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A Quality Improvement Evaluation of an Emergency Department Response System for Psychiatric Patients

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This is to certify that the doctoral study by

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Abstract

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by

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MS, Walden University, 2015

BS, University of Rio Grande, 2013

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The DNP project was a quality improvement evaluation of an emergency department (ED) response system for psychiatric patients. The identified problem within the organization was a breakdown in care for psychiatric patients in the ED. The practice-focused question was twofold to address whether: (a) the development of a new ED response team would significantly reduce ED wait times, positively affect the left without being seen (LWBS) rates, and improve patient satisfaction for psychiatric patients and (b) the development of a new emergency room response team would improve the perceptions of ED staff on the process. The context, input, process, and product evaluation model was used to sum up the value the program and its impact on the organization. Sources of evidence were used to address the practice questions and include length of stay in the ED, LWBS rates, patient satisfaction survey, and staff survey. Evidence from published research was used and other sources of evidence included project site archival and retrospective data. Findings indicate that the programmatic changes improved LWBS rates from an overall percentage of 1.5% to 1.2% during the evaluation period. There was a significant improvement in staff satisfaction with an overall mean score for the 2017 of 18.73 and the overall mean score for the 2020 of 38.2. A Wilcoxon Signed Ranks test indicated that the higher mean score on the 2020 questions was statistically significant when compared to the 2017 scores ($Z = -3.463$, $p < .001$). Findings and recommendations were provided in a presentation to senior leaders of the organization. Implications for positive social change include greater awareness regarding mental illness, greater access to care, and recovery oriented-patient centered care.

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Dedication

I humbly dedicate this quality evaluation project to the mental health professionals who are committed to providing quality care of patients with mental illness and strive to break the mental health stigma.

Acknowledgments

I would like to take the opportunity to thank and acknowledge the host site for their continued support and for allowing me to engage in a project that is so near to my heart. I would also like to thank my husband Nathan and 7 daughters for being supportive and pushing me to make a dream become a reality. Lastly, I would like to thank Dr. Niedz for encouraging me and supporting my passion for mental health nursing.

Table of Contents

List of Tables

List of Figures

Section 1: Nature of the Project

Introduction

Excessive wait times for patients with mental illness in the emergency department (ED) had created a decrease in patient satisfaction and an increase in reported complaints at the project site where I did my research to earn my Doctor of Nursing Practice (DNP) degree. A new evaluation process model had been implemented to minimize the average wait time that patients with mental illness experience in the ED at the DNP project site. The purpose of the DNP project was to conduct a retrospective, quality improvement (QI) program evaluation of the impact of the programmatic changes (e.g. the new ED response model) on patient satisfaction and ED wait times in three hospitals located in the southeastern part of the US.

Evaluating the effectiveness of the ED response model could potentially show decreased wait times in the ED over a significant period of time and provide data showing an improvement in patient and organizational outcomes. Evaluating the quality of an organizational QI strategy such as this has a positive impact on social change. A positive impact on social change is shown through decreased ED wait times, increased patient satisfaction scores, improved employee satisfaction, and a decrease in patient complaints. This project aligns with the Walden University mission by applying an idea and strategy toward the development and implementation of evidence-based practice into an organization (Walden University, 2018).

Problem Statement

The identified problem within the organization was a breakdown in care for psychiatric patients in the ED. In the clinical practice setting for the DNP project, the psychiatric patients' average wait time in the ED had been 5-7 hours before the local community mental health caseworker arrived and was able to screen them.

There are three EDs within the organization that served as the setting for the DNP project. An increase was seen in these three EDs in terms of length of stay (LOS), decrease in patient satisfaction scores and an increase in complaints. The average wait time plus a transfer wait at the DNP project site were placing patients anywhere from 7-18 hours after being admitted to the ED. This identified practice problem had driven the organization to formulate a new model of care for psychiatric patients using the EDs in the health system. After implementation, the new program had not been formally evaluated to be better able to understand its effect on patient wait time, left without being seen rates, satisfaction, or complaints. Although there has been anecdotal insight that the new program is more effective, there has been no formal, comprehensive analyses of its impact on patient care, capturing both positive and negative impacts. Potential barriers to implementing the program could be staffing the model appropriately to meet the needs of three EDs and potential challenges among community mental health organizations. This deficit is significant to the organization and to administrative nursing practice; since no formal evaluation has taken place, the senior team has identified this deficit as a need in order to support its continuation. Thus, the purpose of the DNP project emerged.

The increased wait times created an array of safety issues for psychiatric patients, families, and staff. Creamer (2017) studied Massachusetts EDs and found that patients suffering from mental illness languish for hours to days to receive care compared to other patients who present to the ED in mental health crisis. Crowding and excessive wait times for psychiatric patients in EDs have brought attention to LOS, which is often extended, and boarding, i.e., keeping patients overnight in the ED. A study of Florida EDs from 2010 to 2013 found that patients with psychiatric disorders have significantly longer LOS compared to the general ED population (Zun et. al, 2016).

A position statement by the Emergency Nurses Association (ENA) reported that crowding has been implicated in increased nursing workload, burnout, and staff turnover. Salway et al. 2017 reports that overcrowding in the ED causes problems for patients and staff, including increased waiting times, increased LOS, increased medical errors, increased patient mortality. Optimizing staffing to ensure that the department is appropriately resourced at the times when patient flow is highest is a solution to flow and resource issue (Salway, et al., 2017).

Purpose Statement

Prior to the change in process, wait times were reported to be very high and patient safety was reported as a concern bringing attention to or making this a priority issue to address. Key stakeholders of the organization drafted and implemented a proposed change in practice to decrease wait times and increase patient satisfaction of psychiatric patients. The previous practice used a community mental health agency to screen all psychiatric patients in the ER. However, this screening was not being achieved

in a timely manner and posed safety concerns along with poor patient satisfaction rates. The gap in practice was twofold; (a) primarily a program change was needed and implemented and (b) the program change had never been fully evaluated for its impact on patient satisfaction and ED throughput. Thus, the purpose of the DNP project is to close this administrative gap in practice with a thorough and comprehensive program evaluation.

The change addressed the amount of time psychiatric patients experienced waiting in the ED while awaiting evaluation and placement to an inpatient setting. The change also addressed gaps in patient safety and improving patient outcomes. The program was implemented to fix the problem of delayed treatment in the ED for psychiatric patients, but to date, the organization has not undertaken a comprehensive evaluation of the program including the impact on patients and the *impact* on safety. Extended LOS in the ED also impact the ED staff and the throughput of other patients who present with emergency medical conditions. These continued challenges can cause burnout, poor morale, and could potentially increase staff turnover (Morley et al, 2018). Although there are reportedly fewer patient complaints, shorter ED wait times, and improved patient satisfaction scores, there has been no formal data collection to report on the effectiveness of the program and nothing at all on the influence of the programmatic changes on staff in the ED. This project focused on evaluating the effectiveness of a QI initiative retrospectively by analyzing and synthesizing the data to determine the effectiveness of the programmatic changes to reduce the delay experienced in the ED by psychiatric patients, which was the primary goal of the intervention of the QI initiative. Thus, the

practice-focused questions that provide the focus for the DNP project are twofold: (a) Did the development of a new emergency room response team significantly reduce emergency department wait times, positively affect the left without being seen (LWBS) rates, and improve patient satisfaction for psychiatric patients? and (b) Did the development of a new emergency room response team improve the perceptions of ED staff on the process?

Nature of the Doctoral Project

The intended setting for the selected DNP project is a rural hospital with an ED that lies within the main campus, a critical access hospital ED, and a free-standing ED. The outlying EDs are located approximately 30 minutes from the main hospital campus. The psychiatric service covers all three EDs. There are approximately 23,000 psychiatric visits between all three EDs per year. Roughly, 65 registered nurses are on staff and work between the three EDs. Implementation of the new response model began in July 2017 and ended in December 2017. The implementation period of the new response model took 6 months. Data were abstracted 18 months prior to the implementation period using the time December 2015 to June 2017. Review of data 18 months prior to implementation provided a historical review of the number of patients who LWBS, ED wait times, and the impact on patient satisfaction. Patient satisfaction scores were presented using a flow chart broken down by month. A comparable period of time after the implementation was used for comparison. Thus, data were abstracted from January 2018 through May 2020 to evaluate if implementing a new response model had improved patient satisfaction scores,

the number of patients who LWBS, and average LOS in the ED for patients in all three of the hospital's EDs.

As part of the organization's administrative interest in evaluating the impact of the programmatic changes in the ED, a brief staff survey was provided to those staff members who worked at the site over the past 3 years and through the implementation period to obtain opinions regarding the new response model and its effectiveness. There are roughly 30 staff members who are registered nurses, doctors, and support staff who worked at the facility for the last 3 years, had been a part of the process prior to the implementation phase, and participated in the retrospective staff survey.

Significance

Key stakeholders are identified as ED staff and providers, psychiatric evaluators, organizational leaders, community mental health providers, patients and families who present to the ED. Addressing the problem of ED wait times and patient satisfaction will positively impact the mental health system across the continuum of care. Emergency response teams to evaluate patients in the ED who are mentally ill, have been shown to improve the problem of psychiatric patients who have experienced increased wait times in the EDs and improves patient satisfaction (Zun, 2016). The findings of this project that support effectiveness of the ED response model have potential to make a positive change in nursing practice by improving patient flow, improving patient outcomes, improving staff and patient satisfaction, and allow the ability for nurses to provide quality nursing care.

This project focuses primarily on psychiatric patients who present to the ED in crisis. The project model could potentially be transferrable to the acute care setting where psychiatric patients are held for a medical reason and await transfer to a psychiatric hospital once their medical condition is cleared. Evaluating the effectiveness of the ED response model can be used to determine if this change resulted in decreased wait times and provide data showing whether an improvement in patient satisfaction was achieved. Findings from this evaluation can be used to support the ongoing need for the QI intervention or aid stakeholders in making changes to further the organization's effort to improve care for patients experiencing mental health concerns.

The impact on staff members has not been evaluated. Although there is positive feedback from staff members in the ED at all three sites, there has not been a formal evaluation of their viewpoints. There is a gap that has not been addressed, in better understanding whether the barriers and obstacles operative before the new program was initiated were addressed fully in the implementation and the extent to which the gains have held over time.

Evaluating the quality of an organizational strategy such as this has a positive impact on social change and findings could be used by other organizations to improve the care of patients with mental health disorders. Potential implications for positive social change will likely include greater awareness regarding mental illness, greater access to care, and recovery oriented-patient centered care. Often times, patients with mental illness have a difficult time seeking help. When presenting to the ED in crisis, extended wait times can exacerbate symptoms and create potential safety risk for the individuals.

Fast ED evaluation response time for psychiatric patients depends on mental health awareness among the ED staff, and improves the quality of patient care for all patients who present to the ED making access more available.

Summary

Evaluating the effectiveness of the ED response model could potentially display decreased wait times in the ED and improvement in patient outcomes. The QI program evaluation project evaluated the effectiveness of a new psychiatric response model in the EDs to minimize ED wait times, improve patient flow and outcomes, and potentially increase patient satisfaction score. This project focused on evaluating the effectiveness of a QI initiative retrospectively to analyze wait times over a period of time before and after the new program development which was the primary intervention of the QI initiative. The setting for the selected DNP project is a midsize rural hospital with an ED that lies within the main campus, a critical access hospital ED, and a free-standing ED. The de-identified data was collected and analyzed over a period of time from December 2015 through May 2020. Section 2 provides and adds an in-depth review of the existing literature on program evaluation processes as well as a review of evidence-based practices in managing delays in the ED for psychiatric patients.

Section 2: Background and Context

Introduction

Overcrowding in the ED can be the root of concern for patients and staff and can be caused by a number of factors. Increased wait times for psychiatric patients in the ED can have a negative impact on all ED wait times, increase overcrowding, and potentially reduce patient safety. Crowding and excessive wait times for psychiatric patients in EDs have brought attention to LOS and boarding. A study of Florida EDs from 2010 to 2013 found that patients with psychiatric disorders have significantly longer LOS compared to the general ED population (Smith et. al, 2016). Psychiatric patients who visited the ED were transferred to another facility at six times the rate of nonpsychiatric patients (Zhu et al., 2016).

The purpose of the project was to focus on evaluating the effectiveness of a QI initiative retrospectively to analyze wait times as well as the impact on patient satisfaction and staff over a period of time before and after the new program development which was the primary intervention of the QI initiative. In this section, I will discuss the model chosen to perform the literature review that addresses improving ED wait times for psychiatric patients, increasing patient and staff satisfaction and improving patient outcomes. Following the literature review, the role of the DNP student as it relates to the project and the relevance to nursing practice will also be discussed.

Concepts, Models, and Theories

There are various concepts, models and theories that address the focus of the DNP project. There is a need for a quality evaluation of this program within the organization

that addresses if the program implementation has improved LOS and LWOBS rates within the three ED's. There are many concepts regarding the impact of increased LOS and the perceptions of patients and staff. The CIPP program evaluation model was used to provide retrospective information to sum up the quality of the program and evaluate the safety, impacts and worth of the program to the organization.

The Impact of Delays on the Patient

The effectiveness of delays that psychiatric patients experience can be devastating. Many EDs report crowding and operate at or above capacity (AHRQ, 2018). There are many different challenges that can potentially affect the quality of care provided to patients in the ED if boarding and LOS times are a problem. It is important to monitor what causes the delay and evaluate the effectiveness it has on patient care.

Harris et al. (2016) conducted a secondary analysis of data previously collected in a 2012 qualitative, phenomenological study of patients' perceptions of a community-based crisis facility, which serves as an alternative to EDs for persons in emotional distress. There were 9 participants who presented for crisis treatment for various reasons. The data collection occurred by an interview and telephone screening. Harris et al. (2016) reported that the number of psychiatric emergencies that present to the EDs in the United States continues to increase. The study points out that out of 95 million ED visits in the U.S., 12.5% are related to mental illness or substance abuse issues (Harris et al., 2016). Harris et al. (2016) studied patient perceptions of a community-based crisis facility that served as a resource for patients in crisis who present to the ED. The study found that patient perceptions of psychiatric care consisted of verbalized stress over lack of privacy,

complaints about long wait times, and no availability of psychiatric providers that increased anxiety and distress (Harris et al., 2016).

Nicks and Matheny (2012) discuss the effectiveness of psychiatric boarding and long LOS that psychiatric patients experience in the ED. This was a retrospective cohort analysis that focused on all adult patients admitted for a psychiatric purpose who presented to an academic ED at a Level 1 trauma and tertiary center between January 2007 and January 2008. The data were collected using the electronic health record within the organization and using the psychiatric consult as well as the department of admission or transfer as an identifier. There was a total of 92,000 patient visits during this time and 68,000 were adults. The study found that prolonged ED stays are associated with increased risk for elopement due to high stimuli in the busy ED and an increase in anxiety or agitation. Nicks and Matheny (2012) explain that the impact on increased LOS on psychiatric patients includes poor clinical outcomes and an increase in morbidity and mortality. The study suggested that improvements in patient care such as direct care disposition to inpatient facilities and medical home models that include psychiatric assessments may improve patient outcomes and increase satisfaction.

A cross-sectional observational study by Pearlmutter et al. (2014) took place in 10 unaffiliated Massachusetts hospitals. Data forms were completed for 885 psychiatric patients who were enrolled in the study. ED LOS and its component intervals were used as a measure of throughput for patients because this metric has been used in multiple other mental health studies (Pearlmutter et al., 2014). All sites combined had between 30,000 to 112,000 visits per year annually. Every hospital in Massachusetts was asked to

participate in the study, and the hospitals selected were those that expressed interest and were collectively reflective of the various ED treatment settings throughout the state, with the intent of maximizing external validity (Pearlmutter et al., 2014). The study's sites included seven community-based hospitals and three hospitals with ED academic centers (Pearlmutter et al., 2014). Results showed that psychiatric patients with Medicaid and the uninsured had longer LOSs and were more likely to remain in the ED for over 24 hours.

In summary, all three of the above studies discuss the impact of delays on psychiatric patients who present to the ED for care. In the secondary analysis by Harris et al. (2016) it was found that patients verbalized stress over lack of privacy, complaints about long wait times and increased anxiety and distress. Nicks and Matheny (2012) completed a retrospective cohort analysis that reported prolonged ED stays being associated with increased risk for elopement, high stimuli and an increase in anxiety or agitation. The cross-sectional observational study by Pearlmutter et al. (2014) found that patients with different insurances impact the LOS among psychiatric patients in the ED. The impact of long wait times in the ED affects the patient's perception of care, increases aggressive behaviors, and complaints.

Barriers and Obstacles

There are many barriers, challenges and obstacles related to long LOS in EDs for psychiatric patients. These barriers and challenges pose safety concerns for staff and patients alike, decrease patient satisfaction and create a negative impact on the ED staff.

Other challenges and obstacles related to increased wait times in the ED included lack of staff education, poor response of consultation services and increase in safety concerns.

Dombagolla et al. (2019) aimed to determine the barriers of managing psychiatric patients in the ED. The observational study took place in a tertiary referral ED with a 24-hour acute psychiatric nursing service between February and April of 2017. After the patients were discharged the psychiatric nurse completed a validated questionnaire to determine the barriers they encountered with their patient. One hundred and four encounters were collected in the data. This study describes the nature and burden of barriers to the optimal management of psychiatric ED patients (Dombagolla et al., 2019). Although there were limitations to the study, the barriers identified are noted to coincide with a number of national and international studies that demonstrate the noisy and highly stimulating ED environment limits privacy and confidentiality, potentially aggravating the patient's condition (Dombagolla et al., 2019).

Fleury et al. (2018) explored barriers found in mental health management of patients in the ED. The study used a theory-driven qualitative design, based on case study methodology that includes a short questionnaire on participant characteristics and ability to diagnose and treat MHDs and SUDs (Fleury et al., 2018). The study was conducted in four ED’s located in different areas of Quebec. It is suggested that implementing a mental health liaison nurse in the ED could potentially alleviate some barriers to access to psychiatric care. Other barriers were reported included insufficient budgets, inability to process ED patients quickly and severe limits on LOS within the ED. Another barrier found associated to increased LOS included the relationship between psychiatry and

general ED's. Fleury et al. (2018) report that effective management of mental health patients requires ED access to a rich network of mental health services.

These studies describe the barriers to managing psychiatric patients in the ED. Dombagolla et al. (2019) reports that the stimulation of the ED environment and privacy barriers make it difficult to manage psychiatric patients in the ED. Barriers reported by Fleury et al. (2018) included issues with throughput that caused extended wait times for psychiatric patient in the ED. There are other factors that play a role in the extended LOS and wait times for these individuals. It is important that all barriers that have an impact on ED throughput are identified and managed to improve patient outcomes and quality care.

Program Evaluation Model: CIPP

The CIPP evaluation model is used to guide evaluations of programs, projects, products, and evaluation systems (Stufflebeam, pp. 31, 2003) and includes both formative and summative evaluative steps. The CIPP model provides a framework for retrospective program evaluation and has four components: context, input, process, and product. Each step in the program evaluation was used to retrospectively evaluate the impact of the programmatic changes introduced at the three EDs in the health system that serves as the setting for the DNP project.

The CIPP model is composed of four evaluative steps. The context phase addressed the background of the DNP project, the past barriers created by long LOSs and identify needs or resources needed to improve the overall outcomes. The input step of the CIPP program evaluation was used to assess the key stakeholders' perceptions of the

change process and to evaluate those perceptions before and after the programmatic changes that took place. In the input step of the CIPP program evaluation, a questionnaire was used to evaluate the process change and how the change has affected the ED staff. According to Stufflebeam, pp. 23 (2017), input evaluations identified how well the chosen strategy converted to a feasible work plan. In the process phase of the CIPP program evaluation, the details of the change process was described. Process evaluations help staff keep activities moving effectively and identify implementation issues, adjust plans and performance to ensure program quality (Stufflebeam, pp. 23, 2017). Finally, in the product phase of the CIPP model, data with regard to patient satisfaction including complaints in the ED specific to long wait times were reviewed and assessed in the DNP project. Average LOS in the ED before and after the program changes that took place was assessed as part of the product phase of the program evaluation. In the product phase I evaluated if the program successfully addressed the needs and stated goals and what conclusions were reached in terms of the quality of the new program. The evaluation of wait times for psychiatric patients in the ED is an important outcome, and the summative evaluation using the CIPP model.

Although the CIPP Model was created primarily to be used in education, all disciplines have “borrowed” the evaluation tool (Stufflebeam, pp. 326, 2017). Patient safety became a priority in healthcare nationwide in the year 2000 (Kohn et al., 2000). There are many illustrations using the CIPP model for evaluating programs in healthcare both inside and outside of the United States. Using the CIPP Model in this DNP quality program evaluation provide retrospective use of the CIPP information to sum up the

value the quality of the program and evaluate the safety, impacts and worth of the program to the organization.

Relevance to Nursing Practice

Addressing the Needs of the Psychiatric Patient

Psychiatric patients often present to the ED in crisis and require immediate attention due to safety concerns and crisis management (Zun, 2015). Although psychiatric patient needs differ from those who present with medical concerns, the overall treatment of the individual is typically the same. However, addressing those unique needs of the psychiatric patient that differ from nonpsychiatric patients can improve patient satisfaction and the overall quality of care provided to patients with mental illness.

According to Zun (2015), psychiatric patients have a unique set of preferences that differ from nonpsychiatric patients. Psychiatric patients differ from nonpsychiatric patients by requesting verbal interventions, peer support services, a better triage process, privacy and reduced wait times for treatment (Zun, 2015). Zun (2015), states that the psychiatric patient has every bit the risk of the sickest medical patients. Psychiatric patients have therapeutic needs that differ from patients who present with medical complications. It is imperative that caregivers have the skillset to care for patients with mental illness when they present to the ED or provide psychiatric services during the ED stay.

Thomas et al. (2018) evaluated specific accommodations for psychiatric patients using focus groups that were audio recorded, transcribed, and coded using a value-based

lens. The study found that appreciation for feeling respected, basic comforts, and shared decision-making as foundations of quality care. The researchers asked patients who had presented to the ED over the last year what accommodations would improve the quality of their experience while in crisis. Findings suggest that improved communication, private space away from the other patient population, visitation during crisis care, and shared decision making were just a few that were named.

Impact on ED Staff

Increased LOS in EDs does not only affect psychiatric patients. The impact that increased LOS has on ED staff is just as unfavorable. Long wait times cause a delay in patient care for non-medical patients, can potentially cause poor patient outcomes and cause a burden on ED physicians and staff. ED boarding negatively impacts job stress, morale and reduces overall job satisfaction.

Innes et al. (2013) report ED clinician' views on the management of caring for psychiatric patients. The study was a mixed method approach that used surveys and focus groups. Data were collected from patients with mental illness, family members and ED staff. The study showed a lack in preparation among ED staff to care for patients with mental illness (Innes et al., 2013). Consequences for ED staff were identified as reduced number of staff and inability to manage the workload. Educational preparedness of ED staff was raised as a concern. The role of ED staff of caring for patients with mental illness can present many challenges. The study found that enhanced education is vital to ensure the safety of both the patient and staff.

A systematic review (SR) of international literature by Evans et al., (2019) was conducted and designed based upon Centre for Reviews and Dissemination guidance. This systematic review aimed to examine the current quantitative evidence for liaison psychiatric services in international EDs treating patients with mental health (MH) problems in terms of their outcomes impact on EDs and ED patient care (Evans et al., 2019). There were eight studies included that used before-and-after designs, six studies used uncontrolled cohort designs, one cohort design used matched control data (Evans et al., 2019). The sample size of each study in the SR ranged from 100 patients to 2,715 and study durations ranged from 30 days to 6 years. Findings showed that care coordinators as part of standard MH care reduced ED LOS. The study also found that additional MH nurses in the ED during the day received positive feedback from psychiatry and ED staff and may have improved ED staff skills and confidence. Staff also reported that MH patients were better served by adding the liaison services.

Chepnik and Pinker (2017) discusses a psychiatric emergency service (PES) that consists of 12 beds in a locked area designated for psychiatric evaluations within a university hospital ED that has approximately 7,500 psychiatric patient visits per year. A discrete event simulation model was used on the basis of two months of data collected in a PES. The study found that visits for psychiatric emergencies appear to be increasing at an even faster rate than emergency visits overall and reports of patient boarding and ED overcrowding have become common (Chepnik and Pinker, 2017). Chepnik and Pinker (2017) also report that overcrowding can lead to dissatisfaction among patients and staff and can also contribute to poorer outcomes.

In summary, the above studies used various methodology to evaluate the challenges with increased LOS in the ED and also mentions how it impacts ED staff. ED staff education and training regarding patients who are mentally ill are a key components to patient and staff satisfaction (Larkin, 2009). Adding liaison mental health services to the ED could positively impact wait times and improve staff satisfaction (Evans et al., 2019). Although overcrowding in the ED continues to be a problem, nurses can assist in changing processes and developing policies that can benefit patient outcomes and improve average LOS to maximize quality care provided to patients with mental illness (Chepnik and Pinker, 2017).

Local Background and Context

The setting of the DNP project includes three different locations. The main location is a rural community hospital setting ED. There is a critical access hospital approximately thirty minutes from the main hospital. There is a free-standing full service ED center approximately 45 minutes from the main campus. The psychiatric service covers all three ED's. There are approximately 23,000 psychiatric visits between all three EDs per year. Roughly, 65 registered nurses are on staff and work between the three ED's. Of these approximately 50 have at least 3 years tenure at the site. A survey was distributed to all ED staff, including nursing staff, physicians, respiratory therapists, and support staff by the project site to those who have worked at the site for 3 years or longer.

Role of the DNP Student

This QI evaluation focuses on evaluating the impact of ED wait times on the staff, patients, and organization. The evaluation also determined the effectiveness of a

psychiatric emergency response evaluation process and its impact on LOS. The motivation behind this project is to improve the quality of care provided to psychiatric patients in the ED by evaluating the effectiveness of a project of improving ED wait times.

My passion for mental health nursing has grown through the years and improving the quality of care that mental health patients receive sparks my greatest interest. My role as the DNP student is to evaluate the data and present to key stakeholders the findings and potential recommendations that could enhance the throughput in the ED. Leading the project with individuals such as quality specialists, ED staff and physicians provided meaning not only to myself but to the organization.

Role of the Project Team

The project team that oversaw the programmatic changes included the ED director, behavioral health leadership, ED physician leader, chief legal counsel, and the chief compliance officer. The team met in various phases to ensure that the quality of the program followed regulatory guidelines and staff education and training was complete. The program was implemented but there was no formal program evaluation completed.

After the quality program evaluation is complete, key findings were presented to the senior leadership team, the ED and behavioral health leadership team including the ED physician senior leaders. The presentation included a review of data from January 2018 through May 2020 to validate if implementing a new response model for evaluating patients in the ED with mental illness has improved patient satisfaction scores, the

number of patients who leave without being seen and average LOS for patients in all three of the hospital's ED's.

Summary

In Section 2, there is evidence from the published literature that suggests that the increased wait times in the ED has had an impact on psychiatric patients, ED staff and patient satisfaction. The impact on patient safety, poor patient outcomes and a decrease in quality of care can be associated with overcrowding in the ED were discussed. The CIPP model was discussed and supported the quality evaluation project. In the next section, I discussed the collection and analysis of the evidence using the CIPP evaluation model.

Section 3: Collection and Analysis of Evidence

Introduction

The problem that is identified includes the amount of time psychiatric patients experience waiting in the ED while awaiting evaluation and placement to an inpatient setting. The program was implemented to fix the problem of delayed treatment in the ED for psychiatric patients, but to date, the organization has not undertaken a comprehensive evaluation of the program including the impact on patients and the impact on staff. There are reportedly fewer patient complaints, shorter ED wait times and improved patient satisfaction scores but there has been no formal data collection to report on the effectiveness of the program and nothing at all on the staff impact in the ED. This project focused on evaluating the effectiveness of a QI initiative retrospectively to analyze the impact of the programmatic changes addressing the delay issue in the ED for psychiatric patients, which was the primary intervention of the QI initiative. This section will review the sources of evidence used in the review of literature, published outcomes and research, and discuss participants, procedures, and protections of the DNP project.

Practice-Focused Questions

The practice-focused questions that provide the focus for the DNP project are twofold: (a) Did the development of a new emergency room response team significantly reduce emergency department wait times, positively affect the LWBS rates, and improve patient satisfaction for psychiatric patients? and (b) Did the development of a new emergency room response team improve the perceptions of ED staff on the process?

The first practice-focused question focused on excessive wait times for psychiatric patients in EDs and how it has brought attention to LOS, which is often extended, and boarding, like keeping patients overnight in the ED, the number of patients who have LWBS, and the effectiveness on patient satisfaction. The second question brings attention to the ED staff members' viewpoint in terms of their perceptions of the impact of the program change on the patient with mental illness as well as on the entirety of the ED.

There is a gap that has not been addressed, in better understanding whether the barriers and obstacles operative before the new program was initiated were addressed fully in the implementation and the extent to which the gains have held over time. To date, there had been no retrospective review of the data that supported that the gap in clinical practice has been reduced. The purpose of this DNP project was to provide a retrospective analysis of the site's QI initiative and identify any further gaps in practice.

The approach aligns with the practice-focused question by using retrospective data to determine whether or not the development of a new emergency room response team significantly reduced ED wait times and improved patient satisfaction. Data was abstracted 18 months prior to the implementation period and from January 2018 through May 2020 to evaluate if implementing a new response model has improved patient satisfaction scores, the number of patients who LWBS, and average LOS for patients in all three of the hospital's E.Ds. A brief staff survey was provided to those staff members who worked at the site over the past 3 years and through the implementation period to obtain opinions regarding the new response model and its effectiveness.

Sources of Evidence

The sources of evidence are used to address the practice question and include information related to extended LOS in the ED, LWBS rates, and patient satisfaction. Evidence from published research regarding LOS, LWBS and patient satisfaction is found in the literature review of Chapter 2. Sources of evidence from project site archival and retrospective data are provided by the project site and abstracted from the quality data tool that houses the information. Another source of evidence is the retrospective survey information that was conducted at the project site to review staff's perception of the programmatic changes. Collection and analysis of the retrospective data was used to address the practice-focused question by evaluating if the LOS at the DNP project site had improved after implementation of the new program.

Published Outcomes and Research

Various databases and search engines were used to find outcomes and research related to increased LOS, patient outcomes, and both staff and patient satisfaction that relates to the practice problem. The literature search was conducted by using databases such as National Library of Medicine (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), ProQuest database via the Walden Library. The peer review journal and nursing article parameters were used in the search to ensure that clinical nursing research was found. Phrases used in the search included *emergency room, emergency department, A and E departments, psychiatric, behavioral health, mental health, staff satisfaction, patient outcomes, impact, challenges* and *length of stay.* There were over 2000 peer reviewed journals associated with the phrases used in the literature

search. During the search, the years were modified to fit a more recent base of literature from the years 2010 to 2020. Conducting a literature review is important in further understanding the identified gap in practice and answering the identified practice question. This literature search assists in building a case for conducting this QI evaluation by establishing a chosen topic, conducting the search using various databases, and reviewing the literature to support the importance of examining the effectiveness of this QI initiative conducted at the DNP project site.

Archival and Operational Data

The programmatic evaluation and its impact on LOS and LWBS rates in the EDs at the project site, patient outcomes as well as patient satisfaction at the project site require data collection provided by the organization's quality team. The data was provided regarding LOS in all three ED's of the project site and LWBS. Patient complaints are retrieved from organizational experience team for the time prior to the implementation of the program and up to the post implementation phase for comparison. The data is relevant to the practice problem by demonstrating graphically the LOS over time since the new program was implemented and whether patient satisfaction scores have been significantly impacted.

LOS and LWBS data were originally collected through a proprietary system called Midas quality reporting system. The organization reported that the Midas system has been used for many years to track certain quality metrics such as LOS and outcomes and is used to improve quality throughout the organization. Patient satisfaction data is collected using the Press Ganey survey tool. The organization reports that the Press

Ganey survey process has been used for many years and allows the ability to track certain dissatisfaction by unit and complaint type. To evaluate the satisfaction with the programmatic implementation, a survey was conducted at the project site.

Evidence Generated for the Doctoral Project

Participants

No participants were recruited for this study.

Procedures

The procedures for this project was guided by steps as outlined in the Walden University DNP QI evaluation manual. To obtain the LOS evidence, the project site uses a collection tool called Midas that houses past and current data. The Midas system is used to measure, monitor and manage quality data in healthcare organizations. The requested data can be abstracted by changing the dates of services from the implementation phase up to the current state. The system is a valid tool to use because of its ability to translate the collected data into relevant information. The quality department at the project site provide this deidentified data for analysis.

The LWBS data is collected in an excel document and transferred to an excel spreadsheet specific to all 3 ED's. The quality department at the DNP project site uses this tool to report out LWBS data to senior leaders on a monthly basis.

Patient satisfaction data is housed in the DNP project sites Press Ganey database and can be abstracted using a number of different filters. The filters used from the Press Ganey collection tool include complaints specific to LOS and wait times. Another item that was abstracted using the filter of the Press Ganey tool is the overall satisfaction score

of the ED each month displayed using a run chart. The project site provided a questionnaire of ten questions that focus on the staff satisfaction before and after implementation of the program. The data from the questionnaire was provided for analysis.

A final report was presented to senior leaders within the organization. A presentation took place in the monthly QI committee meeting that consists of key leaders of the quality division. The presentation was provided by a visual PowerPoint and consist of a question and answer session prior to the end of the presentation.

Protections

Quality initiatives at the DNP project site are in place to ensure ethical protection is obtained. The quality department secured de-identified data and provided it for the evaluation process. The project site deferred to the Institutional Review Board (IRB) at Walden University as the IRB of record. The Walden University manual for an existing QI initiative's IRB process and ethical considerations were followed to ensure that privacy is maintained during the summary of the quality evaluation. Ethical protection was maintained by following the Walden University IRB policies (approval no. 11-02-20-0440370).

Analysis and Synthesis

The system used for recording and tracking quality information such as LOS, numbers of LWBS and patient satisfaction information at this project site includes the Midas Care Management System. The Midas system can be used to create spreadsheets and dashboards to trend selected data during a period of time. Midas Healthcare

Analytics offers a care performance platform that seamlessly integrates data with workflow across functional areas, automatically capturing it and reporting to regulatory organizations, then enhancing with advanced analytics (Conduent, 2020). The Midas system offers provider scorecards that facilitate review and allow comparison within peer and national communities. The system also allows care management tracking that monitors care coordination, care transition assessments with readmission risk scoring, through a streamlined workflow, which means fewer screens and consolidated forms and more focus on patient outcomes (Conduent, 2020).

LOS data were analyzed comparing monthly data from December 2015 to May 2020 of average wait times in the ED for patients with mental illness. The data was reviewed based on eighteen months prior to implementation, 6-month implementation period and eighteen months after the implementation phase. The deidentified aggregate data was collected by the quality department at the project site and provided to me as DNP project manager. The data provided the basis for statistical analysis of what happened prior to the implementation of the program, during and after. LOS data were reviewed by quarter during these times and placed on a run chart.

Retrospective data of LWBS rates were analyzed using a spreadsheet of monthly numbers of patients who have LWBS. These findings were also placed on a run chart and compared each month from the time prior to programmatic implementation to May 2020.

Patient satisfaction data were analyzed using information from the Press Ganey survey tool provided by the DNP project site. Two items from the hospitals data set were analyzed; (a) the number of complaints from patients in the ED related to LOS and (b)

the overall monthly survey scores from December 2015 through May 2020. The scores were placed on a run chart to visualize if patient satisfaction scores have had an overall improvement.

According to Provost & Murray (2011) run charts play a pivotal role in improvement projects. A run chart was used to present the data to address the practice-two. A run chart determines when changes are truly improvements by displaying a pattern of data that you can observe as you make changes (IHI, 2020). Run charts allowed leadership to visualize if change has been consistent and the new program has been effective in minimizing the LOS and the number of patients who have LWBS. The run chart allowed for comparison to current LOS and LWBS national data.

Data from a ten-question survey that was provided as part of the organizations administrative interest in evaluating the impact of the programmatic changes in the ED a brief staff survey was provided to those staff members who worked at the site over the past 3 years and through the implementation period to obtain opinions regarding the new response model and its effectiveness. The survey consisted of five questions about the ED psychiatric services prior to implementation of the program and five questions about current state of the program. The allowed the ability to gather staff's perception about the program implementation and if it has had a negative or positive impact on their workflow.

Summary

To date, there has not been a thorough evaluation of the new program that was designed in an effort to minimize long LOS for psychiatric patients in the ED. There has

been data collected to support the practice focused question, but a diligent evaluation of the data is needed, and a plan was summarized in section 3. Section 4 will discuss the findings and implications of the data analysis as well as the strengths and limitations of the project. Section 4 will also include a discussion about any plans to extend the project beyond the DNP doctoral project.

Section 4: Findings and Recommendations

Introduction

Crowding and excessive wait times for psychiatric patients in EDs have brought attention to length of stay (LOS), which is often extended, and boarding, like keeping patients overnight in the ED. A new process model was implemented to minimize the average wait time that patients with mental illness experience in the ED at the DNP project site. The purpose of the DNP project was to conduct a retrospective, QI program evaluation of the impact of the programmatic changes (a new ED response model) on patient satisfaction, staff satisfaction, LWBS, and wait times in the ED. The gap in practice was identified as an administrative gap.

The practice-focused questions that provide the focus for the DNP project are twofold:

1. Did the development of a new emergency room response team significantly reduce emergency department wait times, positively affect the LWBS rates, and improve patient satisfaction for psychiatric patients?
2. Did the development of a new emergency room response team improve the perceptions of ED staff on the process?

The purpose of the DNP project was to conduct a retrospective, QI program evaluation of the impact of the programmatic changes (a new ED response model) on patient satisfaction and ED wait times in three hospitals located in the southeastern part of the US. The literature search was conducted by using databases such as National Library of Medicine (MEDLINE), Cumulative Index to Nursing and Allied Health

Literature (CINAHL), ProQuest database via the Walden Library. Phrases used in the search included *emergency room, emergency department, A and E departments, psychiatric, behavioral health, mental health, staff satisfaction, patient outcomes, impact, challenges* and *length of stay*.

Findings and Implications

A QI evaluation was conducted of an ED psychiatric evaluation program that was implemented in July 2017. The evaluation of the data of LWBS, patient satisfaction, staff satisfaction and LOS were analyzed and compared 18 months prior to implementation, 6 months during implementation and 18 months after implementation totaling 42 months (December, 2015 to June 2017, July 2017 to December 2017 and January 2018 to May 2020). The CIPP evaluation model checklist that was developed by Stufflebeam (2007), allowed for organization of the findings in this DNP project.

Context

Prior to program implementation, the organization relied on an outside agency to complete psychiatric evaluations at all three EDs. The wait times prior to the patients being screened began to increase, patient satisfaction was impacted and there was some thought that the LWBS rates increased as a result. The organization identified a need to implement new programmatic changes due to concerns of increased LOS, LWBS, as well as poor patient and staff satisfaction.

The quality evaluation period prior to implementation began December 2015 through June 2017 and allowed for visualization of the LOS data, LWBS rates and also patient satisfaction percentages per month. This provided a picture of what the data

looked like prior to implementation of the program and allowed for comparison of the data after the programmatic changes took place.

Input

Prior to July 2017, a project team was put together to begin implementation of a new program model that would aim to improve the LOS for psychiatric patients, LWBS rates of the ED, and overall patient and staff satisfaction. The organization began to hire staff to fill the positions as a mental health prescreener in the EDs. Training and education began, and the new program started in July 2017.

The programmatic evaluation and its impact on LOS and LWBS rates, patient satisfaction, and staff satisfaction required data collection that was provided by the quality team at the project site. LOS and LWBS data were provided through the proprietary system called Midas quality reporting system. Patient satisfaction data were provided using the Press Ganey survey reporting system. To evaluate the staff satisfaction with the programmatic implementation, a survey was conducted at the project site and was provided for analysis of the staff's perception of the changes before and after implementation of the new program.

Process

The implementation period was seamless and smooth. The program was well planned using a strategic plan by the senior leaders of the organization. The project team used a project management approach using the plan-do-check-act (PDCA) cycle. The program was implemented using only one prescreener per shift between three ED's. The volumes of the psychiatric patients who present to the ED for evaluation have increased

drastically over the last 3 years and no staff has been added to the prescreening department. The organization maintains training of the mental health prescreeners annually and as changes are made. Data has been collected by the organization and stored using the Midas database for comparison but prior to this QI evaluation, no formal evaluation of the data had been complete to compare how the programmatic changes had affected the organization.

The EDs treat patients of all ages who present with mental health complaints or who are in psychiatric crisis. The organization has a psychiatric unit on site that treats patients who are 55 years and older only. Therefore, patients who are under 55 years old have to be transferred to an outside psychiatric facility. The data collection of the LOS reflects two details: (a) patients who can be admitted to the organization's psychiatric unit and (b) patients who are transferred to an outside psychiatric facility.

Product

The program met the need of the organization by being onsite and on call ready to see patients who require a psychiatric screening. LWBS data reveals a slight steady down trend in the number of all ED patients who LWBS in all three ED's before, during and after implementation of the program. The LOS data was unchanged throughout the timeframe that the data was collected. Patient satisfaction data from March 2016 through May 2020 reveals that patient satisfaction in the three ED's is unchanged since the program was implemented. The project site provided a survey to evaluate staff perception of the program using five questions about staff perception prior to implementation of the program and five questions about the staff's perception the current state of the program.

Based upon the staff satisfaction survey data provided by the project site, there has been a positive change in staff perception of the new program and management of psychiatric patients, despite the lack of apparent change in ED LOS for psychiatric patients.

Left Without Being Seen

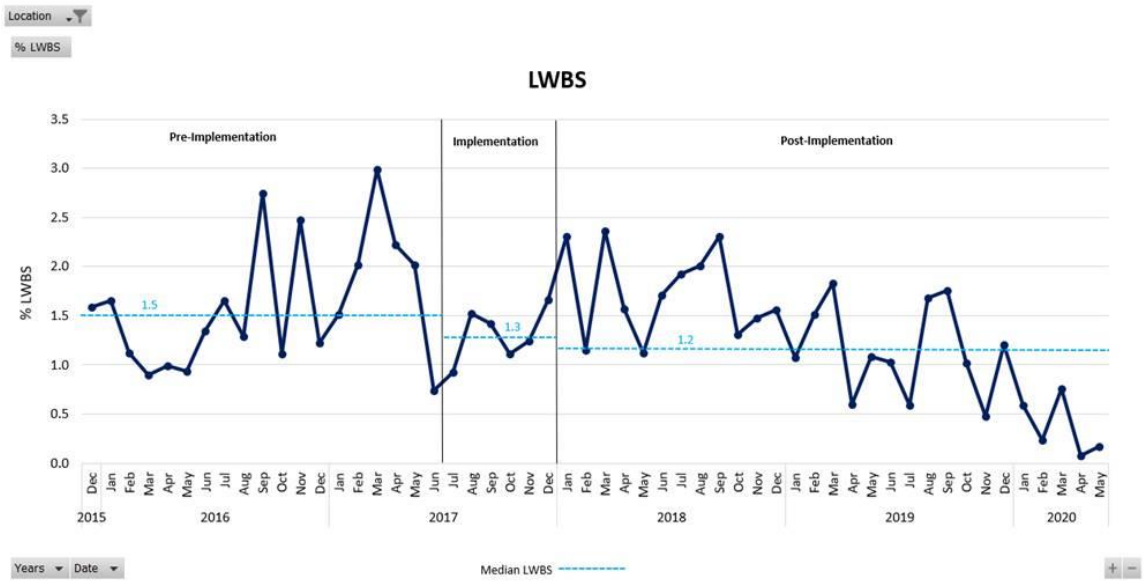
During the evaluation period of December 2015 through May 2020, 235,584 ED psychiatric patients were registered in all 3 EDs. In this entire timeframe, there were 3,807 patients who LWBS between December 2015 and May 2020. That number includes psychiatric and medical patients who presented to the ED. The monthly number of patients who left the ED without being seen fluctuated by month but overall, there is a downward trend of overall patients who LWBS in the three ED's. The data were calculated using a monthly percentage. The LWBS percentage for the entire period is 1.6% overall. The organization has a goal of equal to or below 1.5% of patients who LWBS monthly. According to hospital compare website the national average is less than 2% with a goal for healthcare organizations of 1.5%.

There is a noted steady decrease in LWBS during the time of October 2020 and May 2020 (see Figure 1). The organization anecdotally reports a decrease in ED volumes overall during that time period due to the Covid19 pandemic. The overall decrease in volume is anecdotally contributed to less patients seeking care during that timeframe. The organization reported that in 2018 there was an average of 8,300 patients per quarter that presented to all 3 EDs. In 2019, the project site reports an average of 7,600 patients per quarter that presented to all 3 EDs and in 2020, only an average of 5,400 patients per quarter has been noted. Provost and Murray (2011) explain that there are four rules for

identifying nonrandom signals of change with run charts. The rules are appropriate for quality improvement projects. Figure 1 does not provide any signal of change, indicating that there is no significant change in the process (Provost & Murray, 2011). The downward trend in LWBS between the months of December 2019 and May 2020 is anecdotally related to the recent Covid19 pandemic where the ED reports that less patients are seeking care.

Figure 1

Left Without Being Seen (LWBS)



Length of Stay

The LOS data at the project site can be analyzed using defined inclusion criteria. Thus, ED psychiatric patients' experiences from the facilities ED department can be summarized to include the time from in minutes from decision to admit until they departed from the ED departure time. The median is reported by month, and exceeds the comparative database median of 138 minutes both before and after the programmatic

changes were instituted. Although this data is useful to estimate the overall experience of the patient, it does not represent the response time of the psychiatric screener, and thus the impact of the programmatic changes is masked and bundled into the LOS total. This deficit in data collection may explain why the results of the change in process are not evident in Figure 2.

There are noted spikes in Figure 2 in Jauary 2017 and again in July 2019. The organization antecdotally reports that bed placement has been a huge challenge at the project site. The state psychiatric facilities were inundated and required diversion at various points during the evaluation period which may have contributed to the increase in wait times, and accounting for the two astronomical points in Figure 2. Provost and Murray (2011) note that a nonrandom pattern could also be signaled by too few or too many runs, or crossings of the median line. The ED arrival to departure data does not provide a signal of improvement except for the two astronomical points, inidicating significant delays in ED LOS which may be explained by state hospital diversion.

Other factors that potentially influenced the LOS and the astronomical spikes in LOS during the time of January 2017 and July 2019 include prescreener response time. The prescreener drive time, time to complete the evaluation and placement process can extend the LOS. Prescreener response time can impact LOS when there is one prescreener and multiple patients waiting at the multiple ED locations.

Figure 2

LOS ED arrival to discharge in all three locations

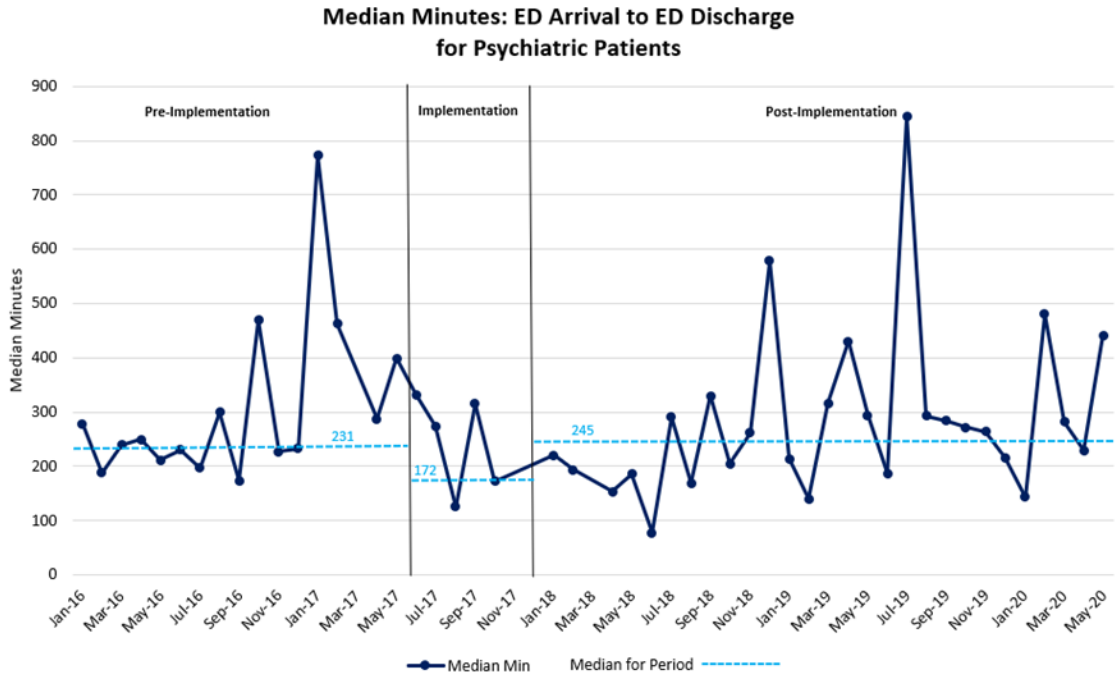


Figure 2 reflects the time from admission to the ED until the time the patient is discharged home, transferred to another psychiatric facility or admitted as an inpatient. The Midas database provides comparative data against 66 other facilities of similar size for this measure. An improvement goal noted by the organization is to continue to decrease in the median value of wait time in minutes for psychiatric patients from ED arrival time to ED discharge. Included populations include psychiatric patients from the facilities' EDs with the data elements of arrival time, discharge diagnosis, principal diagnosis code, and ED departure time.

Figures 3 to 5 breakdown the LOS by ED location within the organization. The LOS at location one is the critical access hospital. Figure 3 shows a downward trend in

LOS during the implementation phase followed by astronomical spike. There is no indication of significant change in the process. Location two and Figure 4 includes data from the main campus. Beginning in August 2016 it appears that the LOS times were below the median prior to the implementation phase. During the implementation phase there was a spike in LOS. After implementation at the main campus, there were multiple data points below the median but still did not indicate a change that was related to the new program. Figure 5, location three signifies the free standing ED data. There are very few data points below the median at this site and multiple astronomical spikes are noted indicating the program did not significantly impact the LOS.

Figure 3

LOS-ED arrival to discharge location one

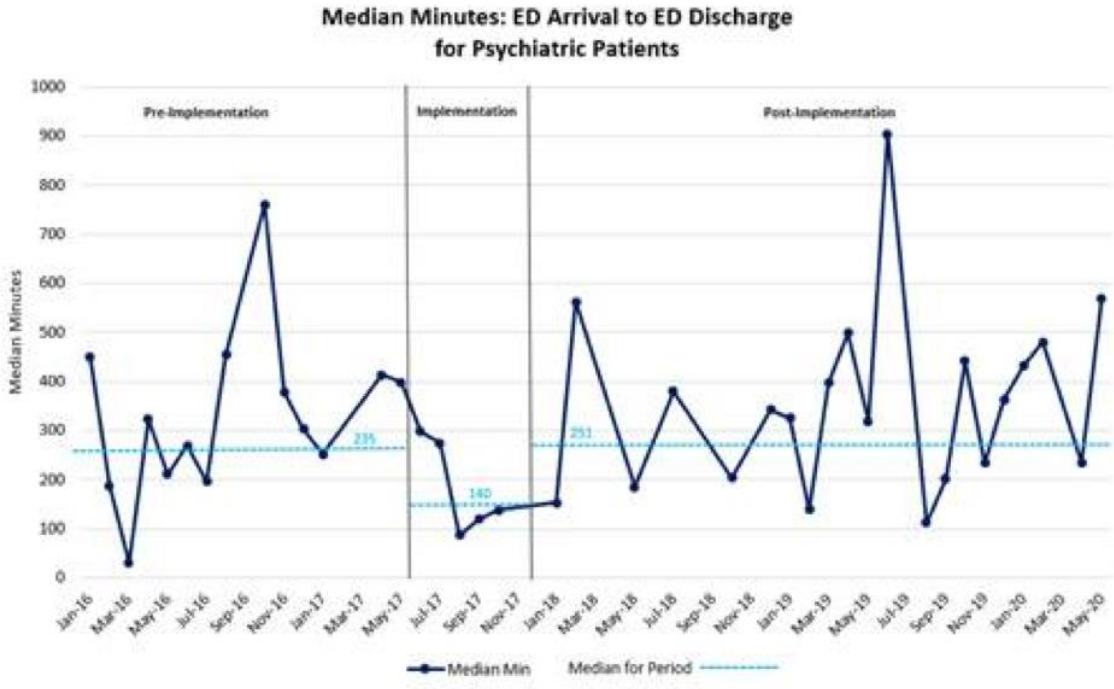


Figure 4

LOS ED arrival to discharge location two

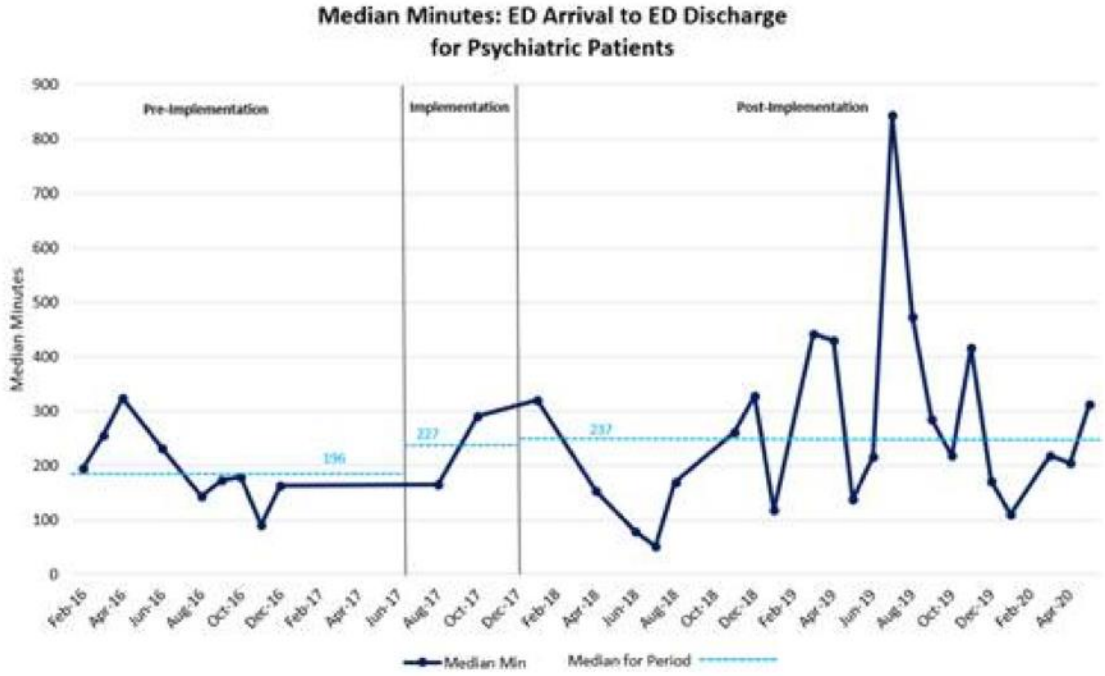
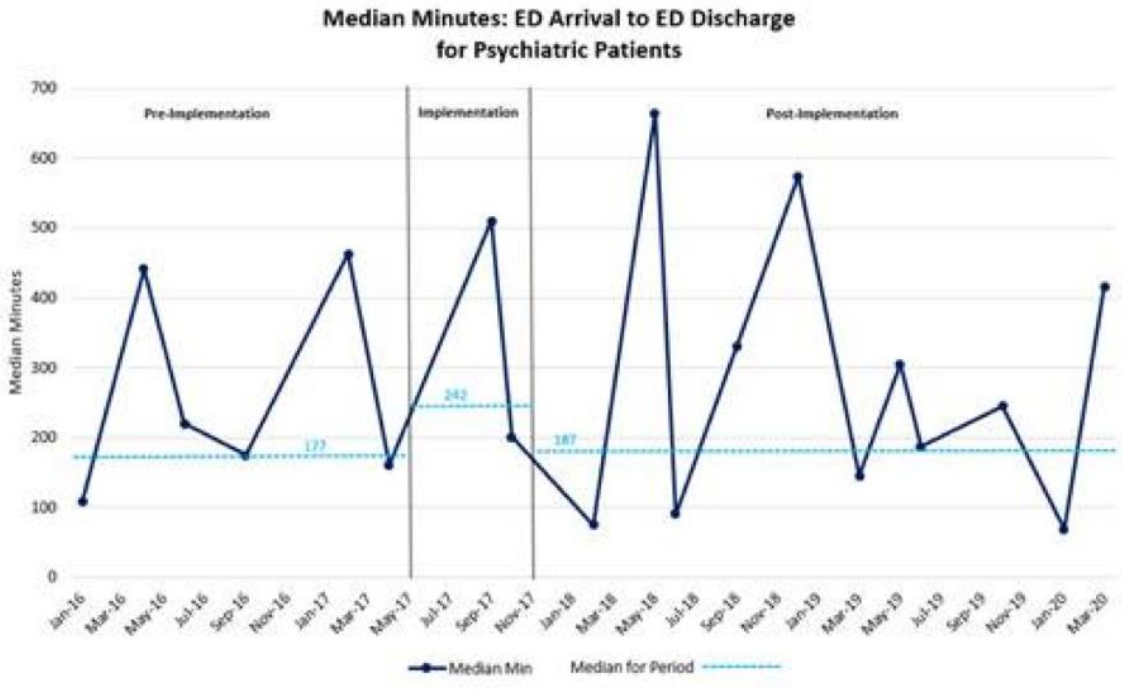


Figure 5

LOS ED arrival to discharge location three



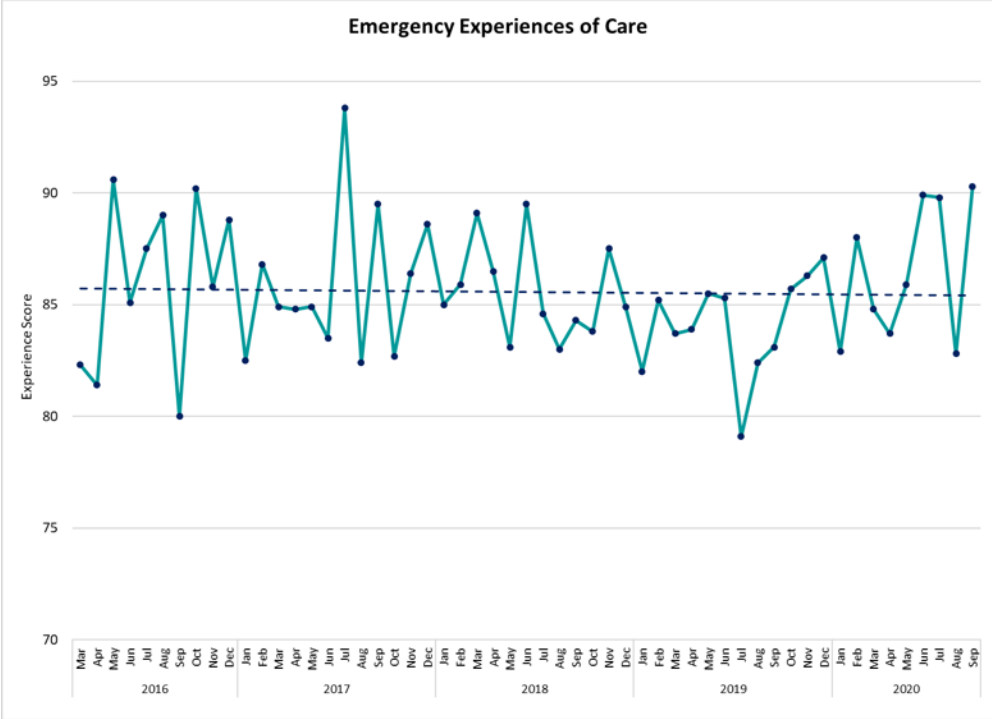
Patient Satisfaction

Patient satisfaction data were not collected using the Press Ganey database at the project site organization until March of 2016. Prior to that time, no formal patient satisfaction data collection process was conducted at the project site. In 2016, the patient satisfaction goal was 82.2% and FY20 goal was set at 86.8%. A new patient experience goal is established each fiscal year and may increase or decrease based on the goals of the EDs at that specific time. The data includes all patients who present to all three EDs during the time of evaluation. The project site anecdotally reports that the sample size each month is very low (as low as one response in a month) for all ED patients and this small sample size could produce a poor overall satisfaction percentage. After

retrospective review of the data from prior to implementation through post implementation period, the trend line remained unchanged (see Figure 6).

Figure 6

Patient Satisfaction



Feedback from Staff

A survey was provided to nursing staff, ED providers and support staff in all three ED's about their perception of the psychiatric services prior to the implementation phase and after the implementation phase. There were three providers who completed the survey, 13 RN's and three support staff. Of the ED staff who completed the survey (*N* = 19) there were 19 who met the qualifications of working in the ED with at least 3 years' tenure. Results of the demographic data collected are summarized in Tables 1, 2 and 3.

Table 1

Participants

Staff	Number of Each Staff	Average of 2017 Question 4: prescreener response	Average of 2020 Question 4: prescreener response
Provider	3	3.6	8.3
RN	13	3.2	8
Support	4	4.3	9.5
Grand Total	20	3.47	8.35

Table 2

Gender of Participants

Gender	Frequency	Percent	Valid Percent
Female	11	55.0	55.0
Male	9	45.0	45.0
Total	20	100.0	100.0

Table 3

Age of Participants

Age of Participants	Frequency	Percent	Valid Percent
18-22	2	10.0	10.0
23-33	5	25.0	25.0
34-45	7	35.0	35.0
46-60	6	30.0	30.0
Total	20	100.0	100.0

The survey consisted of five questions about the staff's satisfaction with psychiatric patient evaluation processes prior to implementation in 2017 of a revised method and five questions about the staff's perception of the program after changes were put in place in 2020. The questions were scored on a scale of 1 to 10 with 1indicating

strongly dissatisfied with the programmatic changes and 10 signifying the most satisfied. When the scores were summed across all five items for 2017 and all five items for 2020, the scores could range from a low of 25 to a high and positive score of 50.

The overall total mean score for the 2017 questions was 18.73 with a median of 17 and a standard deviation of 8.35. The total mean score for the 2020 data was 38.2 with a median of 42 and a standard deviation of 9.67. Similar counts of women and men participated in the survey and the ages of the participants varied (see tables 1, 2, and 3). The response of registered nurses (RN's) was significantly higher than the response rate of providers and support staff. The data were normally distributed for the 2017 questions, and not normally distributed for the 2020 questions. Thus, a nonparametric inferential test was used to compare the differences in the mean summed scores across the 19 survey participants. A Wilcoxon Signed Ranks test ($Z = -3.463$, $p < .001$) indicates that the mean score on the 2020 questions were statistically significantly higher and more positive than the 2017 scores.

With regard to the individual survey questions, the 2020 results were higher with a minimum average of 3 and a maximum score of 10, showing great improvement in the staff satisfaction with the programmatic changes. Prior to implementation, the prescreeners were provided by an external agency. Bringing the prescreener process internal, i.e., within the organization has drastically improved staff perception and satisfaction with the screening process. There were two particular questions of interest. The first one (Question 4) was phrased: "In 2017, I was satisfied with the psychiatric evaluation services that were provided to my patients". Question 5, was the companion

question for 2020: “In 2020, I am satisfied with the psychiatric evaluation services that are provided to my patients.” The implementation of the new program and the satisfaction with the current psychiatric services rated a score of 8.35 among all ED staff who completed the survey (*N*=19) as compared to a score of 3.42 as participants recalled their experience in 2017. As displayed in Table 5, there was a significant improvement noted in the overall satisfaction of psychiatric evaluation services among the staff from 2017 to 2020.

In table 4, descriptive statistics were used to show the meaningful data of the ED staff perception of the programmatic changes. Staff who took the survey (*N=19)* scored the 2017 questions (Q1-Q5) at an overall minimum of 1 to a maximum score of 8. The first question asked of staff pertained to the management of MH patients in the ED in 2017 ran smoothly. Question 2 focused on how quickly the patients were transferred to an inpatient hospital. Question 3 asked if patients who require inpatient psychiatric admission and do not meet criteria at the current facility, patients were transferred to other facilities quickly. Question 4 asked if ED staff was satisfied with the psychiatric evaluation services that were provided to patients in 2017. Question 5 asked if the patients were evaluated by a psychiatric prescreener quickly.

Table 4

Staff Satisfaction

Question	2017 Mean	2020 Mean
Q1 MH patient process smooth	4.11	7.30
Q2 Quick transferral to inpatient	4.16	6.80
Q3 Increased LWBS	4.11	7.30
Q4 Quick transfer to other psych	3.47	8.50
Q5 Satisfied with psych evaluation	3.42	8.35

Feedback from Senior Leadership

A meeting was held with the organization's senior leaders and key stakeholders of the DNP project and overall psychiatric services in the ED. The senior leadership consisted of the Vice President of Operations, Executive Director of Emergency Services, Vice President of Nursing Services and Executive Vice President of Hospital Operations. The presentation revealed findings of the retrospective data analysis of LOS, LWBS, patient satisfaction, and staff satisfaction during the evaluation period. The hospital leaders acknowledged that based on the data findings in the retrospective analysis, the organization must review the process and continue to make programmatic changes to improve these initiatives moving forward.

Recommendations were discussed following the presentation which brought up much dialogue about what ongoing QI initiatives the organization would support based on the current data. The senior leadership recognized that the work is only beginning. They were very complimentary of the overall project and very excited to move forward to

make further improvements in the psychiatric services within each ED at the organization. Specific recommendations for next steps were agreed upon.

Recommendations

The project site has been supportive throughout this project and continues to show commitment by recognizing the need and opportunity for improvement of the program. The DNP project site is a 277 acute care hospital in a rural area with an ED that lies within the main campus, a critical access hospital ED about 30 miles north of the main campus and a free-standing ED, also 30 miles away to the south. The organization offers psychiatric services in all three EDs but outside psychiatric services are limited across the mental health continuum. The project site is dedicated to improving the quality of mental healthcare in the community that they serve. Improving the LOS, LWBS, patient and staff satisfaction was the sole purpose for the programmatic changes.

The gap in practice was identified as an administrative gap as there had been no formal review of the data since the new program was implemented. Through formal review of the data, a retrospective quality analysis was performed. This QI evaluation project confirmed that implementation of the new program had minimal impact on patient satisfaction and LOS, as determined by the available data on overall LOS and LWBS. There was a small improvement shown by the data on LWBS rates but these changes do not seem to be related to the implementation phase, and moderate improvement on staff satisfaction of the program. However, a significant limitation in the data is related to the specific changes included in the program implementation. That is, there were no data on the response time from request for screening in the ED, to the actual completion of that

psychiatric screening process. Many things affect ED throughout, for example, availability of an inpatient psychiatric bed for short-term acute hospitalization, to lack of long-term psychiatric beds, which present another confounding variable in the data analyzed in this project.

There is recognized need for additional drill down of further data. Recommendations based on the QI evaluation for this program is for the quality department at the organization to analyze data further by looking to see if there is a correlation between specific times of the day and an increase in ED volumes. Further drill down of data related to prescreener response time is needed to evaluate if the program should include a prescreener at the EDs with greater volume rather than having one prescreener for all three EDs.

It is also recognized that the organization only provides one mental health prescreener during each shift. The implication is that if there are times of high volumes having only one prescreener on duty may cause a decrease in ED throughput due to staffing concerns. Psychiatric prescreeners anecdotally report higher volumes during the time period of 3pm to 11pm each night but there has not been any further analysis supporting that information. Increasing the number of prescreeners based on a volume analysis may significantly reduce wait times in all three EDs. The organization's leaders were supportive and suggested that a cost analysis be completed to review if creating another prescreener position would be beneficial from the hours found to have the most ED volume.

Another recommendation is moving the psychiatric evaluation from a paper document to assessment located in the EMR. Currently, the prescreeners are using a seven-page paper assessment that affects time management and the amount of time spent on each individual patient. By integrating the assessment in the EMR, the prescreeners could complete the assessment at a much higher pace and potentially increase productivity. The third recommendation is for the quality department to further analyze the benefit of the organization designating ED beds specifically for psychiatric patients. Currently, the psychiatric patients are held in the general population of the ED. By dedicating a space in the ED for this patient population, the organization would potentially increase ED throughput, decrease safety concerns, and improve the quality of care provided to these patients.

After the presentation with the organization's senior leaders, there were two further recommendations made by various leaders. Currently, transportation of psychiatric patients to other facilities has presented as an issue and creates longer wait times after the patients are accepted by a facility. A psychiatric transportation service was suggested to improve LOS and LWBS times. The second suggestion was made by the VP of Operations that was to trial completing virtual assessments in one of the EDs to minimize the travel time that it takes the prescreeners prior to beginning the assessment.

Contribution of the Doctoral Project Team

The project team that oversaw the programmatic changes consisted of the ED director, behavioral health leadership, ED physician leader, chief legal counsel, and the chief compliance officer. After completion of this data analyses, when the quality

program evaluation was complete, key findings were presented to the senior leadership team, the ED and behavioral health leadership team including the ED physician senior leaders.

The final quality evaluation data results from January 2018 through May 2020 were presented to the senior leadership team to validate if implementing a new response model improved patient satisfaction scores, the number of patients who LWBS and LOS for patients in all three of the hospital's EDs. After reviewing the results, the team has a plan to further drill down of data and will look at taking the recommendations to improve the process since there has been no viable change in LOS, LWBS and patient satisfaction data. The team acknowledges that there is more work to be done to improve the process. Prior to this quality evaluation there was no formal data analysis of this information which really proves the need for this project.

Strengths and Limitations of the Project

There were identified strengths and limitations of the project. Strengths included positive support from the project site and key stakeholders, deidentified data sources, supportive deidentified data provided by the project site and the promotion of positive social change. Another strength of the project was the available data that was provided by the project site to allow for a thorough retrospective data analysis. The project impacts positive re that promotes a greater awareness regarding mental illness, greater access to care, and recovery oriented-patient centered care.

A few limitations were identified in the study. One limitation is that there was not significant patient satisfaction data prior to March 2016 and the sample size of the staff

satisfaction data was small. There was a lack in participants for the survey that was used by the project site to evaluate staff perception of the programmatic changes. Only 29% of the ED staff participated in the survey.

Regardless of the limitations, there was an administrative gap that was identified prior to the quality evaluation. The gap showed that there was no formal review of the program after implementation and the organization did not know if the changes had made an impact on the patients in the ED. Moving forward, the organization has acknowledged that there is more work to be done and further analysis of data will need to be conducted to improve the process. The project showed a need for further drill down of the data and recommended changes to make further improvements in the process. Going forward, the project team will need to continue to review the data and analyses if further adjustments need made to create a positive impact of the program.

Section 5: Dissemination Plan

Introduction

Now that the retrospective review of the data has been finalized and the findings are completed, a dissemination plan is being developed. As previously stated, there had not been a review of the new program after implementation. A dissemination plan is being conducted to share the findings of the project with ED staff, providers, and psychiatric prescreeners. The data that was presented to the senior leadership team will be provided to the people who have the capability of making the most impact in this process, such as ED staff and the psychiatric prescreeners.

This quality evaluation project and retrospective review of the ED response system for psychiatric patients at the DNP project site can be followed by other organizations who want to improve the quality of care provided to mental health patients who present to the ED in crisis. This project highlights the relationship between the ED and mental health professionals and could be used in a variety of different settings.

Analysis of Self

As a practitioner and leader with a psychiatric and mental health nursing background, it was concerning that the programmatic changes took place 3 years prior with no formal analysis of the program or knowledge of that the program was effective. I realized more than ever that continuous evaluation of processes and programs is imperative whether newly implemented or not. It is important to never assume a process or program has improved the quality of care without the data to prove its effectiveness.

Pursuing a Doctor of Nursing was a goal of mine to advance in my career and move to an executive level of nursing leadership.

As a scholar, I am grateful for this project and this journey. This project has given me confidence, analytical skills and more passion than I already had for psychiatric and mental health nursing. As a scholar, I am now committed to a lifetime of learning and ever-changing opportunity. I will be able to help others by mentoring them to reach their goals as they advance their knowledge around my expertise.

This DNP project has provided the ability to improve my role as a project manager. I have experience managing and implementing many projects, but this was a different experience and I am thankful for that. I am passionate about organizing and directing projects that improve the care of patients with mental illness. Serving as a project manager takes strong leadership skills, communication, and problem solving.

At the beginning of my DNP journey, I knew immediately that my project would involve my passion for mental health care and improving the outcomes for patients in mental health crisis. This QI evaluation allowed me to accomplish my goals and integrate my passion for mental health nursing. I found the most challenging piece of the DNP project was the scholarly literature review, which presented with many challenges. I stayed on task with my term plan and continued to push through the barriers. Hard work, dedication, and determination has been something that I have used throughout my nursing career that I applied through the DNP program and during the project development.

Reflecting on my project experience, I am extremely thankful for the knowledge that I gained in researching, evaluating, and working toward improving patient experiences through program evaluation. As a scholar leader in healthcare, I am excited to use this knowledge and to apply it to other areas of my practice. Being able to choose a project that engaged my interest motivated me to focus on positive change.

Summary

According to the National Alliance on Mental Illness (NAMI; 2020), an average of 43% of adults suffer with mental illness each year. There are many treatment options during a mental health crisis, but the ED is used often when no other options are available. This project encompasses the need for social change and the passion to improve outcomes for patients with mental illness.

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Appendix A: Staff Survey

Staff members will be asked to complete the following 10-item survey provided by the organization's quality team.

Demographics:

Gender M, F

Age

18-22; 23-33; 34-45; 46-60; 61 and older

Tenure at site

less than 3 years; 3 years or more

Position

RN, Provider, Resp therapist, Support Staff

Shift

7am-7pm; 7pm-7am

Please respond to each question ranking your viewpoint regarding the psychiatric evaluation services in the ED in 2017 and then your view in 2020 using a scale of between 1 and 10 where 10 represents strong agreement and 1 represents strong disagreement.

Pre2017

In 2017, management of MH patients in the ED ran smoothly with little or no delays

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2017, psychiatric patients were quickly transferred to inpatient psychiatric hospital unit.

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2017, for patients who require inpatient psychiatric admission and do not meet criteria at the current facility, patients were transferred to other facilities quickly.

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2017, I was satisfied with the psychiatric evaluation services that were provided to my patients.

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2017, my patients were evaluated by a psychiatric assessor quickly

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

Post2020

In 2020, management of MH patients in the ED runs smoothly with little or no delays

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2020, psychiatric patients are quickly transferred to inpatient psychiatric hospital unit.

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2020, for patients who require inpatient psychiatric admission and do not meet criteria at the current facility, patients are transferred to other facilities quickly.

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2020, I am satisfied with the psychiatric evaluation services that are provided to my patients.

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree

In 2020, my patients are evaluated by a psychiatric assessor quickly

10 9 8 7 6 5 4 3 2 1
Strongly agree ……Strongly disagree