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## **An Evaluation of Preexisting Psychiatric Diagnosis: Patient Outcomes in an Intensive Care Setting**

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An Evaluation of Preexisting Psychiatric Diagnosis:

Patient Outcomes in an Intensive Care Setting

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing

Practice at the University of Kentucky

By

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Pleasureville, KY

2019

## Abstract

**BACKGROUND:** Mental health is a state of well-being in which an individual is able to acknowledge ability levels, cope with the normal stresses of life, be a productive member of society and contribute to the community. An important consideration for DNP prepared nurses is implementing principles of the Collaborative Care Model as a guiding framework to improve access to evidence-based mental health care in a medical care setting.

**PURPOSE:** The purpose of this DNP project was to examine the demographic, clinical and treatment characteristics of patients with both medical and psychiatric diagnoses admitted to an Intensive Care Unit (ICU) of a hospital in a large healthcare system located in a metropolitan area in the southeast United States.

**METHODS:** For the study in this DNP project, an exploratory, descriptive design with a retrospective medical record review was conducted on 100 patients with both medical and psychiatric diagnosis admitted to the ICU between July 1, 2018 and December 31, 2018. This study was an exploration of demographic, clinical and treatment characteristics of patients with both a medical and psychiatric diagnosis admitted to the ICU during the study period. The relationships among and between the psychiatric medication reconciliation status, type of psychiatric treatments received, length of stay and discharge disposition of the study sample were explored.

**RESULTS:** Those who had psychiatric diagnosis on admission were more likely to be female (60.0% vs. 40%), have a neurological condition as the admitting diagnosis (63%) and suffer from co-existing medical diagnosis including cardiac/pulmonary (83%). The nonexclusive, primary

psychiatric diagnosis was anxiety (75%), follow by depression (63%) with nearly three quarters of the sample on a psychiatric medication prior to admission (71%). The most common psychiatric medication was an antidepressant/mood stabilizer (56%). There were no significant differences in admission diagnosis, co-existing medical diagnosis, restraint use, PRN medication use, psych consult, disposition or length of stay between those with and without psychiatric medications on admission.

**CONCLUSION:** There remains limited research concerning collaborative care in the inpatient healthcare setting. The preliminary findings of this DNP project suggest the need for more exploratory research that can guide practice and policies to enhance care for patients with psychiatric and medical comorbidities in the ICU setting.

## Dedication

This work and my DNP Project are dedicated to my family. To Rex, thank you for rearranging numerous things in our life and “hanging on to the rollercoaster ride” we had to take so that I could pursue my doctoral education academic achievement. To Ethan, Isabelle, Alice and Cameron, I hope that I have inspired you to follow your heart and taught you that with hard work and dedication you can achieve your dreams. To my mom, thank you for picking up all of my slack and always being there. Thank you for making sure that I was able to continue to do the mom activities with the kids that I love while also accomplishing my dreams.

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I would also like to say a special thank you to the Intensive Care Unit. Thank you, my work family, for all the years of support. I will truly miss you. Lastly, I would like to acknowledge that this Doctor of Nursing Practice project and program of study was fully funded through the University of Kentucky College of Nursing and Norton Healthcare academic practice partnership.

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An Evaluation of Preexisting Psychiatric Diagnosis:  
Patient Outcomes in an Intensive Care Setting

**Introduction**

A mental illness is defined as a change or alteration in a person's thinking, emotions, behavior or a combination of these conditions (American Psychiatric Association (APA), 2018). Mental illnesses can range from a phobia or intellectual disability, which does not limit one's functional abilities, to severe depression, schizophrenia, or substance abuse that may compromise functioning and require hospitalization. A comorbid mental health condition occurs when an individual suffers from co-existing mental and physical health conditions simultaneously. A recent report from the Substance Abuse and Mental Health Services Administration (SAMHSA, 2017b) defined comorbid mental and physical illnesses as the presence of two or more diseases that not only co-exist but also tend to exacerbate prognosis and precipitate the number and severity of complications, thereby compromising efficacy of treatments.

With the spiraling, unsustainable costs of healthcare today and the focus on reducing overall healthcare costs, the cost of treatment for co-existing conditions is also a variable of concern. Yoon and Bernell (2013) reported that adverse mental and physical illness events are associated with as much as a threefold increase of clinical office visits and medication treatment. For example, in comorbid diabetes and depression, patients are on a downward spiral as poor glycemic control can lead to an increase in symptoms of depression, which in turn leads to compromises in self-care as well as poor medication adherence and poor dietary regimens and glycemic control. Although integrating the care of mental and physical illnesses reduces the overall severity and cost of both conditions (SAMHSA, 2017b), current healthcare practice tends

to address and treat these conditions separately. Increased education about mental illness to primary care providers and a care delivery system designed around the efficacy of services using a collaborative care model can provide a more integrated health model and lower overall healthcare cost (Rolls, Davis, & Coupland, 2002).

### **Problem Statement**

The majority of research to date reports on medical and psychiatric illnesses separately or only medications for physical conditions. Yet, fully integrated care, which provides comprehensive care for both medical and psychiatric illnesses, can improve patient outcomes and quality of care (Reiss-Brennan, et al., 2016). The majority of providers in the ICU setting do an excellent job of managing patients' physical needs. However, patient's psychiatric needs may be unmet, particularly when psychiatric medications are abruptly stopped upon admission to the ICU, despite the occurrence of accurate medication reconciliation. The practice of abrupt discontinuation of psychiatric medications can cause an exacerbation of patient's symptoms and possibly result in psychosis (National Institutes of Mental Health, 2010). These reports support the importance of studying the characteristics of patients admitted to the ICU with a psychiatric diagnosis and how psychiatric diagnosis influences clinical and treatment use modalities.

### **Study Purpose/Aims**

The purpose of this study was to examine the demographic, clinical and treatment characteristics of patients with both medical and psychiatric diagnoses admitted to an Intensive Care Unit (ICU) of a hospital in a large healthcare system located in a metropolitan area in the southeast United States.

The specific aims were to:

- Conduct a retrospective electronic medical record review to examine the frequency in which patients with a psychiatric diagnosis are admitted to the ICU.
- Examine the frequency in which psychiatric medication reconciliations are completed for patients with a psychiatric diagnosis who are admitted to the ICU.
- Examine the relationship of a prior to admission psychiatric medication use and use of recommended treatment modalities, patterns of service use and disposition upon discharge from the hospital.

### **Theoretical Model**

The theoretical model chosen to guide this Doctorate of Nursing Practice project was Lydia E. Hall's theory of Core, Care and Cure (1964). Kimball and colleagues (2017) suggested that Hall viewed patients as three overlapping parts; the core (patient's psyche), the care (intimate care of the body) and the cure (the medical aspects of the patient). Hall described the cure as the primary factor considered when a patient entered a hospital in the acute phase of a disease. Because of the primary focus, Hall suggested that the hospital environment created a difficult psychological experience for the ill individual. For instance, when the primary focus is on cure, all efforts are focused on giving medications or treatments to resolve or improve the pathological cause of the disease. In addition, healthcare providers tend to spend the majority of time working towards a medical cure. However, providers may give little thought to the patient's psychological response to how the disease and treatment. In contrast, Hall's Core, Care and Cure Theory expands on the curative thinking to include a holistic, collaborative approach of caring for patients suffering both medical and mental illnesses to include how the pathology affects the patient's core. In sum, Hall believed all three parts were equal and required equal attention (Alligood, 2014).

## **Evidence Based Intervention**

Despite Hall's theory being developed in the 1960s, multiple collaborative or integrated care models have only begun to emerge within the last 10 years in an effort to provide a more holistic approach to patient care. One evidence-based intervention is the Collaborative Care Model (CCM) developed by the American Psychiatric Association (APA) and the Academy of Psychosomatic Medicine (APM). The CCM operationalizes the principles necessary to improve access to evidence based mental health care in a medical care setting (APA, 2016). The CCM provides an approach for both chronic medical and mental illnesses. The focus of the CCM is on four core elements of integrating mental and primary health care. The core elements specify that care must be: 1) team-driven, 2) population-focused, 3) measurement-guided, and 4) evidence-based. Although the CCM was originally designed to be implemented in a primary care setting with the primary care physician (PCP) as the team leader, it can be expanded to all patient care settings which involve multiple disciplines, including those who are providers in hospital settings.

The CCM stresses the need for a team based approach to patient care to include a multidisciplinary group of professionals such as: 1) primary care physicians; 2) advanced practice registered nurses; 3) case managers; 4) registered nurses; 5) social workers and 6) mental health practitioners (APA, 2016). Typically, the primary care practitioner is the ultimate decision maker in the patient's care yet can readily draw on the expertise of the numerous other professionals of the CCM team. The second core element of the CCM is the basis of population-focused care and how the individual affects the overall health of a set population. In using systematic, disease-specific, patient-reported outcome measures the CCM is measurement guided and able to track individual patient health as well as the overall population health. Measureable outcome tracking

allows for the identification of modifiable outcomes in which evidence-based interventions can be implemented to improve the overall individual and population health.

### **Literature Review**

Approximately 20% of all adults in the United States will experience a mental illness and of those, 9% will have a substance abuse problem (APA, 2018). In Kentucky alone, the average number of mentally unhealthy days was four out of the preceding 30 days studied. In addition, during the year preceding the report, Kentucky's incidence of adults experiencing a serious mental illness was greater than 5%, compared to the average of 4% in the United States (SAMHSA, 2017a). Furthermore, more than 40% of all individuals in the United States have a chronic physical illness (Centers for Disease Control and Prevention (CDC), (2012). People with co-existing mental and physical health conditions tend to have even higher rates of chronic health conditions including hypertension, asthma, diabetes, heart disease and stroke that are often secondary to the side effects of psychotropic treatments, disparities in health care access and utilization of services (De Hert et al., 2011).

Mental illness can lead to an impaired ability to engage in adequate self-care of the co-existing physical illness, thereby contributing to poor health outcomes and an increase in the overall health care cost. Recent reports indicate that individuals who suffer from co-existing mental and chronic physical health conditions experienced healthcare costs 75% higher than those without a co-occurring mental and physical health illness (SAMHSA, 2017b). Even so, healthcare professionals too often make a clear distinction between mental and physical illness when one condition should not be addressed to the exclusion of the other.

Comorbid mental and physical illnesses will affect an increasing number of individuals as advances in medicine increases the likelihood of a prolonged life without curing diseases, thus resulting in two or more co-existing illnesses (World Health Organization (WHO), 2005). In addition, the overall increase in life expectancy, increased risk for late-onset diseases and unhealthy life styles may contribute to an increased number of mental and chronic physical illnesses in the population (WHO, 2015). In accordance with the increased number of chronic mental and physical illnesses, treatment interventions are likely to result in greater use of medications in treatment, especially for those with chronic illnesses. For example, the increased number of medications for chronic illnesses highlights the importance of The Joint Commission 2019 Hospital National Patient Safety Goal of accurate and complete medication reconciliation (The Joint Commission, 2018).

Medication reconciliation is the process of generating the most accurate listing of a patient's medications, including the drug name, dosage, frequency and route (Institute for Healthcare Improvement, 2019). The goal of medication reconciliation is for the patient's medication listing to be reviewed at all transition points as the patient transverses the healthcare process, in order to assure correct, appropriate continuation of the patient's medications. Discrepancies in medication reconciliation create inadvertent inconsistencies across care and leave patients vulnerable to adverse drug events. Although the inconsistencies typically are unintentional, a 2018 study by the Agency for Healthcare Research and Quality (AHRQ) found that more than 50% of hospitalized patients' medication lists contained at least one discrepancy and of those, 40% were identified to have the potential to cause harm.

Medication reconciliation is especially important for patients admitted to the ICU. Bell et al. (2011) reported an increased risk of discontinuation of medications for physical conditions upon

admission to the ICU when compared to patients who are hospitalized but do not have an ICU admission. Despite having a documented preexisting mental illness, greater than 20% of patients reported developing depression during an ICU admission (Davydow, Gifford, Desai, Bienvenu & Needham, 2009). Furthermore, approximately 40% of patients admitted to the ICU were diagnosed with anxiety following admission (Peris, et al., 2011). The nature of ICU admission criteria and subsequent therapies place patients at risk for stressors, including but not limited to, respiratory insufficiency, discomfort of tube insertions and labs draws, activation of the inflammatory cascade which includes brain inflammation and potential delirium with psychotic experiences relating to a lack of appropriate day-night cycling (Davydow et al., 2009).

With approximately 20% of adults experiencing a mental illness prior to admission to an ICU, a lack of appropriate medication reconciliation can truly create harm and risks for patient safety (APA, 2018). Patients admitted to the ICU are already extremely physically ill and abruptly discontinuing prescribed psychiatric medications can lead to changes in sleep, increased anxiety, difficulty with emotions, sadness or tearfulness, fatigue, memory or concentration problems, flu-like physical symptoms and diarrhea or constipation (Ostrow, Jessell, Hurd, Darrow & Cohen, 2017). Along with the physical symptoms, abruptly stopping psychiatric medications can lead to a reemergence of mental illness symptomatology, possibly create or increase existing suicidal ideations as well as explosive outburst and psychosis which may result in an increased length of stay (Ostro et al., 2017). Lastly, stopping psychiatric medications can precipitate a loss of control resulting in a setback in treatment regimens for patients with a mental illness, increasing the loss of autonomy typically associated with an ICU admission. In order to obtain the correct treatment regimen, patients with a mental illness may be forced to tolerate suffering and symptoms from four to six weeks before obtaining an effective medication state (National Institute of Mental Health

(NIMH), 2016). Patients admitted to the ICU are at high risk for poor physical recovery without the added consequences associated with complications resulting from the lack of medication reconciliation.

## **Agency Description**

### **Setting**

This DNP project was implemented at an Intensive Care Unit (ICU) of a hospital in a large healthcare system located in a metropolitan area in the southeast United States. The ICU in the study setting consists of 36 beds on two units of the acute-care setting. These combined ICU units serve approximately 250 patients monthly; the majority have neurologic/neurosurgical, cardiac, pulmonary, medical, surgical and renal critical care needs. In addition, many have several comorbid medical illnesses in addition to a psychiatric diagnosis.

### **Target Population**

The target population for the study was patients admitted to the ICU with a service level of intensive and who had both psychiatric and medical diagnoses. The study period was July 1, 2018 to December 31, 2018 during which time, 230 medical records met criteria for study inclusion out of the total 405 patients admitted to the ICU. Using a random number generator, a random sample of 100 medical records was selected from the 230 eligible records.

Inclusion criteria for the study from the medical records of patients were: a) 18 years of age or older, b) admitted with a service level designation of intensive to the ICU, c) admitted between July 1, 2018 and December 31, 2018, and d) a documented past or current psychiatric diagnosis. Exclusion criteria were: a) admitted or discharged with a legal status of incarceration.

## **Congruence of DNP Project and Norton Healthcare**

The mission of the healthcare organization and hospital of the study site is to provide quality health care to all those in need, in a manner which responds to the needs of the community and honors the faith heritage. This mission is achieved through vision and values statements about being the most comprehensive, strongest health care organization who sets the standard of quality care in the region and demonstrating stewardship of resources. This study, which examines the demographic, clinical and treatment characteristics of patients with a psychiatric diagnosis in the ICU, contributed to the organization's mission, since assessing the appropriate standard of care and resources for patients with a psychiatric diagnosis could result in improved patient care and safety.

## **Description of Stakeholders**

The stakeholders of this study included: the chief executive officers (CEOs), chief nursing officers (CNOs) and chief financial officers (CFOs); hospitalist providers; intensivist providers; registered nurses and patients with mental illnesses. The CEOs, CNOs and CFOs are in charge of the day to day operations of the hospitals, assuring the quality of care and financial stewardship. The hospitalist and intensivist providers are on the front line of patient care, responsible for the reconciliation of patient medications and ultimately responsible for increased length of stays with subsequent cost. The hospital and intensivist providers along with hospital nurses will also be directly impacted by the implications and practice change suggestions which emerge from this study. Lastly, patients who are diagnosed with a mental illness are the key stakeholders as they will benefit from determining if collaborative care is being performed at the hospital ICU and any practice change implications.

## **Site-specific Facilitators and Barriers to Implementation**

Multiple facilitators within the organization and hospital helped in the process of implementing this study. The chief nursing officer, ICU director and ICU manager approved and supported the study. The Director of Patient Care Services and the organization's data analytics team was helpful in extracting critical data points from the medical records for review. An important barrier identified in the study was the subjective nature of the documentation of mental health diagnosis within the electronic medical record system. In addition, there are a limited number of psychiatric providers within the healthcare system and therefore the majority of documented preexisting, mental illnesses were self, patient reported.

## **Project Design**

This study was based on a descriptive design with a retrospective medical record review to extract data on 100 randomly selected medical records of patients admitted to the ICU between July 1, 2018 and December 31, 2018 with both medical and psychiatric diagnoses. The data extracted included the patients' demographic, clinical and treatment characteristics, including the admission diagnosis, co-existing medical diagnosis, psychiatric diagnosis, frequency of psychiatric medication reconciliation, the use of recommended treatment modalities, patterns of service use and disposition upon discharge.

## **Project Methods**

### **Procedure**

A university medical Institutional Review Board (IRB) and the healthcare organization's research office approved the study. Secondary to the retrospective nature of the study, a waiver of documentation of informed consent was obtained as part of the approved IRB application.

Following study approval, data analytics staff compiled a list of potential medical records meeting the study inclusion criteria. The Principal Investigator (PI) then reviewed each medical record for inclusion and exclusion criteria. Once a list of eligible medical records was compiled, a sample of 100 medical records was selected using a random number generator. Each selected medical record was then assigned a unique identification number known only to the PI. The PI then reviewed each of the selected medical records to obtain information related to the variables listed in Table 1. This information was recorded on a paper data collection tool (Appendix A). The data were then entered into an Excel spreadsheet and coded for use in SPSS. Due to the span of the data points within the admission and co-existing medical diagnosis, type of psychiatric medication, sitter use, time surrounding psychiatric consults, race/ethnicity and marital status, some original categories were narrowed to facilitate interpretation of analysis.

## **Measures and Instruments**

The following measures were extracted from the electronic medical records (Table 1):

1. **Diagnoses:** The diagnoses recorded included the admission diagnoses (neurological, cardiac/pulmonary and other), co-existing medical diagnoses (neurological, cardiac/pulmonary and other) and psychiatric diagnoses (schizophrenia, bipolar disorder, depression, anxiety, post-traumatic stress disorder and intellectual disability). The diagnoses data were examined using frequencies and percentages.
2. **Medication Reconciliation:** The medication reconciliation reviews were used to determine if the patients were on psychiatric medications prior to admission and, if so what type the patients were taking (antipsychotic, antidepressant/ mood stabilizer and/or anxiolytic), in addition to whether or not the medications were given to the patients during

admission. The medication reconciliation data were examined using frequencies and percentages.

3. **Restraint use:** Patient history of restraint use and type of restraints (medical or behavioral) during the hospital stay were collected. The restraint use was compared to the prior to admission psychiatric medications using chi-square analysis and the type of restraints used were examined with frequencies and percentages.
4. **Sitter use:** Patient history of sitter use during the hospital stay was explored. The proportion of patients who were on a prior to admission psychiatric medication and had a sitter ordered were examined using chi-square analysis.
5. **As needed medications:** The use of as needed or PRN medications with the indication for use listed as anxiety or agitation was recorded. The proportion of patients who were on a prior to admission psychiatric medication and had an as needed medication ordered were examined using chi-square analysis.
6. **Psychiatric consult:** Orders were reviewed for psychiatric providers consults during the hospital stay along with the time between admission and when the order was placed, as well as the duration between when the order was placed and the psychiatric provider completed the consult. The proportion of patients who were on a prior to admission psychiatric medication and had a psychiatric consult ordered were examined using chi-square analysis.
7. **Length of stay:** Total number of hours patients were admitted to the ICU and the overall hospital stay were collected. The length of stay data were examined proportionately to the four prior to admission psychiatric medication groups using Mann-Whitney U analyses and interquartile ranges.

8. **Discharge disposition:** The location of the patients upon discharge from the hospital (home, rehab or deceased) were recorded. Chi-square analyses were used to examine the differences between the four medication groups and the discharge disposition.
9. **Demographics:** The demographic data included gender (male vs. female), age (in years), race (white, black, or Hispanic) and marital status (partnered or non-partnered) were collected. The demographic data were examined using frequencies and percentages and means and standard deviations.

## **Results**

### **Sample Characteristics** (Table 2 & 3)

The sample ( $N=100$ ) was primarily female (60%), white (90%), non-partnered (55%) and on average 54.02 ( $SD= 15.01$ ) years of age. An overwhelming majority of the sample had a primary admission diagnosis of a neurological condition (63%), followed by other diagnosis (22%) and finally cardiac/pulmonary diagnosis (15%). The sample suffered from a significant percentage of co-existing medical diagnoses including cardiac/pulmonary (83%) and other (83%) followed by neurological (53%). The nonexclusive, primary psychiatric diagnosis was anxiety (75%), followed by depression (63%). Nearly three quarters of the sample was on a psychiatric medication prior to admission (71%) including antidepressants/mood stabilizers (56%), followed by anxiolytics (33%) and antipsychotics (16%).

### **Differences in Prior to Admission Psychiatric Medication Reconciliation Completion**

As illustrated in Table 4, of the 71% of the sample that was on a psychiatric medication prior to admission, antipsychotic medications (68.8%) and antidepressant/mood stabilizers (76.8%) were restarted within 23 hours of admission at a significantly higher frequency when

compared to anxiolytic medications (39.4%). Of the sample whose medications were not started prior to 23 hours from admission, all three medication groups (20.0%, 38.5% and 15.0%) had a relatively low frequency of having a prior to admission psychiatric medication started between 24 hours and discharge. On the contrary, greater than 70% of the sample had prior to admission psychiatric medications restarted or continued at discharge. While those in the sample on anxiolytic medications had the lowest continuation of medication at less than 23 hours from admission, the frequency of anxiolytic medications restarted at discharge nearly doubled (39.4% vs. 72.7%). In addition, of the portion of the sample on antipsychotic medications ( $N=16$ ), almost one-third of this group (68.6% vs. 93.8%) was abruptly taken off the antipsychotic medication on admission and then restarted on the medication upon discharge (see Table 4).

#### **Treatment Modalities and Patterns of Service Use differences between those with and without prior to Admission Psychiatric Medications.**

Table 5 presents the differences in admission diagnosis, co-existing medical diagnoses, restraint use, PRN medication use, psychiatric consults and disposition upon discharge between the sample with and without a prior to admission psychiatric medication, along with differences between the three psychiatric medication classifications. Neurological admitting diagnoses (68.8%, 71.4%, 66.7% and 48.3%) surpassed cardiac/pulmonary and other diagnoses in all medication classifications, yet had the lowest percentage among the sample who were not on a prior to admission psychiatric medication. There were no significant trends among co-existing medical diagnoses in the different medical classifications. Restraint use overall was relatively low, less than 40%, in the study sample across all medication classifications. Documentation of psychiatric consult orders was also proportionately low across the entire sample population, with the highest percentage being among those on an antipsychotic medication (25%). Overall, among

all medication classifications, the majority of the sample were discharged home followed by rehabilitation.

While all of the above data showed trends among some of the medication classifications, the only significant data involved PRN medication use among those who were on an anxiolytic medication prior to admission. Of the sample who were on an anxiolytic prior to admission, both the percentage of those who used a PRN medication (yes) and those who did not (no) was statistically significant (45.5% and 54.5% respectively).

### **ICU and Hospital Length of Stay (LOS) difference between those with and without prior to Admission Psychiatric Medications**

Table 6 presents the differences between ICU and hospital length of stays (LOS) when compared to the four medication classifications. The ICU LOS of all four medication classifications varied minimally within a few hours of one another. However, when compared to those taking an antidepressant/mood stabilizer prior to admission, those taking an antipsychotic or anxiolytic prior to admission had an overall longer median hospital LOS (59.0 hours vs. 90.0 hours). Overall, there were no significant differences in the ICU or hospital LOS in regards to the medication classifications.

### **Discussion**

This study examined the demographic and clinical characteristics of patients with both medical and psychiatric diagnoses admitted to an ICU, as well as the impact of prior to admission psychiatric medications on treatment characteristics. Based on literature searches (CINAHL, Healthsource, MEDLINE and Proquest) studies of this type have not been reported and to my knowledge, this is the first study to make comparisons between the type of psychiatric medications

a patient is taking and the ICU treatment characteristics. The main finding of this study was the significantly higher percentage of the sample who suffered from a prior to admission psychiatric diagnoses in comparison to the national average. In the United States, an average of 20% of Americans suffering from a psychiatric illness yearly (APA, 2018). In this study, history of psychiatric illnesses was largely self-reported; however, of the 405 patients admitted during the study period 230 (56.8%) had a psychiatric diagnosis. Although this study finding cannot be generalized, given the random sample determined for analysis, it is reasonable to question whether or not half of all patients admitted to the ICU at the study hospital would have a psychiatric diagnosis prior to admission requiring the attention of the hospital personnel.

In addition to the high percentage of the study sample having a psychiatric diagnosis, medical records indicated that 75% had anxiety, 63% had depression and 71% were on a psychiatric medication prior to admission. These percentages are higher than national estimates, thus re-affirming the profound prevalence of psychiatric conditions within the sample population. However, despite the high prevalence rates found in this study, it does not account for additional portions of the population which may develop anxiety, depression or PTSD as a result of the ICU stay. With advances in medicine, patients are surviving critical illnesses which in the past were not survivable (Rattray & Hull, 2008). Along with this increasing survival rate, there is a high likelihood that there will be increases in significant emotional and psychological problems secondary to isolation, discomfort of tube insertions, sleep deprivation, physical confinement, time-spacial disorientation, sensory overstimulation, depersonalization and loss of autonomy (Davydow et al., 2009; Peris et al., 2011). In addition, with greater than 50% of the sample having a preexisting psychiatric diagnosis as well as the potential for intra-intensive care unit psychiatric

complications, the need is crucial for early recognition and intervention of psychiatric symptoms among hospital ICU patient populations.

The second major finding of this study was the lack of correct medication reconciliation of psychiatric medications. Although not statistically significant, a noteworthy amount of the sample had the psychiatric medications abruptly stopped or held for a number of days. Findings revealed that 8 out of 56 patients on antidepressant/mood stabilizers were restarted on their psychiatric medications during their hospital stay, compared to those on antipsychotics (4 out of 16) or anxiolytics (17 out of 33). Again while neither statistically significant nor generalizable, the statistics in the sample indicated that 4 patients had abrupt interruptions in antipsychotic medication prescriptions and 17 patients had abrupt interruptions in anxiolytic medication prescriptions. While provider reasoning for stopping the medications were frequently not listed, patients who have abrupt interruption in medications are subject to significant side effects or withdrawal symptoms that may include nausea, vomiting, diarrhea, trouble sleeping, anxiety or agitation which can compound the medical diagnoses and increase intra-intensive care unit psychiatric complications.

The final major finding of this study was the high proportion (63%) of the sample with a neurological admitting diagnosis. Even though the site of the study includes a comprehensive stroke center accepting stroke patients from a wide geographical region, the high percentage findings were not expected secondary to the ICU being a medical-surgical ICU. The neurological diagnoses ranged from hemorrhagic or ischemic stroke to brain tumors and patients with uncontrolled seizures. All of these neurological diagnoses place the study population at an increased risk for psychiatric diagnosis, especially depression, anxiety or adjustment disorders. For instance, Hacket and colleagues (2012) reported that approximately one-third of all patients

who have experienced a stroke will suffer from post-stroke depression within the first year. In addition, Arnold et al. (2009) found that almost half of all patients with brain tumors suffer from depression. Abrupt interruptions of medication management can also have an effect on the central nervous system. For example, the combination of the physiological stress response may result in activation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system. Therefore, a sudden change in neurotransmitter functioning that is likely to result from discontinuation of psychiatric medications could lead to significant physical and psychiatric complications for patients. While the physiological stress from a stroke may not be mediated, accurate medication reconciliation of psychiatric medications in ICU patients by providers can potentially limit problems resulting from changes in the physiologic functioning of neurotransmitters.

Overall the major findings of this DNP study were the increased rate of prior to admission psychiatric diagnoses, the lack of appropriate medication reconciliation of psychiatric medications and the abundance of neurological patients within the sample. These findings support the necessity for: thorough assessments by healthcare providers to assure awareness of the patient psychiatric diagnosis; focused education regarding psychiatric diagnoses emphasizing collaborative care, and treatment emphasizing appropriate reconciliation of psychiatric medications for patients in ICU.

### **Limitations**

A few limitations should be considered when interpreting the findings of this study. First, there was a limitation in that the majority of the prior to admission psychiatric diagnoses found in the medical records were patient reported versus physician reported. For instance, because the majority of the psychiatric diagnoses were reported by the patients, the information was listed in the past medical history section of the chart instead of the problem list which is provider designated

with associated diagnostic codes. Therefore, the reporting method led to difficulty when identifying patients who meet the inclusion criteria; this limitation may have also contributed to the finding related to increased rates of prior to admission psychiatric diagnoses in comparison to national averages.

Secondly, the study data regarding medication reconciliation of psychiatric medications may not show whether the complete process of medication reconciliation was completed. Medication reconciliation requires the admitting nurse or provider to review the medication list with the patient, family members or patient pharmacy to verify correct medications and dosages. Because of EMR computer charting, it was not possible to explore whether the prior to admission medications were actually reviewed with the patient on admission or simply carried over from a prior visit. Nor could it be determined if medications were linked to a diagnostic code, thus limiting the ability to see if, for example, an antipsychotic medication was being used as an adjunct treatment for resistant depression or true psychotic symptoms.

Third, the increased rate of neurological admitting diagnoses (63%) may have influenced the rates of prior to admission psychiatric diagnoses. Patients with stroke, brain tumors and uncontrolled seizures have a high incidence of depression and anxiety (Hackett et al., 2012; Arnold et al., 2009). However, this is consistent with the study setting of a comprehensive stroke center and it contributes to the importance of addressing study implications.

Lastly, with the exploratory descriptive nature of these study the data is not generalizable outside the current healthcare system. However, this study's data has confirmed prior observations and has value and utility in guiding changes in practices within the healthcare system to improve patient outcomes.

## **Implications for Future Doctoral Nursing Practice and Research**

### **Psychiatric Diagnoses, Treatment Modalities and Patterns of Service Use**

One recommendation regarding the prior to admission psychiatric diagnoses would be to expand the study time period and sample size, to assure that the increased rate of prior to admission psychiatric diagnoses is significant. If this is the case, the argument could be made to investigate the study facility in comparison to other facilities within the system to determine if there are more extensive trends between the admitting diagnosis and prior to admission psychiatric diagnosis. Additionally, with an extended study time period and sample comparison of demographics, an examination of treatment modalities and patterns of service use could be conducted between patients who have a prior to admission psychiatric diagnosis and those who do not. This might increase the chance of a more clear statistical comparison to determine if the prior to admission psychiatric diagnosis makes a statistical difference in the rate of restraint use, psychiatric consults, PRN medication use and length of stays.

A second recommendation regarding prior to admission psychiatric diagnosis, which would help clarify diagnoses within the medical records, would be to implement collaborative care within the healthcare system. The current care model within the study site deals with medical and psychiatric illnesses separately. Psychiatric illnesses are handled and a psychiatric consult placed only when the psychiatric illnesses supersedes the medical illness or becomes a major complication. This is supported by the minimal use (less than 25.0%) of psychiatric consults during the study period. Instituting the Collaborative Care Model developed by the American Psychiatric Association (APA) and the Academy of Psychosomatic Medicine (APM) across the healthcare system would operationalize psychiatric care from the primary care practice all the way

up through inpatient hospital stays. This would improve access to evidence-based mental health care across the entire healthcare system (APA, 2016).

### **Medication Reconciliation**

The recommendation for evidence-based nursing practice surrounding medication reconciliation would be to explore the current process. Currently, the study site's institutional policy is for the physician, physician's assistant, nurse practitioner or registered nurse to make a good faith effort to verify the patient's home medications with the listing in the electronic medical record from the patient, family members and/or significant others. However, problems may occur if patients are unsure of their medication list or unable to communicate with providers. In addition, the admitting provider may continue medications based on an expired list. Finally, not all of the patient's providers are linked through the same electronic medical record system. Further research is required to address limitations and barriers to correct medication reconciliation along with potential processes such as contacting patient pharmacies for current prescriptions or having the reconciliation process completed by pharmacist.

### **Implications using DNP Essentials**

In order to further examine the association of the demographic, clinical and treatment characteristics of patients with both medical and psychiatric diagnosis admitted to an Intensive Care Unit (ICU), a Doctoral Nursing Practice (DNP) graduate can be guided by principles evident in the domains of several of the DNP Essentials. They include: Essential II, Organizational and System Leadership for Quality Improvement; Essential III, Clinical Scholarship; Essential IV, Information Systems/Technology; Essential VI, Interprofessional Collaboration; and Essential VIII Advanced Nursing Practice (AACN, 2006).

DNP graduates are also prepared to conceptualize new care delivery models which are focused on the target population of patients in order to impact policies and procedures to meet the overall health needs of this population (AACN, 2006). Examples include investigating barriers at the system level that may need to be changed to help medical providers acknowledge psychiatric diagnoses; in addition, elimination of barriers can facilitate correct medication reconciliation among advanced practice registered nurses (APRNs), depending upon the practitioner's specialty. Specific scholarship efforts include additional retrospective chart reviews or a qualitative study to investigate the providers' and staffs' opinions about psychiatric diagnoses to uncover undue biases.

DNP Essential III states that the DNP graduate is capable of using analytic methods to: critically appraise existing literature; identify and compare variability between practice settings and national benchmarks; and determine and implement the best evidence for practice (AACN, 2006). It is important to build on the findings of this study to identify other areas for additional research as well as foster study by other DNP graduate who are prepared to appraise the literature for connections. Most important, it is essential for all providers including DNP graduates to apply this knowledge to solve the problems regarding patients with psychiatric conditions in general and those admitted to the ICU. These efforts will enable the DNP graduate's use of the combination of essentials III and VI to lead the implementation of evidence-based, collaborative care.

The DNP graduate has advanced preparation in leading interprofessional collaboration and overcoming hindrances to interprofessional practice; these skills can create highly fluid collaborative teams (AACN, 2006). With foundational knowledge and evidence-based research, the DNP graduate will be able to practice at the full scope of their APRN license and apply the broad range of competencies of the DNP role, for the purpose of leading the development of collaborative care models within the inpatient setting and between the inpatient and outpatient

settings. They will also be prepared to develop implementation strategies to educate inpatient providers in order to institute the collaborative care models.

Finally, within the context of APRN licensure, the DNP graduate will be able to apply Essentials IV and VIII, to improve the overall medical reconciliation process, thus assuring that patients' medication regimens are continued rather than interrupted during inpatient treatment. This too is an important area for additional research in order to better understand and eliminate the barriers and limitations of medication reconciliation on a system level as well as assess the efficacy of the current policies and procedures (AACN, 2006). Finally, DNP graduates will contribute to optimal quality of care and patient safety through the implementation of new, evidence-based interventions and development of policies and procedures to increase the accuracy of medication reconciliations. In addition, through the collaborative care model, the DNP can work to incorporate the recommendations of Murphy et al. (2009) in working to have a pharmacist complete the medication reconciliation or having staff contact the patient's outside pharmacy in order to obtain a current prescription list.

### **Conclusion**

Approximately 20% of all adults in the United States will experience a mental illness (APA, 2018). Furthermore, more than 40% of all individuals in the United States have a chronic physical illness. Still others have a co-existing mental and physical health condition and these patients tend to have even higher rates of chronic health conditions that are often secondary to the side effects of psychotropic treatments, disparities in health care access and utilization of services (CDC, 2012 & De Hert et al., 2011). There remains limited research concerning collaborative care in the inpatient healthcare setting. However, the preliminary findings of this DNP project suggest the need for more exploratory research that can guide practice and policies to enhance care for

patients with psychiatric and medical comorbidities in the ICU setting. In conclusion, additional research is needed to determine the needs of patients with co-existing conditions in acute care and ICU settings as well as comparisons of a collaborative care model with those currently in place.

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**Table 1. Measures**

Variable name	Measures	Data Source	Level of measure	Statistical analysis
Aim 1				
Admission Diagnosis	Neurologic Cardiac/Pulmonary Other	EMR	Nominal	Frequencies and Percentages
Co-existing Medical Diagnosis	Neurologic Cardiac/Pulmonary Other	EMR	Nominal	Frequencies and Percentages
Psychiatric diagnosis	Schizophrenia Bipolar Disorder Depression Anxiety PTSD Intellectual Disability	EMR	Nominal	Frequencies and Percentages
Aim 2				
Taking psych meds prior to admission	Yes or No	EMR	Nominal	Frequencies and Percentages
Classification of Psych med	Antipsychotic Antidepressant/ Mood Stabilizer Anxiolytic	EMR	Nominal	Frequencies and Percentages
Psych medication reconciliation status  <u>Antipsychotics</u>  - Continued in less than 23 hours from admission	(May not be mutually exclusive)    Yes or No	    EMR	    Nominal	    Frequencies and Percentages

- Restarted between 24 hours and discharge	Yes or No	EMR	Nominal	Frequencies and Percentages
- Restarted at discharge only	Yes or No	EMR	Nominal	Frequencies and Percentages
<u>Antidepressant/Mood Stabilizer</u>				
- Continued in less than 23 hours from admission	Yes or No	EMR	Nominal	Frequencies and Percentages
- Restarted between 24 hours and discharge	Yes or No	EMR	Nominal	Frequencies and Percentages
- Restarted at discharge only	Yes or No	EMR	Nominal	Frequencies and Percentages
<u>Anxiolytic</u>				
- Continued in less than 23 hours from admission	Yes or No	EMR	Nominal	Frequencies and Percentages
- Restarted between 24 hours and discharge	Yes or No	EMR	Nominal	Frequencies and Percentages
- Restarted at discharge only	Yes or No	EMR	Nominal	Frequencies and Percentages
Aim 3				
Restraints				
- ordered	Yes or No	EMR	Nominal	Chi-square
-Type (Medical or Behavioral)	Yes or No	EMR	Nominal	Frequencies and Percentages
- Sitter ordered	Yes or No	EMR	Nominal	Chi-square
PRN medication given for anxiety or agitation	Yes or No	EMR	Nominal	Chi-square
Psychiatric Consult - Ordered	Yes or No	EMR	Nominal	Chi-square

- hours from admission to ordered	# of hours	EMR	Nominal	Frequencies and Percentages
- hours from order placed to completed	# of hours	EMR	Nominal	Frequencies and Percentages
Length of Stay in hospital	# of hours	EMR	Ratio	Mann-Whitney U and interquartile ranges
Length of Stay in ICU	# of hours	EMR	Ratio	Mann-Whitney U and interquartile ranges
Disposition on discharge	Home Rehab Deceased	EMR	Nominal	Frequencies and Percentages
<b>Demographics</b>				
Age	Age of participant in years	EMR	Nominal	Mean with standard deviation
Gender	Male, female	EMR	Nominal	Frequency
Race	White, Black, Hispanic	EMR	Nominal	Frequency
Marital Status	Partnered, Non-partnered	EMR	Nominal	Frequency

Table 2. Demographic characteristics of patients admitted to the ICU with a psychiatric diagnosis (N=100)

	<i>Mean (SD) or n (%)</i>
<b>Age</b>	54.02 (15.01)
<b>Gender</b>	
Male	40 (40%)
Female	60 (60%)
<b>Race/ethnicity</b>	
White	90 (90%)
Black	9 (9%)
Hispanic	1 (1%)
<b>Marital Status</b>	
Partnered	45 (45%)
Non-partnered	55 (55%)

Table 3. Clinical characteristics of patients admitted to the ICU with a psychiatric diagnosis (N=100)

	n (%)
<b>Admission Diagnosis</b>	
Neurological	63 (63%)
Cardiac/pulmonary	15 (15%)
Other	22 (22%)
<b>Co-existing Medical Diagnosis <sup>a</sup></b>	
Neurological	53 (53%)
Cardiac/pulmonary	83 (83%)
Other	83 (83%)
<b>Psychiatric Diagnosis <sup>a</sup></b>	
Schizophrenia	3 (3%)
Bipolar Disorder	9 (9%)
Depression	63 (63%)
Anxiety	75 (75%)
PTSD	4 (4%)
Intellectual Disability	3 (3%)
<b>Prescribed Psychiatric Medications Prior to Admit</b>	
Yes	71 (71%)
No	29 (29%)
<b>Types of Psychiatric Medications<sup>a</sup> (N=71)</b>	
Antipsychotic	16 (16%)
Antidepressant/Mood Stabilizer	56 (56%)
Anxiolytic	33 (33%)

<sup>a</sup>patients may have more than one diagnosis, medication, etc.

Table 4. Medication Reconciliation of Prior to Admission Psychiatric Medications (N= 71)

Medication grouping	Medication restarted within 23 hours n (%)	Medication restarted between 24 hours and discharge n (%)	Medication restarted at discharge n (%)
<b>Antipsychotic</b> (N=16)			
Yes	11 (68.8%)	1 (20.0%)	15 (93.8%)
No	5 (31.3%)	4 (80.0%)	1 (6.3%)
<b>Antidepressant/ Mood Stabilizer</b> (N=56)			
Yes	43 (76.8%)	5 (38.5%)	49 (87.5%)
No	13 (23.2%)	8 (61.5%)	7 (12.5%)

<b>Anxiolytic</b> (N=33)			
Yes	13 (39.4%)	3 (15.0%)	24 (72.7%)
No	20 (60.6%)	17 (85.0%)	9 (27.3%)

<sup>a</sup> patients may be on more than one medication

Table 5. Treatment Modalities and Patterns of Service Use in Accordance with Prior to Admission Psychiatric Medications.

	Antipsychotic <sup>a</sup> (N=16)	Antidepressant/Mood <sup>a</sup> Stabilizer (N=56)	Anxiolytic <sup>a</sup> (N=33)	No prior psych medications (N=29)
<b>Admission Diagnosis</b>				
Neurological	68.8%	71.4%	66.7%	48.3%
Cardiac/pulmonary	18.8%	10.7%	9.1%	20.7%
Other	12.5%	17.9%	24.2%	31.0%
<b>Co-existing Medical Diagnosis<sup>a</sup> (% yes)</b>				
Neurological	56.3%	55.4%	57.6%	41.4%
Cardiac/pulmonary	75.0%	85.7%	87.9%	79.3%
Other	81.3%	83.9%	81.8%	82.8%
<b>Restraint use (%)</b>				
Yes	12.5%	28.6%	36.4%	20.7%
No	87.5%	71.4%	63.6%	79.3%
<b>PRN medication used (%)</b>				
Yes	18.8%	25.0%	<b>45.5%</b>	24.1%
No	81.3%	75.0%	<b>54.5%</b>	75.9%
<b>Psych consult placed (%)</b>				
Yes	25.0%	7.1%	15.2%	10.3%
No	75.0%	92.9%	84.8%	89.7%
<b>Disposition upon discharge from hospital</b>				
Home	75.0%	64.3%	57.6%	82.8%
Rehab	25.0%	26.8%	30.3%	6.9%
Hospice/Deceased	0.0%	8.9%	12.1%	10.3%

<sup>a</sup> patients may be on more than one medication or co-existing medical diagnosis

(Significant comparisons in bold)

Table 6. Length of Stay (hours) outcomes by Type of Prior to Admission Psychiatric Medications

	ICU LOS Median (IQR)	p- value	Hospital LOS Median (IQR)	p-value
<b>Antipsychotic<sup>a</sup></b> (N=16) Yes No	39.0 (23.0-95.0) 45.0 (23.5-94.0)	0.768	90.0 (39.0-170.0) 62.0 (35.0-180.5)	0.566
<b>Antidepressant/ Mood Stabilizer<sup>a</sup></b> (N=56) Yes No	46.5 (23.5-91.5) 42.0 (23.25-121.0)	0.892	59.0 (39.5-163.5) 75.0 (34.0-184.0)	0.624
<b>Anxiolytic<sup>a</sup></b> (N=33) Yes No	45.0 (22.0-92.0) 44.0 (25.0-99.0)	0.895	90.0 (34.5-189.0) 62.0 (36.0-141.0)	0.545
<b>No prior psych medications</b> (N=29) Yes No	47.0 (22.5-168.0) 41.0 (23.0-90.0)	0.250	72.0 (35.0-203.0) 61.0 (35.0-170.0)	0.713

<sup>a</sup> patients may be on more than one medication

**Appendix A: Data Collection Form**

Comorbid Mental and Physical Health Conditions in an ICU setting

Nicole Ryan, RN, BSN, Primary Investigator

UK-IRB approved study 46928

1. Unique study number: \_\_\_\_\_
2. Age: \_\_\_\_\_
3. Gender: \_\_\_\_\_ Male \_\_\_\_\_ Female \_\_\_\_\_ Other
4. Race: \_\_\_\_\_ American Indian or Alaska Native  
\_\_\_\_\_ Asian  
\_\_\_\_\_ Black or African American  
\_\_\_\_\_ Hispanic or Latino  
\_\_\_\_\_ Native Hawaiian or Other Pacific Islander  
\_\_\_\_\_ Other  
\_\_\_\_\_ White or Caucasian
  
5. Marital status: \_\_\_\_\_ Divorced  
\_\_\_\_\_ Legally Separated  
\_\_\_\_\_ Married  
\_\_\_\_\_ Other  
\_\_\_\_\_ Significant Other  
\_\_\_\_\_ Single  
\_\_\_\_\_ Unknown  
\_\_\_\_\_ Widowed
  
6. Admission Diagnosis: \_\_\_\_\_ Neuro  
\_\_\_\_\_ Respiratory  
\_\_\_\_\_ Cardiovascular  
\_\_\_\_\_ Gastrointestinal  
\_\_\_\_\_ Genitourinary  
\_\_\_\_\_ Endocrine  
\_\_\_\_\_ Malignancy  
\_\_\_\_\_ Infectious Disease  
\_\_\_\_\_ Musculoskeletal  
\_\_\_\_\_ EENT  
\_\_\_\_\_ Integumentary

7. Other Medical Diagnosis:  Neuro  
 Respiratory  
 Cardiovascular  
 Gastrointestinal  
 Genitourinary  
 Endocrine  
 Malignancy  
 Infectious Disease  
 Musculoskeletal  
 EENT  
 Integumentary
8. Psychiatric Diagnosis:  Schizophrenia  
 Bipolar Disorder  
 Depression  
 Anxiety  
 PTSD  
 Intellectual Disability
9. Psychiatric Medication Prior to Admission:  Yes  
 No
10. Type of Psychiatric Medication:  Antipsychotic  
 Antidepressant  
 Mood Stabilizer  
 Stimulant  
 Anxiolytic
11. Psychiatric Medication Continued in less than 23 hours:  Yes  No  
Which ones? \_\_\_\_\_
12. Psychiatric Medication Restarted between 24 hours and discharge:  Yes  No  
Which ones? \_\_\_\_\_
13. Psychiatric Medication Restarted at Discharge:  Yes  No
14. Restraints Ordered:  Yes  No
15. Type of restraints:  Medical  Behavioral
16. Sitter ordered:  Yes  No
17. PRN medication for anxiety or agitation:  Yes  No  
Which ones? \_\_\_\_\_
18. Psychiatry consult ordered:  Yes  No
19. Hours from admission to psychiatric consult placed: \_\_\_\_\_ hours
20. Hours between psychiatric consult order placed to completed: \_\_\_\_\_ hours
21. ICU length of stay: \_\_\_\_\_ days \_\_\_\_\_ hours

22. Hospital length of stay: \_\_\_\_\_ days \_\_\_\_\_ hours

23. Disposition on discharge: \_\_\_\_\_ Home

\_\_\_\_\_ Acute rehab

\_\_\_\_\_ Subacute rehab

\_\_\_\_\_ Inpatient psych

\_\_\_\_\_ Nursing home

**Appendix B: Data Coding Form**

<b>Chart Audit Data Coding Form</b>	
<b>Patient Identification Code</b>	Numeric
<b>Age</b>	Numeric
<b>Gender</b>	Male-0, Female-1
<b>Race</b>	See Key
<b>Marital Status</b>	See Key
<b>Admission Diagnosis</b>	See Key
<b>Co-existing Diagnosis</b>	See Key
<b>Psychiatric Diagnosis</b>	See Key
<b>Psychiatric medication prior to admission</b>	Yes- 0, No- 1
<b>Type of psychiatric medication</b>	See Key
<b>Psychiatric medication continued less than 23 hours</b>	Numeric
<b>Psychiatric medication restarted between 24 hours and discharge</b>	Numeric
<b>Psychiatric medication restarted at discharge</b>	Numeric
<b>Restraints ordered</b>	Yes- 0, No- 1
<b>Type of restraints</b>	Medical- 0, Behavioral- 1
<b>Sitter</b>	Yes- 0, No- 1
<b>PRN medication for anxiety or agitation</b>	Yes- 0, No- 1
<b>Psychiatric Consult ordered</b>	Yes-0, No-1
<b>Hours between admission and psychiatric consult place</b>	Numeric
<b>Hours between psychiatric consult ordered and completed</b>	Numeric
<b>ICU Length of stay in hours</b>	Numeric
<b>Hospital Length of stay in hours</b>	Numeric

<b>Disposition on Discharge</b>	See key
---------------------------------	---------

**Key:**

**Ethnicity**

Black or African American: 1  
 Hispanic or Latino: 2  
 White or Caucasian: 3

**Marital Status**

Partnered: 1  
 Non-partnered: 2

**Admission Diagnosis**

Neurological: 1  
 Cardiac/pulmonary: 2  
 Other: 3

**Co-existing Diagnosis**

Neurological: 1  
 Cardiac/pulmonary: 2  
 Other: 3

**Psychiatric Diagnosis**

Schizophrenia: 1  
 Bipolar: 2  
 Depression: 3  
 Anxiety: 4  
 PTSD: 5  
 Intellectual Disability: 6

**Psychiatric Medication**

Antipsychotic: 1  
 Antidepressant/Mood Stabilizer: 2  
 Anxiolytic: 3

**Disposition on Discharge**

Home: 1  
 Rehab: 2  
 Hospice/deceased: 3