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## **Increasing and Monitoring Medication Adherence by Implementing a Long-Acting Injection Screening Tool**

Analee Ryals

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INCREASING AND MONITORING MEDICATION ADHERENCE BY  
IMPLEMENTING A LONG-ACTING INJECTION SCREENING TOOL

by

Analee Rose Ryals

A Doctoral Project  
Submitted to the Graduate School,  
the College of Nursing and Health Professions  
and the School of Leadership and Advanced Nursing Practice  
at The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Nursing Practice

Committee:

Dr. Carolyn Coleman, Committee Chair  
Dr. Anita Greer

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## ABSTRACT

Medication nonadherence leads to a high risk of deterioration in patients diagnosed with a mental illness. Medication nonadherence is more likely in patients who are taking daily oral medications when compared to patients on long-acting injectable antipsychotics (LAIs) (Chakrabarti, 2014). Millions of people are diagnosed with bipolar disorder or schizophrenia and treated with various medications. However, LAIs are under-utilized as a long-term treatment option for patients diagnosed with a mental illness. Patients who are prescribed LAI have a better quality of life and are more closely monitored by their healthcare providers (Kaplan et al., 2013). The implementation of an LAI screening tool is essential to increase the utilization of LAIs for the long-term treatment of various mental illnesses, especially bipolar disorder and schizophrenia. The DNP project was conducted to determine if the implementation of a screening tool increased the number of patients prescribed LAI.

## ACKNOWLEDGMENTS

The following DNP project would not have been possible without the guidance and assistance of The University of Southern Mississippi's graduate nursing professors. Specifically, Dr. Carolyn Coleman, Dr. Anita Greer, and Dr. Lisa Morgan were instrumental in ensuring I have all the tools needed to finish my degree. I would also like to acknowledge the providers and director and Baptist Behavioral Health Care for offering unwavering support throughout the DNP project. Lastly, I would like to acknowledge Emily Perkins, FNP, Patricia Malone, PMHNP-BC, and Angela Gibson, PMHNP-BC for guiding me through new experiences and challenges as an Advanced Practice Registered Nurse.

## DEDICATION

The DNP project is dedicated to the memory of my beloved grandmother, Annette Brackeen, who selflessly supported her children, grandchildren, and great-grandchildren throughout her wonderful life. I also dedicate this DNP project to my amazing husband, Peyton, who I can always count on to be dependable, patient, and loyal. Peyton continues to make exponential sacrifices to ensure my dreams are achieved. Lastly, I would like to dedicate this DNP project to my family and friends who helped me in many ways throughout my graduate studies.

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## LIST OF ABBREVIATIONS

<i>CDC</i>	Centers for Disease Control and Prevention
<i>CSSR-S</i>	Columbia Suicide Severity Rating Scale
<i>DNP</i>	Doctor of Nursing Practice
<i>EMR</i>	Electronic Medical Record
<i>IRB</i>	Institutional Review Board
<i>LAI</i>	Long-Acting Injectable Antipsychotic
<i>PA</i>	Prior Authorization
<i>PMHNP</i>	Psychiatric Mental Health Nurse Practitioner
<i>USM</i>	The University of Southern Mississippi
<i>WHO</i>	World Health Organization

## CHAPTER I – INTRODUCTION

### Background

Medication nonadherence has a negative impact on patients by causing relapse or deterioration, hospital readmission, time to stabilization, and increased suicide attempts (Leaucht & Heres, 2006). An estimated 50% of patients diagnosed with a psychiatric disorder who are prescribed psychiatric medications either take the medication incorrectly or do not take the medications at all. Compliance is defined as “the extent to which the patient’s behavior matches the prescriber’s recommendations” (Chakrabarti, 2014, p. 30). Medication noncompliance is likely when healthcare providers do not take into consideration the patient’s beliefs, socioeconomic status, and background. Adherence has replaced the word compliance to emphasize the patient’s role in contributing to his or her treatment plan. Adherence is defined as “the extent to which a person’s behavior, taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider” (Chakrabarti, 2014, p. 30).

### Significance

Medication adherence increases when a patient is prescribed an LAI (Chakrabarti, 2014). LAIs are not given to a majority of patients with psychiatric illnesses. The reasons for the minimum use of LAIs vary, but some common reasons include negative beliefs about the medication from the patient or provider and lack of resources to receive medication (Barnes et al., 2009). Educating providers and implementing a screening tool that providers can utilize could increase the number of patients being treated with LAIs. Research has shown that LAIs increase the likelihood of medication adherence, improve

patient satisfaction, and improve the patient's quality of life. According to Kaplan et al. (2013), "LAIs are associated with better functioning, quality of life, and patient satisfaction. A need exists to encourage broader LAI use, especially among patients with a history of nonadherence with oral antipsychotics" (p. 1171).

#### PICOT

The DNP project originated a clinical question to be addressed in the patient population, intervention, comparison, outcome, and time (PICOT) format. The clinical question addressed the main change in practice desired. In Behavioral Healthcare Providers (P), will the implementation of a screening tool (I) increase the awareness and knowledge of LAIs, improve screening skills, and increase the number of patients (C) initiated on an LAI (O) within 14 days of education and implementation (T)?

#### Need Assessment

The impact of medication nonadherence, especially in psychiatric disorders, is a significant issue for providers, patients, and patients' loved ones. LAIs are usually indicated for patients with schizophrenia or bipolar disorder (Barnes et al., 2009). According to the World Health Organization (WHO), schizophrenia affects approximately 24 million people (1 in 222 people) worldwide. In 2019, approximately 40 million people had a diagnosis of bipolar disorder worldwide (World Health Organization [WHO], 2022). In combination, the total number of people affected by schizophrenia or bipolar disorder totals over 64 million. Leucht & Heres assumes that about 32 million people are suffering from chronic mental illness symptoms, considering that about 50% of patients diagnosed with a psychiatric disorder are not adhering to treatment (2008).

According to Mental Health America, Mississippi is ranked 41 out of 51 states (including the District of Columbia), meaning that Mississippi has the tenth-highest prevalence of mental illness compared to other states (BetterHelp, 2022). Mental Health America indicates that Mississippi has a higher rate of mental illness and less access to care when compared to other states. Since Mississippi is a rural state, having less access to care is expected, but LAIs could aid in bridging the gap in access to care.

The facility that is supporting the DNP project treats patients diagnosed with bipolar disorder and schizophrenia on an inpatient and outpatient basis. Patients that the providers see on an outpatient basis will often be admitted as an inpatient when they do not adhere to their treatment regimen. Therefore, the providers at the facility agreed that a need existed to encourage LAI use as a long-term treatment option to increase the likelihood of patients adhering to treatment.

### Synthesis of Evidence

#### *Evidenced-Based Practice Search*

Searches of online literature were performed using multiple databases and search engines. Using criteria provided by the National Institute for Health, the trustworthiness and accuracy of online information were ensured before being included in the research (U.S. Department of Health and Human Services [USHHS], 2023). Databases such as Google Scholar, PubMed, and CINAHL were used to identify past research and information published. The research was found by searching keywords including but not limited to psychiatric medication noncompliance, long-acting injectable antipsychotics, psychiatric hospital readmission statistics, prevalence of bipolar disorder, and prevalence

of schizophrenia. The website and articles reviewed were published within the last 15 years (2008-2023).

### *Patient Benefits of Prescribing LAIs*

Patients are prescribed long-acting injectable antipsychotics for the maintenance of schizophrenia and other psychotic illnesses, such as bipolar disorder. LAIs are shown to control psychotic symptoms and prevent relapse of mental illness. According to Barnes et al. (2009), “Compared with oral antipsychotics, the psychopharmacological benefits claimed are more consistent bioavailability and more predictable correlations between dosage and plasma drug level, and an improved pharmacokinetic profile allowing lower dosage to be prescribed, with a consequent reduction in side-effect liability” (p. s37). Therefore, LAIs can be therapeutic for a patient on a smaller dose when compared to oral antipsychotics. If a patient is administered an LAI in the clinic and regularly comes to receive their injection, medication nonadherence can be ruled out, if that patient begins to experience an exacerbation of psychiatric symptoms. Receiving LAIs in a clinic setting also ensures that the patient does not overdose on their oral medication. Healthcare professionals also see patients who receive LAIs more often than other patients to receive their injections. The nurse or provider giving the injection may be more familiar with a patient on an LAI and could notice a change in condition. Another advantage of having a patient on an LAI is that clinic staff knows when a patient is not adhering to their medication regimen if they do not attend their injection appointments.

### *Benefits of LAIs for Patients’ Families and Loved Ones*

Patients with bipolar disorder, schizophrenia, or other mental illnesses have a better chance of adhering to treatment when they have a robust support system. A

supportive loved one will assist the patient by reducing barriers to treatment. If a patient was initiated on an LAI, the patient's family would likely have decreased anxiety about the patient's treatment. The patient would also have decreased anxiety about the patient potentially overdosing on oral medication. If a patient gives a loved one consent to speak with the patient's provider, the loved one can be notified if a patient happens to miss an injection. Therefore, the family will know when the patient is not adhering to treatment.

#### *Ensuring Patients' LAIs are Included in Insurance Coverage*

For most LAIs, payor sources like Medicare, Medicaid, and private insurance require prior authorization (PA). A PA is a form the provider and pharmacist complete that shows the patient has met the requirements to be initiated on an LAI. For most payor sources to approve an LAI, a patient has to be diagnosed with bipolar disorder or schizophrenia. Secondly, the patient will usually be required to have tried and discontinued one or two preferred oral antipsychotic drugs. Reasons patients would have to discontinue some oral medications are if the medication is failing to treat symptoms or if the patient is experiencing adverse effects such as weight gain or lactation. Next, the PA has to be completed and sent to the payor source for approval. Another way most payor sources will pay for a patient to be initiated on an LAI is if the patient was stabilized on the injection during hospital admission and the patient is discharged with a prescription to continue taking the LAI. Payor sources may also cover the medication if the provider deems the patient a high risk for inpatient readmission.

#### Theory and Framework

To change practice, a provider must be educated on how the practice benefits themselves and the patient. After reviewing many theories and models, Lewin's change



theory is the most applicable to this DNP project. The change theory is easy to understand. The theory consists of three steps: unfreezing, changing, and freezing. The unfreezing stage is when you prepare those who will change and educate them on why the change is occurring. Next, the changing stage is when the change is implemented, and any issues are addressed and resolved. Lastly, the freezing stage consists of the change becoming concrete. For organizations, the last stage may consist of implementing policies that state the change is now in practice (Zaccagnini & Pechacek, 2021).

The change theory provides an excellent framework for implementing a new screening tool. The unfreezing stage will consist of educating providers about the underutilization of LAIs and explaining to the providers how the new tool will help them improve the utilization and practice of prescribing LAIs. The changing stage is when the new screening tool will be implemented, and the providers will voice any questions or concerns they have during implementation. The concerns will then be addressed so the providers can continue to use the tool without any issues. The freezing stage will be the tool aiding the providers in changing their practice. The freezing stage should also increase the number of patients that are prescribed LAIs.

#### Doctor of Nursing Practice Essentials

The DNP project must address most of the Doctor of Nursing Practice (DNP) Essentials to be an effective and worthy change in practice. Healthcare is constantly evolving based on current evidence-based practice standards. The DNP Essentials provide categories that must be considered for a change in practice to be deemed essential (Zaccagnini & Pechacek, 2021). All eight of the DNP Essentials are considered and addressed for this DNP project.

### *Essential I: Scientific Underpinnings for Practice*

The first Essential ensures that nursing science and other applied sciences are the foundation for practice. Even though nursing integrates many principles to provide quality patient care, science is at the root of nursing (Zaccagnini & Pechacek, 2021). After reviewing published research, scientific underpinnings are found in the efficacy and trials of LAIs. The LAIs were formulated and tested using scientific principles.

### *Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking*

The second Essential ensures DNP nurses understand system policies and procedures and advocate for quality improvement within organizations (Zaccagnini & Pechacek, 2021). Since the Essential implicates practice changes and improvements in organizations, most DNP projects should address the Essential. For this DNP project, the Essential is addressed by educating the providers on why the screening tool is needed and advocating within the organization for the tool to be implemented.

### *Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice*

The third Essential requires the DNP nurse to review current evidence-based practice and published research. The Essential validates the DNP project by examining other professional research and publications (Zaccagnini & Pechacek, 2021). An evidence-based practice search was completed and explained earlier in this chapter for this DNP project.

*Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care*

The fourth Essential requires that the DNP nurse utilize new technology to improve health care. Information systems and technology are both essential to providing efficient patient care (Zaccagnini & Pechacek, 2021). The DNP project addresses this Essential by utilizing technology to compile and analyze all the data gathered from the screening tools.

*Essential V: Health Care Policy for Advocacy in Health Care*

The fifth Essential states that a DNP nurse must advocate for change in policies and laws for health care (Zaccagnini & Pechacek, 2021). Even though the DNP project does not directly change a policy, it could change if the findings were significant enough for the providers and the health care system. Specific screening tools, such as the Columbia Suicide Severity Rating Scale (CSSR-S), are required to be completed as part of policy and protocol (Richard Freeze, personal communication, March 6th, 2023). The use of screening tools helps providers guide their practice and provide the rationale for the plan of care.

*Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes*

The sixth Essential focuses on the importance of interprofessional collaboration to improve patient care (Zaccagnini & Pechacek, 2021). Interprofessional collaboration guides all aspects of patient care. If appropriate, a provider will utilize the screening tool and order a patient an LAI, if the patient meets the criteria. The pharmacy staff will review the order and fill the medication for the patient. Lastly, a nurse will educate the

patient and administer the injection. Therefore, at least three types of professionals will be collaborating for the change in practice for this DNP project.

*Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health*

The seventh Essential discusses the principle of primary prevention in patient care (Zaccagnini & Pechacek, 2021). According to the Centers for Disease Control and Prevention (CDC) (2017), tertiary prevention is “managing disease post-diagnosis to slow or stop disease progression” (p.1). Increasing the use of LAIs is a form of tertiary prevention, and it does improve population health by screening each patient for potential treatment with an LAI.

*Essential VIII: Advanced Nursing Practice*

The eighth Essential states that the DNP nurse must be advanced in skills, assessments, and other aspects of nursing (Zaccagnini & Pechacek, 2021). The DNP student has satisfied the eighth Essential by fulfilling clinical hours, passing check-offs, and implementing aspects of advanced nursing practice within the DNP project. As a psychiatric mental health nurse practitioner, the DNP student will continue to fulfill this essential for her entire nursing career.

Summary

Medication nonadherence is an ongoing problem within psychiatric hospitals and clinics. LAIs are underutilized and are shown to improve medication adherence. The DNP project aims to change provider practice by implementing a screening tool to increase the utilization of LAIs for patient treatment. Millions of people in the United States are diagnosed with mental illness, and many of these patients could benefit from

using an LAI. Evidence has proved that patients, their loved ones, and others could benefit from increased utilization of LAIs. Therefore, the DNP student will implement a LAI screening tool into practice to increase the amount of LAIs prescribed by providers.

## CHAPTER II – METHODS

### Introduction

The DNP project was conducted at a behavioral healthcare facility in North Mississippi. The behavioral healthcare facility is a 38-bed inpatient adult and geriatric unit and an outpatient clinic that serves adolescents, adults, and geriatrics. Two psychiatrists and two psychiatric mental health nurse practitioners (PMHNP) currently practice at the facility. The inpatient unit treats patients for drug and alcohol detox, initial or acute symptoms of neurocognitive disorders, suicidal or homicidal ideations or attempts, and acute exacerbations of psychotic disorders such as schizophrenia and bipolar disorder. The outpatient clinic provides therapy and medication management for patients with psychiatric illnesses. The screening tool implemented during this DNP project was used on an inpatient and outpatient basis.

### Intervention

The DNP project was initiated after discussing with psychiatric providers and conducting an evidenced-based practice search. The conclusion was that more patients need to be initiated on an LAI for long-term treatment of certain psychiatric illnesses. Since an LAI screening tool is not used at the behavioral healthcare facility, the tool will be implemented and aid in quality improvement in practice. The behavioral healthcare facility's director gave a letter of support to the DNP student. The screening tool consisted of five short questions based on current LAI prescribing guidelines found during the evidence-based practice search, and the tool is designed to promote the initiation of LAIs for patients who are appropriate candidates. The providers utilized the

tool for patients with other diagnoses as well, but the providers were required to utilize the tool for patients diagnosed with schizophrenia or bipolar disorder.

#### *Category One-Awareness*

The DNP project began by conversing with the providers and discussing how LAIs are often under-utilized in supporting behavioral healthcare facilities and other practices worldwide. The providers understood that a change in practice was necessary to improve patient care. The providers were grateful that this proposed change in practice would likely promote medication adherence.

#### *Category Two-Education*

The providers were educated on the synthesis of evidence and how the screening tool needed to be utilized. The providers were informed that the tool was to be utilized on patients diagnosed with schizophrenia and bipolar disorder; however, if they desired, they could utilize the screening tool on patients with a different diagnosis. The providers were also educated that most forms of insurance will not approve using an LAI unless the patient has failed medication therapy for two other oral antipsychotics.

#### *Category Three-Implementation*

Training for the implementation of the screening tool was simple. Providers were given ample copies of the screening tool to store in their offices. Providers were informed on how to answer the questions to the best of their abilities. The tools were collected at the end of each business day by the DNP student for data collection and storage. The providers were informed to not put any identifying patient information on the screening tool. They understood the screening tool and did not have any further questions. The

providers were given the DNP student's contact information should they have any questions during the implementation process.

### Study of the Intervention

The study of the intervention of this DNP project consisted of comparing the number of patients prescribed an LAI during the time of implementation to the number of patients prescribed an LAI two weeks before implementation. The amount of patients prescribed an LAI two weeks before implementation will be identified by a retrospective chart review. If the intervention is successful, the number of patients prescribed an LAI during implementation will be higher when compared with the number of patients prescribed an LAI before implementation. The DNP project will also determine if patients with a certain diagnosis are more likely to be prescribed an LAI. Lastly, the DNP project will identify common reasons why patients who meet the criteria for an LAI are not being prescribed one. Providers will learn that initiating an LAI is the best form of long-term treatment for most patients who fit the criteria for being screened.

### Population of Interest

When deciding the course of the DNP project, a specific population of interest was identified. The specific population included patients with schizophrenia or bipolar disorder at risk for medication nonadherence and past or potential hospital readmission. Providers were the subjects of this DNP project, and they decided which patients were suitable for utilization of the screening tool based on the patient's diagnosis of schizophrenia or bipolar disorder and the patient's cognitive ability to consent to treatment with an LAI.



## Instruments

The questions used in the screening tool were derived from various sources that provided prescribing practice guidelines for LAIs. The first question, which reads “What is the patient’s diagnosis?” is a demographic question the DNP student included to obtain if a majority of patients diagnosed with a particular mental illness are more likely to be prescribed LAIs. The second question, “Has the patient been on two or more oral antipsychotics?” was included based on guidelines written by Hamann et al. (2010). Hamann et al. discuss that maintenance therapy with oral antipsychotics should be tried first before attempting treatment with an LAI since an LAI is a more invasive form of medication therapy. The third question, “has the patient been informed and educated about the use of LAIs?” is used to ensure the provider educates and informs the patient about LAI treatment before prescribing an LAI to the patient without his or her informed consent. The fourth question, “Was the patient prescribed an LAI?” is to gather data on how many patients were prescribed an LAI after the providers were educated and the screening tool was implemented. The last question reads, “If not, why was the patient not initiated on an LAI?” The provider can answer this question freely, and common answers will be included with the results. Common answers the DNP student expects for the final question include the patient refused, the patient does not have insurance and cannot afford medication, or the patient is stable on current medication therapy.

## DNP Project Timeline

The timeline of this DNP project began with the approval of the PICOT statement by the DNP student’s committee chair, Dr. Coleman, and the DNP student’s committee member, Dr. Anita Greer, in February 2023. After approval was gained, the DNP student

then gained a letter of support from the supporting behavioral health facility's director in March of 2023. After writing the first two chapters, the student then presented her proposal to Dr. Coleman and Dr. Greer. When approval was gained from the committee chair and member, the DNP student submitted her DNP project proposal to the University of Southern Mississippi's (USM) Institutional Review Board (IRB) (Protocol 23-0474). After approval from the IRB, the student was then permitted to implement her DNP project using the methods explained in this chapter.

#### Summary

The location for implementation of a screening tool for LAIs is ideal considering the variety and amount of patients seen at the supporting behavioral healthcare facility. The providers were educated on the need for increased use of LAIs, and they agreed that a required screening tool could aid them in changing their practice to increase the number of patients prescribed LAIs. The providers were then trained on how to utilize the screening tool. The DNP student was available to address any concerns during implementation. After implementation, the DNP student gathered all the screening tools, and she compiled and analyzed all the data to produce the intended results for this DNP project.

## CHAPTER III – RESULTS

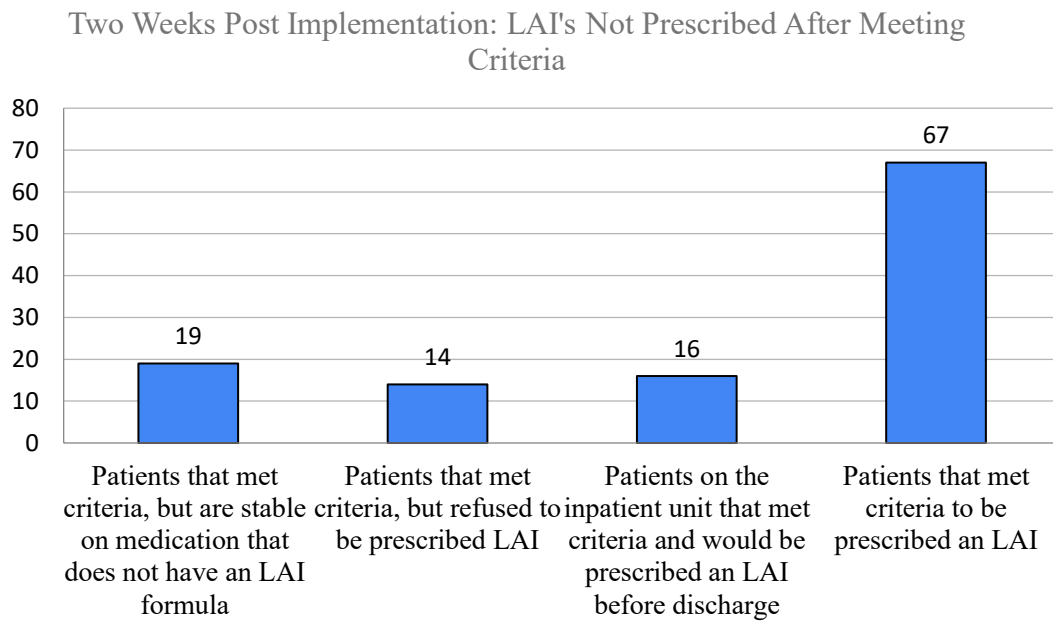
### Overview.

Two psychiatrists and two psychiatric mental health nurse practitioners at the supporting behavioral health facility implemented the screening tool into their practice for two weeks. The providers were educated on how to use the screening tool and were informed that they were required to utilize the tool on patients diagnosed with schizophrenia or bipolar disorder, but they could also utilize it on patients with a different diagnosis. The data analysis focused on how many LAIs were prescribed in total, how many LAIs were prescribed per diagnosis, and identifying why patients were not prescribed an LAI if they met the criteria. The main objective of the DNP project was to increase the amount of LAIs prescribed in practice. The DNP student conducted a chart review of all the patients seen by the four providers participating in the study to determine the number of LAIs prescribed to patients two weeks before the implementation of the screening tool. A total number of three patients were prescribed an LAI in the two weeks before implementation of the screening tool. The screening tool was implemented, and the DNP student collected all completed screening tools for two weeks. Overall, the total number of patients prescribed an LAI two weeks after implementation of the screening tool was twelve.

### Analysis of Findings

After implementing the screening tool for two weeks a total of 154 screening tools were completed and analyzed. To meet the criteria for an LAI, most prescribing guidelines recommend that a patient fail two oral antipsychotic medications (Barnes et al., 2009). 67 (43.5%) patients screened met the criteria to be prescribed an LAI. The data

showed two frequently occurring reasons that patients were not prescribed an LAI, even after meeting the criteria. The total number of patients who met the criteria to be prescribed an LAI but were stable on an oral medication that did not have an LAI formula was 19 (28.4%). 16 (23.8%) patients who were screened and met the criteria were patients on the inpatient unit who would be prescribed and given an LAI on the day of discharge from the facility. Lastly, 14 (20.8%) patients who met the criteria to be prescribed an LAI refused to be given the prescription and requested another plan of treatment. The data analysis described is shown in the figure below.

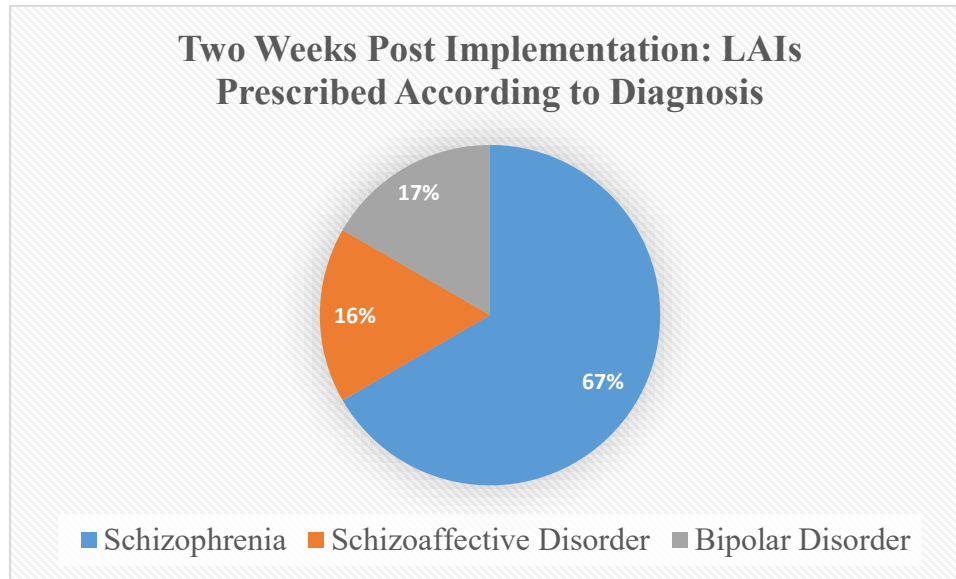


*Figure 1. Two Weeks Post Implementation: LAIs Not Prescribed After Meeting Criteria*

Of the twelve patients who were prescribed an LAI two weeks after implementation of the screening tool, eight (66.7%) of those patients were diagnosed with schizophrenia. Two (16.7%) of the patients who were prescribed an LAI were diagnosed with Schizoaffective Disorder, and the other two (16.7%) patients were

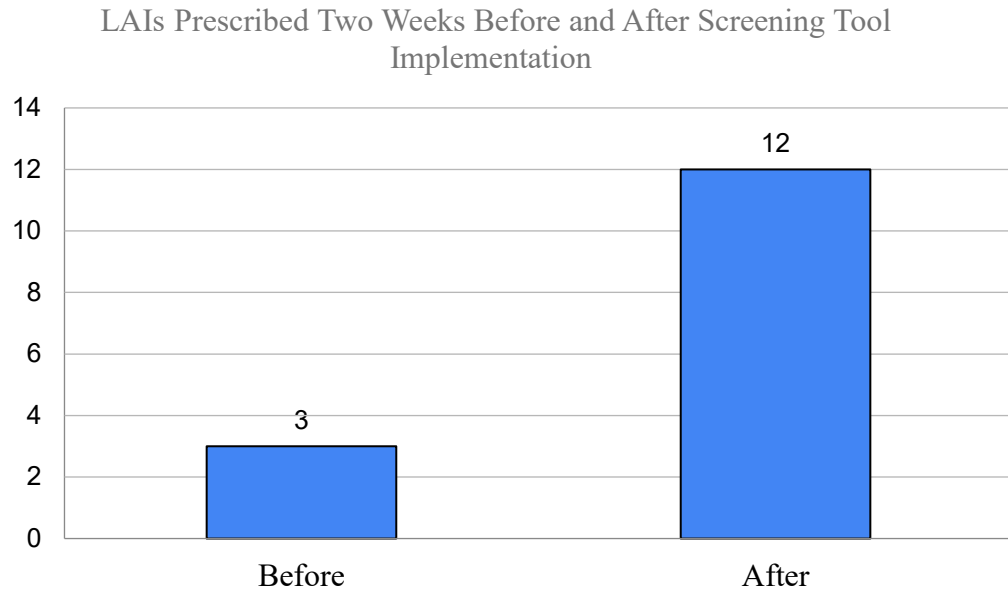
diagnosed with bipolar disorder. Overall, the providers were more likely to prescribe an LAI to a patient diagnosed with schizophrenia, when compared to all other diagnoses.

The statistics are shown in the figure below.



*Figure 2. Two Weeks Post Implementation: LAIs Prescribed According to Diagnosis*

Out of the 67 patients who met the criteria to be prescribed an LAI, twelve (17.9%) patients were prescribed an LAI. When compared to the number of patients who were prescribed an LAI two weeks before implementation of the screening tool, which was three, there was a 400% increase in the number of LAIs prescribed two weeks after implementation of the screening tool.



*Figure 3. LAIs Prescribed Two Weeks Before and After Screening Tool Implementation*

#### Summary

The objectives of the DNP project were to increase the number of LAIs prescribed, identify reasons patients are not prescribed LAIs, and identify which patients were more likely to be prescribed an LAI based on their diagnosis. After analyzing the findings, the DNP student found that all the objectives were met. The analysis showed that utilizing the screening tool led to the providers changing their practice by increasing the number of LAIs prescribed.

## CHAPTER IV – CONCLUSION

The main goal of the DNP project was to ensure behavioral healthcare providers are considering LAIs for treatment for each patient that meets the criteria. Since the providers were required to utilize the screening tool during visits with patients diagnosed with bipolar disorder or schizophrenia, the providers were constantly reminded to inform their patients about the option of including LAIs in their treatment plan. Therefore, the implementation of the screening tool was effective.

### Key Findings

The DNP project yielded numerous findings that are included in the results; however, the key findings are the most important results. The practice of prescribing LAIs for treatment was quadrupled after the implementation of the screening tool. The patients diagnosed with schizophrenia were more likely to be prescribed an LAI than a patient with another diagnosis. Lastly, the most common reason patients are not prescribed an LAI after meeting the criteria is that they are stable on a medication that does not have an LAI formula.

### Strengths and Limitations

The largest strength of the DNP project is the amount of screening tools completed. Since the behavioral health facility has both inpatient and outpatient services, the providers see numerous patients. The high acuity of the patients in the inpatient unit and the lower acuity of the patients at the outpatient clinic gave the DNP project a diverse population of patients. Another strength is the length of the screening tool, which is only five questions. Lastly, the DNP project brought more awareness and education about the need to increase the utilization of LAIs. One limitation of the DNP project was time

constraints. The implementation phase of the DNP project was only two weeks, but four to six weeks would have been ideal. More time to carry out the DNP project would result in a larger sample size and more refined results. However, the sample size of 154 was more than adequate when considering the time span of the DNP project.

### Recommendations

The DNP student recommended that the facility continue to utilize the screening tool to continue to increase the utilization of LAIs for treatment. The DNP student recommended that the screening tool be added to the electronic medical record (EMR). If the screening tool was in the EMR, it would be easier for the providers to access it during documentation. The DNP student recommended that the providers utilize oral medications that have an LAI formula, when appropriate, so the provider will have the option of prescribing an LAI when the patient is stabilized. The DNP student also recommended the providers ensure the patient has adequate resources to receive an LAI after the LAI is prescribed.

### Summary

The long-term and short-term anticipated findings of the DNP project were met. An increase in the amount of patients prescribed an LAI will yield a better outcome for the patients. The patients who are now being treated with an LAI are less likely to be readmitted to the hospital and more likely to be adherent to their treatment regimen. Due to the change in practice brought on by the implementation of the screening tool, the participating healthcare providers are more likely to utilize LAIs as a treatment option for their patients.



APPENDIX A – Letter of Support



March 27, 2023

**RE: Letter of Support for Analee Ryals, BSN, RN**

To: Dr. Carolyn Coleman and Dr. Anita Greer

This letter is in reference for Analee Ryals, BSN, RN who is seeking approval of her Clinical Doctoral Project. The focus and title of her evidenced-based project is *Increasing and Monitoring Medication Adherence by Implementing a Long-Acting Injection Screening Tool*. The site is in the Behavioral Health setting of Baptist Memorial Hospital-Golden Triangle Regional.

I have discussed this topic with Analee Ryals and support and recommend the need for a screening tool for long-acting psychotropic injections and behavioral health provider education. I understand that the behavioral health providers would use the screening tool for at least 14 days. After data analysis, I understand that Analee will distribute her findings to the providers that participated in her research.

I understand that following approval by Baptist Memorial Hospital, she will seek approval from The University of Southern Mississippi Institutional Review Board (IRB) for final approval of her Clinical Doctoral Project proposal. At present, I understand that Analee Ryals is a full-time BSN-DNP (Psychiatric Mental Health Nurse Practitioner) student in the Doctor of Nursing Practice Program at the University of Southern Mississippi, Hattiesburg campus.

I am the Behavioral Health Director at Baptist Memorial Hospital. I am offering this letter of support of the doctoral student, Analee Ryals, in her doctoral project as titled above and look forward to hearing her findings.

I understand that participation by the behavioral health providers is completely anonymous and voluntary. There is no compensation for their participation.

I understand that letter of support will be included in the University of Southern Mississippi Institutional Review Board (IRB) application.

Her Chair contact information is Dr. Carolyn Coleman, MPH, DNP, FNP-BC, PMHNP-BC and number is (601)266-5869.

*As Director of Behavioral Health at Baptist Memorial Hospital-Golden Triangle Regional, I would like fully support Analee Ryals to achieve her academic endeavor in this clinical practice project. I look forward to hearing the results of this study and the implications on clinical practice.*

If there is any other information you should need, please do not hesitate to contact me.

Sincerely,

A large black rectangular redaction box covering the signature and name of the sender.

00-544-8762

## APPENDIX B – Long-Acting Injection Screening Tool

### LONG ACTING INJECTABLE ANTIPSYCHOTICS (LAIs) SCREENING TOOL

\*Please do not put any patient identifying information on tool

1. What is the patient's diagnosis?

2. Has the patient been on two or more oral antipsychotics? Circle one:

Yes No

3. Has the patient been informed and educated about the use of LAIs? Circle one:

Yes No

4. Was the patient initiated on an LAI during today's visit? Circle one:

Yes No

5. If not, why was the patient not initiated on an LAI?

## APPENDIX C – IRB Approval Letter

### Office of Research Integrity



118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

#### NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI using the Incident form available in InfoEd.
- The period of approval is twelve months. If a project will exceed twelve months, a request should be submitted to ORI using the Renewal form available in InfoEd prior to the expiration date.

PROTOCOL NUMBER: 23-0474  
PROJECT TITLE: INCREASING AND MONITORING MEDICATION ADHERENCE BY IMPLEMENTING A LONG-ACTING INJECTION SCREENING TOOL  
SCHOOL/PROGRAM: School of Leadership & Advance Nursing Practice  
RESEARCHERS: PI: Analee Ryals  
Investigators: Ryals, Analee-Coleman, Carolyn-  
IRB COMMITTEE: Approved  
ACTION:  
CATEGORY: Expedited Category  
PERIOD OF APPROVAL: 12-Jun-2023 to 11-Jun-2024

A handwritten signature in cursive script that reads "Donald Sacco".

Donald Sacco, Ph.D.  
Institutional Review Board Chairperson

APPENDIX D – Informed Consent



INSTITUTIONAL REVIEW BOARD  
**STANDARD (SIGNED) INFORMED CONSENT**

**STANDARD (SIGNED) INFORMED CONSENT PROCEDURES**

- **Use of this template is optional.** However, by federal regulations ([45 CFR 46.116](#)), all consent documentation must address each of the required elements listed below (purpose, procedures, duration, benefits, risks, alternative procedures, confidentiality, whom to contact in case of injury, and a statement that participation is voluntary).
- Signed copies of the consent form should be provided to all participants.

Last Edited March 13<sup>th</sup>, 2023

Today's date:06/15/2023		
<b>PROJECT INFORMATION</b>		
Project Title: INCREASING AND MONITORING MEDICATION ADHERENCE BY IMPLEMENTING A LONG-ACTING INJECTION SCREENING TOOL		
Protocol Number: 23-0474		
Principal Investigator: Analee Ryals	Phone: (662)822-5954	Email: w10029009@usm.edu
College: Nursing and Health Professionals	School and Program: School of Leadership and Advanced Nursing Practice Doctor of Nursing Practice Psychiatric Mental Health Nurse Practitioner	
<b>RESEARCH DESCRIPTION</b>		
<p><b>1. Purpose:</b></p> <p>The purpose of the study is to make a change in prescribing practice within the psychiatric specialty. The change seeks to increase the amount of long acting injectable antipsychotics (LAIs) prescribed within the practice.</p> <p><b>2. Description of Study:</b></p>		

The screening tool that will be implemented is a short five question tool with no identifiers that will guide the prescriber in whether or not a patient is appropriate to be prescribed a long acting injectable antipsychotic (LAI). The tool will be utilized by the providers for patients diagnosed with bipolar disorder or schizophrenia.

The analysis will determine if the amount of LAIs prescribed was increased due to utilization of the screening tool. The analysis will also examine reasons patients are not initiated on an LAI for long term treatment.

**3. Benefits:**

Potential benefits include becoming more familiar with the prescribing practice for long acting injectable antipsychotics (LAIs).

**4. Risks:**

Providers that participate in this study and prescribe their patients long-acting injectable antipsychotics (LAIs) pose the risk of patients experiencing adverse effects of these medications. Adverse effects of these medications include mild sedation, dry mouth, constipation, akathisia, sexual dysfunction, acute dystonias, weight gain, tardive dyskinesia, myocarditis, and agranulocytosis.

**5. Confidentiality:**

The information the providers share on the screening tool will be confidential. No patient identifying information will be recorded on the screening tool the providers utilize. The collected screening tools will be kept in a locked cabinet at the practice. The P.I. and the facility director will be the only individuals to have access to the locked cabinet.

**6. Alternative Procedures:**

None

**7. Participant's Assurance:**

This project and this consent form have been approved by USM's Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, 601-266-5997.

Any questions about this research project should be directed to the Principal Investigator using the contact information provided above.

**CONSENT TO PARTICIPATE IN RESEARCH**

**Participant's Name:** \_\_\_\_\_

I hereby consent to participate in this research project. All research procedures and their purpose were explained to me, and I had the opportunity to ask questions about both the procedures and their purpose. I received information about all expected benefits, risks, inconveniences, or discomforts, and I had the opportunity to ask questions about them. I understand my participation in the project is completely voluntary and that I may withdraw from the project at any time without penalty, prejudice, or loss of benefits. I understand the extent to which my personal information will be kept confidential. As the research proceeds, I understand that any new information that emerges and that might be relevant to my willingness to continue my participation will be provided to me.

(       )

\_\_\_\_\_

**Research Participant**  
**Person Explaining the Study**

\_\_\_\_\_

\_\_\_\_\_

**Date**

**Date**

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