric evaluation or any treatment can occur (Brown et al., 2017). Once patients are medically cleared, they can be transferred to a specialized psychiatric unit. However, if there is not an open psychiatric bed available, the patient must remain in the ED until they can be transferred. This waiting time period is called psychiatric boarding (Nicks & Manthey, 2012). Psychiatric boarding in the ED is an increasingly observed practice in the United States (Nordstrom et al., 2019).

During psychiatric boarding, it is largely unknown what type of care is provided and by which support staff or specialists. If the patient is undergoing psychiatric boarding and they become acutely agitated, rapid sedation may be used with a combination of benzodiazepines and antipsychotics (Brown et al., 2017). The utilization of physical restraints is also frequently observed for patients with psychiatric concerns in the ED (Wong et al., 2019). Beyond these details, little is understood about psychiatric boarding with respect to its frequency and correlates. Doing so is important because it allows for us to generate an epidemiological understanding of psychiatric boarding. Such information can inform improvement of our understanding of, and efforts to build upon methods that can be used to reduce, psychiatric boarding.

This study aims to improve the understanding of patients that are undergoing psychiatric boarding in the ED by examining all patients age 12 or older. The specific aims of this article are (1) to quantify the

number of patients that were undergoing psychiatric boarding in the ED and produce a national estimate for the number of patients that undergo psychiatric boarding; (2) to determine the prevalence of physical restraint use among patients that are undergoing psychiatric boarding; (3) to determine the demographics, medical characteristics, and hospital characteristics for persons that are undergoing psychiatric boarding. These patients will be compared to patients that were at risk for psychiatric boarding but they did not ultimately board; (4) To identify a model that predicts the likelihood of psychiatric boarding using demographic, medical, and hospital contextual characteristics.

Methods

This study utilizes the 2016 and 2017 Healthcare Cost and Utilization Project's (HCUP) National Emergency Department Sample (NEDS) datasets to examine the problem of psychiatric boarding in the ED. HCUP is sponsored by the Agency for Healthcare Research and Quality (AHRQ) which is housed within the United States Department of Health and Human Services (Mutter & Stocks, 2014). One of HCUP's databases is the Nationwide Emergency Department Sample (NEDS) and it is the largest ED database that utilizes all-payer data (NEDS Overview, 2021). The HCUP NEDS allows for national estimates to be produced and it is the largest ED database with all-payer information with more than 30 million ED visits each year (NEDS, 2020). HCUP NEDS includes patients that are uninsured and its complex sampling procedure allows nationally representative analysis for all EDs in the United States (Mutter & Stocks, 2014).

This study was submitted to the Institutional Review Board (IRB) at the University of North Carolina at Charlotte and was determined to not be human subjects research and therefore did not need IRB approval.

Study Population. A combination of International Classification of Disease Clinical Modification (ICD-10-CM) codes and Current Procedural Terminology, Fourth Edition (CPT) codes were used to identify patients that were boarding in the ED for psychiatric concerns (CPT, 2019; World Health Organization [WHO], 2020). All CPT and ICD-10-CM codes used in this study are in table 1. Participants were eligible to board if they had a psychiatric examination while in the ED. Patients were included in the

psychiatric boarding group if they had one code from the psychiatric examination category and one code in the boarding category. The boarding codes were used based on the recommendation for billing for ED physicians by the American College of Emergency Physicians for documenting a patient that is being monitored in the ED for multiple days while they are waiting for an inpatient psychiatric bed to become available (ACEP, 2020). All patients under the age of 12 were also excluded to ensure that all adolescents are captured but all children under the age of 12 will be excluded. Adolescents are considered a special population in emergency medicine. Children under the age of 12 are considered clinically different than adolescents over the age of 12 and pose challenges in assessing suicidality (Tishler et al., 2007). Therefore, only adolescents and adults were included in the forthcoming analyses.

Table 1: CPT and ICD-10-CM codes used in this study

Code Type	Code Description
ICD-10-CM	
Z04.6*	Encounter for general psychiatric examination, requested by authority
Z78.1	Physical restraint use
CPT Codes	
90791*	Under psychiatric diagnostic evaluation services
90792*	Under psychiatric diagnostic evaluation services with medical services also provided
99224**	Each day of observation care services with 15 minutes at patient's bedside
99225**	Each day of observation care services with 25 minutes at patient's bedside
99226**	Each day of care services with 35 minutes at patient's bedside

Note: This table is adapted from information from the CPT and ICD-10-CM search functions (CPT, 2019; WHO, 2020).

The population of interest were patients that were undergoing psychiatric boarding in the ED. Patients that were eligible for psychiatric boarding had either ICD-10-CM code Z04.6, CPT code 90791, or CPT code 90792. These variables are in table 1 and indicate that the patient had a psychiatric evaluation ("Observation," 2018; "ICD-10-CM Codes," 2021). All of these patients were then eligible to

psychiatry board. Any patient that had a CPT code of 99224, 99225, or 99226 was under observation in the ED for greater than one calendar day ("CPT Codes," 2021). Patients with at least one code from the psychiatric evaluation group and the observation group were considered to be psychiatric boarding. For purposes of this article, boarding is defined as remaining in the ED for greater than one calendar day based on the CPT codes that are available.

A combined 55,153,016 unique ED visits were included in the combined 2016-2017 HCUP NEDS sample. After patients under age 12 were removed, there were 47,354,949 patient visits and 80,700 patients had a psychiatric exam and were eligible to board. The mean age for all patients over the age of 12 was 46.20 years (*SD* = 21.09). In this sample, 47 patients psychiatrically boarded for greater than one day and figure 1 presents how the target population was identified.

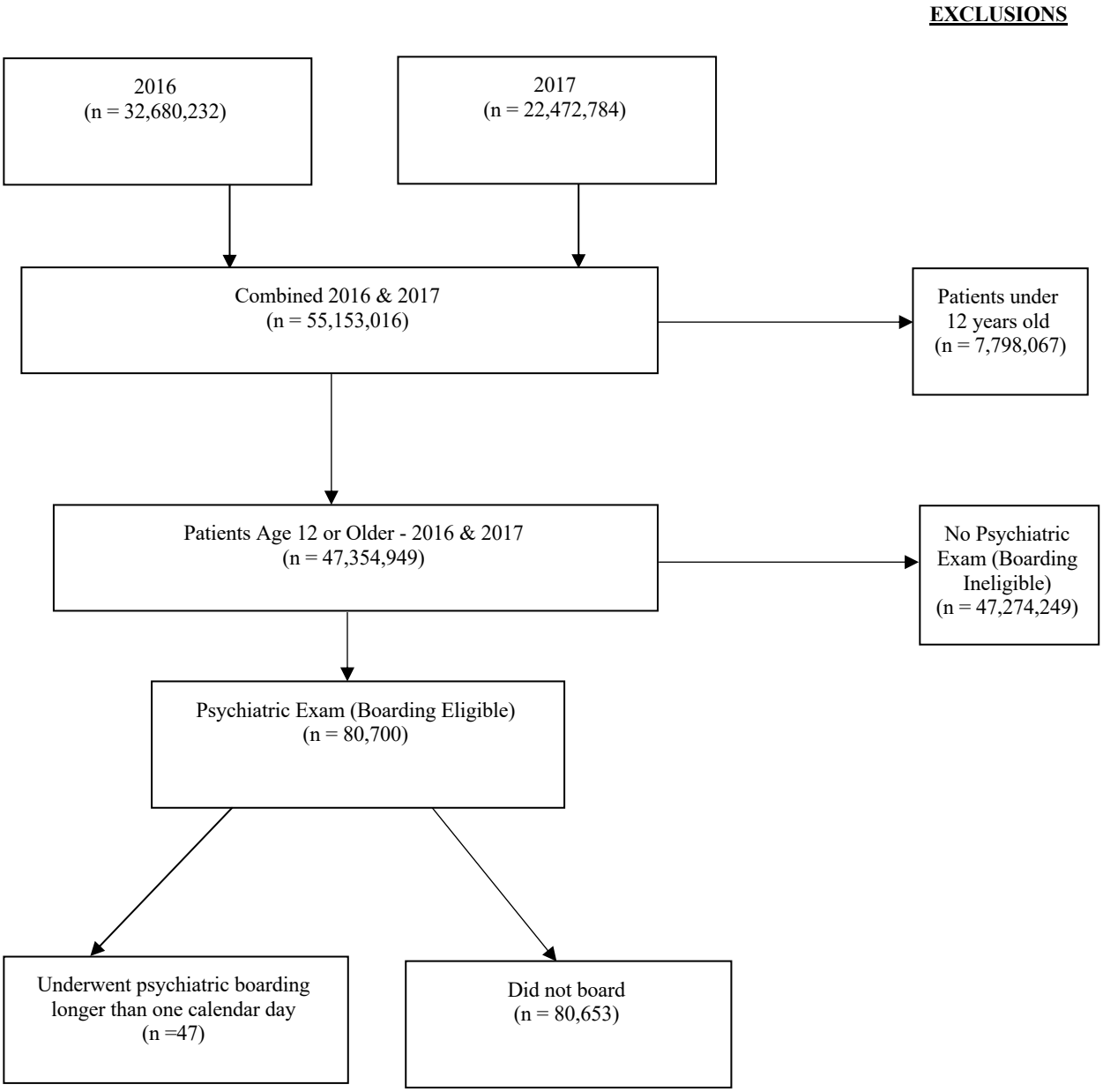

Figure 2.1: Target population identification in 2016-2017 HCUP NEDS

Variables. Variables in the HCUP NEDS dataset fell into several categories including patient demographics, patient medical characteristics, and hospital characteristics. Variables related to patient characteristics included the year that the patient presented to the ED, age, diagnosis related group, patient's sex, expected primary payer, inpatient discharge disposition, mean length of inpatient stay, the number of procedures performed, expected secondary payer, patient location, total charges for ED services, total combined charges for inpatient services and ED services, and the median household income

for the patient's zip code. Hospital characteristics included the admission month, discharge quarter, hospital region, hospital's trauma status, hospital's teaching status. A codebook for HCUP NEDS data was created and is in Appendix A. Variables were recoded when cell counts were ten or fewer to ensure sufficient samples sizes, statistical power, and to comply to HCUP's publishing of data policies ("Publishing," 2021). Details of exact coding and recoding of variables are in Appendix A. The primary outcome variable was if the patient underwent psychiatric boarding and this was accomplished by making a new dichotomous variable, where 0 indicated the patient was not undergoing psychiatric boarding and a 1 indicated the patient was undergoing psychiatric boarding. An additional dummy variable was created for physical restraint use.

Statistical Analyses. SAS statistical software was used to analyze the 2016 and 2017 HCUP NEDS datasets. Both datasets were combined in SAS to create one larger dataset that was used for the analyses. Four different files provided by HCUP were used for 2016 data including a HCUP NEDS core file, ED file, hospital file, and IP file for 2016. The same four files for 2017 were also available from HCUP and were merged using the hospital identification number. SAS code files and instructions for merging different datasets were also provided by HCUP and followed. The combined 2016-2017 dataset was then exported as a CSV and used for analyses.

For Aim 1, analyses were used to compare (1) patients that had a psychiatric examination in the ED that resulted in boarding for longer than one calendar day; and (2) patients that had a psychiatric examination that did not result in psychiatric boarding. National estimates of psychiatric boarding were calculated using the HCUP provided discharge weight variable to determine national estimates. Standard errors and national estimates were calculated using HCUP guidelines (Houchens & Elixhauser, 2015). For Aim 2, to determine the prevalence of physical restraint use among patients that were undergoing psychiatric boarding, the ICD-10-CM code for physical restraints (Z78.1) was used. The rate that physical restraints were used was calculated for patients that underwent psychiatric boarding and patients that did not go through psychiatric boarding but were eligible to do so.

For Aim 3, demographic characteristics, medical characteristics, and hospital characteristics were examined for patients that were undergoing psychiatric boarding. Patients that had a psychiatric exam and underwent psychiatric boarding were compared to patients that were at risk for psychiatric boarding (had a psychiatric exam) but they did not ultimately board. The alpha level used to test for significant associations was 0.05. Cramer's *V* was also calculated to assess effect size and 0.10 was considered a small effect size, 0.30 was the cut off for medium effect sizes, and 0.50 was used for large effect sizes (Kim, 2017). Cohen's *d* was used for discrete and continuous variable effect size calculation.

For Aim 4, multiple logistic regression was used in order to create a model that predicts the likelihood of psychiatric boarding using patient characteristics, medical characteristics, and hospital characteristics. The outcome variable used was psychiatric boarding. Backwards stepwise selection of covariates were utilized (Derksen & Keselman, 1992). Odds ratios were used as a metric of effect size with magnitude interpretation guided by statistical literature (Chen et al., 2010).

Results

Aim 1 Results

There were 80,700 patients in the 2016-2017 HCUP NEDS database over the age of 12 that had a psychiatric evaluation and were eligible to board. This equates to an estimated 363,470 (95% CI: 249,174.30 – 477,766.94) patients in the United States that had a psychiatric exam and were eligible to board in 2016-2017. Given the 47 (0.06%) patients that were eligible for psychiatric boarding, there were an estimated 216.19 (95% CI: 11.063, 421.32) patients that underwent psychiatric boarding in the United States in 2016 through 2017.

Aim 2 Results

Physical restraint use was uncommon among all patients with a psychiatric examination. No patients were physically restrained who underwent psychiatric boarding and only 0.25% (n = 204) patients were physically restrained that did not board. Among non-boarded patients with a psychiatric exam, there are an estimated 887.13 (95% CI: 549.87, 1,224.39) patients who were physically restrained in 2016 and 2017.

Aim 3 Results

Demographic Characteristics. Table 2 presents characteristics of patients that had a psychiatric exam in the ED. Significantly more patients boarded in 2017 compared to 2016. Boarded patients had a greater average age of 46.94 years (*SD* = 24.08 years) compared to non-boarded patients who had an average age of 45.01 years (*SD* = 20.71 years) but this relationship was not significant. More patients of female sex boarded compared to males but this association was also not statistically significant.

Medical Characteristics. The range of the length of inpatient hospitalization for boarded patients (1 - 7 days) was shorter compared to the range for non-boarded patients (0 - 301 days). The average length of inpatient hospitalization was 3.13 days (*SD* = 1.73 days) for patients that underwent psychiatric boarding and 5.05 days (*SD* = 7.96) for patients that did not board prior to their inpatient stay. Patients that boarded had a significantly shorter average length of inpatient stay (3.13 days, *SD* = 1.73 days) compared to patients that did not board (5.05 days, *SD* = 7.96 days). Boarded patients also had significantly more procedures performed compared to patients that did not board. The range for the number of procedures performed was 7 to 35 for patients that boarded and 0 to 35 for patients that did not board. The most common diagnosis related group for boarded patients was chronic obstructive pulmonary disorder (COPD) with major complication or comorbidity (MCC) (n=16, 34.04%). The second most common diagnosis related group for boarded patients was diabetes with MCC (n=13, 27.66%). Approximately 61.70% of patients that boarded had a diagnosis related group of COPD or diabetes while only 1.0% of non-boarded patients visits had these diagnosis related groups.

The total amount charged for ED services for boarded patients ranged from $132 to $14,315 and a larger range was observed from non-boarded patients ($100 - $167,284). The mean amount charged for ED services for boarded patients was lower compared to non-boarded patients but the difference was not significant. However, the combined amount charged for inpatient services and ED services was significantly lower for patients that boarded compared to patients that did not board. The range for the amount charged for combined inpatient services and ED services was $3,336 to $55,841for boarded patients and $1,400 to $2,582,449 for patients that did not board.

Hospital Characteristics. Several different hospital characteristics were significantly associated with boarding including the hospital's region, teaching status, and trauma status. More patients underwent psychiatric boarding in the Northeast compared to all other regions of the United States. Fewer patients boarded in non-trauma hospitals compared to level II trauma centers and boarding was also more frequently observed for patients living in a metropolitan area compared to all other non-metropolitan locations. Hospital characteristics such as admission season and the discharge month were not significantly associated with psychiatric boarding. When examining effect sizes, overall, the largest observed bivariate effects were for the diagnosis related group, total charges for combined inpatient and ED services, and number of procedures performed (see Table 2 for effect sizes).

Table 2: Characteristics of patients in 2016-2017 HCUP NEDS who had a psychiatric exam

Patient ED Visit Characteristics	**Boarded* Patients w/a Psychiatric Exam** **N (%)**	**Non-Boarded* Patients w/a Psychiatric Exam** **N (%)**	**X^2 (df), *p***	**Cramer's *V*******
Year				
2016	13 (27.66%)	52,727 (65.38%)	29.51 (1), $p < .001$	0.02
2017	34 (72.34%)	27,926 (34.62%)		
Age (in years)				
Mean (*SD*)	46.94 (24.08)	45.01 (20.71)	-0.64 (80,698), $p = .52$	0.09
Average Age (in years)				
Below average	21 (44.68%)	36,654 (46.07%)	0.036 (1), $p = .85$	0.001
Above average	26 (55.32%)	42,915 (53.93%)		
Diagnosis Related Group				
COPD w/MCC**	16 (34.04%)	732 (0.91%)	4088.73 (2), $p < .001$	0.23
Diabetes w/MCC***	13 (27.66%)	69 (0.09%)		
Other	18 (38.30%)	79,852 (99.01%)		
Sex				
Male	20 (42.55%)	36,989 (45.87%)	0.21 (1), $p = .65$	0.002
Female	27 (57.45%)	43,649 (54.13%)		
Admission Season				

Fall or Winter	22 (50.00%)	44,066 (57.92%)	1.13 (1), p = .29	0.004
Spring or Summer	22 (50.00%)	32,019 (42.08%)		
Discharge Month				
January - June	25 (53.19%)	39,733 (49.70)	0.23 (1), p = .63	0.002
July – December	22 (46.81%)	40,208 (50.30%)		
Expected Primary Payer				
Medicare or Medicaid	23 (48.94%)	42,789 (53.13%)	0.33 (1), p = .56	0.002
Other	24 (51.06%)	37,752 (46.87%)		
Inpatient Discharge Disposition				
Routine	21 (44.68%)	60,383 (74.88%)	22.77 (1), p <.001	0.02
Other	26 (55.32%)	20,255 (25.12%)		
Hospital Region				
Northeast	30 (63.83%)	34,795 (43.14%)	8.20 (1), p = .004	0.01
Other	17 (36.17%)	45,858 (56.86%)		
Trauma Hospital Status				
Not a trauma center	30 (63.83%)	36,465 (45.21%)	6.57 (1), p = .01	0.01
Level II trauma center	17 (36.17%)	44,188 (54.79%)		
Teaching Hospital Status				
Non-teaching	23 (48.94%)	21,532 (26.70%)	11.87 (1), p < .001	0.01
Teaching	24 (51.06%)	59,121 (73.30%)		
Length of Inpatient Stay (days)				
Mean (*SD*)	3.13 (1.73)	5.047, 7.96	1.65 (80,696), p = .10	0.33
Number of Procedures				
Mean (*SD*)	24.83 (9.20)	7.12 (5.033)	-24.09 (80, 698), p < .001	2.39
Expected secondary payer				
No	36 (76.60%)	52,787 (66.65%)	2.090 (1), p = .15	< 0.01
Yes	11 (23.40%)	26,413 (33.35%)		
Patient Location				

Metro area	28 (60.87%)	71,752 (89.55%)	40.36 (1), $p < .001$	0.02
Other	18 (39.13%)	8,372 (10.45%)		
Total Charges for ED Services				
Mean (*SD*)	$2,291.80 ($2,341.10)	$3,378.5 ($4,735.90)	1.54 (76,907), $p = .12$	0.29
Total Charges for Combined Inpatient and ED Services				
Mean (*SD*)	$20,192.90 ($10,007.20)	$47,391.40 ($83,777.30)	2.23 (80,675), $p = .03$	0.46
Median Household Income for Patient's Zip Code				
<50th percentile	29 (63.04%)	41,159 (51.78%)	2.34 (1), $p = 0.13$	< 0.01
>50th percentile	17 (36.96%)	38,335 (48.22%)		

Note: * Indicates boarded in the ED longer than one calendar day; **Chronic obstructive pulmonary disease (COPD) with major complication or comorbidity (MCC); ***Diabetes with major complication or comorbidity (MCC); ****t tests and Cohen's *d* used continuous variables; *SD*= standard deviation

Aim 4 Results

Multiple logistic regression was administered using significant univariate correlates of boarding from table 2. Table 3 presents results from the multiple logistic regression. The variables used in the original multiple logistic regression were year, diagnosis related group, inpatient discharge disposition, hospital region, trauma hospital status, teaching hospital status, number of procedures, patient location, and the combined total charges for inpatient and ED services. The final variables used in the model after backwards stepwise elimination of covariates was performed are in table 3 and were the inpatient disposition, the hospital's teaching status, the number of procedures, and the combined total charges for inpatient services and ED services.

The odds of boarding were 0.76 times lower for every decrease in the number of procedures performed. The odds of boarding were also 4.89 times higher if the inpatient disposition was routine when the patient was discharged from the inpatient stay compared to all other dispositions including

transfer to home health care and transfer to a skilled nursing facility. Patients that were seen at non-teaching hospitals were 2.40 times more likely to board compared to patients that were seen at a teaching hospital. The odds of boarding were not significantly higher based on the total charges for inpatient services. Patients were also 2.62 times more likely to board if the patient lived in a metro area compared to all other city sizes.

Table 3: Multiple logistic regression model

Variable	**Estimate (Standard Error)**	**X^2 (df)**	**OR (95% CI)**	***p* value**
Intercept	10.05 (0.46)	478.75 (1)		$p < .001$
Inpatient disposition	0.79 (0.17)	21.25 (1)	4.89 (2.49, 9.59)	$p < .001$
Hospital teaching status	0.44 (0.19)	5.22 (1)	2.40 (1.13-5.10)	$p = .02$
Number of procedures	-0.27 (0.02)	286.93 (1)	0.76 (0.74-0.79)	$p < .001$
Patient location	0.48 (0.19)	6.60 (1)	2.62 (1.26-5.46)	$p = .01$
Combined total charge for ED and inpatient services	0.000028 (0.000009)	9.37 (1)	1.00 (1.00-1.00)	$p = .002$

*Note: OR = odds ratio; CI = confidence interval; SD = standard deviation

Discussion

Aim 1

The present study found that there were 47 patients that psychiatrically boarded for greater than one calendar day in 2016-2017. Only 0.06% of all patients that had a psychiatric evaluation were boarded in the ED. Given that there was not a boarding variable in the HCUP NEDS dataset, all boarding patients were identified using CPT and ICD-10-CM codes. Another national dataset that includes ED visits is the National Hospital Ambulatory Medical Care Survey (NHAMCS). Psychiatric boarding estimates gleaned from the NHAMCS dataset found that approximately 21.5% of ED visits for psychiatric concerns result in psychiatric boarding (Nolan et al., 2015). This is mostly likely due to the differences in the definitions

of boarding. Boarding was defined by The Joint Commission as a length of stay in the ED after an admitting or transferring decision has been made for more than four hours ("The Joint Commission," 2013). Therefore, the present study describes only prolonged boarding stays that are greater than 24 hours and fails to capture patients that boarded for less than one calendar day given that there is not an ED length of stay variable in the HCUP NEDS dataset. Given the limitations of the HCUP NEDS dataset, there is not a universal way determine which patients are boarding for medical or psychiatric concerns in the HCUP NEDS dataset nor a way to determine the length of stay in the ED before their inpatient stay.

Aim 2

Physical restraint use was not observed for any patients that were psychiatrically boarding for greater than one calendar day. There were 204 patients that were physically restrained and had a psychiatric examination which accounts for only 0.25% of patients that were physically restrained. This estimate is considered low given that physical restraints are a recommended course of action during a psychiatric ED stay for both children and adults in certain circumstances, such as an acute psychotic episode (Mayers et al., 2010; Nash et al., 2021). Common reasons for restraint use among patients that have had a psychiatric evaluation include intoxication and mania (Beck et al., 1996). Patients that are restrained in the ED during a psychiatric emergency are often subject to different types of sedation, seclusion, and restraint use (Mayers et al., 2010). Another study found that 6.8% of all patients in a pediatric ED who had a psychiatric evaluation were physically restrained (Dorfman & Mehta, 2006). This suggests that physical restraint use may be under-documented or detected in the HCUP NEDS database.

Aim 3

The present study found several differences in the characteristics of patients that boarded compared to patients that did not board. As is consistent with other psychiatric boarding studies, patients in the Northeast and metropolitan cities were more likely to board compared to all other regional locations (Nolan et al., 2015). The average length of inpatient hospitalization was 3.13 days for patients that underwent boarding was and 5.05 days for patients that did not board prior to their inpatient stay. Since

the patient boarded for longer than one calendar day in the ED, the time in the ED may account for the observed difference in inpatient length of stay.

One of the largest challenges with handling psychiatric emergencies in the ED is when patients have intermediate presentations where there is both a medical and psychiatric condition precipitating the ED visit (Chun et al., 2016). The most common diagnosis related group for patients that boarded was COPD with MCC and the second most common diagnosis related group was diabetes with MCC. These two diagnosis related groups accounted for 61.70% of patients that boarded compared to only 1.00% of patients that did not board. Both of these conditions may have partially contributed to the length of boarding and extended the ED length of stay.

In most EDs, patients must be medically cleared before they are eligible for transfer to a psychiatric facility. The medical clearance is determined necessary based on the emergency medicine provider's physical examination and history of the patient (Janiak & Atteberry, 2012). However, the exact steps and process of medical clearance differ across EDs including the frequency of use of urinalysis, drug screens, and other laboratory testing. According to the American Association for Emergency Psychiatry Task Force on Medical Clearance of Adult Psychiatric Patients, this routine testing in the ED may lead to the identification of diabetes or other conditions such as renal failure, but it is also unknown how often this happens (Wilson et al., 2017). Diabetes can affect one's mental status and hyperglycemia can result in altered mental status such as lethargy or a coma (Sood & Mcstay, 2009). Patients that are thought to have delirium rather than a psychiatric disorder are recommended to be observed and this may have contributed to the results in this study if many diabetics were being assessed to determine if either delirium was present or a psychiatric disorder (Wilson et al., 2017). In addition, persons with diabetes are also at a higher risk of suicide and are four to five times more likely to attempt suicide in part due to their ease of access to insulin (Barnard-Kelly et al., 2020). These could be several reasons why patients with diabetes were more likely to board compared to other physical conditions.

The charge for combined inpatient services and ED services was significantly lower for patients that boarded for greater than one day compared to patients that did not board. Patients that boarded also

had nearly three times the number of procedures completed while in the ED. Also, it has been estimated by one hospital system that each patient that is psychiatrically boarded in the ED costs the hospital $2,400 (Nicks & Manthey, 2012). This is similar to the average charge for ED services in the present study where the mean amount charged for ED services among patients that boarded was $2,291.80.

Aim 4

The odds of boarding were nearly five times higher for patients that were being discharged home as compared to all other discharge dispositions including transfer to home health. Being discharged as self-care may require more social work involvement if the patient does not have stable housing, which could extend the length of the ED visit and result in a longer boarding stay. Patients had 2.62 times higher odds of being boarded if they lived in a metropolitan area compared to all other sized locations. This is consistent with analyses from the NHAMCS study examining psychiatric boarding that found that patients from nonmetropolitan cities were less likely to board as compared to patients from metropolitan cities (Nolan et al., 2015). This could be due to the size of the ED as urban EDs are often larger and have greater capacity for observation of patients compared to rural EDs (Greenwood-Ericksen et al., 2019).

Implications for Policy, Practice, and Training

The present study represents several areas for research and practice improvement. CPT codes and/or ICD-10-CM codes are used for EDs to bill for the services that are provided in the ED. However, this study found that only 47 patients underwent psychiatric boarding using this identification method which also means that only 47 patients were charged specifically for their observation during a prolonged ED visit. A streamlined process to quickly identify patients who undergo psychiatric boarding using these codes is needed in order to better document the incidence or duration of psychiatric boarding. Given that psychiatric boarding in the ED is associated with lower quality psychiatric care and patients often have higher rates of social stressors (i.e. substance abuse and homelessness) (Abid et al., 2014), the care provided during a psychiatric boarding episode is of special attention. Providing care in a humane and patient-centered care approach that is also in line with critical ethical principles such as beneficence and

nonmaleficence is needed even in a loud and chaotic ED environment (Nordstrom et al., 2019; Lovrin & Reinisch, 2007).

Physical restraint use for patients with a psychiatric evaluation was also lower than expected which could indicate that it is not being documented outside of narrative notes in patient's charts or facility specific restraint reporting. Given the distress that boarding (Nordstrom et al., 2019) and restraint use in the ED can cause (Wong et al., 2020), accurately describing and documenting the process and procedures of psychiatric boarding is needed to ultimately improve patient experience and outcomes. Despite the lack of documentation, other studies have reported that physical restraints are sometimes utilized for patients undergoing psychiatric boarding in certain situations (Simpson et al., 2014). One study found that 26% of patients that remained in the ED for greater than 24 hours with psychiatric concerns were physically restrained (Chang et al., 2012). Despite the reports of physical restraint use, physical restraints should only be considered as a last resort due to their potential for physical and psychological injury to the patient (Knox & Holloman, 2012; Nordstrom et al., 2019). Additional research is still needed in determining why physical restraint use is under-documented using ICD-10-CM codes or CPT codes and the short-term and long-term effects of being physically restrained during a prolong ED visit.

Present findings also have implications for ED policy and training. A standard psychiatric boarding definition is needed to determine which patients in the ED undergo psychiatric boarding and the prevalence of psychiatric boarding across the country. Patients undergoing psychiatric boarding in the ED are a particularly vulnerable patient population and protections (ie. patient advocate access, right to bathe, right to use a phone) cannot be provided to patients or monitored unless patients undergoing psychiatric boarding can be properly identified. This could be accomplished through CPT and ICD-10-CM codes which would create a nationwide uniform definition of psychiatric boarding. This would also help determine the physical comorbidities that make placement of patients undergoing psychiatric boarding more difficult such as COPD and diabetes as described in the present study. Patients that are undergoing psychiatric boarding are a vulnerable patient population and many patients are experiencing acute

psychological distress when they present to the ED. Even when ED staff members are assisting a patient with agitation, using a patient-centered approach can help build a therapeutic alliance with the patient (Wong et al., 2020). Additional training focused on how nurses, nurses assistants, and sitters can build therapeutic relationships with patients is needed with special attention on the needs of patients spending multiple days in the ED.

Limitations and Future Directions

This study has several limitations. Study participants were identified through CPT and ICD-10-CM codes for boarding greater than one calendar day. However, incorrect or missing ICD-10-CM or CPT codes may not capture the entire target population that is undergoing psychiatric boarding in the United States. ED providers may also not be consistent in the CPT codes used for boarding, despite recommendations from the American College of Emergency Physicians, especially in EDs where psychiatric boarding is more of a sporadic occurrence instead of omnipresent. A universal definition of boarding is also needed to better examine the effects of boarding and if longer boarding instances result in different outcomes than shorter boarding stays. Future research should focus on streamlining the definition of boarding and the way it is coded for in CPT and ICD-10-CM codes, which will in turn allow psychiatric boarding to be better tracked and examined on the institution, state, and national level.

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APPENDIX A: VARIABLES IN THE HCUP NEDS DATASET

Variable	Description	Values	Notes/Recode
AGE	Age in years at admission	0-124	Average age -Above average age -Below average age
AMONTH	Admission month	1-12	Admission season -Fall or winter -Spring or summer
AWEEKEND	Was the admission day on a weekend?	0: no (Mon-Friday) 1: yes (Saturday or Sunday)	
DIED_VISIT	Died in the ED, died in the hospital, or did not die	0: did not die 1: died in the ED 2: died in the hospital	
CPTCCSn	Clinical Classifications Software (CCS): services and procedures classification	1-244: CCS procedure class	Assigns CPT codes a category
CPTn	CPT-4/HCPCS procedures	5(a) procedure code	
DISP_ED	Discharge disposition from ED	1: routine 2: Transfer to short-term hospital 5: Transfer other: includes Skilled Nursing Facility (SNF), Intermediate Care Facility (ICF), and another type of facility 6: Home Health Care (HHC) 7: Against medical advice (AMA) 9: Admitted as an inpatient to this hospital 20: Died in ED 21: Discharged/transferred to court/law enforcement (only used in 2010 data; in all others years this category is included	indicates the disposition of the patient at discharge from the emergency department.

		under routine discharges) 98: Not admitted to this hospital, destination unknown 99: Not admitted to this hospital, discharged alive, destination unknown	
DISP_IP	Disposition from inpatient discharge record	1: routine 2: Transfer to short-term hospital 5: Transfer other: includes Skilled Nursing Facility (SNF), Intermediate Care Facility (ICF), and another type of facility 6: Home Health Care (HHC) 7: Against medical advice (AMA) 9: Admitted as an inpatient to this hospital 20: Died in ED 99: discharged alive, destination unknown	dictates the disposition of the patient when discharged from the *inpatient stay* that resulted from an emergency department visit Recode: -Routine -Other
DISCWT	Weight for discharges	nn.nnnn	Used to produce national estimates of discharges by using this weight to discharges from the community hospitals
DQTR	Discharge quarter	1: 1st Jan-Mar 2: 2nd April-Jun 3: 3rd July-September 4: 4th Oct-Dec	derived from either the month of the discharge date or the supplied discharge quarter Recode: Discharge Month -January through June -July through December
DRG	DRG in use on discharge date	DRG values	For hospital inpatient care

			reimbursement and assigned by the Medicare DRG Grouper algorithm *if a valid discharge date was not available, a temporary date was created based on the discharge quarter Recode: 1: 190 (chronic obstructive chronic obstructive pulmonary disease with mcc); 194 (simple pneumonia and pleurisy with cc) 2: 637 (diabetes with mcc) 3: other
EDevent	Type of ED event	1: ED visit in which the patient is treated and released 2:ED visit in which the patient is admitted to this same hospital 3: ED visit in which the patient is transferred to another short-term hospital 9: ED visit in which the patient died in the ED 98: Not admitted to this hospital, destination unknown 99: Not admitted to this hospital, discharged alive, destination unknown	
FEMALE	Patient's sex	0: male	

		1: female	
HOSP_CONTROL	Hospital ownership/control	0: Government or private (collapsed category) 1: Government, nonfederal (public) 2: Private, not-for-profit (voluntary) 3: Private, investor-owned (proprietary) 4: Private (collapsed category)	
HOSP_ED	Hospital identification number	5 (n)	
HOSP_REGION	Hospital region	1: Northeast 2: Midwest 3: South 4: West	
HOSP_TRAUMA	Trauma hospital designation	0: Not a trauma center 1: Level I 2: Level II 3: Level III 4: Not a trauma center or a level II 8: Level I or level II	Recode: -Not a trauma center -Level II trauma center
HOSP_UR_TEACH	Teaching hospital status	0: Metropolitan non-teaching 1: Metropolitan teaching 2: Non-metropolitan	Recode: -Non-teaching -Teaching
HOSP_URCAT4	Urban rural status	1: Large metropolitan areas with at least 1 million residents 2: Small metropolitan areas with less than 1 million residents 3: Micropolitan areas 4: Not metropolitan or micropolitan (non-urban residual) 6: Collapsed category for any urban-rural	

		location (only applicable to the NEDS, beginning in 2014) 7: Collapsed category of small metropolitan and micropolitan, (only applicable to the NEDS, beginning in 2011) 8: Metropolitan, collapsed category of large and small metropolitan 9: Non-metropolitan, collapsed category of micropolitan and non-urban	
HOSPWT	Hospital weight	nn.nnnn	To produce national estimates, use HOSPWT to weight sampled hospitals to all community hospitals located in the U.S
I10_DXn	ICD-10-CM Diagnosis	annnnnn	Number of diagnoses given differs by state and range from 9 to 72
I10_INJURY	Injury ICD-10-CM diagnosis	0: no injury 1: injury is first listed diagnosis 2: injury but not listed as first diagnosis	
Multiple ICD-10-CM injuries reported on record	Multiple ICD-10-CM injuries reported	0: 1 or fewer injury diagnosis 1: 2+ injury diagnoses	
I10_NDX	Number of ICD-10-CM diagnoses on this discharge	0-nn	
KEY_ED	HCUP NEDS record identifier	14(n)	ID number to match NEDS files
LOS_IP	Length of stay for inpatient stay in days	0-365	
NCPT	Number of CPT/HCPCS procedures	0-25	

NEDS_STRATUM	5 digit number used	5 (n)	Combines region, trauma center level, urban-rural location, teaching status, and control
PAY1	Expected primary payer	1:Medicare 2:Medicaid 3:Private insurance 4:Self-pay 5:No charge 6:other	Other includes Worker's Compensation, CHAMPUS, CHAMPVA, Title V, and other government programs Recode -Medicare or Medicaid -Other
PAY2	Expected secondary payer	1:Medicare 2:Medicaid 3:Private insurance 4:Self-pay 5:No charge 6:other	Recode -Yes -No
PL_NCHS	Patient Location: NCHS Urban-Rural Code	1: "Central" counties of metro areas of >=1 million population 2: "Fringe" counties of metro areas of >=1 million population 3: Counties in metro areas of 250,000-999,999 population 4: Counties in metro areas of 50,000-249,999 population 5: Micropolitan counties 6: Not metropolitan or micropolitan counties	urban-rural classification scheme for U.S. counties developed by the National Center for Health Statistics (NCHS) Recode: -Metro area -Other
S_DISC_U	Number of discharges in the sample for the stratum	6(n)	
S_HOSP_U	Number of hospitals in the sample for the stratum	nn	
TOTAL_EDvisits	Total number of ED visits from this hospital in the NEDS	6(n)	

TOTCHG_ED	Total charge for ED services	100 and above	Total ED charges are rounded to the nearest dollar
TOTCHG_IP	Total charge for ED and inpatient services combined	100 and above	Total charges are rounded to the nearest dollar
YEAR	Year	Yyyy	
ZIPINC_QRTL	Median household income for patient's ZIP Code (based on current year)	1: 0-25th percentile 2: 26th to 50th percentile (median) 3: 51st to 75th percentile 4: 76th to 100th percentile	Recode: <50th percentile >50th percentile

CHAPTER 4: EMERGENCY DEPARTMENT NURSING STAFF PERCEPTIONS AND BELIEFS ABOUT PATIENTS UNDERGOING PSYCHIATRIC BOARDING: A MIXED METHODS STUDY

Abstract

Introduction: Emergency department (EDs) are increasingly being used for patients experiencing a mental health emergency and associated ED wait times are increasing. ED nurses are tasked with caring for patients undergoing psychiatric boarding with few resources. The specific aims of this study were (1) to describe nurse characteristics, hospital characteristics, and the prevalence of common psychiatric boarding practices; (2) to describe the factors associated with ED nurses' attitudes about patients that are undergoing psychiatric boarding; and (3) to further understand if ED nurses perceive psychiatric boarding to be a problem and how they believe it can be improved.

Methods: Any nurse that had ever worked in a United States' ED was eligible to participate. Primary participant recruitment methods included several nursing programs from a large university in the southeast, Nursing Reddit, and ED nurses from a local healthcare organization. A Qualtrics survey was used to gather nurse demographics, common psychiatric boarding practices, and qualitative responses regarding the positive, negatives, and areas for improvement for psychiatric boarding in the ED.

Results: A total of 44 nurses were included in the analyses. More than half (54.55%) of nurses believed psychiatric boarding was a problem at their hospital. Nurses believing psychiatric boarding was a problem were more likely to have more years of nursing experience, more years of ED experience, not have an emergency nursing certification, and work in hospitals where virtual monitoring was not utilized. Positive attitudes toward persons undergoing psychiatric boarding were associated with lesser stigmatizing of persons with mental illness, as well as higher levels of several dimensions of perceived competency providing care for persons with mental illness. When addressing benefits of psychiatric boarding, nurses reported that patient safety was the most common benefit, but the quality of psychiatric treatment was not adequate or entirely nonexistent. ED nurses also had several suggestions for improvement such as changes to the physical environment and improving psychiatric treatment that is provided in the ED.

Conclusion: This pilot study provided insight into next steps for psychiatric boarding research and practice. Interventions aimed at altering the physical environment in the ED may be helpful for both patients and nurses in order to lessen the distress for patients undergoing psychiatric boarding. Additional research is needed to determine the best practices for providing psychiatric treatment for patients undergoing psychiatric boarding.

Introduction

The number of emergency department (ED) visits for mental health concerns has been steadily rising over the past decade (Theriault et al., 2020). Patients with mental health concerns often spend longer lengths of time in the ED compared to patients with solely medical complaints (Nolan et al., 2015). Many patients end up undergoing psychiatric boarding while they wait to be transferred to an inpatient facility. In the ED, physicians rarely spend extended time with patients with mental health needs and physicians often have more direct contact with the nurse than direct contact with the patient (Clarke et al., 2014; Plant & White, 2013). Therefore, ED nurses experience with the practice of psychiatric boarding is important to assess. The present study examined nurses' perceptions of the following specific factors involved in psychiatric boarding: common practices (e.g., restraint use), attitudes relevant to psychiatric boarding (e.g., competency to assess and manage relevant patients), and views on problems and potential solutions for psychiatric boarding.

There are two main types of physical restraint use in the ED. Non-violent restraints are primarily used to prevent patients from pulling out or impeding medically necessary drains or tubes and violent restraints are used for patients exhibiting self-destructive or violent behavior to either themselves or others (Bybel, 2016). There is scant research on what occurs during a psychiatric boarding stay in the ED with regards to violent and non-violent restraint use and related practices. When examining restraint use in a psychiatric ED, being physically restrained was associated with an increased risk of being hospitalized compared to being discharged (Beck et al., 1996). Physical restraint use has also been associated with a four hour longer length of ED stay for patients with psychiatric concerns that were restrained compared to patients that were not restrained and also had psychiatric concerns (Weiss et al., 2012). Nurses also have mixed attitudes about physical restraint use because one study found that 76.1% of nurses believed that physical restraint use calms the patient and yet 39.1% of nurses also believed that physical restraint use was degrading to the patient (Gelkopf et al., 2009). Thus, the first aim of this study was to examine the frequency of restraint use as well as other practices that may co-occur with psychiatric boarding.

The American Nurses Association (ANA) Code of Ethics establishes ethical standards for nurses (ANA, 2015). Several provisions provide grounding for understanding nurses' involvement with psychiatric boarding. For example, provision 1 specifies that the nurse should have compassion and respect for every person while also respecting different attributes of every patient (ANA, 2015). In addition, provision 2.1 addresses a nurse's commitment to the primary importance of patients' interests while also considering patients' unique characteristics in each nursing plan of care (ANA, 2015). This provision is directly relevant in the ED because every patient that comes to the ED is experiencing a unique situation and nurses must adapt their care accordingly, especially related to different treatment options and available resources (ANA, 2015). It is important to examine how matters surrounding psychiatric boarding relate to other ethical matters in the ED.

ED nurses' attitudes towards patients, particularly towards patients experiencing a mental health crisis, are also critical to examine. Existing literature lays the groundwork for deeper exploration of nurses' perspectives on boarding because ED staff members often have negative attitudes towards patients with mental health chief complaints (Clarke et al., 2014). These negative attitudes are important to examine (e.g., stigmatizing attitudes towards patients with a mental illness) because they may affect a nurses' ability to engage in ethical practice, especially related to having honest conversations with patients about treatment options and currently available resources. Patients that are continuously psychiatrically boarding in the ED may be overlooked as patient acuity often forces nurses to tend to the most critically ill patients first. ED nurses may also avoid caring for patients with psychiatric concerns and many other non-psychiatric staff members may have negative attitudes towards these patients (Dombagolla et al., 2019). These negative attitudes are important to further explore because when nurses do not feel empowered to act on their patient's behalf, this influences a nurse's professional self-concept and their self-reported ability to provide safe and quality care (Andrews et al., 2010). Thus, the second aim of this study examined the factors associated with ED nurses' attitudes towards patients that are undergoing psychiatric boarding.

Nurses who work in the ED often feel that they do not have the skills to properly assess and treat a patient who is experiencing a psychiatric crisis (Plant & White, 2013). Nurses also often feel powerless when caring for a patient with psychiatric concerns and this is particularly concerning because when nurses have low self-esteem and feel isolated while working, nurses also perceive that their ability to ensure patient safety and quality patient care is also jeopardized (Andrews et al., 2010; Plant & White, 2013). Also, this issue is directly related to provision 3.5 of the Code of Ethics that states that nurses must protect patients' health and safety by acting on questionable practices that are unethical or illegal as well as have knowledge of relevant laws and regulations at the federal, state, and local levels (ANA, 2015). Nurses are usually the primary point of contact for patients that are spending extended periods of time in the ED (Marynowski-Traczyk & Broadbent, 2011) and experienced ED nurses may be able to offer practical solutions to help lessen the patient's distress during psychiatric boarding. Nurses may also be able to describe how hospital policy changes may improve the patients' experience during psychiatric boarding since nurses are acutely aware of the barriers that are present while caring for a patient with psychiatric concerns in the ED (Dombagolla et al., 2019). The third aim of this study, therefore, examined nurses' perspective on the various problems psychiatric boarding presents and how nurses believe that psychiatric boarding can be improved.

The Present Study

The present study attempts to better understand nurses' perspectives on psychiatric boarding, and their attitudes about patients that are undergoing psychiatric boarding in the ED. Specifically, this study assesses nurses' perceptions of common practices in the ED that occur when caring for patients undergoing psychiatric boarding such as chemical or physical restraint use, law enforcement involvement during the boarding stay, and locations where patients are boarded. Additionally, we asked nurses about their view of psychiatric boarding as a problem, as well as their beliefs about the rights that patients undergoing psychiatric boarding should be offered and their behavioral health care competencies related to caring for patients with mental health concerns. The specific aims of this study are (1) to describe nurse characteristics, hospital characteristics, and the prevalence of common boarding practices; (2) to

determine the factors associated with ED nurses' attitudes about patients that are undergoing psychiatric boarding; and (3) to further understand if ED nurses perceive psychiatric boarding to be a problem and how they believe it can be improved.

Methods

Procedure

This study utilized a cross-sectional survey design. The survey was administered via Qualtrics. The survey opened in February 2021 and closed in May 2021. Potential participants were eligible to participate if they had ever worked in the ED as a nurse in the United States.

Recruitment. This study utilized several convenience sampling methods for participant recruitment. The first method of recruitment was a posting on the Emergency Nurses Association's (ENA) External Research Opportunities webpage. The title of the study was posted as an URL link to the Qualtrics survey and it remained on the ENA's webpage for six weeks. Participants were also solicited from the University of North Carolina at Charlotte (UNCC) nursing programs. Specifically, the Registered Nurse to Bachelor of Science in Nursing (RN-to-BSN) program, Doctor of Nursing Practice (DNP) program, and the Master of Science in Nursing (MSN) degree program enrollees were emailed information about the study and the link to the Qualtrics survey. Another method of recruitment involved the survey being emailed to every ED nursing director of a local healthcare organization, Atrium Health. ED directors then forwarded the email with the Qualtrics link to the nurses in their unit. For the final recruitment method, the survey was also posted on the Nursing Reddit webpage with a brief description of the survey and the Qualtrics link. Anonymous links were created via Qualtrics that were not able to be tracked so response rates could not be tabulated.

Survey Details. The survey took approximately 15-20 minutes to complete. An example email that was used for recruitment is in Appendix A. On the first page of the Qualtrics survey, participants encountered the consent form where they were informed about the purpose of the study, the potential risks and benefits that may occur as a result of participation in the study, and other typical consent details. The consent form and the debriefing form are in Appendix B. The next page of the survey determined

eligibility and if participants were eligible, they proceeded to the remainder of the survey. The eligibility screening question addressed if the participant had ever worked in an ED as a nurse in the United States.

The first section of the survey inquired about different characteristics of nurses and their associated EDs. The following three sections included the Opening Minds Scale for Health Care Providers (OHS-HC; Modgill et al., 2014), the Behavioral Health Care Competency (BHCC; Rutledge et al., 2012), and the adapted version of the Attitudes of Clients and Nurses toward the Rights of Hospitalized Psychiatric Clients (Ebrahimi & Dehno, 2018). The measures section below contains further detail for these instruments. Survey order for these three blocks were randomized in Qualtrics to avoid systematic response sets or systematic missing data. Two attention check items were also used to ensure participants were devoting sufficient attention to question items. Six respondents did not pass the attention checks and those failing the attention checks were not eligible to be entered into the gift card drawing. Participants that passed both attention checks had the opportunity to enter into a random drawing for five $20 Amazon e-gift cards.

The study was approved by the University of North Carolina at Charlotte's Institutional Review Board via exempt status. Survey data were only accessed through a secure internet connection on the password protected Qualtrics website. Survey data were downloaded as a CSV file, kept on a password-protected computer with a secure internet connection, and only accessed by the researchers on this study.

Study Participants. A total of 44 nurses were included in the analyses and Table 1 presents nurse and hospital characteristics of the study sample. Most of the survey respondents were of White race, female gender, and had a Bachelor's in Nursing (BSN) degree. Nurses had a mean length of nursing experience of 8.53 years and had an average of 5.64 years of experience working in the ED. Nurses practiced in 18 different states and the most common states were North Carolina (30.23%), California (16.28%), and Massachusetts (9.38%). When examining hospital characteristics, the most common ED size contained 10-20 beds and the most common hospital size contained 150-300 beds. Nearly all hospitals utilized sitters (93.18%) yet only 54.55% of hospitals used virtual monitoring for patients undergoing psychiatric boarding.

Table 1: Nurse characteristics, hospital characteristics, and boarding practices

Characteristics	*N* (%)	*M (SD)*
Gender		
Male	9 (20.45%)	
Female	34 (77.27%)	
Non-binary/third gender	1 (2.27%)	
Hispanic, Latino, or Spanish Ethnicity*		
Mexican, Mexican Am., Chicano	10 (22.73%)	
Another Hispanic, Latino, or Spanish origin	5 (11.36%)	
Multiple Hispanic, Latino, or Spanish ethnicities	1 (2.27%)	
Not Hispanic, Latino, or Spanish ethnicity	28 (63.64%)	
Race *		
White	34 (77.27%)	
Black or African American	3 (6.82%)	
American Indian or Alaska Native	3 (6.82%)	
Chinese	1 (2.27%)	
Other race	1 (2.27%)	
Multiple races	2 (4.55%)	
Nursing Education		
Nursing Diploma	6 (13.64%)	
Associate Degree Nursing	10 (22.73%)	
Bachelor's Degree in Nursing (BSN)	22 (50.00%)	
Master's Degree in Nursing (MSN)	5 (11.36%)	
Ph.D. in Nursing	1 (2.27%)	
Overall Education		
High school/GED	3 (6.82%)	
Some college	6 (13.64%)	
Associate's Degree	5 (11.36%)	
Bachelor's Degree	24 (54.55%)	
Master's Degree	5 (11.36%)	
PhD or Professional Degree (e.g. MD or JD)	1 (2.27%)	
UNCC Nursing Status		
Not a UNCC nursing student	26 (59.09%)	
UNCC RN-to-BSN student	8 (18.18%)	
UNCC MSN student	6 (13.64%)	
UNCC DNP student	3 (6.82%)	
Missing	1 (2.27%)	
Certified Emergency Nurse		
No	20 (45.45%)	
Yes	23 (52.27%)	
Missing	1 (2.27%)	
Adult Psychiatric-Mental Health Clinical Nurse Specialist		
No	31 (70.45%)	
Yes	12 (27.27%)	

Missing	1 (2.27%)	
Child/Adolescent Psychiatric-Mental Health Clinical Nurse Specialist		
No	28 (63.64%)	
Yes	15 (34.09%)	
Missing	1 (2.27%)	
Current State of Nursing Practice		
Alaska	1 (2.27%)	
California	7 (15.91%)	
Connecticut	1 (2.27%)	
Illinois	1 (2.27%)	
Kentucky	1 (2.27%)	
Massachusetts	4 (9.09%)	
Maryland	1 (2.27%)	
Michigan	1 (2.27%)	
Minnesota	1 (2.27%)	
North Carolina	13 (29.55%)	
New Jersey	1 (2.27%)	
Nevada	2 (4.55%)	
New York	1 (2.27%)	
Pennsylvania	1 (2.27%)	
Rhode Island	1 2.27%)	
Texas	3 (6.82%)	
Vermont	1 (2.27%)	
Washington	1 (2.27%)	
Practice in Canada	1 (2.27%)	
Missing	1 (2.27%)	
Primary Shift		
Dayshift (ex. 7a-7p	11 (25.00%)	
Nightshift (ex. 7p-7a)	10 (22.73%)	
Switches	21 (47.73%)	
Other shift	2 (4.55%)	
ED Position		
Charge nurse	9 (20.45%	
Staff nurse	24 (54.55%)	
Nurse manager	3 (6.82%)	
Nurse educator	1 (2.27%)	
Nurse practitioner	2 (4.55%)	
Not applicable	1 (2.27%)	
Other	1 (2.27%)	
Missing	3 (6.82%)	
Psychiatric boarding is a problem at their hospital		
No	19 (43.18%)	
Yes	24 (54.55%)	
Missing	1 (2.27%)	
ED Size		
Under 10 beds	4 (9.09%)	
10-20 beds	15 (34.09%)	
20-30 beds	9 (20.45%)	

40-50 beds	10 (22.73%)	
50-60 beds	1 (2.27%)	
60+ beds	4 (9.09%)	
I don't know	1 (2.27%)	
Hospital Size		
Under 25 beds	2 (4.55%)	
25-75 beds	6 (13.64%)	
75-150 beds	5 (11.36%)	
150-300 beds	17 (38.64%)	
300+ beds	11 (25.00%)	
I don't know	3 (6.82%)	
Sitter Usage		
No	2 (4.55%)	
Yes	41 (93.18%)	
I don't know	1 (2.27%)	
Virtual Monitoring Usage		
No	18 (40.91%)	
Yes	24 (54.55%)	
I don't know	2 (4.55%)	
Age		35.14 (10.58)
Frequency Assigned to Boarding Patients		2.19 (0.83)
Weekly Hours in ED		23.25 (15.50)
Current ED Nurse Experience (years)		4.14 (3.91)
Overall Nursing Experience (years)		8.53 (10.25)
ED Nurse Experience (years)		5.64 (6.63)

Note: *Participants could select multiple responses; UNCC = The University of North Carolina at Charlotte; *SD*= standard deviation; *M*=mean

Measures.

Nurse Characteristics, Hospital Characteristics, and Boarding Practices. Demographic information was collected including the nurse's age, gender, race, ethnicity, highest level of nursing education, and highest level of overall education. This section of the survey is in Appendix C. Other questions examined the characteristics of the nurse's hospital such as how many treatment beds the ED contained and how many total beds were in their hospital. In order to gauge the magnitude of psychiatric boarding, there were several questions that asked about the frequency in which a nurse was assigned to care for a patient that was undergoing psychiatric boarding. Response options were on a Likert type scale that ranged from *never, rarely, sometimes, often, or always* answer choices. The outcome variable used

was the question, “Do you think psychiatric boarding is a problem at your hospital?” with response options *yes* and *no*.

The Opening Minds Scale for Health Care Providers (OMS-HC). The OSM-HC is a 20-item measure that assesses health care providers’ stigmatizing attitudes towards patients that are mentally ill. It was first developed in 1962 in order to create an objective measure of hospital employee attitudes towards patients that are mentally ill (Cohen & Struening, 1962). This was the first measure to assess stigmatizing attitudes towards people that are mentally ill among health care professionals specifically (Kassam et al., 2012). The original scale included 70 items related to patients that were mentally ill at two large Veterans Administration neuropsychiatric hospitals (Cohen & Struening, 1962). It was then updated after extensive focus group evaluation of the survey items (Kassam et al., 2012). This scale has Likert type response options including *strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly agree (5)*. Reverse coding was required for items 3, 8, 9, 10, 11, 15, and 19 (Modgill et al., 2014). The 20-item OMS-HC produces a total score with a of range from 20 to 100 where a higher score indicating more stigmatizing attitudes (Modgill et al., 2014). Instructions were based on upon other English administrations of the survey (Sapag et al., 2019). A copy of the survey is in Appendix D.

Kassam et al. (2012) validated the OSM-HC with the use of seven focus groups including 64 health care providers or providers in training and six people with a mental illness. Cognitive interviewing was used to narrow down the number of items and then seven focus groups were used to assess how the interviewee interpreted each question and what they thought the questions were referring to. Focus group participants included both professionals and professionals in training from the following health disciplines: nurses, psychiatric nurses, general practitioners, surgeons, pharmacists, social workers, medical students, psychologists, psychiatrists, and other physicians. The OSM-HC was then tested and the Cronbach’s alpha was 0.82, indicating internal consistency. Test-retest reliability produced satisfactory results with an intraclass correlation coefficient of 0.66. They also found that social desirability was not significantly correlated with the OMS-HC which further indicates the reliability of the OMS-HC (Kassam et al., 2012). Modgill et al. (2014) also tested the OSM-HC and the Cronbach’s

alpha was 0.79 using a sample of 1,305 healthcare professionals. The OMS-HC has been previously used for assessing ED nurses attitudes towards patients with mental health conditions (Truitt, 2019). Internal consistency for the OMS-HC in the present sample was 0.76.

Behavioral Health Care Competency (BHCC). The BHCC is a 23-item scale that was originally developed to measure nurses' perceptions of their competency in treating patients with mental health concerns and treating disruptive behaviors such as agitation, psychotic episodes, and aggression (Rutledge et al., 2012). The BHCC was developed to evaluate their behavioral health care competency. This 23-item scale has Likert type response options including *strongly disagree (1), disagree (2), neither agree nor disagree (3), agree (4), strongly agree (5)* and the range on a summed total score is 23 to 115. A higher scores indicate a higher perceived behavioral health care competency. Psychometric testing was performed utilizing a sample of 844 nurses from three separate hospitals. Four subscales were developed that include assessment (9 items), practice/intervention competency (8 items), resource adequacy (4 items), and psychotropic recommendation (2 items). For the assessment subscale, one question states, "I identify signs and symptoms of common psychiatric conditions (e.g. depression, schizophrenia, bipolar disorder)." Questions related to practice/intervention include, "I can effectively manage conflicts caused by patients who have mental problems." When addressing questions related to psychotropic medications, one question states, "I recommend psychotropic drugs to physicians for psychiatric patients." Resource adequacy was assessed through questions such as, "I know when to ask for outside help (e.g. physician, psychiatric nurse, other) for a patient with psychiatric issues or dangerous behaviours."

The internal consistency for the BHCC total score was 0.92 (Rutledge et al., 2013). During psychometric testing, Cronbach's alpha coefficients for each of the four subscales were calculated: assessment (0.91) (questions 1-9), practice/intervention competency (0.90) (questions 10-17), resource adequacy (0.78) (18-19), and psychotropic recommendation (0.78) (questions 20-23) (Rutledge et al., 2012). Content validity was established and factor analysis was performed and the factors were found to account for 62% of the overall variance (Rutledge et al., 2012). Internal consistency for the BHCC in the present sample was 0.96. For the BHCC subscales, internal consistency for the assessment subscale was

0.93, practice/intervention competency was 0.90, resource adequacy was 0.86 and psychotropic recommendation was 0.82. A copy of the survey is in Appendix E.

Nurses' Attitudes About the Rights of Hospitalized Psychiatric Clients. Attitudes about the rights of patients that are undergoing psychiatric boarding were assessed using an adapted 32-item measure that was originally developed to determine the attitudes of clients and nurses toward the rights of hospitalized psychiatric patients in Iran (Ebrahimi & Dehno, 2018). Statements focus on the rights that patients should have and when treatment should be involuntarily administered (see Appendix F). For example, one item used in the survey states, "The nurse should provide adequate information about the patients' treatment option in a manner appropriate to his/her clinical condition in an understandable language" with response options that included *strongly disagree* (1), *disagree* (2), *neither agree nor disagree* (3), *agree* (4), *strongly agree* (5). A total score is calculated and they range from 32 to 160. This measure has not been evaluated or assessed for reliability or validity.

The original survey was edited in several ways to make it applicable to ED nurses practicing in the United States. The wording was changed in each item and edited to apply to psychiatric boarding in the ED as opposed to general inpatient psychiatric hospitalization. The primary edit to survey items was replacing "patients" with "patients that are undergoing psychiatric boarding" and replacing the word "therapist" with "nurse." The word "staff" was also replaced with the word "nurse." In the present study, the reliability for this sample was 0.95. A copy of the edited survey is in Appendix G.

Nurses Perspectives on Psychiatric Boarding. Three open-ended questions were used to gather nurse feedback on the psychiatric boarding process. The set of questions used were (1) What do you see as the benefits of psychiatric boarding?; (2) What do you see as the negatives of psychiatric boarding?; and (3) How do you think psychiatric boarding could be improved? A copy of the questions and the survey instructions are in Appendix H.

Statistical Analyses. STATA statistical software (release 16) was used to analyze the data after it was extracted from Qualtrics. In order to assess the variation in nurse characteristics, hospital characteristics, and boarding practices (aim 1), analyses were used to determine the prevalence of

common practices that occur during a psychiatric boarding episode. The mean and standard deviation was calculated for all continuous variables while the frequency and associated percentages were calculated for all categorical variables. Descriptive statistics were obtained for measures relevant to psychiatric boarding and whether they perceived psychiatric boarding to be a problem at their hospital.

Correlates of attitudes toward psychiatric boarding (aim 2) were examined using two outcomes: Beliefs regarding whether boarding is a problem (yes/no) and the Attitudes of Clients and Nurses About the Rights of Hospitalized Psychiatric Clients. For missing data, participants missing entire sections of the survey were not included in the analyses. Multiple imputation was used to address the rest of the missing data in the OMS-HC, BHCC, and the attitudes towards patients undergoing psychiatric boarding survey (Enders, 2017). The mean and standard deviation were provided for each of the preceding surveys. Independent-samples *t* tests were performed on continuous outcomes (e.g., years worked as a nurse) for two group comparison of attitudes that may be associated with those who thought boarding was a problem compared to nurses who did not believe that boarding was a problem. Chi-square analyses were performed to identify categorical variables associated with perceptions of boarding as a problem; specifically, the following were assessed: patient boarding locations (e.g., boarded in hall beds or in regular ED beds) nurse demographics and characteristics (e.g., years worked in the ED or certified emergency nurse certification), and boarding practices (e.g., chemical restrain use during boarding or sitter usage). The alpha level for both independent *t* tests and chi squares was 0.05. Effect size was evaluated with Cohen's *d* for continuous outcomes while Cramer's *V* was used for categorical outcomes. A large effect size for Cramer's *V* was considered 0.50, 0.30 was used for medium effect sizes, and 0.10 was the cut-off for large effect sizes (Kim, 2017). For Cohen's *d*, +/- 0.20 was considered a small effect size, +/- 0.50 was a medium effect size, and +/- 0.80 was used as the cut-off for large effect sizes (Cohen, 1992).

Qualitative responses were gathered from survey respondents through three open-ended questions in order to understand if ED nurses' perceive psychiatric boarding to be a problem and how it could be improved (aim 3). Content analysis was used and data was coded at the descriptive level, focusing on

understanding the phenomenon of psychiatric boarding directly from the nurses providing care to patients undergoing this process (Graneheim & Lundman, 2004). Content analysis was the approach chosen for this study over thematic analysis due to the ability to describe the frequency of different content areas and given the brevity of the responses (Vaismoradi et al., 2013). Although themes were not explicitly sought after, the researcher was open to the possibility of finding a theme based in part on the frequency of the content and its function (Vaismoradi et al., 2013). A second coder was also used to increase the rigor of this study. A list of content codes was created with both definitions and an exclusion list. After all codes were generated, the list was reviewed by two researchers to see if any codes could be combined or dropped. Then inter-rater agreement was tabulated for each of the content codes for each of the three questions. 25% of the sample was used to establish inter-rater agreement using SPSS statistical software. All codes with a kappa value less than 0.70 were discussed and discrepancies were resolved between the two researchers (Bakeman & Gottman, 1997). The content code list with definitions and exclusions was also revised based on discussion, and discrepant codes were resolved until kappa values greater than 0.70 were achieved. The rest of the data were then coded independently.

Results

Aim 1: Nurse and Hospital Characteristics and Practices

Table 2 presents current psychiatric boarding practices as reported by nurses and their scores on several measures. A total of 24 (54.55%) of nurses believed that psychiatric boarding was a problem at their hospital. The majority of nurses had not witnessed a patient being held in the ED without the proper paperwork filed (59.09%). However, few nurses (11.36%) had personally witnessed illegal detention in the ED and 15.91% of nurses had not personally witnessed this practice but knew that it had occurred in their ED. The longest length of time that a patient had boarded varied greatly with 22.73% of nurses reporting that 24 hours or 48 hours was the longest time that a patient had boarded. Extended psychiatric boarding times were also reported, with 4.55% of nurses reporting six months as the longest stay and 9.09% of nurses reported that 12 months was the longest length of stay. When asked about the frequency in which nurses were assigned to care for patient undergoing psychiatric boarding, most nurses rarely

cared for these patients ($M = 2.19$). When asked about different psychiatric boarding locations nurses reported that regular beds were most common (56.82%), followed by non-locked observation units (40.91%), and then a locked unit (38.64%). Chemical restraint and physical restraint use were also not common in the study sample.

Table 2: Current psychiatric boarding practices and measures

Characteristics	***N* (%)**	***M (SD)***
Location of boarding*		
Regular bed	25 (56.82%)	
Hall Bed	10 (22.73%)	
Observation Unit (not locked/secure)	18 (40.91%)	
Secure unit (locked)	17 (38.64%)	
Transfer to medical floor	8 (18.18%)	
Dedicated psych section of ED	15 (34.09%)	
Patients held in hospital without proper legal paperwork filed		
Yes, I have personally witnessed this occurring	5 (11.36%)	
No, I have not witnessed this but I know it has occurred in my ED	7 (15.91%)	
No, I have not witnessed this and I do not think it has occurred in my ED	26 (59.09%)	
I don't know	6 (13.64%)	
Longest time a patient has boarded		
24 hours	4 (9.09%)	
48 hours	6 (13.64%)	
5 days	5 (11.36%)	
1 week	4 (9.09%)	
2 weeks	3 (6.82%)	
1 month	4 (9.09%)	
2 months	3 (6.82%)	
3 months	6 (13.64%)	
6 months	2 (4.55%)	
12 months	4 (9.09%)	
Other:	2 (4.55%)	
None of the above have occurred to my knowledge	1 (2.27%)	
Number of different boarding locations		2.11 (1.26)
Patients boarding are experiencing homelessness		2.24 (0.66)
Patients boarding and involved in involuntary commitment process		2.02 (0.96)
Law enforcement and/or security involvement during boarding		2.00 (0.79)
Physical restraint use during boarding		1.81 (0.76)
Chemical restraint use during boarding		2.07 (0.67)
Scales		
Negative attitudes towards patients with a mental illness		54.07 (8.58)

Ability to treat patients with mental health concerns		3.66 (0.70)
Ability to assess patients with mental health concerns		3.73 (0.78)
Ability for practice intervention		3.62 (0.71)
Ability for recommending psychotropics		3.32 (1.01)
Ability to resources adequacy competency		3.75 (0.81)
Positive Attitudes towards Patients Undergoing Psychiatric Boarding		120.80 (19.88)

Note: *Participants could select multiple responses; *SD*= standard deviation; *M*=mean

Aim 2: Correlates of Nurse Attitudes Towards Psychiatric Boarding

Table 3 presents bivariate associations of nurse characteristics stratified by whether or not the nurse believed psychiatric boarding was a problem. Several characteristics were significantly associated with nurses believing that psychiatric boarding was a problem. Nurses that believed that psychiatric boarding was a problem were more likely to not have an emergency nursing certification (CEN), and also not have the child/adolescent psychiatric-mental health clinical nurse specialist certification. Older age, having a BSN or higher degree, more years worked overall as a nurse, and a greater number of years working in the ED were also significantly associated with believing that psychiatric boarding was a problem. Nurses that believed that psychiatric boarding was a problem were also more frequently assigned to care for a patient undergoing psychiatric boarding in the ED. Nurses that worked in hospitals where virtual monitoring was utilized were more likely to believe that psychiatric boarding was not a problem compared to hospitals without virtual monitoring (large effect size).

Table 3: Bivariate associations for nurse characteristics stratified based on whether the nurse believes that psychiatric boarding is a problem

Characteristics	Psychiatric Boarding is *Not* a Problem *M* (*SD*)	Psychiatric Boarding is a Problem *M* (*SD*)	Test Statistic* *T (df), p*	Effect Size** Cohen's *d*
Age	31.37 (6.57)	38.58 (12.08)	-21.61 (84), $p < .001$	0.74
Years worked as nurse	5.37 (2.83)	11.27 (13.14)	-9.01 (84), $p < .001$	0.62
ED Nurse Experience	3.71 (2.44)	7.13 (8.29)	-5.03 (82), $p < .001$	0.56

Current ED Experience	3.79 (2.20)	4.46 (4.95)	-5.94 (84), $p < .001$	0.17
Weekly Hours in ED	17.58 (15.74)	27.04 (14.18)	-9.46 (84), $p < .001$	0.63
Assigned to patient undergoing psychiatric boarding	2.11 (0.68)	2.25 (0.94)	-10.97 (83), $p < .001$	0.17
	N (%)	N (%)	X^2 (*df*), *p*	Cramer's *V*
Hispanic Ethnicity				
Hispanic, Latino, or Spanish Origin Ethnicity	5 (26.32%)	22 (91.67%)	19.38 (1), $p < .001$	0.67
Not Hispanic, Latino, or Spanish Origin Ethnicity	14 (73.68%)	2 (8.33%)		
Race				
White	12 (63.16%)	21 (87.50%)	3.52 (1), $p = .06$	0.29
Other race	7 (36.84%)	3 (12.50%)		
Nursing Education				
Nursing Diploma or Associate's Degree in Nursing	10 (52.63%)	6 (25.00%)	3.47 (1), $p = .06$	0.28
Bachelor's Degree in Nursing or MSN, DNP, PHD	9 (47.37%)	18 (75.00%)		
Overall Education				
High school/GED, Some college, or Associate's Degree	11 (57.89%)	3 (12.50%)	9.95 (1), $p = .002$	0.48
Bachelor's Degree +	8 (42.11%)	21 (87.50%)		
UNCC Nursing Affiliation				
Not a UNCC nursing student	9 (47.37%)	17 (73.91%)	3.11 (1), $p = .08$	0.27
UNCC nursing student	10 (52.63%)	6 (26.09%)		
Certified Emergency Nurse				
No	1 (5.56%)	18 (75.00%)	20.02 (1), $p < .001$	0.69
Yes	17 (94.44%)	6 (25.00%)		
Adult Psychiatric-Mental Health Clinical Nurse Specialist				
No	10 (55.56%)	20 (83.33%)	3.89 (1), $p = .05$	0.30
Yes	8 (44.44%)	4 (16.67%)		
Child/Adolescent Psychiatric-Mental Health Clinical Nurse Specialist				
No	6 (33.33%)	21 (87.50%)	13.14 (1), $p < .001$	0.56
Yes	12 (66.67%)	3 (12.50%)		
Primary Shift				
Dayshift (ex. 7a-7p	2 (10.53%)	9 (37.50%)	13.02 (2), $p = .001$	0.55
Nightshift (ex. 7p-7a)	1 (5.26%)	8 (33.33%)		

Other/switches	16 (84.21%)	7 (29.17%)		
Current ED Position				
Staff nurse	4 (21.05%)	5 (23.81%)	0.04 (1), $p = .84$	0.03
Other position	15 (78.95%)	16 (76.19%)		
Size of ED				
30 or fewer beds	17 (89.47%)	11 (47.83%)	8.12 (1), $p = .004$	0.44
Over 30 beds	2 (10.53%)	12 (52.17%)		
Size of Hospital				
Under 150 beds	6 (31.58%)	7 (33.33%)	0.01 (1), $p = .91$	0.02
Over 150 beds	13 (68.42%)	14 (66.67%)		
Virtual Monitoring				
No	1 (5.88%)	16 (66.67%)	15.15 (1), $p < .001$	0.61
Yes	16 (94.12%)	8 (33.33%)		

Note: *SD*= standard deviation; **T* tests and Cohen's *d* used continuous and discrete variables; ***X*^{2} and Cramer's *V* used for categorical variables

Table 4 presents bivariate associations for psychiatric boarding practices in the ED stratified by whether or not nurses perceived psychiatric boarding to be a problem. Nurses that believed that psychiatric boarding was a problem also had less stigmatizing attitudes towards patients that were mentally ill (large effect size) and higher perceived ability to care for patients with a mental illness (medium effect size). Nurses that believed that psychiatric boarding was a problem also had greater perceived ability to assess patients with mental health concerns (large effect size), greater ability to practice nursing or intervene with patients with mental health concerns, and a higher ability to know when or how to access resources. Nurses that believed that psychiatric boarding was a problem also believed that patients undergoing psychiatric boarding should have additional rights and protections in the ED (medium effect size).

Nurses working in EDs that utilized regular ED beds (large effect size) and hall beds (medium effect size) for patients undergoing psychiatric boarding were significantly more likely to believe that psychiatric boarding was a problem. Similarly, nurses who believed psychiatric boarding was a problem reported that their ED patients board in a greater number of different locations for nurses who did not believe it was a problem (medium effect size). In hospitals where patients undergoing psychiatric boarding were also involved in the involuntary commitment process, nurses were significantly more likely to report that psychiatric boarding was a problem (large effect size).

Table 4: Bivariate associations for psychiatric boarding practices stratified based on whether the nurse believes that psychiatric boarding is a problem

Characteristics	Psychiatric Boarding is *Not* a Problem *M* (*SD*)	Psychiatric Boarding is a Problem *M* (*SD*)	Test Statistic* *T (df), p*	Effect Size** Cohen's *d*
Number of different boarding locations	1.70 (0.87)	2.33 (1.43)	-7.40 (84), $p < .001$	0.53
Boarding patient experiencing homelessness	2.06 (0.54)	2.38 (0.71)	-13.28 (83), $p < .001$	0.51
Boarding and involuntary commitment process	1.58 (1.02)	2.38 (0.77)	-8.84 (84), $p < .001$	0.89
Law enforcement and/or security involvement during boarding	1.84 (0.83)	2.13 (0.74)	-10.13 (84), $p < .001$	0.37
Physical Restraint use during boarding	1.84 (0.90)	1.79 (0.66)	-9.01 (84), $p < .001$	0.06
Chemical restraint use during boarding	1.89 (0.81)	2.21 (0.51)	-11.85 (84), $p < .001$	0.47
Scales				
Negative attitudes towards patients with a mental illness	58.63 (4.42)	50.63 (9.60)	-40.51 (84), $p < .001$	1.07
Ability to treat patients with mental health concerns	79.22 (18.84)	87.63 (13.39)	-33.57 (83), $p < .001$	0.51
Ability to assess patients with mental health concerns	30.17 (7.46)	36.08 (5.68)	-30.53 (83), $p < .001$	0.89
Ability for practice intervention	28.44 (6.73)	29.29 (5.04)	-32.15 (83), $p < .001$	0.14
Ability for recommending psychotropics	6.67 (1.97)	6.54 (2.11)	-18.96 (83), $p < .001$	0.08
Ability to resources adequacy competency	13.94 (3.59)	15.71 (2.87)	-28.48 (83), $p < .001$	0.54
Positive Attitudes towards Patients Undergoing Psychiatric Boarding	113.58 (22.04)	126.75 (16.65)	-39.27 (84), $p < .001$	0.67
	n (%)	n (%)	X^2 (*df*), *p*	Cramer's *V*
Psychiatric Boarding Locations				
Regular ED Beds				
No	15 (78.95%)	4 (16.67%)	16.68 (1), $p < .001$	0.62
Yes	4 (21.05%)	20 (83.33%)		
Hall Bed				
No	18 (94.74%)	15 (62.5%)	6.17 (1), $p = .01$	0.38
Yes	1 (5.26%)	9 (37.50%)		

Observation Unit (not locked/secure)				
No	9 (47.37%)	17 (70.83%)	2.44 (1), p = .12	0.24
Yes	10 (52.63%)	7 (29.17%)		
Secure unit (locked)				
No	12 (63.16%)	15 (62.5%)	0.002 (1), p = .97	0.01
Yes	7 (36.84%)	9 (37.50%)		
Transfer to medical unit				
No	14 (73.68%)	21 (87.50%)	1.34 (1), p = .25	0.18
Yes	5 (26.32%)	3 (12.50%)		
Dedicated psych section of ED				
No	13 (68.42%)	16 (66.67%)	0.01 (1), p = .90	0.02
Yes	6 (31.58%)	8 (33.33%)		
Patients held in hospital without proper legal paperwork filed				
Occurred in nurse's ED (personal witness or secondhand knowledge)	4 (23.53%)	8 (40.00%)	1.14 (1), p = .29	0.18
Has not occurred	13 (76.47%)	12 (60.00%)		
Longest time a patient has boarded				
24 hours to 1 week	7 (36.84%)	12 (57.14%)	1.65 (1), p = .20	0.20
2 weeks to 12 months	12 (63.16%)	9 (42.86%)		

Note: *SD*= standard deviation; **T* tests and Cohen's *d* used continuous and discrete variables; ***X*^{2} and Cramer's *V* used for categorical variables

Table 5 presents correlations between the OMS-HC, BHCC score totals and subscales, and nurses' attitudes towards patients undergoing psychiatric boarding. Positive attitudes towards patients undergoing psychiatric boarding were significantly and positively correlated with all attitude measures (i.e., lesser stigmatizing attitudes towards persons with mental illness, and higher levels of all dimensions of perceived competency in providing care). In particular, the largest correlate of positive attitudes about boarding was the perceived ability to assess patients with mental illness. Greater negative attitudes towards patients with a mental illness were also associated with less positive attitudes of nurses towards patients undergoing psychiatric boarding.

Table 5: Correlations between the Opening Minds Scale (1), Behavioral Health Care Competency score totals (2) and subscales (3-6), and Behavior Health Patient's Rights Scale (7)

Scales	1	2	3	4	5	6	7
1. Negative attitudes towards patients with a mental illness	-	-.34*	-.45*	-.24	-.02	-.29	-.31*
2. Ability to treat patients with mental health concerns		-	.93*	.94*	.64*	.91*	.85*
3. Ability to assess patients with mental health concerns			-	.79*	.49*	.79*	.87*
4. Ability for practice intervention				-	.56*	.86*	.75*
5. Ability for recommending psychotropics					-	.53	.42*
6. Ability to identify adequate resources						-	.77*
7. Positive Attitudes towards Patients Undergoing Psychiatric Boarding							-

Note: * $p < .05$

Aim 3 Results: Psychiatric Boarding Improvement

Content analysis of the qualitative survey responses generated 21 distinct codes across all three questions and the results are in Table 6.

Table 6: Content Codes Identified

Code	Representative Quote
1. Emotional Safety	"…time away to think…"
2. Physical Safety	"…safe from the streets…"
3. Treatment Improvement and/or Absence of Appropriate Treatment	"…no effective treatment for the patient…"
4. Supervision/Observation	"Do not leave the person under 24-hour supervision"
5. Waiting time as a problem	"The length of time that patients can be boarded is excessive since there are often not enough available beds"
6. Level of violence affects treatment	"can attempt to try and medicate and get them on a regimen, but if nonviolent, the issue isn't pressed too hardly."
7. Control/Stabilize Disease	"Control the progression of disease
8. Depletes resources:	"Takes up beds for medical patients"
9. Family member influence:	"Abused at time by family memebers thay need a nreak or just dont want to deal with those who have mental illnesses"

10. ED high pressure environment	"It is so loud, the lights never go off, there are no windowa, sleeping schedules flip and concept of time is lost…"
11. Nothing Happens for the Patient:	"…often nothing is happening to help patients progress while boarding"
12. Confinement	"…patient has to stay in room at all times."
13. Treated Inhumanely	"Environment should be more like a residental ward and not a prison. Allow patients to wear their own clothes. Allow them to go outside or have access to window. Stop treating them like criminals and more like people who need help."
14. Impact on other persons	"…disruptive to other psych/med pts and staff…"
15. Staffing concerns	"More staff to be sitters, PCAs to assist with what the patient may need"
16. Patient behavior	"…also we are a no smoking facility and can only provide them with patches, which may aggravate then more. plenty of other negatives. can be violent to staff, disruptive to other psych/med pts and staff, unstable behavior"
17. Timing of placement	"Streamline the process, explain the situation better, faster transfer to psych facility."
18. Facility improvements to care for psych patients:	"Having a separate locked area in the ER with specially trained staff."
19. EDs not meant for long term care:	"The ED is no place for a psychiatric patient to spend long periods of time. 24-48 hours max."
20. No recommendations	"I don't think there is anything to improve"
21. Other category	"More legal provisions"

Question 1: Benefits of Psychiatric Boarding

When describing the benefits of psychiatric boarding, the most common code was treatment improvement and/or absence of appropriate treatment (n=18). For example, one nurse responded, "*None beyond the fact that they're in a safe place while waiting for treatment*." The physical safety (n=5) and emotional safety (n=14) of the patient as benefits of psychiatric boarding was also common. Another nurse responded, "…*Where I work while patients are boarding, no treatment is started. The only benefit it keeping the patient safe until a better level of care can be given*." Nine participants cited that there were no benefits of psychiatric boarding.

Question 2: Benefits of Psychiatric Boarding

When examining the negatives of psychiatric boarding, several codes were frequently observed. The negative aspects most cited were that the ED is a high pressure environment (n=10) and the emotional safety of the patient (n=10). One particularly illustrative example that demonstrates many of the high pressure aspects of the ED states, "*taking up ED beds for too long, pts get cabin fever. most ED providers do not cannot or won't start the pt on a new therapy without psych consult which can take 24hrs sometimes, esp if they are under the influence. not therapeutic for them at all to be confined. also we are a no smoking facility and can only provide them with patches, which may aggravate then more. plenty of other negatives. can be violent to staff, disruptive to other psych/med pts and staff, unstable behavior.*" This respondent included several other common negative attributes codes such as Confinement was also cited by seven respondents as a negative aspect of psychiatric boarding. For example, one respondent replied, "*Patients are waiting in an area they can't even walk around in for DAYS."*

Questions 3: How to Improve Psychiatric Boarding

When asked what can be improved with psychiatric boarding, 14 nurses responded that facility improvements to better care for patients with psychiatric concerns would be helpful. Some example of improvements from three different nurses included, (1) "*Each person has a separate room"* (2) *"Environment should be more like a residental ward and not a prison. Allow patients to wear their own clothes. Allow them to go outside or have access to window"* (3) *"Allow patients a quiet area with day night lighting schedule, maybe a safer environment that can be locked so they dont need to be watched 24/7 and some space to allow freedom of movement."* The second highest frequency (n=11) observed for improvements was treatment improvement and/or absence of appropriate treatment. Several nurses remarked on how treatment improvement outside of the ED would benefit patients. One nurse responded, "*There needs to be more options for those people who do not need to be constantly hospitalized but need help with medication management or finding a place to live*." Staffing concerns were also frequently observed (n=6).

Discussion

Aim 1: Boarding Practice Prevalence, Nurse Characteristics, and Hospital Characteristics

This small pilot study found that when nurses were asked about the longest time that a patient had boarded in the ED, the most common response was 48 hours (13.64%). Chemical restraint use was also more common than physical restraint usage but both were not typically utilized on patients undergoing psychiatric boarding. Although restraint use was sometimes used, other studies have linked restraint use (either physical or chemical restraints), to a greater risk of spending more than 24 hours in an ED (Hoffmann et al., 2018). Patients that arrive to the ED and were already restrained also have a greater risk of boarding in the ED compared to patients that do not arrive in restraints (Simpson et al., 2014). Although restraints are not usually used on patients experiencing psychiatric boarding, it is important to further determine how restraint use is linked to a greater risk of extended boarding in order to reduce these boarding times in the future.

The present study also found that more than half of nurses believed that psychiatric boarding was a problem. In addition, only 11.36% of nurses had personally witnessed a patient being prevented from leaving the ED without the proper legal paperwork. Almost one quarter of nurses reported that a patient had spent three to twelve months in the ED while psychiatrically boarding When addressing medicolegal issues in the ED, one Louisiana study found that 4.2% of all emergency confinement certificates were inappropriate or incomplete (Reeves et al., 1998). Prior studies have demonstrated in the ED, that hospitals can create their own protocols for nurses, such as standing orders for patients with certain chief complaints, but it is unclear if hospitals even have the regulatory, legislative, or institutional authority to do so (Castner, & Boris, 2020). Therefore, every hospital may have a different protocol for patients undergoing psychiatric boarding. The varied protocols in the experience of nursing in the ED that greatly varies across the country because every hospital may have different psychiatric boarding practices. One study found that the scope of practice for nurses in the ED also greatly varies which could have contributed to the variety in nurse responses (Castner et al., 2013). The varied practices indicate that a

nurse's experience with psychiatric boarding may likely also differ across the country in part due to differences in an ED nurses' scope of practice across the United States.

Overall, this pattern of findings is somewhat consistent with the present study's findings because although it is not happening frequently, illegal detention in the ED is still occurring for a minority of patients. Although nurses typically are not involved in filling out the legal paperwork, they are often tasked with enforcing laws and hospital policies. All ED policies should also comply with the Code of Ethics for nurses and provision 3.5 specifically addresses nurses acting on questionable practices that are illegal or unethical (ANA, 2015). ED nurses are already tasked with many time sensitive duties and may not have time to review legal documents on every shift to ensure that the legal requirements are met for every patient undergoing psychiatric boarding. Additional staff members that are not involved in direct patient care in the ED that oversee the logistics and legality of a psychiatric boarding stay, might be helpful so that nurses can focus on providing quality and compassionate care for these patients rather than focusing on the legality of the ED stay.

In the present pilot study, psychiatric boarding is not a uniform practice. Hospitals can create their own protocols for nurses, such as standing orders for patients with certain chief complaints, but it is unclear if hospitals even have the regulatory, legislative, or institutional authority to do so (Castner, & Boris, 2020). Therefore, every hospital may have a different protocol for patients undergoing psychiatric boarding. The present study supports this notion and found that patients undergoing psychiatric boarding are regularly boarded in an average of about 2 locations. The location of care can affect the quality and type of care that is provided as the experience of psychiatric boarding would be much different in a regular ED bed compared to a bed in a locked dedicated psychiatric unit in the ED. Streamlining best practices for the location of boarding could improve the patient experience of boarding. Also, the scope of practice for nurses in the ED greatly varies and this could have contributed to the variety in nurse responses (Castner et al., 2013). Additional research is needed to determine how streamlining nurses' scope of practice in the ED and best psychiatric boarding practices could improve the experience of psychiatric boarding for both nurses and patients.

When examining the different attitude measures in this study, the present sample of nurses had fewer stigmatizing attitudes towards patients with a mental illness compared to other samples of psychiatric nurses, social workers, non-psychiatric nurses, and physicians (Kassam et al., 2012). This could be due to the present study having a large percentage of nursing students from one university which could also indicate that nurses in the present sample may have less nursing experience than in other studies. However, when examining nurses' behavioral health care competency with their perceived ability to treat patients with a mental health concern, overall scores were lower in the present study compared to other samples of ED nurses (Rutledge et al., 2013). Behavioral health care competency scores related to a nurses' ability to assess patients with mental health concerns, recommending psychotropics, and practice intervention were all lower in this sample compared to other ED nurses (Rutledge et al., 2013). The present sample also had overall positive attitudes towards patients undergoing psychiatric boarding but there were a large range in responses. Additional research is needed to ensure that nurses' attitudes do not negatively indirectly or directly affect patient care and therefore patient outcomes.

Aim 2: Correlates of Nurse Attitudes Towards Psychiatric Boarding

Several nurse characteristics were associated with believing that psychiatric boarding was a problem, including a greater number of years worked as a nurse, longer ED experience, and a greater number of weekly hours worked in the ED. These patterns may be due to nurses with more experience having greater exposure to psychiatric boarding in the ED which, in turn, leads nurses to believe it is a problem. Nurses often have to act as the "middle man" where they coordinate care with ED or psychiatric providers, which can also lead to frustration for both the nurse and the patient (Isbell et al., 2020). Other studies have also linked negative attitudes towards patients with mental health concerns but the findings demonstrate inconsistent relationships between nurse experience and negative attitudes (e.g., Clarke et al., 2014). Similarly, nurses who had a greater perceived ability to assess patients with a mental illness were significantly less likely to believe that psychiatric boarding is a problem. This could be due to overconfidence as nurses with greater experience are at a greater risk for overconfidence (Yang et al., 2012). Physician overconfidence has also been linked to diagnostic errors (Cassam, 2017) and it is

important to ensure that nurse overconfidence does not lead to lower quality patient care. Additional research is needed to determine the specific factors that affect nurses' perceptions of different ED practices and problems.

Other boarding practices that were associated with nurses believing psychiatric boarding was a problem were chemical restraint use, being involved in the involuntary commitment process, law enforcement/security involvement, and a greater number of boarding locations. These practices may impede on a nurses' ability to fully comply with the Code of Ethics. Specifically, provisions 2.1 and 3.5 address that nurses should have honest conversations with their patients about resources and treatment options while also protected patients from unethical practices (ANA, 2015). This may be more difficult to ensure during these situations that often arise while a patient is undergoing psychiatric boarding due to a greater number of staff members that interact with the patient, especially security or law enforcement. In a national study on hospital security, security officers are allowed to handcuff patients in 64% of hospitals and nearly half of security officers carry other weapons that can be used such as handguns, TASERs, pepper spray, and batons (Schoenfisch & Pompeii, 2016). Additional research is needed to examine if the presence and interaction with security officers changes the experience for psychiatric boarding for patients and nurses as well as how involvement in the involuntary commitment process affects the experience.

The present pilot study also found stigmatizing attitudes were negatively correlated with positive attitudes towards patients undergoing psychiatric boarding in the ED. In addition, every behavioral health care competency subscale was positively associated with more positive attitudes towards patients undergoing psychiatric boarding. Stigmatizing attitudes towards patients with a mental illness are common and interestingly, attitudes have been found to be associated with the length of stay for patients with mental health concerns (Vistorte et al., 2018; Wolf et al., 2015). However, the present study results indicate that attitudes towards patients with a mental illness are consistent with attitudes towards patients undergoing psychiatric boarding. Therefore, a nurse with already negative attitudes towards patients undergoing psychiatric boarding is likely to also have greater negative attitudes towards patients

undergoing psychiatric boarding and a lower perceived ability to care for the patient's behavioral health needs. This could indicate that ED nurses generally consider patients with psychiatric concerns to be especially time-consuming and energy consuming (Isbell et al., 2020). However, it could also indicate that ED nurses are not confident in their ability to treat, assess, and intervene when patients are experiencing a mental health crisis. Previous educational interventions aimed at nurses have been proven to both reduce stigmatizing attitudes while producing greater behavioral health care competencies, and may be helpful in addressing nurses' attitudes towards patients undergoing psychiatric boarding (Bird, 2019).

Aim 3: Areas Psychiatric Boarding Improvement

When ED nurses were asked about the benefits of psychiatric boarding, the most common responses were related to treatment for the patient. Emotional or physical safety of the patient were also common themes. Prior literature has shown that patients with mental health concerns often turn to the ED because it is their only option to get psychiatric care (Nordstrom et al., 2019). In addition, adolescents who underwent psychiatric boarding reported that they felt safe and secure during their psychiatric boarding episode (Worsley et al., 2019). This feeling of safety is also consistent with the present pilot study that found that psychiatric boarding provides patients with a sense of safety that they did not have previously. Patients are primarily turning to the ED during a mental health crisis because it is the only option for safe treatment and physical safety.

When addressing the negative aspects of psychiatric boarding, many nurses reported that the patient does not receive any treatment nor is anything actually happening to the patient during the boarding time. This is consistent with other studies on psychiatric boarding that found a similar lack of treatment overall for patients undergoing psychiatric boarding in the ED (Nordstrom et al., 2019). This is concerning because while patients are waiting, feelings of distress and anxiety are common and some patients may report worsening symptoms during the waiting time (Harris et al., 2016). The physical environment and layout of the ED has also been reported to further make it difficult for nurses to even properly assess and treat patients with a mental illness due to its busy and loud nature (Innes et al., 2014).

The present study found somewhat consistent results that the is a high pressure environment and may not be conducive for healing for patients undergoing psychiatric boarding because of the innate intense stimuli found in many EDs.

When addressing areas for improvement, the most common recommendation was to improve the physical layout of the ED. Nurses suggested giving patients a private room and also allowing patients to walk around in a safe location. Studies examining patients' experience with psychiatric emergencies in the ED found similar sentiments that a lack of privacy caused patients stress (Harris et al., 2016). Improving the physical layout may also improve the ability of patients to adhere to ED rules and policies. Prior studies aimed at reducing the amount of stimuli present in the ED have found that even changes to ambient lighting in the ED were associated with patients having less pain in a pediatric ED (Robinson & Green, 2015). The present study also found that nurses believe that the current loud and chaotic environment in the ED is not ideal for patients undergoing psychiatric boarding. Patients experiencing symptoms of mental illness may also have a more difficult time adhering to the many ED policies and procedures (Harris et al., 2016). One study suggested the if nurses could moderate some of the stimuli in the ED, it could lessen patients' distress (Harris et al., 2016). These findings from a prior study are consistent with results from this study that found that patients can get upset over ED rules such as not being allowed to smoke cigarettes and not being allowed to walk around for days at a time. Alleviating certain innate features of the ED for patients undergoing psychiatric boarding, such as lights that never go off, loud environment at all hours of the day, and a lack of windows, were examples that may improve the patient experience.

Implications for Practice and Research

This small pilot study presents several important implications related to practice and research. The present study found that nurses' experiences with psychiatric boarding differed greatly and approximately half of nurses perceived psychiatric boarding to be a problem. Therefore, this suggests that the experience of psychiatric boarding may not be uniform and the nurse and patient experience may differ based on each ED. The present findings related to the physical environment also indicate that

practice improvements will also differ based on the needs of particular hospitals and EDs. However, many nurses had recommendations to improve physical features of the ED to make it an environment conducive to healing. The physical environment has been cited as a contributor that can make it more difficult to care for patients with mental health concerns, especially the lack of privacy for the patient (Chou & Tseng, 2020). Nurses in the present study suggested giving the patient their own room and this recommendation has also been given before by ED nurses when examining experiences with patients with mental health concerns (Chou & Tseng, 2020). Giving patients their own room would give the patient dignity and prevent other patients and visitors from staring at patients with mental health concerns (Chou & Tseng, 2020). Private rooms have also been associated with lower noise levels in the ED which may be further therapeutic for patients (Liddicoat, 2019). However, there is scant literature related to how changes in the physical environment of the ED affect patients undergoing psychiatric boarding. Literature related to changing the physical environment often focuses on asking patients and staff what they would change but rarely focuses on the effects of implementing changes in the ED.

Several hospital characteristics in this study were also significantly related to whether nurses perceived psychiatric boarding to be a problem at their hospital. This could be due to different modalities of care in different EDs and different access to inpatient psychiatric resources. Given the risk of harm during a psychiatric boarding stay as demonstrated by the many negative aspects of psychiatric boarding reported by nurses, additional research is needed to determine the best practices for caring for these patients. Hospitals that have created protocols that dictate care for patients with mental health concerns in the ED have been successful and further research is needed to expand the usage of these protocols (Turner & Stanton, 2015). One study examining ED nurses found that 24% of ED nurses reported that their ED did not have a standard protocol for caring for patients with mental health concerns (Wolf et al., 2015). A case manager may also be helpful and has been used previously in the ED to treat patients with mental health concerns to help with referral and transfer but it may be difficult to staff a psychiatric case manager on every shift (Turner & Stanton, 2015).

Given the pilot nature of the study, findings are best used to generate next steps in research concerning psychiatric boarding. Additional research is needed to determine how the involuntary commitment process changes the experience of psychiatric boarding for both nurses and patients. This may be due to differences in civil commitment laws in each state but future studies might examine how involuntary commitment policies directly affect ED usage, length of psychiatric boarding, and nurses experience with psychiatric boarding. In addition, the physical features of the ED and high pressure environment in the ED affect the experience of psychiatric boarding. Altering the physical environment was suggested in the present study and the suggested changes are consistent with prior literature. However, many of these physical changes in the ED have not been evaluated and additional research is needed to determine the actual effects of physical changes in the ED such as providing patients with their own room or having a variable lighting schedule. The present study also found that the quality or even presence of psychiatric treatment is lacking for patients undergoing psychiatric boarding. Further research is needed to determine practical and cost effective ways for patients undergoing psychiatric boarding to receive treatment while they are in the ED that does not burden ED nurses with additional time-intensive tasks yet is also feasible in many types of EDs.

Limitations

This exploratory pilot study has several inherent limitations. Convenience sampling was utilized and the sample size was rather small, so results may not be generalizable and require further research to investigate. Statistical power is also restricted. Survey questions did not address whether nurses worked in a psychiatric ED or a pediatric ED. Questions also did not address whether patients that were undergoing psychiatric boarding were children, adolescents, or adults. There are unique challenges in treating children boarding in the ED compared to adults and also different processes in psychiatric EDs compared to regular EDs. Another limitation of the study was the various sampling methods that were used; responses were gathered from a national nursing organization, social media, university email recruitment, and from a local healthcare organization. These various methods introduce sources of error that may provide alternative explanations, and hamper reproducibility of the study. Conclusions of this small pilot

study must be taken with caution and further research is needed to more deeply describe the associations that were found in the present study. Despite these limitations, this pilot study lays the foundation for additional research on psychiatric boarding to determine the effects of different psychiatric boarding practices for both patients and nurses.

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APPENDIX A: RECRUITMENT EMAIL

Subject: Psychiatric Boarding in the Emergency Department Survey (Opportunity to win a gift card)

Have you ever worked in an emergency department as a nurse in the United States?

If so, you are eligible to participate in my survey examining psychiatric boarding in the emergency department. The purpose of this study is to better understand nurses' experiences with psychiatric boarding and their attitudes about patients that are undergoing psychiatric boarding. If you choose to participate, the survey will take about 15-20 minutes and you will have the option of entering into a drawing for five $20 Amazon e-gift cards at the conclusion of the survey. Study responses will not be linked in any way to email addresses.

If you would like to participate, click the link below or copy the URL into your web browser:

http://uncc.qualtrics.com/jfe/form/SV_e35DoSvNHfH7gAB?EmailDistributionID=uncc

If you have any questions, please contact Shelby Veri at sveri@uncc.edu.

NOTE: This study has been approved by UNC Charlotte Institutional Review Board, Protocol#21-0277

Thank you,

Shelby Veri
PhD Candidate in Health Services Research
Department of Public Health Sciences
Email: sveri@uncc.edu

Robert Cramer
Associate Professor
Irwin Belk Distinguished Scholar in Health Research
Department of Public Health Sciences
Email: rcramer4@uncc.edu

APPENDIX B: CONSENT FORM, DEBRIEFING FORM, AND ELIGIBILITY

Consent to be Part of a Research Study

Title of the Project: Psychiatric Boarding in the Emergency Department Survey
Principal Investigator: Shelby Veri, MPH, University of North Carolina at Charlotte
Co-investigator: Robert J. Cramer, Ph.D., University of North Carolina at Charlotte; Franck Diaz Garelli, Ph.D., Jessamyn Bowling, Ph.D., MPH; Jane B. Neese, Ph.D, MS, Oluwaseun Adeyemi, MBCh.B, MPH, MWACS

You are invited to participate in a research study. Participation in this research study is voluntary. The information provided is to give you key information to help you decide whether or not to participate. If you have any questions, please ask.

Important Information You Need to Know

- The purpose of this study is to better understand nurses' experiences with psychiatric boarding and their attitudes about patients that are undergoing psychiatric boarding.
- You will be asked to complete an online one-time survey.
- If you choose to participate it will require 15 to 20 minutes of your time.
- Risks or discomforts from this research are minimal. The risks and discomforts and not greater than the those normally occurring in everyday life.
- There are no direct benefits to you by participating in this study. However, you will have the option at the end of the survey to be entered into a random drawing for five $20 e-gift cards at the conclusion of the study. Payment will only occur for persons meeting study criteria as assessed in the first set of survey questions and for participants who answer the attention check questions correctly. Participants failing to answer either one of the two attention check questions will be excluded from the drawing of gift cards. The drawing will occur approximately two weeks after the survey closes or eight weeks after the survey opens. The chances of winning a gift card are approximately 1 out of 50.

Please read this form and ask any questions you may have before you decide whether to participate in this research study.

Why are we doing this study?
The purpose of this study is to gain insight how emergency department nurses experience psychiatric boarding in the emergency department and the prevalence of common practices related to psychiatric boarding as perceived by nurses.

Why are you being asked to be in this research study.
To be eligible to participate in this this survey, must be: (1) over 18 years of age and (2) have worked in an emergency department as a nurse in the United States.

What will happen if I take part in this study?
If you choose to participate in this study you will be asked to complete an online-administered survey via a link to UNC Charlotte Qualtrics. Qualtrics is an online survey creation tool. Survey questions will ask you to complete demographic information (e.g., age, gender), characteristics and practices that occur in your ED, and your attitudes and beliefs about patients that are undergoing psychiatric boarding. No private health information is being requested.

Your time commitment will be about 15-20 minutes.

What benefits might I experience?
You will not directly benefit from being in this study. You may gain insight into your own beliefs related to psychiatric boarding.

What risks might I experience?
Risks or discomforts from this research are minimal. The risks and discomforts and not greater than the those normally occurring in everyday life. To minimize this risk, we have had the survey reviewed by the Human Subjects Review Board and experts in mental health. If these questions make you feel uncomfortable, you may withdraw from participation at any time. Should you need assistance with your mental health, you can locate psychological services in your area via the American Psychological Association's Psychologist Locator (http://locator.apa.org). If you are experiencing any distress, please call the National Suicide Prevention Lifeline at 1-800-273-8255. You may also reach the national Crisis Text line by texting HOME to 741741.

How will my information be protected?
We plan to publish the results of this study. To protect your privacy, we will not include any information that could identify you. Data are confidential and responses are not linked to identifying information.

A limit to confidentiality is giving your email address for administration of e-gift cards. Specifically, after completion of the survey, you will have the option to provide your email address and it will maintained in a separate secure database from survey responses, thereby ensuring your survey responses remain anonymous. Email addresses will also be deleted upon study completion and gift card distribution.

How will my information be used after the study is over?
The data/information collected will not be used or distributed for future research studies even if identifiers are removed.

Will I receive an incentive for taking part in this study?
You will have the option at the end of the survey to be entered into a random drawing for five $20 Amazon e-gift cards at the conclusion of the study. Payment will only occur for persons meeting study criteria as assessed in the first set of survey questions. The survey responses will not be linked in any way to email addresses.

What other choices do I have if I don't take part in this study?
There is no alternative other than not taking the survey.

What are my rights if I take part in this study?
It is up to you to decide to be in this research study. Participating in this study is completely voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. You do not have to answer any questions you do not want to answer.

If you choose to stop the survey, data may still be used in de-identified group-level analysis if you provided a sufficient number of responses to do so.

Who can answer my questions about this study and my rights as a participant?
For questions about this research, you may contact Shelby Veri, MPH, Health Services Research Doctoral Candidate at UNC Charlotte, sveri@uncc.edu; or Robert Cramer, Ph.D., Associate Professor of Public Health Sciences at UNC Charlotte, rcramer4@uncc.edu, (704) 687-6022

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the Office of Research Protections and Integrity at 704-687-1871 or uncc-irb@uncc.edu.

Consent to Participate

By clicking "yes" on this page, you are agreeing to be in this study. Make sure you understand what the study is about before you press "yes". You can save a screen shot of this document for your records, or request it from study investigators. If you have any questions about the study after you click "yes" , you can contact the study team using the information provided above.

I understand what the study is about and my questions so far have been answered. By clicking "yes", I agree to take part in this study.

Click "YES" to participate.

Click "NO" or close the web page to choose not to participate.

Debriefing Form

Dear Participant,

You have just participated in a study examining nurses' experiences with psychiatric boarding in the emergency department. Your valuable contribution is appreciated and will go a long way toward accurately describing and improving the experience of psychiatric boarding for both patients and emergency department staff members.

If you would like to be entered into a random drawing for five $20 Amazon e-gift cards, please ***click here*** to enter your email address. This will open a new webpage where you may enter your email address which will not be linked in any way to your survey responses because it is an entirely separate survey. All your survey responses will remain anonymous.

As a back-up, we recommend you save a screen shot or other electronic version of this debriefing form. Should you have other questions, please contact one of the primary investigators below.

Should you need assistance with your mental health, you can locate psychological services in your area via the American Psychological Association's Psychologist Locator (http://locator.apa.org). If you are experiencing any distress, please call the National Suicide Prevention Lifeline at 1-800-273-8255. You may also reach the national Crisis Text line by texting HOME to 741741.

Thank you for your time and assistance completing this study.

Sincerely,

Shelby Veri, MPH
Doctoral Candidate in Health Services Research
University of North Carolina at Charlotte
sveri@uncc.edu

Robert J. Cramer, Ph.D.
Associate Professor & Belk Distinguished Scholar in Health Research
University of North Carolina at Charlotte
Rcramer4@uncc.edu
(704) 687-6022

Eligibility Screen

Have you ever worked in an emergency department as a nurse in the United States? □ Yes □ No

*if no is selected:

Dear Prospective Participant,

Thank you for your interest in participating in this study examining nurses' experiences with psychiatric boarding in the emergency department. Unfortunately, you do not qualify to participate in this study but we greatly value your time and consideration.

Should you need assistance with your mental health, you can locate psychological services in your area via the American Psychological Association's Psychologist Locator (http://locator.apa.org). If you are experiencing any distress, please call the National Suicide Prevention Lifeline at 1-800-273-8255. You may also reach the national Crisis Text line by texting HOME to 741741.

Thank you for your time and assistance.

Sincerely,

Shelby Veri, MPH
Doctoral Candidate in Health Services Research
University of North Carolina at Charlotte
sveri@uncc.edu

Robert J. Cramer, Ph.D.
Associate Professor & Belk Distinguished Scholar in Health Research
University of North Carolina at Charlotte
Rcramer4@uncc.edu
(704) 687-6022

APPENDIX C: NURSE CHARACTERISTICS

What is your age (in years)? _____ (text entry)

What is your gender?

- □ Male
- □ Female
- □ Non-binary/third gender
- □ Prefer not to say

Are you of Hispanic, Latino, or Spanish origin? Check all that apply.

- □ No
- □ Yes, Mexican, Mexican Am., Chicano
- □ Yes, Puerto Rican
- □ Yes, Cuban
- □ Yes, another Hispanic, Latino, or Spanish origin _____

What is your race? Check all that apply.

- □ White
- □ Black or African American
- □ American Indian or Alaska Native
- □ Chinese
- □ Vietnamese
- □ Korean
- □ Filipino
- □ Asian Indian
- □ Japanese
- □ Native Hawaiian
- □ Samoan
- □ Chamorro
- □ Other Asian: _____
- □ Other Pacific Islander: _____
- □ Other race: _____

What is your highest level of completed education in NURSING? Check all that apply.

- □ Nursing Diploma
- □ Associate Degree Nursing
- □ Bachelor's Degree in Nursing (BSN)
- □ Master's Degree in Nursing (MSN)
- □ Doctorate of Nursing Practice (DNP)
- □ Ph.D. in Nursing

What is your highest level of completed education? Check all that apply.

- □ Less than high school

□ High school/GED
□ Some college
□ Associate's Degree
□ Bachelor's Degree
□ Master's Degree
□ PhD or professional degree (e.g. MD or JD)

Are you a nursing student at UNC Charlotte?

□ No
□ Yes, a RN-to-BSN student
□ Yes, a MSN student
□ Yes, a DNP student
□ Yes, other:_____

How long have you worked as a nurse (in years)? _____

How long have you worked in the ED (in years)? _____

How long have you worked in your current ED as a nurse (in years)? _____

Are you a certified emergency nurse (CEN)? □ yes □ no

Are you an adult psychiatric-mental health clinical nurse specialist? □ yes □ no

Are you a child/adolescent psychiatric-mental health clinical nurse specialist? □ yes □ no

Which state(s) do you currently practice nursing in? _____

Check all that apply. Do you primarily work:

□ Only dayshift (ex. 7a- 7p)
□ Only nightshift (ex. 7p – 7a)
□ Switch between dayshift and nightshift depending on the day
□ Other shift _____

In a typical week, how many hours do you work in the ED? _____

What is your current position in the ED? Check all that apply.

□ Charge nurse
□ Staff nurse
□ Nurse manager
□ Nurse educator
□ Nurse practitioner
□ Not applicable
□ Other _____

Approximately how many treatment beds does your ED have (including triage and hallway beds)?

- Under 10 beds
- 10-20 beds
- 20-30 beds
- 40-50 beds
- 50-60 beds
- 60+ beds
- I don't know

How many total beds does your hospital have?

- 0 (because it is a freestanding ED)
- Under 25 beds
- 25-75 beds
- 75-150 beds
- 150-300 beds
- 300+ beds
- I don't know

Does your hospital utilize sitters (other names include patient safety attendants, safety sitters, patient monitors)?

- Yes
- No
- I don't know

Does your hospital utilize virtual monitoring for patients undergoing psychiatric boarding?

- Yes
- No
- I don't know

Where does your hospital board patients for psychiatric concerns? Check all that apply.

- Regular ED bed
- Hallway bed
- Observation unit (not secure/locked)
- Secure unit (locked)
- Transferred to medical floor
- Dedicated psych section of ED
- Other: _____

Do you think your institution has held patients (ie. prevented them from leaving) that are psychiatric boarding without the proper legal paperwork (ex. did not file involuntary commitment documentation to the magistrate/courts within the required time period)?

- Yes, I have personally witnessed this occurring
- No, I have not witnessed this but I know it has occurred in my ED

□ No, I have not witnessed this and I do not think it has occurred in my ED
□ I don't know
Other_____

How often are you assigned to care for a patient that is psychiatric boarding?

Never	Rarely	Sometimes	Often	Always
□	□	□	□	□

How often are patients that are undergoing psychiatric boarding also experiencing homelessness?

Never	Rarely	Sometimes	Often	Always
□	□	□	□	□

How often are patients that are undergoing psychiatric boarding also undergoing the involuntary commitment process?

Never	Rarely	Sometimes	Often	Always
□	□	□	□	□

How often does security and/or law enforcement have to be called during a patient's entire psychiatric boarding stay?

Never	Rarely	Sometimes	Often	Always
□	□	□	□	□

How often are physical restraints utilized for a patient undergoing psychiatric boarding?

Never	Rarely	Sometimes	Often	Always
□	□	□	□	□

How often are chemical restraints utilized for a patient undergoing psychiatric boarding (ex. Haldol, Ativan, Geodon, Benadryl, etc)?

Never	Rarely	Sometimes	Often	Always
□	□	□	□	□

Do you think psychiatric boarding is a problem at your hospital?

□ Yes
□ No
□ I don't know

What is the longest length of time that a patient has ever psychiatrically boarded in your ED?

□ 24 hours
□ 48 hours
□ 5 days
□ 1 week
□ 2 weeks

□ 1 month
□ 2 months
□ 3 months
□ 6 months
□ 12 months
□ Other: _____
□ None of the above have occurred to my knowledge

APPENDIX D: THE OPENING MINDS SCALE FOR HEALTH CARE PROVIDERS (OMS-HC)

Instructions: The next few questions ask you to agree or disagree with a series of statements. There is no correct answer to each question. Please select the option that best fits your opinion.

1. I am more comfortable helping a person who has a physical illness than I am helping a person who has a mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

2. If a person with a mental illness complains of physical symptoms (e.g., nausea, back pain or headache), I would likely attribute this to their mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

3. If a colleague with whom I work told me they had a managed mental illness, I would be just as willing to work with him/her.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

4. If I were under treatment for a mental illness I would not disclose this to any of my colleagues.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

5. I would be more inclined to seek help for a mental illness if my treating health care provider was not associated with my workplace.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

6. I would see myself as weak if I had a mental illness and could not fix it myself.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

7. I would be reluctant to seek help if I had a mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

8. Employers should hire a person with a managed mental illness if he/she is the best person for the job.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

9. I would still go to a physician if I knew that the physician had been treated for a mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

10. If I had a mental illness, I would tell my friends.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

11. It is the responsibility of health care providers to inspire hope in people with mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

12. Despite my profession beliefs, I have negative reactions toward people who have mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

13. There is little I can do to help people with mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

14. More than half of people with mental illness don’t try hard enough to get better.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

15. People with mental illness seldom pose a risk to the public.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

16. The best treatment for mental illness is medication.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

17. I would not want a person with a mental illness, even if it were appropriately managed, to work with children.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

18. Health care providers do not need to be advocates for people with mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

19. I would not mind if a person with a mental illness lived next door to me.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

20. I struggle to feel compassion for a person with mental illness.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

APPENDIX E: BEHAVIORAL HEALTH CARE COMPETENCY (BHCC)

Instructions: Nurses across the hospital have varying competencies related to caring for patients with behavioral health or psychiatric conditions, including substance abuse. We are interested in whether you believe you have the following competencies. All statements relate to patients you might care for in an ED nursing role. No answers have been designated as right or wrong.

1. I can assess patients for potential psychiatric problems.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

2. I identify signs and symptoms of common psychiatric conditions (e.g. depression, schizophrenia, bipolar disorder).

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

3. I can identify common neuroleptic, tranquilizers, and antidepressant medications used with psychiatric patients.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

4. I am able to assess patients for risk of suicide (suicidality).

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

5. I recognize behaviors that indicate a patient may have alcohol or drug abuse problems.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

6. I can recognize signs and symptoms of alcohol withdrawal.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

7. I can recognize signs and symptoms of drug withdrawal.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

8. I can distinguish between dementia and delirium.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

9. I can recognize the warning signs in patients whose behavior may escalate to aggression or dangerous behaviors.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

10. I can initiate appropriate nursing interventions for common psychiatric issues such as depression, bipolar disorder, and psychosis.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

11. I can effectively interact with patients who have psychiatric conditions.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

12. I am able to maintain a safe environment for patients on my unit who have a psychiatric condition.
Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

13. I can effectively manage conflicts caused by patients who have mental problems.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

14. I can effectively intervene with a patient having hallucinations.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

15. I am able to use de-escalation techniques and crisis communication to avert aggressive behaviors.
Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

16. I plan for more time to take care of patients with psychiatric issues compared with my other patients.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

17. I am able to maintain a therapeutic relationship with most patients on my unit who have psychiatric issues.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

18. I am confident that I can recommend use of psychotropic drugs to physicians for appropriate patients.
Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

19. I recommend psychotropic drugs to physicians for psychiatric patients.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

20. I know when to ask for outside help (e.g. physician, psychiatric nurse, other) for a patient with psychiatric issues or dangerous behaviors.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

21. I call for outside resources (e.g. physician, psychiatric nurse, other) when I recognize a patient's behaviors are escalating beyond my capabilities.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

22. I am confident that help is available to me when I need assistance with patients who have co-morbid behavioral or psychiatric issues.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

23. Hospital resources are available to me when I need assistance with behavioral health, or psychiatric issues, or substance abuse issues.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

APPENDIX F: ORIGINAL ATTITUDES OF CLIENTS AND NURSES TOWARD THE RIGHTS OF HOSPITALIZED PSYCHAITRIC CLIENTS

1. Patient should receive service regardless of race, language, religion, sex, physical or mental disability, socioeconomic status, etc.

2. The patient should have the right to access customer information services and access all services that are provided in the hospital.

3. Psychiatric patients should have the right to appropriate medical, psychosocial, and rehabilitative care, treatment, and training as soon as possible.

4. Patients should have the right to access the medical team during hospitalization.

5. Patients should have the right to access the medical team after being discharged from the hospital.

6. Patients should have the right to be informed about all their rights at the time of admission.

7. Patients should have the right to obtain an adequate information about their clinical status in an understandable language.

8. The therapist should provide adequate information about the patients' treatment option in a manner appropriate to his/her clinical condition in an understandable language.

9. Patients should have the right to receive sufficient information about a rare complication of treatment in compliance with medical needs.

10. Patients should have the right to ask for explanation about the risks and complication of the therapeutic plan offered.

11. Patients should have the right to be informed about their chances for healing and recovery.

12. The therapist should introduce him/herself to the mentally ill patients.

13. The therapist should provide information about the professional role and responsibility of the medical team to the mentally ill patients.

14. Patients should be permitted to access their medical file.

15. Patients should have the right to participate actively in all decisions and to have input in treatment planning.

16. Assessing the mental state of patients to determine the decision-making capacity of patients at every clinical encounter.

17. Patients have the right to be informed about error by the person who commits an error during service delivery.

18. Presence of a legal authority to change the decision taken by the service providers for the patient to preserve the patient's best interests.

19. Informed consent should be obtained about educational and research activities in which the patients will be present.

20. Patients should have the right to withdraw from treatment against the advice of the medical team at any time with or without cause.

21. The patient should have the right to refuse the recommended treatment.

22. The patient should have the right to leave the hospital against the advice of the medical team with personal consent.

23. In case of violation of rights, the patient should have the right to be able to use complaints and lawsuits and any application within the framework of legislation.

24. The staff should have the right to force hospitalization against a person's will if the person is violent or and is a source of danger to others.

25. The staff should have the right to force hospitalization against a person's will if the person is psychotic and thereby is not able to take care of his/her needs and neglects him/herself physically or mentally.

26. The staff should have the right to force hospitalization against a person's will after a serious suicide attempt or if the person makes suicidal threats that seem serious.

27. There are circumstances under which the staff should have the right to confine the patients in a locked room.

28. There are circumstances under which the staff should have the right to use physical coercion, such as strapping, straitjackets, forced feeding, or injections.

29. The staff should have the right to ask patients to obey the ward rules, such as time of sleeping and awakening, eating, proper behavior, and rules about outings.

30. The therapist should have the right to pass on information in response to a query of the courts and legal authorities about the patient, his/her hospitalization and mental condition, even without the patient's consent.

31. The therapist should be allowed to give information about the patient's hospitalization and mental condition to his or her mate, even without the patient's consent.

32. The healthcare provider should not disclose any information about the patient to the employers without the patient's consent.

APPENDIX G: EDITED RIGHTS OF PATIENTS WHO ARE PSYCHIATRICALLY BOARDING SURVEY

Instructions: The next few questions ask you to agree or disagree with a series of statements. There is no correct answer to each question. Please select the option that best fits your opinion.

1. Patients undergoing psychiatric boarding should receive care regardless of race, language, religion, sex, physical or mental disability, socioeconomic status, etc.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

2. The patient should have the right to access customer information services and access all services that are provided in the hospital.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

3. Patients undergoing psychiatric boarding should have the right to appropriate medical, psychosocial, and rehabilitative care, treatment, and training as soon as possible.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

4. Patients undergoing psychiatric boarding should have the right to access the medical team during their hospitalization.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

5. Patients who undergo psychiatric boarding should have the right to access the medical team after being discharged from the hospital.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

6. Patients undergoing psychiatric boarding should have the right to be informed about all their rights at the time of admission.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

7. Patients undergoing psychiatric boarding should have the right to obtain adequate information about their clinical status in an understandable language.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

8. The nurse should provide adequate information about the patients' treatment option in a manner appropriate to his/her clinical condition in an understandable language.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

9. Patients undergoing psychiatric boarding should have the right to receive sufficient information about a rare complication of treatment in compliance with medical needs.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

10. Patients undergoing psychiatric boarding should have the right to ask for explanation about the risks and complication of the therapeutic plan offered.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

11. Patients undergoing psychiatric boarding should have the right to be informed about their chances for healing and recovery.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

12. The nurse should introduce him/herself to the mentally ill patients.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

13. The nurse should provide information about the professional role and responsibility of the medical team to the mentally ill patients.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

14. Patients undergoing psychiatric boarding should be permitted to access their medical file.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

15. Patients undergoing psychiatric boarding should have the right to participate actively in all decisions and to have input in treatment planning.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

16. Assessing the mental state of patients undergoing psychiatric boarding to determine the decision-making capacity of patients is important at every clinical encounter.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

□ □ □ □ □

17. Patients undergoing psychiatric boarding have the right to be informed about errors by the person who commits an error during healthcare delivery.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

18. It is acceptable for the presence of a legal authority to change the decision taken by healthcare providers for the patient to preserve the patient's best interests.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

19. Informed consent should be obtained about educational and research activities in which patients undergoing psychiatric boarding are involved.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

20. Patients undergoing psychiatric boarding should have the right to withdraw from treatment against the advice of the medical team at any time with or without cause.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

21. The patient undergoing psychiatric boarding should have the right to refuse the recommended treatment.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

22. The patient undergoing psychiatric boarding should have the right to leave the hospital against the advice of the medical team.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

23. In case of violation of rights, the patient undergoing psychiatric boarding should have the right to be able to use complaints, lawsuits, and any application within the framework of legislation.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

24. The ED staff should have the right to force hospitalization against a person’s will if the person is violent or and is a source of danger to others.

Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree
□ □ □ □ □

25. ED staff should have the right to force hospitalization against a person's will if the person is psychotic and thereby is not able to take care of his/her needs and neglects him/herself physically or mentally.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

26. The ED staff should have the right to force hospitalization against a person's will after a serious suicide attempt or if the person makes suicidal threats that seem serious.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

27. There are circumstances under which the ED staff should have the right to confine the patients in a locked room.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

28. There are circumstances under which the staff should have the right to use physical coercion, such as strapping, straitjackets, forced feeding, or injections.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

29. The ED staff should have the right to ask patients who are undergoing psychiatric boarding to obey the ward rules, such as time of sleeping and awakening, eating, proper behavior, and rules about outings.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

30. The ED staff should have the right to pass on information in response to a query of the courts and legal authorities about the patient, his/her hospitalization and mental condition, even without the patient's consent.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

31. The nurse should be allowed to give information about the patient's hospitalization and mental condition to his or her friend, even without the patient's consent.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
□	□	□	□	□

32. The healthcare provider should not disclose any information about the patient who is undergoing psychiatric boarding to the employers without the patient's consent.

APPENDIX H: NURSES PERSPECTIVES ON PSYCHIATRIC BOARDING

Instructions: For the final questions, please share your brief thoughts related to your experience with psychiatric boarding in the ED.

1. What do you see as the benefits of psychiatric boarding? _____

2. What do you see as the negatives of psychiatric boarding? _____

3. How do you think psychiatric boarding could be improved? Please share your brief thoughts.

_____

Chapter V: Conclusion

Summary of Findings

This three article dissertation explored what is known about psychiatric boarding in the emergency department (ED). Psychiatric boarding is considered to be an endemic problem in the United States (Nolan et al., 2015). EDs are not meant to serve as someone's living quarters for extended periods of time, yet patients across the country are boarding in EDs for extended periods of time. Using the 2008 National Hospital Ambulatory Medical Care Survey (NHAMCS), researchers found that patients with psychiatric concerns were over four times more likely to board compared to patients with primarily medical concerns (Nolan et al., 2014). This dissertation also explored the significance of this research topic and found that psychiatric boarding in the ED is often a symptom of a larger breakdown in mental health care in the United States. Throughout this dissertation, the characteristics of patients that are undergoing psychiatric boarding in the United States were examined to better understand the experience of psychiatric boarding.

The literature review in Chapter 1 reviewed the different factors that have precipitated the psychiatric boarding crisis in the United States. Psychiatric boarding is a newer phenomenon that was first documented in 2003 in part due to the fact that EDs had become safety nets for patients experiencing a serious mental illness and/or homelessness (Canady, 2019; Mansbach et al., 2003; Scheff, 2014). The United States has a history of treating patients with a mental illness in long-term institutions until 1972, which is considered the beginning of deinstitutionalization where patients were supposed to transfer their mental health care to the community (Lanterman Petris Short Act, 1969). Due to the inadequacy of community mental health care, EDs were more frequently visited by patients in a psychiatric crisis (Abid et al., 2014).

Many patients that are psychiatrically boarding are also involved in the civil commitment process if they are considered a danger to themselves or others due to a mental illness (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). A psychiatric boarding stay in the ED often co-occurs with a civil commitment as many patients must wait in the ED until a proper inpatient

arrangement is set up or until a safe transfer to an inpatient facility can occur. Every state has different civil commitment criteria and several rights of patients have been challenged legislatively including the right to adequate living conditions, right to due process, involuntarily medicating patients, and emergency temporary holds. It is unclear if these same rights and protections that are provided to patients that are civilly commitment on an inpatient ward are also provided to patients undergoing psychiatric boarding in the ED. One goal of this dissertation was to explore what is known about patients undergoing psychiatric boarding in the ED in order to improve care for this vulnerable patient population.

Chapter 2 of this dissertation presents a systematic literature review to determine what is known about psychiatric boarding in the ED. Specific attention was given to the wait times associated with psychiatric boarding, what happens during the waiting period, and the associated effects of psychiatric boarding. A total of 31 studies were included in the systematic review and the range in psychiatric boarding times were between 108 minutes and 103 days. Patients with diagnoses related to suicidal ideations or suicidal behaviors had significantly longer boarding times and were at a greater risk of psychiatric boarding compared to other diagnoses. Physical restraint use was also documented in several studies and this review found that patients that arrived in physical restraints were more likely to psychiatrically board compared to patients that did not arrive to the ED in physical restraints.

When examining the quality of care that patients undergoing psychiatric boarding were receiving, patients rarely received counseling or were started on psychiatric medications during their ED visit. Among patients that were given medications, one study found that 65% of patients had at least one medication error during their psychiatric boarding stay (Bakhsh et al., 2014). Patients that were involved in the civil commitment process also had significantly longer boarding times compared to patients that were not involved in the process (Campbell & Pierce, 2018). Overall, the long-term and short-term effects of psychiatric boarding in the ED were minimally described and largely unknown.

Chapter 3 of this dissertation presents an analysis of the Healthcare Cost and Utilization Project (HCUP) Nationwide Emergency Department Sample (NEDS) data and attempted to examine psychiatric boarding using this dataset for the years 2016 and 2017 (NEDS Overview, 2021). Any patient over the

age of 12 who had a psychiatric examination and boarded in the ED for greater than one calendar day was included in the analyses. A combination of ICD-10-CM codes and CPT codes were used to identify patients and there were 80,700 patients that had a psychiatric exam in the years 2016-2017. There were 47 patients that psychiatrically boarded for greater than one calendar day during this two year period. None of these patients were physically restrained and the most common diagnosis related groups were chronic obstructive pulmonary disease (COPD) with major complication or comorbidity (MCC) and diabetes with MCC. Interestingly, patients that boarded had significantly shorter inpatient stays, a greater number of procedures performed, yet the average charge for ED services was lower for patients that underwent psychiatric boarding compared to patients who did not psychiatrically board.

There were also several hospital characteristics that were associated with psychiatric boarding. More patients underwent psychiatric boarding in the Northeast compared to all other regions. In addition, boarding was more frequently observed for patients that lived in a metropolitan area compared to all other non-metropolitan areas. A model that predicted the likelihood of psychiatric boarding was also performed using multiple logistic regression via backwards stepwise elimination. The final significant variables in the model were inpatient disposition, the combined total charges for ED services and inpatient services, the number of procedures, and the hospital's teaching status. The odds of boarding were nearly five times higher for patients that had a routine inpatient disposition when compared to all other inpatient dispositions.

This study examined psychiatric boarding times in the ED using the HCUP NEDS 2016-2017 database and found that it is not possible to identify all patients undergoing psychiatric boarding solely using CPT and ICD-10-CM codes. Other studies have found that the prevalence of psychiatric boarding is much higher than the 0.06% prevalence of psychiatric boarding that was found in the present study (e.g., Hoffmann et al., 2019; Nolan et al., 2015). Physical restraint use was also less frequently documented in the present study compared to prior studies that examined physical restraint use among patients undergoing psychiatric boarding. A standardized definition for psychiatric boarding is needed in order to properly identify patients undergoing this process. This will ensure that the short-term and long-term

effects of boarding in the ED are examined. By having a better method to identify these patients, improved methods for care for these patients can also be produced and evaluated.

Chapter 4 presents results from a mixed-methods Qualtrics survey that was administered to nurses who had ever worked in the ED. Nurses were specifically chosen as the study participants because the nurses' involvement and actions greatly shape how patients' experience their stay in the ED (Harris et al., 2016). Information was gathered from nurses about their demographics and the characteristics of their hospital. The Opening Minds Scale for Health Care Providers (OMS-HC; Modgill et al., 2014), was used to assess stigmatizing attitudes of nurses towards patients that are mentally ill and the Behavioral Health Care Competency (BHCC; Rutledge et al., 2012) was used to assess self-reported competencies related to caring for patients with mental health concerns. An additional survey was used that was adapted from the Attitudes of Clients and Nurses toward the Rights of Hospitalized Psychiatric Clients survey. This survey was originally used to assess nurses' beliefs about the rights of patients that are hospitalized and undergoing psychiatric boarding (Ebrahimi & Dehno, 2018). However, it was edited in the present study to assess nurses' attitudes towards patients undergoing psychiatric boarding.

There were 44 nurse respondents included in the final sample. Nurses that believed that psychiatric boarding was a problem were more likely to not have an emergency nursing certification, have more years of nursing experience, additional years of ED experience, and work in hospitals where virtual monitoring was not utilized. Nearly all hospitals utilized sitters in some capacity but only 54.55% of hospitals utilized a type of virtual monitoring for patients undergoing psychiatric boarding. Nurses with greater positive attitudes toward persons undergoing psychiatric boarding were more likely to have fewer stigmatizing attitudes towards persons with mental illness, as well as have a greater level of all perceived behavioral health care competency measures. When assessing stigmatizing attitudes towards patients that are mentally ill, this study found that nurses that believed psychiatric boarding was a problem were more likely to have less stigmatizing attitudes and have a greater perceived ability to care for patients with behavioral health concerns. When nurses were asked to describe the benefits of psychiatric boarding, common responses included keeping the patient mentally safe and physically safe. In most EDs, treatment

was not commonly started for patients and counseling was not provided. Nurses had several suggestions for improvement and the most common improvement was to make changes to the physical environment in the ED.

Research Limitations

This dissertation has several limitations related to each study and overall limitations. Chapter 2 presented results from the systematic literature review examining what is known about psychiatric boarding with regards to the process, waiting times, and waiting period. The factors that contributed to psychiatric boarding and the outcomes of the process were also explored. However, due to the different terminology used to describe psychiatric boarding, it is possible that literature was missed and not included. Due to the lack of a standardized definition for psychiatric boarding, some studies solely examined ED length of stay and never mention the term 'boarding,' regardless of how many hours or days the patient remained in the ED. In addition, many of the more extended lengths of boarding (e.g. days to weeks) were not described in the empirical literature but rather in news briefs or dissertations. It is possible that this review still represents an incomplete view of psychiatric boarding.

Chapter 3 contains the second article that examined psychiatric boarding in the HCUP NEDS 2016-2017 database. This large, nationally representative ED database was used to determine the prevalence of psychiatric boarding using ICD-10-CM codes and CPT codes. The codes were used to help identify patients that were boarding in the ED for greater than one calendar day and also had a psychiatric examination. This produced a psychiatric boarding prevalence that was much smaller than psychiatric boarding estimates that used a small sample of local hospitals or other national databases, such as the National Hospital Ambulatory Medical Care Survey. A standard definition is needed for psychiatric boarding, specifically related to length of time when a psychiatric boarding episode officially begins. Given the nearly ubiquitous use of ICD-10-CM codes and CPT codes in the United States, creating a code for psychiatric boarding would allow for better observation of psychiatric boarding at both the state and national level.

Chapter 4 contains the third article of this dissertation that explores ED nurses' direct experience with caring for patients that are undergoing psychiatric boarding. The survey was distributed through several convenience sampling distribution channels and a large percentage of respondents were nursing students at one large university in North Carolina. This could have led to the study results primarily representing the status of nursing and psychiatric boarding in North Carolina and the results may not represent the overall status of psychiatric boarding across the entire United States. In addition, the survey asked nurses to self-report the frequency of different psychiatric boarding practices, which may inherently be inaccurate given the inherent recall biases of self-report. Survey respondents may have selected responses that they believed were more socially desirable, given the nature of the survey topic. In addition, the various sampling methods that were used could have introduced alternative explanations and conclusions of this study must be met with caution.

Implications for Policy and Practice

There are several important implications for both policy and practice. Psychiatric boarding is a topic that has been subject to government regulation given the frequent involvement of patients in the civil commitment process. Washington state's Supreme Court actually made psychiatric boarding an illegal practice in an attempt to end psychiatric boarding in 2014 (Appelbaum, 2015). But without additional inpatient psychiatric beds, psychiatric boarding continued. Ending the practice of psychiatric boarding will take systemic changes, so efforts may be focused on improving the experience of psychiatric boarding, given that the practice is unlikely to end soon.

Given the results of this dissertation, providing psychiatric care to patients that are psychiatrically boarding in EDs is important so there is not a delay in psychiatric care. This dissertation also highlighted the importance and need for a standard definition of psychiatric boarding in policy, research and practice. On the institution level, it is important for EDs to identify which patients are psychiatrically boarding because they represent a vulnerable patient population that is often overlooked in the ED. Since patients are not able to be transferred to where psychiatric care is typically given (an inpatient psychiatric ward), bringing the psychiatric services to the patient in the ED is an alternative. This dissertation found that

virtual monitoring was common in EDs which may mean that EDs have a high technology capacity and psychiatric services could be provided virtually to further save time and money. Increased monitoring of patients that are undergoing psychiatric boarding in the ED is also important given the number of medication errors, frequency of chemical and physical restraint use, and physical comorbidities that patients undergoing psychiatric boarding often have. In addition, changes to the physical environment in the ED have been extensively discussed in literature but rarely implemented in the ED. This may be due to the high cost associated with making physical changes to the ED building itself. However, even small physical changes may have an effect on patient and staff experience, such as having a day and night lighting schedule, but further low-cost physical changes would be beneficial to explore.

Suggestions for Future Research

Future research on psychiatric boarding begins with better identification the problem, which begins with creating a standard national definition for psychiatric boarding (e.g., 8 hours length of stay in ED, 2 hours after admitting decision is made). In addition, one of the root causes of psychiatric boarding is a lack of inpatient psychiatric beds. Additional research is needed to determine if increasing the number of inpatient psychiatric beds will have a significant effect on psychiatric boarding times. In the immediate short term, a standard algorithm or care plan for patients undergoing psychiatric boarding in the ED is needed to identify best practices to care for these patients while they are in the ED. In order to create this algorithm or care plan, additional research is needed to determine if different modalities of care in the ED are associated with different short-term and long-term outcomes.

Conclusion

This three article dissertation critically examined psychiatric boarding in the ED. Psychiatric boarding times varied and are difficult to study due to a lack of a standard definition for the length of boarding. The length of stay in the ED also varies across the United States and this may be in part due to different laws surrounding emergency holds or civil commitments. Establishing a best practices protocol for caring for patients undergoing psychiatric boarding in the ED is needed in order to make sure ethical treatment is consistently provided to this vulnerable patient population.

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