

**Decreasing Psychiatric Readmissions in a Nonprofit Behavioral Health Hospital**

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

John Schreiber

Liberty University

Lynchburg, VA

June 2020

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Scholarly Project Chair Approval:

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Dr. Shade Odedina, DNP, FNP-C, PMHNP-BC

Date

## ABSTRACT

This scholarly project aimed to decrease adult readmission rates of psychiatric patients in a Nonprofit Behavioral Health Hospital (NBHH). The project aims to decrease the number of readmissions to an NBHH by 25% using specific interventions that have been revealed through a literature review of evidence-based practices (EBPs). A literature review revealed focused EBP interventions that could decrease readmissions. The PICOT question for this project was, "In adult mentally ill patients who are in an NBHH, what is the effect of focused interventions compared with usual care on readmission rates in 2 months?" Reducing the number of psychiatric readmissions is a high priority in terms of health service efficiency and improving service user outcomes since the rate of psychiatric admissions is strongly correlated with inadequate care. The evidence-based literature review found that many focused interventions could decrease readmission rates. Some interventions were unachievable in the United States due to being cost prohibited or due to the United States' psychiatric system differing from that in numerous socialized or one payer systems of other countries. A scholarly EBP change project was done utilizing the Iowa Model to employ focused interventions to decrease readmissions. Pre-intervention data was collected for six months from August 2019 until March 2020. Post-intervention data were collected for two months, from April to May 2020. Comparison of data from pre- and post-intervention using Intellectus software indicated that there was no decrease in readmissions in adult psychiatric patients resulting from the focused interventions at the NBHH.

*Keywords: Readmissions, Rehospitalizations, Psychiatric, Mental Health, Influences of Readmissions, Causes of Rehospitalization, and Previous hospitalizations.*

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**List of Abbreviations**

After Visit Summary (AVS)

American Association of Colleges of Nursing (AACN)

American Psychology Association (APA)

Brief Critical Time Intervention (BCTI)

Critical Appraisal Skills Program (CASP)

The Cumulative Index to Nursing and Allied Health Literature (CINAHL)

Doctor of Nursing Practice (DNP)

Evidence-based Practice (EBP)

Health Insurance Portability and Accountability Act (HIPAA)

Institutional Review Board (IRB)

Intellectus Statistics (IS)

The Joint Commission (TJC)

Length of stay (LOS)

Local Health Departments (LHDs)

Major Depressive disorder (MDD)

National Learning Consortium (NLC)

Personal Health Information (PHI).

Population, Intervention, Comparison, Outcome and Time (PICOT)

Primary Care Provider (PCP)

Schizoaffective disorder (SAD)

Shared Decision Making (SDM)

Substance use disorder (SUD)

## **Decreasing Psychiatric Readmissions in a Nonprofit Behavioral Health Hospital**

### **Section One: Introduction**

This paper aims to report findings from a scholarly project to decrease adult psychiatric inpatient readmissions at a Nonprofit Behavioral Health Hospital (NBHH). This scholarly project will be introduced in this section, which includes background information on psychiatric readmissions and interventions. This student used Melnyk and Fineout-Overholt's (2015) levels of evidence to evaluate 22 articles. Each article was a four or above on the Melnyk level of evidence scale. The quality of each study presented was rated as either beneficial, some benefit, or not beneficial with only the best evidence used in developing this scholarly project and interventions.

### **Background**

The psychiatric readmission rate is a widely used quality indicator of poor care within the American psychiatric community (Moore et al. 2017). The rising occurrence and costs of readmission cause apprehension for health insurers, both private and public, providers, and patients (Boaz et al. 2017). Reducing the number of psychiatric readmissions is a high priority in terms of health service efficiency and improving service user outcomes. The United States Medicare readmission rate of adult psychiatric patients is 20.1% within 30 days, and children with psychiatric disorders were readmitted at a rate of 17.1% within 30 days. Overall, the prevalence of psychiatric readmissions for the first year ranges from 15% to 60% (Yu et al. 2016). Studies indicate that psychiatric hospitalization and readmission constitute profound interruptions to a person's life (Ådnanes et al. 2018; Graham et al. 2017).

Readmissions are distressing to patients and their families and impact their overall functioning and finances, sometimes causing a family to separate themselves from the patient (Donisi et al. 2016). When medical comorbidities are present, there are more significant risks for

readmission due to inadequate medication management and follow-up care for both the medical and psychiatric conditions (Gopalan et al. 2018). There are more readmissions for chronic, severe conditions such as schizophrenia, schizoaffective disorder, and borderline personality disorder. Lengths of stay (LOS) is another indicator of readmissions. The longer LOS, the more likely the patient will be readmitted within 30 days. These readmissions make for costly hospital bills (Graham et al. 2017; Moran et al. 2016).

Individuals with schizophrenia who are involuntarily admitted may have the highest readmission rates and the worst prognosis (Yu et al. 2015). Regardless of countless change efforts and interventions to decrease readmissions, their readmission rates continue to climb sharply (Hung et al. 2017). "With the increasing focus on reducing hospital readmissions in the United States, numerous readmissions risk prediction models were proposed, mostly developed through analyses of structured data fields in electronic medical records and administrative databases" (Greenwald et al. 2017, p. 261). For this scholarly project, an inpatient psychiatric hospital database was used to analyze readmission rates after interventions were inaugurated.

### **Problem statement**

Eradicating psychiatric hospital readmissions should be a goal of every psychiatric hospital. Even with financial penalties, nonpayment from delinquent payers, and the disruption to patients' lives, elimination of all psychiatric readmission is still not imminent (Tong et al. 2018). The readmission rate for psychiatric inpatient hospitals nationwide is 20.1%. Medical averages of readmission rates are at 18.5% for a 30-day period (Medicare.gov, 2019). Denver Metro area percentage readmission rates vary somewhat (see Table 1).

### **Table 1**

*Denver Metro area percentages of Medicare psychiatric readmissions rates within 30 days.*

<b>Hospitals in the Denver Metro Area</b>	<b>Number of patients readmitted</b>	<b>Percentage of readmissions</b>
Denver Health Medical System	275	18.3%
Lutheran Medical Center	572	18%
Highlands Behavioral Health System	369	20.4%
Colorado Mental Health /Ft. Logan	29	17.7%
Porter Adventist Hospital	412	16.6%
Centennial Peaks Hospital	435	16.1%

(Medicare.gov, 2019)

These rates represent a sizeable number of psychiatric readmissions. Readmissions of psychiatric patients are a widely used signal of inadequate health care quality in the United States (Sfetcu et al. 2017). Therefore, decreasing readmission rates at a nonprofit behavioral health hospital was the goal of this scholarly project to combat inadequate care. Twenty-two articles were evaluated to determine which feasible, valid, and low-cost interventions may decrease readmissions. These interventions were initiated, and data were analyzed and evaluated.

### **Purpose of the Project**

The project aims to decrease the number of readmissions to a nonprofit behavioral health hospital by 25% using specific interventions that have been revealed through a literature review of evidence-based practices (EBPs). The interventions obtained from EBPs that will be used are 1. Medication review. 2. Substance Abuse Disorder referral. 3 Medical Comorbidity information. These focused interventions will be used to decrease readmission rates.

### **Clinical question**

A PICOT question has been formulated to determine if the interventions will decrease readmissions at the nonprofit behavioral health hospital. The PICOT question is: In adult mentally ill patients who are in an NBHH, what is the effect of focused interventions compared

with usual care on readmission rates in 2 months? Interventions found by this student are achievable, and the costs do not outweigh their benefits. The interventions are in the methodology section.

### **Section Two: Literature Review**

Twenty-two articles were examined for appropriateness in answering the PICOT question. The stronger the evidence, the better chance these interventions can help decrease psychiatric readmissions from occurring in this NBHH. These 22 articles were chosen to assist in answering the PICOT question (White et al. 2016).

Since the PICOT question relates to decreasing the number of patients being readmitted back into the psychiatric hospital, interventions need to be developed to meet this goal. Many interventions were examined in these articles. Several interventions could not be applied either due to cost or to how the American Mental Health system functions. Other countries with socialized medicine or one payer system can support uninterrupted care from the hospital after discharge. The interventions from those countries with socialized medicine or one payer system must be excluded due to their cost and the difference in the healthcare systems as compared to the America Healthcare system. Other articles have been reviewed to indicate which interventions would be profitable at a nonprofit behavioral health hospital (see Appendix A) (White et al. 2016). The Melnyk and Fineout-Overholt (2015) leveling system was used when reviewing these articles and whether the article is beneficial to this scholarly project. Beneficial for this scholarly project means that the information or interventions are feasible and valid for a small nonprofit American Hospital. As the literature review was completed, something interesting was found. Since some articles focused on different predictors of readmissions, and several articles focused on different interventions, it was fascinating to see if there could be any

information that would benefit this scholarly project. Some predictors presented in these articles were:

- A severe psychiatric diagnosis such as psychotic disorders, mood disorders, and borderline personality disorder
- Substance use disorder
- The length of stays (LOS)
- Medication nonadherence
- Poor follow up care
- Lack of social support
- Medical comorbidities

There were a variety of interventions used to attempt to decrease readmission with specific predictors in focus. Interventions ranged from phone follow up, text follows up, getting in to see a provider within seven days, finding social support, financial support, and housing. Only one European study saw readmission as a regular part of the recovery (Ådnanes et al. 2018).

### **Search Strategy**

The topic searched was related to psychiatric readmissions (Roush, 2016). This literature review was run through the Liberty University Library search engine that included: PsycINFO (APA PsycNet), Counseling and Psychology Research Guide, CINAHL Plus with Full Text, Health Source: Nursing/Academic Edition, Nursing Research Guide, and EBSCO Quick Search. Keywords considered were readmissions, rehospitalizations, psychiatric, mental health, mental illness, influences of readmissions, causes of rehospitalization, early readmissions, adult, psychiatric treatment, and previous hospitalizations. The search dates used were 2010 to 2019. From these search parameters, there were 1182 articles available for this scholarly project. The majority of these 1182 were below a level four on the Melnyk evidence scale. Out of the 1182

articles, 371 matched the inclusion criteria for this scholarly project, in terms of reliability, validity, level four or above on the Melnyk evidence scale, and cost-effective means of decreasing psychiatric readmissions. From those 371, a total of 22 were selected as best fitting the parameters of this scholarly project. Out of the 22 articles, there was only one, level one, five were level two, four were level three, and twelve were level four. Of the twenty-two articles that were used, six were beneficial for the scholarly project, thirteen were of some benefit, and three were not beneficial for this scholarly project.

There were also some inclusion and exclusion criteria. The article criterion was that articles were excluded in any other language besides English. Articles that were focused on adult psychiatric patients were selected. An attempt was made to get a wide variety of predictors for readmissions (Roush, 2016). One article, Ådnanes et al. (2018), presented that readmission was part of the recovery process and is not necessarily an indicator of poor-quality care. Several articles from around the world had socialized medicine or a one payer system that made follow up after discharge from the hospital much more accessible. No article was found that directly matched a small American nonprofit psychiatric hospital, which this scholarly project purposed to evaluate.

### **Critical appraisal**

Roush (2016) stated that critical appraisal is indispensable in reviewing the literature on the PICOT question for this scholarly project. A critical appraisal informs if there were differences in findings and how they relate. The studies reviewed were at Melnyk's level of evidence at a four or higher, which are cohort studies and above, from the systematic database review (Melnyk & Fineout-Overholt, 2015). However, one study by Shafer (2019) was at level one of the evidence scale, systematic meta-analysis review, the highest level from Melnyk's level of evidence. Studies were chosen if they explored patients' experiences of readmissions,

interventions in reducing readmissions, determining causal factors for readmission, predicting the probability of readmissions, determining the most severe psychiatric diagnosis that causes readmissions, and interventions that were most helpful in decreasing readmissions. Studies were reviewed from databases regarding psychiatric hospitals from around the world. The literature review included only those in English or translated into English.

### **Literature review by Topic (See Appendix A):**

#### **Socialized Medicine or One Payor Systems**

This literature review determined that some interventions could be used for an American nonprofit psychiatric hospital. The first study, which showed some promise, was done by Ådnanes et al. (2018). This study was at level four, which is a cohort study. This study explores service users' experiences of psychiatric readmission across six countries in Europe: Romania, Slovenia, Finland, Italy, Austria, and Norway. All these countries have socialized medicine, which apportions for additional aftercare follow up. The intervention that was brought up by this article is that since they had socialized medicine, patients received more follow up care, which made patients easier to monitor than it would be in America. In America, our hospital and aftercare are two pieces on the continuum of care and are not as fluid as in a socialized medicine country.

#### **Intensive Aftercare**

Benjenk and Chen's (2019) study found that early intensive follow-up after inpatient psychiatric hospitalization was a crucial part of reducing the risk of readmission. Even though a small American nonprofit psychiatric hospital has no means of direct follow up with the patients after discharge, they can make sure that the patient has a provider appointment upon discharge. Molfenter et al. (2016) encouraged early follow-up with the provider within seven days after discharge.

An intervention suggested by Chen et al. (2018) was to have the local health departments (LHDs) in Maryland get involved with follow-up after a psychiatric patient was discharged. The researchers found that intensive follow up was effective in decreasing readmissions. In many studies, it has been similarly shown that intensive aftercare has been the number one intervention in decreasing readmissions for all predictors (Ådnanes et al. 2018; Chen et al. 2018; Hengartner et al. 2017; Hutchinson et al. 2019; Lin et al. 2010).

Two studies found that length of stay was the most significant predictor of readmissions, but again with intensive aftercare, readmissions were diminished (Hung et al. 2017; Moran et al. 2017). Intensive aftercare was useful, especially when looking at medication adherence, social support, and financial support (Tong et al. 2018; Yu et al. 2015). Many of the studies did state that their findings are generalizable, but not all. Also, since most of these studies were database reviews, minimal harm could come to the studies (Critical Appraisal Skills Program (CASP), 2018). However, most American healthcare systems are not set up for the intensive aftercare that is needed to decrease most readmissions. Intensive aftercare entails having case managers assist the patient in getting to provider appointments, get medications, take medications, and meet their basic needs such as food and housing. The health care organization where this scholarly project was implemented does not have the power or resources to give intensive aftercare services. Intensive aftercare as an intervention is the most effective in decreasing the readmission rate, and this is not possible due to the cost and how small American Psychiatric hospitals are set up.

Even though intensive aftercare services are the most effective in decreasing readmissions per these EBP studies, other interventions could be used to help bridge services from hospital to aftercare. Leyden and Owusu (2018) show that follow up is essential. Bridging care is beneficial in decreasing readmissions. They showed that if the hospital, before the patient is discharged, connects the patient to a provider, therapist, or clinic for aftercare within seven

days, readmission rates can decrease. This intervention seemed feasible and was used for this scholarly change project.

### **Brief Critical Time Intervention (BCTI)**

In Shaffer et al. (2015), the authors stated that the implementation of the brief critical time intervention (BCTI) would decrease nonadherence of medications by making sure that robust follow up services were set up after discharge from the hospital. Lastly, Stentzel et al. (2018) indicated that many factors lead to medication nonadherence, such as marital status, education, employment, gender, the severity of illness, drug use, and forgetting to take their medications. Therefore, to overcome medication nonadherence, all these factors must be addressed in any intervention to decrease nonadherence. This factor that Stentzel et al. (2018) stated will be addressed using the Shared Decision Making (SDM) model to decrease readmissions.

Other studies found that SDM is beneficial to increase medication adherence, medication education, finding social support, monitoring systems with patients, and discussing psychosocial interventions with the patient (Mahone et al. 2016; Miasso et al. 2016). SDM helps patients gain knowledge and better prepared to discuss their needs to succeed after discharge. SDM helps the patient understand what has been beneficial to them to keep them out of the hospital. It builds a therapeutic and trusting relationship between the care team and the patient. SDM should help the patient receive care that will keep them out of the hospital (NLC, 2013). Shared decision making will be the last intervention that will be used in this scholarly project. Case managers and nurses will discuss with patients before discharge if they have a doctor's or therapist's appointment set up or have a clinic go to after discharge and other needs that will assist in keeping them from being readmitted. From these 22 articles, EBP interventions were developed and will be presented in this paper later under Interventions for decreasing readmissions.

## Synthesis

Synthesis is the act of bringing together all the supporting evidence and indicating if it is strong or weak and how significant their limitations are. The synthesis process also assesses if these weaknesses negatively influence patient outcomes (Roush, 2016). From the 22 articles used as best evidence, there are many influencers found that affect readmission for adult psychiatric readmissions. The most reliable indicators for readmission are the number of previous hospitalizations, the length of stay (LOS), nonadherence to medication, the severity of their psychiatric disorder, and aftercare weaknesses. A variety of articles point out that the more significant hospitalizations, the higher the chance of being readmitted (Boaz et al. 2017; Chen et al. 2018; Donisi et al. 2016; Leyden & Owusu, 2018; Sfetcu et al. 2017). Also, some studies have shown that specific diagnoses significantly increase the rates of readmission. These diagnoses are Schizophrenia, Schizoaffective, and Borderline personality disorder.

The evidence-based findings from these articles showed that intensive aftercare treatment was the most successful means of decreasing readmissions. Two articles showed that bridging care from the hospital to aftercare as essential in decreasing readmissions (Ådnanes, 2018; Shafer, 2019). Excellent follow up after being discharged from the hospital is essential to keep the patient from being readmitted. Aftercare, which entailed follow up with case managers, making sure patient is getting and taking medications, going to provider appointments and getting food and housing, is simplified in countries with socialized medicine or one payer system, which the United States does not have for the most part (Ådnanes, 2018). Also, shared decision making and connection to a provider, therapist, or clinic all help reduce readmissions.

The 22 selected articles noted several limitations, but the vast majority still allowed for great information on the influences for psychiatric readmission. One of the most significant limitations that many of the articles noted was the question if their findings were truly

generalizable. One pertinent issue found in Ådnanes et al. (2018) was that the assumption was different from all the other studies. They assumed that part of recovery is readmission to the hospital, which could be an acceptable outcome with socialized medicine. However, with the cost and penalties related to readmissions in the United States, readmissions are not only seen as poor-quality care but avoidable. Therefore, these philosophies are different from the start. Other limitations were the number of database entries and the variations of who entered the data. Another limitation was that many people with mental illnesses also have comorbid medical issues, which may escalate their readmission. Drug or alcohol use may precipitate readmissions as well. One last limitation of many of these studies was that sociocultural factors could not be examined to influence readmissions (Hutchinson et al. 2019) drastically. Despite these limitations, it still does not eliminate the use of these studies to gather information about influences for psychiatric readmissions (Miasso et al. 2016; Shaffer et al. 2015).

### **Conceptual Framework-Iowa Model**

The Iowa model formed the backbone of the conceptual framework for this scholarly project. Permission was given to use the Iowa Model for this scholarly project by the University of Iowa Hospitals and Clinics (Appendix E).

The significant steps of the Iowa Model are discussed here.

#### ***Step 1: Find a trigger.***

The Iowa model supports the practice of care that is relevant, feasible, and current. A 'trigger' is a query, knowledge, difficulty, crisis, or values that require changed to fulfill the 'Triple Aim.' The 'Triple Aim' aims to deliver better care, improve the health of the population, and provide affordable care (Iowa Model Collaborative, 2017). Triggers can also be clinical problems or new knowledge that can improve practice and patient outcomes (White et al. 2016). Triggers are introduced in the Iowa model for EBP to foster excellence in health care and design

a practice question to facilitate change or innovation (Zaccagnini & White, 2014). Readmissions are costly to the patient and society; this is the trigger this project will be evaluating. Also, in the United States, readmissions are considered an indicator of poor-quality care by EBP studies. For this scholarly project, the trigger is psychiatric readmissions at an NBHH.

***Step 2: Is this topic is a priority.***

The cost implications for this trigger is of great importance to all healthcare stakeholders (Titler et al. 2001). Readmissions are a priority to the patient due to the cost and disruption to their lives. It is a priority to the hospital in keeping costs down. Moreover, it is a priority to society to decrease the cost of readmissions, many of which are preventable. Readmissions are still costly, and if their rate of occurrence can decrease, it will be beneficial to the patient, hospital, and society. Decreasing readmissions are worthwhile because the benefit outweighs the cost.

***Step 3: Form a team***

The team should be made up of interdisciplinary experts and stakeholders for the best results (Grove et al., 2013). The team would be the director of nursing and operations, Clinical Nurse Manager, case managers, nursing staff, mental health counselors, providers, and this EBP scholarly project manager. The small psychiatric hospital was mandated to pursue evidence-based practices so that when The Joint Commission (TJC) comes to evaluate the hospital, they will receive a good rating. Also, the hospital is pursuing Magnet status, and EBP changes are one of their goals. Social workers, providers, and nurses work together to ensure that the patients will be successful upon discharge. They have connections with providers and clinics that can help the patient stay out of the hospital.

***Step 4: Assemble relevant Research and related literature.***

“A literature review has been done through the research databases looking for systematic research reviews and clinical studies relevant to a study population, intervention, comparison, outcome, and time (PICOT) question” (White et al. 2016, p. 75). Professionals in their fields of expertise should be chosen to do a systematic search for EBPs. These professionals should do a literature review, evaluate the evidence, and Research expected results. Most of the studies reviewed were nonrandom sampling, but their interventions will be practical (Titler et al. 2001). A literature review has been done and noted in Appendix A. The EBP studies showed that focused interventions could be used to decrease psychiatric readmissions.

***Step 5: Critique and synthesis of Research***

During the critique and synthesis process, the team comes back together to see if they have enough data to continue (Iowa Model Collaborative, 2017). The 22 articles were reviewed critiqued and synthesized to obtain the EBP interventions that an NBHH can use to decrease readmissions (Melnyk & Fineout-Overholt, 2015). Critique and synthesis of EBP interventions have been done for this scholarly project. Interventions are written below under interventions. Synthesis is essential to help in directing the scholarly project to decrease psychiatric readmissions. These articles have shown many influences on readmission and presented useful interventions. The synthesis will be the springboard for the scholarly project to determine to move in the proper direction of decreasing psychiatric readmissions.

***Step 6: Asks, Is there enough of a base?***

Another way of asking this question is: "Was there enough EBP interventions to show that there is some precise, valid, reliable, feasible information that will decrease readmissions?" After reviewing these EBP studies, it was shown that there are focused interventions that show a probability of decreasing readmissions. These interventions have been initiated, and an

evaluation will be done to determine if they have been successful in decreasing readmissions (Melnik & Fineoutt-Overholt, 2015). The literature review has given direction for the decreasing of readmissions using EBP interventions.

***Step 7: The Pilot***

A pilot study is an excellent way to provide knowledge to determine if these focused interventions result in decreased readmissions (Titler et al. 2001). The pilot study has been accomplished. The NBHH will continue with the focused interventions that have been presented from this pilot study.

***Step 8: Monitor and analyze the structure, process, and outcome data.***

Assessment and evaluation have occurred at every step of the progression toward change. The Scholarly project needs to be flexible enough to make the changes as it is being monitored, analyzed, and collected (Melnik & Fineoutt-Overholt, 2015). Interventions have been developed from EBP articles and are being used. The analysis will be ongoing until the end of May 2020 to see if readmissions are decreasing.

***Step 9: Disseminate results.***

Once change or innovation has shown it is useful or beneficial, then the results should be disseminated (Iowa Model Collaborative, 2017). Scholarly projects that may not answer their PICOT question in the affirmative should still be disseminated to broaden the database. There are many ways of disseminating the outcomes. One is to do a scholarly project poster presentation. Another is to present at a National or International symposium as a podium presentation. Another way would be to record findings in peer journals or write a book of the results. Other means would be discussion panels, journal clubs, seminars, or media interviews to disseminate the results (Hanrahan et al. 2012). As part of this scholarly project to be completed, a scholarly project defense needs to be done, and dissemination of some type needs to be done.

The Iowa Model was an exceptional standard to follow for this scholarly project through its development and accomplishment. The Iowa Model assisted in structuring this project to be able to discover the EBP change interventions used. It helps structure the project to know how to move through the process of this scholarly project.

### **Section Three: Project Methodology**

#### **Design: Step One-Find EBP interventions**

The design refers to the type of scholarly project that was done. This scholarly project was an evidence-based practice (EBP) change project utilizing the Iowa Model. The design methodology had distinct steps to evaluate whether readmissions had decreased. Step one was to find EBP based interventions for this project that are feasible and achievable from the literature review. The interventions were described in evidence-based articles showing the possibility of decreasing readmissions. Focused interventions were chosen for this scholarly project.

#### **Step Two-Initiate Interventions**

For this design, step two was to initiate evidence-based interventions. Focused interventions were executed on all patients, which will also reach high-risk patients. All readmitted patient data will be used. All readmitted patients are defined as all patients in the NBHH who were readmitted into the hospital within 90 days of discharge.

#### **Step Three-Gather data**

Step three is to gather data pre-and post-intervention. Pre-intervention data was gathered from August 2019 until March 2020. Post-intervention data were gathered in April and May 2020. Focused interventions were launched, and data analysis has been accomplished. Since the same patients will not be evaluated, this project will consider the number of patients readmitted. The project was not interested in individual patients, whether the interventions are successful for

that patient, but will observe if the overall number of readmissions will be decreased with these focused interventions. With the limited data available, there was no way to track an individual patient. This student could not follow patients since he had no means of following them in the community. Also, this student could not follow the patient if they were readmitted to another area hospital. Therefore, all patients from all area hospitals readmitted had to be evaluated.

#### **Step four-Analyze data and record**

Step four, data were analyzed for readmissions after focused interventions were initiated. Data analysis was used to determine if the interventions had significantly decreased readmission rates by using pre- and post-intervention data. Descriptive analysis was used to report the data to compare results before and after the interventions. Step four also recorded the results. Step five was to disseminate findings. The findings will be presented to the team once the project is completed.

#### **Measurable Outcomes**

This section includes a list of the projects' measurable outcomes. Focused interventions were launched, data analysis was done to determine the number of readmissions. The analysis has given data to inform the team if the interventions were significantly beneficial or not. This project hoped to see a decrease in psychiatric readmission by 25% (Roush, 2019).

#### **Setting**

This section will describe the project setting and the rationale for implementing the project in the environment. The nonprofit Behavioral Health Hospital was de-identified, but generally, a description will be given. The project site's description will include a description of the site's geographic location, organizational structure, and population demographics. The scholarly project was done at a nonprofit behavioral health hospital in the middle-class suburb of

Colorado. This hospital is a nonprofit healthcare organization dedicated to improving the health of the people and communities we serve, especially those who are poor and vulnerable.

These NBHH core values are:

- Caring Spirit - We honor the sacred dignity of each person.
- Excellence - We set and surpass high standards.
- Good Humor - We create joyful and welcoming environments.
- Integrity - We do the right thing with openness and pride.
- Safety - We deliver care that seeks to eliminate all harm for patients and associates.
- Stewardship - We are accountable for the resources entrusted to us.

### **Population**

For the scholarly project, this section will detail the information and rationale for selecting the population. The population was all adult psychiatric patients at the NBHH readmitted during this project. This hospital was in Colorado, whose demographics are males 46.6%, females 53.4%, and the median income of \$50,826 per year. Racial demographics are white, 73.5%, Hispanic, 22.3%, Asian 1.8 %, African American, 0.5%, Native American, 0.3% and other races 2.1% (City-Data.com, 2019). The unit itself had two sides, East and West. The West side had a higher acute side. Most patients were in the middle to lower economic class. Some had insurance, while others were on Medicare and Medicaid, while still others were self-pay, having no insurance. The primary diagnoses seen were Schizophrenia, Schizoaffective disorder (SAD), Bipolar disorder, and Major Depressive disorder (MDD). The units can hold 18 patients with double-occupancy rooms.

### **Ethical Considerations**

This section discusses the protection of patients. Since there was no direct contact with patients, no patient was identified; therefore, consent from patients was not required. The NBHH

permitted, through their Institutional Review Board (IRB), the review of data. Their IRB determined this scholarly project fell under the Exempt status. Exempt typically is reserved for projects that use surveys, noninvasive procedures, or database research (Moran et al. 2017).

There was a last ethical consideration that needs to be evaluated by using protected patients' information. Protected patients are designated as a specific population as particularly vulnerable and require special attention. Those populations include children, prisoners, pregnant women, mentally disabled people, and economic or educational disadvantaged people. Since this scholarly project will be using data from the mentally disabled, it must be very cautious about the Health Insurance Portability and Accountability Act (HIPAA) and confidentiality requirements. Therefore, this project will de-identify all personal information that could identify specific mental health patients (Roush, 2019).

### **Data Collection**

For this scholarly project, permission was given through the IRB system of the NBHH and Liberty University to do this project. The hospital and the patients were de-identified for both HIPAA and confidentiality reasons. Data collection pre-intervention started in August 2019 and ended in March 2020. Data collection post-initiation of the focused interventions started in April 2020 and went until the beginning of May 2020. This project used descriptive statistics and correlations to report the data. This data gave the pre-intervention number of readmissions, compared to readmissions post-interventions.

### **Tools**

An Excel spreadsheet was developed with data on admissions, readmissions, and percentages. This scholarly project has focused on decreasing the readmission rate of adult psychiatric patients. This Excel spreadsheet provided valid and reliable data regarding pre-and post-focused interventions for this project. Reliability refers to how well the tool consistently

produces the same result on repeated tests. Intellectus Statistics™ (IS) software was used for data analysis (Intellectus Statistics, 2020).

Focused interventions acquired from the EBP articles were used for this project. Focused interventions were areas the nursing staff should concentrate on before discharging the patient. These focused interventions were a protocol change in that the project wanted all the nursing staff to make sure that they talked with the patients about these interventions before discharge. Therefore, these interventions were presented first by this student to individual nurses so they could apply them. However, once the COVID 19 pandemic occurred, this student could no longer be able to go onto the unit and talk individually to all nurses. Therefore, education about these interventions was presented to all nurses as an eLearning presentation, which this student developed. This NBHH has a total number of 15 full-time nurses. Of those 15 full-time nurses, 13 of them completed the eLearning presentation to begin the focused interventions. The nursing staff was to carry out the focused interventions after their education. Due to the COVID 19 pandemic, this student could not go onto the unit to assess nurses' reactions to these interventions nor determine how well they did at following these focused interventions. However, this student was able to gather data pre- and post-intervention about the number of readmissions. Data about the overall patient census for the unit came from the NBHH business office supervisor.

## **Interventions for decreasing readmissions**

### **1. Medication review**

A medication review is a structured, critical examination of a patient's medicines to reach an agreement with the patient about treatment, optimizing the impact of medicines, minimizing the number of medication-related problems.

*A. Prescription review.* Inform patients about prescriptions or medications they are on.

Objective: Patients should be able to verbalize which medications they are on and their uses.

***Interventions.***

1. Evaluate patient knowledge level of medications and provide education.
2. Encourage patient to verbalize concerns regarding medication and treatment.
3. Involve patients in treatment planning and review ongoing plan of care with them (Shared Decision Making).
4. Discuss with patient methods to stay on medications such as using a calendar, pillbox and/or reminder notes to remember to take medications.

***B. Adherence review.*** A comprehensive and systematic evaluation of the patient's understanding of and adherence to prescribed medication treatment.

Objective: Improve patient's understanding and adherence to prescribed medication treatment. Identify and address factors linked to non-adherent behaviors, if any.

***Interventions.***

1. Review history of drug adherence with the patient
2. Therapeutic education – work with patients to develop therapeutic goals and how to manage adverse events.

***C. Clinical medication review.*** A systematic and patient-centered clinical assessment of psychotropic medicines currently taken by a patient was reviewed by the team, which included the nursing staff.

Objective: Identify, resolve, and prevent medication-related problems as well as optimize the effectiveness of medication treatment.

***Interventions.***

1. Medication treatment review (dosages, drug interactions, side effects, and therapeutic uses).
2. Patient to have a provider appointment within one week of discharge.
3. Nurses and team review the After Visit Summary (AVS) with the patient.

## AVS med reminders

- The patient is to give their current meds to their Primary Care Provider (PCP).
- The patients are always to carry a list of their medications with them.
- Update list if changed.
- The patient is to talk with PCP or pharmacist if bottle labels different than taking now.
- Know if foods and herbal products interact with medications → instruct patient to consult their PCP or provider.
- Counsel about medications as needed.

***D. Diagnosis is still affecting their judgment.*** Assess if the patient's understanding of medications is not possible due to the diagnosis they have.

Objective: Inform the prescribing provider of this issue.

***Intervention.***

1. Inform the provider of the inability of the patient to understand the need for medication

**2. Substance use disorder (SUD)**

Addresses issues related to a patient's substance use disorder (Hutchins et al. 2019; Viggiano et al. 2012).

Objective: Address the patient's drug use disorder.

***Interventions.***

1. Educate patients about the increased risk of readmission due to SUD.
2. Inform patients of substance use disorder groups.

**3. Medical comorbidities**

A systematic and patient-centered clinical assessment of medical issues currently diagnosed.

Objective: to identify, resolve, and prevent medical diagnosis-related problems as well as optimize the effectiveness of holistic treatment.

***Interventions.***

1. Educate patients about the increased risk of readmission due to medical comorbidities.
2. Talk with patients about symptoms that may indicate they are going into a medical crisis.
3. Ensure patients know how to get ahold of their provider for the medical issue (Hutchins et al. 2019; Glisson & Schoenwald, 2005).

***Tools: Timeline.***

The timeline will include each specific action item and an anticipated completion date.

This scholarly project will be set up in coordination of Liberty University's timeline for the Doctor of Nursing Practice (DNP). The DNP program for the scholarly projects is set for the Pre-proposal phase, Phase One: Project Proposal Required submissions, Phase Two: Project Implementation Required Submissions, and Phase Three: Final Project required submissions.

***Tools: Feasibility Analysis.***

This subsection discusses the feasibility of the project. The NBHH believed that this scholarly project could benefit their organization. Therefore, after receiving IRB approval, the first step was to educate the nursing team about the interventions and then initiate it. After the initiation of the interventions, a data review was done. The data was quantitative

and was made accessible for this scholarly project. An Excel spreadsheet was developed that gathered data and makes sure all patients were de-identified. All patients who were readmitted within 90-days were tallied to determine the readmission rate. Two people were abstracting the data: the business office supervisor and this researcher, keeping costs to a minimal and biases from multiple researchers out of the equation (Roush, 2019). The only other cost was the nursing team's time to review the eLearning, which this student developed, to educate them regarding the interventions.

### **Data Analysis**

In the writing of the project proposal, this section describes the detailed plan for evaluating each of the projects' measurable outcomes. This section was organized according to each measurable outcome. Once that data was obtained, it was put into an excel spreadsheet, then data analysis. Descriptive analysis will be used to analyze data to compare results before and after the interventions are implemented. This tool described the variables and used descriptive analysis to find the significance of the variables. Descriptive analysis is the base for describing the results (Marshal, 2016; Intellectus Statistics, 2020).

### **Measurable Outcome**

It is helpful to organize the evaluation section according to each measurable outcome. The measurable outcome will be stated. This scholarly project used IS (2020) for the analysis of data. This tool was beneficial to determine the outcome. The desired measurable outcome was that the readmission rates would decrease by 25%.

The implication for practice was to ascertain whether these interventions will be beneficial to the NBHH. As stated before, in the American psychiatric healthcare system, very few have intensive aftercare. Having intensive aftercare is a direction that Mental Health and our

nation should go in the future but are not yet there. The interventions that this scholarly project is going to use should help to decrease some readmissions.

**Section Four: Results**

**Descriptive Statistics**

Data was gathered from August 2019 until May 2020. The months of August until March 2019 were all pre-intervention months. The months of April and May 2020 were the post-intervention months. Data was collected for the total number of patients admitted, the total number of patients readmitted, the number of patients readmitted from the NBHH, the number of patients readmitted from all the area hospitals, then the percentage of just NBHH readmits and finally a percentage of all readmits (Table 2).

**Table 2**

*Aggregate data collected pre- and post-intervention.*

<b>The month of data collected</b>	<b>Total patients admitted to NBHH</b>	<b>Readmit Total</b>	<b>NBHH readmits only*</b>	<b>Other hospitals readmit**</b>	<b>Percentage of NBHH readmits</b>	<b>Percentage of all readmits***</b>
<b>Pre-intervention</b>					<i>Average Readmit NBHH 0.04</i>	<i>Average Readmit All 0.06</i>
8/2019	96	1	1	0	0.01	0.01
9/2019	104	10	9	1	0.09	0.1
10/2019	108	5	3	2	0.03	0.05
11/2019	69	3	1	2	0.02	0.04
12/2019	77	2	2	0	0.03	0.03
1/2020	73	5	4	1	0.05	0.07
2/2020	83	8	6	2	0.07	0.1
3/2020	98	5	1	4	0.01	0.05

Post-intervention					Average Readmit NBHH 0.11	Average Readmit All 0.13
4/2020	94	5	2	3	0.02	0.05
5/2020	82	15	12	3	0.2	0.2

\*NBHH only=Nonprofit Behavioral Health Hospital number of readmissions  
 \*\*Other Hospitals=other hospitals in the Denver metro area besides the NBHH  
 \*\*\*Percentages=percentages of all readmitted patients from NBHH and other Hospitals

Descriptive statistics were calculated for NBHH pre-intervention readmissions and NBHH post-intervention readmissions. The observations for NBHH pre-intervention readmissions had an average of 0.04 ( $SD = 0.03$ ,  $SE_M = 0.01$ ,  $Min = 0.01$ ,  $Max = 0.09$ ,  $Skewness = 0.70$ ,  $Kurtosis = -0.84$ ). The observations for NBHH post-intervention readmissions had an average of 0.11 ( $SD = 0.13$ ,  $SE_M = 0.09$ ,  $Min = 0.02$ ,  $Max = 0.20$ ,  $Skewness = 0.00$ ,  $Kurtosis = -2.00$ ). When the skewness is greater than 2 in absolute value, the variable is asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers (Westfall & Henning, 2013; Intellectus Statistics, 2020). The summary statistics can be found in Table 3.

**Table 3**

*Summary Statistics Table for Interval and Ratio Variables*

Variable	$M$	$SD$	$n$	$SE_M$	Min	Max	Skewness	Kurtosis
NBHH_readmit_pre_intervention	0.04	0.03	8	0.01	0.01	0.09	0.70	-0.84
NBHH_post_intervention	0.11	0.13	2	0.09	0.02	0.20	0.00	-2.00

Descriptive statistics were also calculated for All readmission's pre-intervention and All readmissions post-intervention. The observations for All readmission's pre-intervention had an average of 0.06 ( $SD = 0.03$ ,  $SE_M = 0.01$ ,  $Min = 0.01$ ,  $Max = 0.10$ ,  $Skewness = 0.22$ ,  $Kurtosis = -1.07$ ). The observations for All readmissions post-intervention had an average of 0.12 ( $SD =$

0.11,  $SE_M = 0.07$ , Min = 0.05, Max = 0.20, Skewness = 0.00, Kurtosis = -2.00) (Westfall & Henning, 2013; Intellectus Statistics, 2020). The summary statistics can be found in Table 4.

**Table 4**

*Summary Statistics Table for Interval and Ratio Variables*

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	$SE_M$	Min	Max	Skewness	Kurtosis
All_readmits_pre_intervention	0.06	0.03	8	0.01	0.01	0.10	0.22	-1.07
All_post_intervention	0.12	0.11	2	0.07	0.05	0.20	0.00	-2.00

Both tables 3 and 4 indicate that they are very similar in means and the same in the standard deviations (SD). SD is the spread of data around the mean of a scale variable and measures the dispersion of a set of values. SD indicates that the data from the two sets of variables are similar (Intellectus Statistics, 2020). These two data sets being similar indicate that NBHH data and All data show conclusively that the focused interventions did not affect readmission rates since other hospitals did not alter their interventions. This data reveals that the readmission rates did not decrease by 25% but increased.

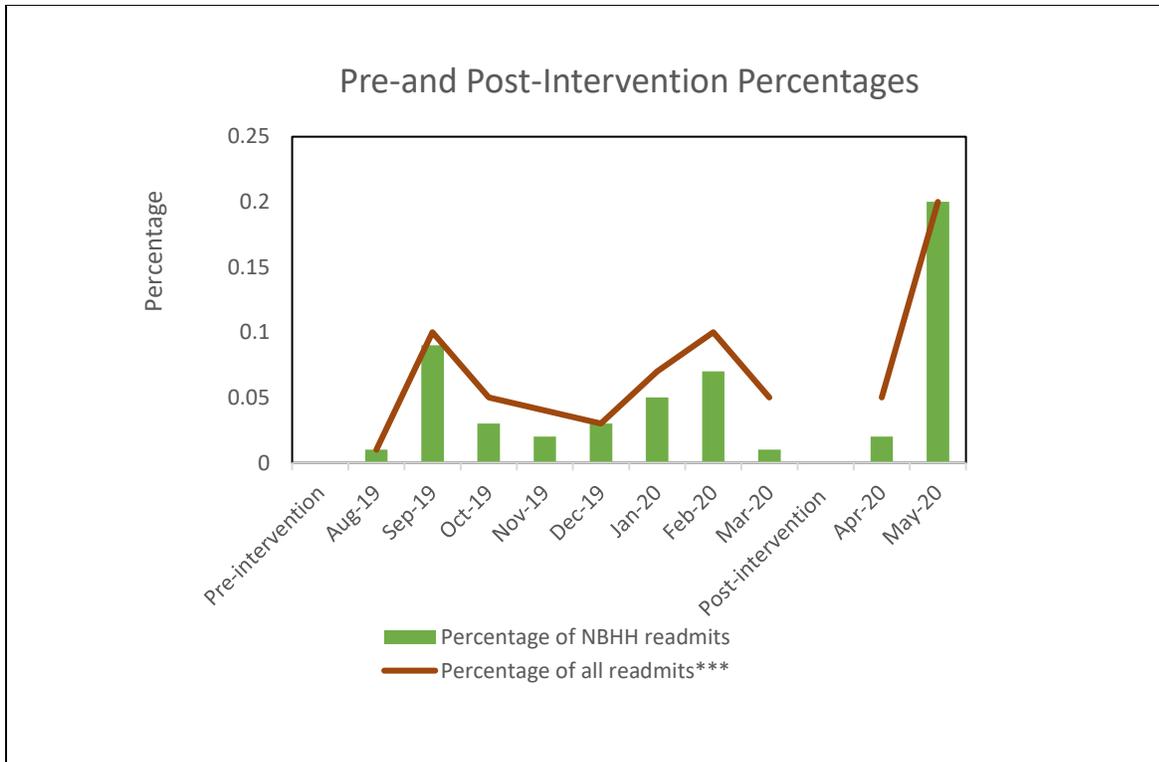
### **Measurable Outcome**

This scholarly project's measurable outcome was to decrease adult psychiatric readmission by 25% after focused interventions were initiated. As seen in Chart 1, this did not occur. Not only was there not a decrease in readmission by 25%, but there was an increase. This increase was not the standard for this NBHH. This increase of readmissions appears to be due to the COVID19 pandemic and not from the focused interventions. This readmission rate of 2% is the highest readmission rate over the eight months of data collecting. The second highest was only 1%. In May 2020, the census was 82 patients, with 15 readmissions, 12 from the NBHH, and three from other Denver area hospitals. The average post-intervention NBHH readmission rate was 11 percent, compared to 4 percent pre-intervention. The average post-intervention all

readmission rate was 13 percent, compared to 6 percent pre-intervention. That is the highest readmission rate for any month in the ten months of the scholarly project, giving a readmission percentage of 0.2.

**Chart 1**

*Pre- and Post-intervention Percentages*



Nonprofit Behavioral Health Hospital (NBHH) percentage of readmissions  
 \*\*\*Percentages of all readmitted patients from NBHH and other Denver Metro Hospitals

**Section Five: Discussion**

The findings of this scholarly project are not what would be expected from this NBHH. Many factors complicated the findings making for incongruities. The first is that the admission rate for summers is usually lower, but for May 2020, it was 82. Second, the high rate of readmission is unusual for the summer months, but it was highest by at least double compared to all the previous months. Previous month readmission rates were as high as 10% while May 2020 was 20%. Interventions that were applied during the COVID 19 pandemic could not double

readmission rates. It would have been excellent if data from the summers of 2018 and 2019 would have been available to verify this, but they were not. Therefore, the readmissions were not due to the focused interventions but from the COVID19 pandemic stressors on this vulnerable population.

### **Implication for Practice**

The implications for practice are much different than anticipated. This student had hoped for a decrease in the readmission rates using focused interventions in the NBHH but found an increase. The increase appears not to be due to focused interventions but due to the COVID19 pandemic. The interventions were to give more concentrated effort in meeting the patient's needs in medication, substance use, and medical comorbidity support. The increase of readmissions could not be from the focused interventions since none of the readmitted patients were the same post-intervention. This scholarly project used focused interventions to decrease readmissions but had no control over the culture change due to the COVID 19 pandemic. With the COVID 19 stay-at-home orders, many people had increase mental health issues. Due to the stay at home orders, there was an increase in readmissions. This increase was abnormal and caused by the COVID19 pandemic stress; this student believes that the stress affected this vulnerable population negatively, causing more readmissions. The implication for practice is that if a pandemic did not occur simultaneously as these interventions were proceeding, this project would have been able to test if the interventions could decrease readmissions. The COVID19 pandemic skewed the results of this scholarly project.

### **Sustainability**

This section will discuss the sustainability of the practice change. This practice change is very sustainable since it focused on feasible interventions. There were no increased costs to perform these interventions, nor was there any significant difficulty in undertaking the

interventions. If this student could have been on the unit to talk with the nurses more to see how the focused interventions were going, it may have helped determine if the interventions were being applied fully or not.

### **Limitations**

There were several limitations to this scholarly project, which could have affected the outcome of an increase in readmissions. The first limitation is really about the Zeitgeist, which is the stress and strain of the COVID19 pandemic. During this project, the COVID 19 pandemic hit with its stay-at-home rules and the anxiety it produced. The media had no other news coverage but about the COVID 19 pandemic.

A second limitation was with the COVID 19 shut down; this student was unable to go onto the unit and talk to each nurse individually. Therefore, an eLearning tool was used to dispense information about focused interventions. The eLearning program was used to disseminate information to all the nursing staff. They are required to read it and sign that they have read it. Once they have read the eLearning, they then could start implementing the focused interventions. The Psychiatric Clinical Educator team are the ones who made sure that all nurses had read the eLearning PowerPoint. The change to focused interventions was slow.

A third limitation was that this scholarly project was to look at decreasing all readmissions. Looking at all readmissions is problematic since the nonprofit Behavioral Health Hospital did not control all readmissions. Data was collected on readmissions from the NBHH and other hospitals in the Denver Metro area (see Table 2). It was impossible to follow one patient from the hospital to see if they were readmitted back to another hospital in the Denver Metro area. Therefore, all readmission data had to be entered.

The last limitation was regarding the cost to benefit ratio. In the literature review, it was found that intensive aftercare showed the highest efficacy in decreasing readmission rates. In the

Psychiatric hospital system, intensive aftercare treatment is expensive. For this scholarly project, funding for intensive aftercare treatment was not available. Funding for small hospitals to do intensive aftercare treatment is practically nonexistent.

### **Dissemination Plan**

The dissemination plan is to inform the NBHH of the findings. Although the study's findings show that these focused interventions did not decrease readmissions, there still may be interest in the obtained data. The possibility of either a poster or podium presentation may come out of this project. A manuscript was written for the possibility of being published.

### **Conclusion**

The direction of this paper was to answer the PICOT question of how to decrease adult psychiatric readmissions. The PICOT question was: In adult mentally ill patients who are in an NBHH, what is the effect of focused interventions compared with usual care on readmission rates in 2 months? In section two of this paper, the literature review was done in preparation for the scholarly project. The scholarly project in section three was the methodology section, reviewed areas of design, measurable outcomes, setting, population, ethical considerations, data collection, tools, interventions, and data analysis. The project's purpose was to decrease the number of readmissions to a nonprofit behavioral health hospital by 25% using specific interventions that have been revealed through a literature review EBPs. The outcome of decreasing the readmission rate was not reached. The data did not show a decrease in readmissions but rather an increase in readmissions. This student believes the increase of readmissions by two percent is most likely due to the COVID 19 pandemic causing stress and strain in the lives of the vulnerable adult mentally ill.

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**Appendices turned in separate, due to size.**

The appendices will include several artifacts that support the project. Each artifact will be designated an appendix. The appendix will not be included in the same file as the body of the project proposal or final project. Create a separate file of appendices to submit in conjunction to the project proposal and final project. Appendices may need to be formatted in a “landscape” orientation.

Required appendices include the following:

- A. Strengths of Evidence Table (Landscape orientation; include in Proposal and Final Project Manuscript)
- B. IRB Approval Documentation (Final Project Manuscript)
- C. CITI Certificate (Landscape orientation; include in Proposal and Final Project Manuscript)
- D. Letter of support from the organization (Proposal and Final Project Manuscript)
- E. Permission to use the Iowa Model