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Utilizing the PHQ9 survey to improve depressive symptoms in opioid dependent adults: A Quality Improvement Project

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Utilizing the PHQ9 survey to improve depressive symptoms in opioid dependent adults: A Quality Improvement Project

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A DNP project submitted in partial fulfillment of the requirements for the degree of

Doctor of Nursing Practice

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Approval Page

This is to certify that the DNP Project Final Report by

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has been approved by the DNP Project Team as well as the Sacred Heart University IRB on

September 11, 2023

for the Doctor of Nursing Practice degree

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Abstract

Significance and Background: Opioid dependence continues to be a fighting battle in our country. While many individuals do well on maintenance therapy such as suboxone, they often are faced with comorbid challenges including depression and anxiety. Research shows that the risk for depressive symptoms in opioid dependent adults increases along with the duration of use and increase of dosage (Semenkovich et al., 2014). There is no consistency among depression screening for opioid dependent adults despite the research that suggests the two often coincide with one another. The goal of this quality improvement project was to implement routine depression screening using the PHQ9 survey for the opioid dependent adults who are patients of the practice setting.

Purpose: The purpose of this quality improvement project is to utilize the PHQ9 survey for opioid dependent adults who have been on maintenance therapy for at least 30 days prior to the beginning of this project to identify depressive symptoms that often coincide with opioid use and misuse. The goal of this project is for the provider to treat or refer patients to treatment options for depressive symptoms, ultimately improving their quality of life.

Methods: The method used for this quality improvement project was The Institute for Health Care Improvement (IHI) Model (PDSA).

Outcome: After reviewing the data, it was found that 66% of the opioid dependent adults who participated in this quality improvement project had positive scores on their PHQ9 survey, identifying depressive symptoms that may have otherwise gone unnoticed. Of the 66% of patients who had positive scores, 78% were open to discuss treatment options for depression such as medical management or therapy.

Discussion: The outcome of this quality improvement project ultimately concludes that routine depression screening should be a part of routine visits for opioid dependent adults.

Keywords and Phrases: *Opioid dependence, opioid dependent patients, PHQ9, depression screening, depression screening for opioid dependent patients.*

Problem Identification

Description of the Problem – National

The opioid epidemic has been viciously affecting our nation since the 1990s with the first major wave of opioid overdose deaths occurring in 1999 (CDC, 2023). Since the 1990s, over half a million lives have been lost to opioid overdoses in this country (CDC, 2023). There are over 200 million prescriptions written annually for opioid analgesics despite the limited evidence on their efficacy and the abundance of evidence on their potential harm and addictive measures (Semenkovich et al., 2014). Data published in the *Journal of General Internal Medicine* offers clear evidence that opioid analgesics prescribed for non-cancer and non-HIV pain significantly increases the risk for development of major depressive disorder in individuals with no prior history of depression (Semenkovich et al., 2014). Data also shows that the risk for depressive symptoms increases along with the duration of use and increase of dosage (Semenkovich et al., 2014). Opioid analgesics continue to be prescribed for non-cancer pain, such as back and shoulder pain, causing the national public health problem to soar as this practice increases the addiction and misuse of opioids, ultimately leading to an increase in mental health problems among these individuals (Semenkovich et al., 2014). Other studies have shown that patients with severe depressive symptoms who use opioids have an increased likelihood of opioid misuse (Tumenta et al., 2021).

Description of the Problem - Local

The misuse and abuse of opioid analgesics in Connecticut has increased significantly over the past few years, causing a state-wide public health concern (Department of Public Health CT, 2023). Studies show that prolonged use of opioids (greater than 30 days) increases the risk for depression and depressive symptoms in these individuals (Tumenta et al., 2021). The patient

population of the practice setting that will be considered for this project are opioid dependent adults on Buprenorphine/Naloxone, a medication that is used to treat opioid addiction and opioid use disorder (SAMHSA, 2023). The medication produces similar, but much weaker effects as opioids such as fentanyl and methadone (SAMHSA, 2023). When taken as prescribed, Buprenorphine/Naloxone can assist in diminishing the physical dependence to opioids and lower the potential for misuse or relapse (SAMHSA, 2023).

The patient population on this medication at the practice setting have strict appointments that range in frequency depending on the patient's behavior and misuse of opioids. Many of these patients who take Buprenorphine/Naloxone as prescribed and provide clean urine samples are seen monthly. Their visits are quick, but include important questions such as "how is your mood?" and "are you feeling depressed or having suicidal thoughts?" It has been found that medical interviewing for depressive symptoms is less sensitive than diagnostic screening tools such as the PHQ9 (Levis et al., 2019). This project would involve implementing the PHQ9 survey for opioid dependent patients at this practice at each monthly (or more frequent) visit to further assess and screen for possible depressive symptoms that may otherwise have gone undiagnosed.

Organizational Priority

This project has the support of the practice owner and project mentor as well as the rest of the staff at the practice setting. The project will be used to show how the implementation of the PHQ9 survey at monthly office visits for opioid dependent adults improves the quality of life of this patient population through timely diagnoses, treatment, and follow-up of co-existing depressive symptoms.

Development of Clinical Question

An evidence search was performed to identify effective practices in place for the use of the PHQ9 for opioid dependent adults. The following PICO question was developed for this search:

Do opioid dependent adults with co-existing depression (P) who complete the PHQ9 survey at their monthly office visit (I) compared to those who do not complete the survey (C) receive earlier/prompt treatment for their depressive symptoms (O)?

Evidence Review

Systematic Search for Evidence: Process

A search of the following databases was conducted; CINAHL, MEDLINE, PUBMED and TRIP. The keywords and phrases searched were opioid dependence, opioid dependent adults, opioid abuse, PHQ9, PHQ9 and depression screening, depression screening and opioid dependent adults, depressive symptoms, PHQ9 and opioid dependence, quality of life and opioid dependence. Filters for all searches included “English language” and “peer reviewed.” Criteria used when selecting articles for rapid critical appraisal included depression screening for opioid dependent adults, opioid dependent adults with undiagnosed depression, opioid dependence, risk for depressive symptoms in patients on chronic opioids, and screening for co-existing depression in opioid dependent adults in primary care. Please see Appendix A for a display of the search terms and results for each database utilized.

Systematic Search for Evidence: Results

To understand the local practice problem more fully, this DNP student was part of many discussions and office appointments with opioid dependent patients at the practice setting that resulted in the identification for the need of a routine depression screening tool for this patient population. The idea was discussed with the practice owner and project mentor who agreed with

the need for a routine depression screening tool for this patient population and expressed full support of implementing this project.

Evidence Appraisal Summary, Synthesis, and Recommendations

Appraisal of each article was performed using the Rapid Critical Appraisal Tools (Melnyk & Fineout-Overholt, 2019). Appendix B displays the use of the RCA tool for one of the articles appraised. Six articles were reviewed utilizing the RCA that focused on the link between opioid dependence and misuse and depression. The six articles had levels of evidence ranging from II to IV. An evidence summary table with details of all the appraised articles is found in Appendix C.

The evidence demonstrates that patients who are opioid dependent or misuse opioid analgesics are at an increased risk for depression (Semenkovich et al., 2014).

Based on the evidence, the recommendation is to implement the PHQ9 survey at monthly office visits for opioid dependent patients to identify depressive symptoms that may otherwise have gone undetected. Successful implementation of this tool will (a) ensure early identification of depressive symptoms in opioid dependent patients and (b) expand the knowledge of comorbid depression in opioid dependent adults to patients and staff. Please see Appendix J for a copy of the PHQ9 screening tool.

Project Plan

Project Goals

1. Implement the consistent use of the PHQ9 survey at monthly office visits for opioid dependent adults between the months of September and December 2023.
2. Increase the number of patients screened using the PHQ9 survey for co-existing depression at every monthly office visit.

3. Identify and treat potential depressive symptoms in opioid dependent adults that may have otherwise gone unidentified.

Implementation Model

The Institute for Health Care Improvement (IHI) Model (PDSA) will guide this project implementation and evaluation (IHI, 2023). This tool uses a model for improvement with three fundamental questions that are addressed in other sections of this proposal. The answer to 'What are we trying to accomplish?' may be found in the Project Goals section. The answer to 'How will we know that a change is an improvement?' may be found in the Evaluation section. Lastly, 'What change can we make that will result in improvement' is described in the Evidence Appraisal Summary, Synthesis, Recommendations, and Project Plan sections. The second part of the Institute for Healthcare Improvement Model includes the PDSA cycle that is described in the Description of the Practice Change and Project Implementation sections.

Context

The project setting is a primary care clinic that offers services in substance misuse, pain management, and depression treatment amongst others. The practice is located in central Connecticut. The patient population used for this project consists of adults on Buprenorphine/Naloxone treatment for opioid dependence. Participants of the proposed project include one Medical Doctor, three Nurse Practitioners, two medical technicians, one office manager, and one office clerk. The office utilizes Practice Fusion for their Electronic Health Records.

Project Team and Roles

Table 1. displays the project team members and their roles.

Table 1. Project Team and their Roles

Person	Role
Taylor Fuhr - DNP student	Project Manager
Primary Project Mentor	APRN at the practice setting Review for compliance and serve as change agent
Project Team Member	Practice owner and Medical Doctor for this project Review to ensure primary care standards are met
Dr. Sue Penque	DNP Project Faculty Advisor – EBP and QI expert

Key Stakeholders, Staff, and Buy-in

Key stakeholders identified for this project include patients of the practice; the owner, director, and Medical Doctor of the practice; the healthcare insurance providers; and the three Nurse Practitioners working for the practice. Key staff that are essential to the success of this project are the medical technicians who will be directing the patients on how to complete the PHQ9 survey as well as the Nurse Practitioners who will be explaining and reviewing the survey with the patients. An emphasis on improvement of quality of life and patient satisfaction will be emphasized to earn staff buy-in. The Medical Doctor of the practice setting and the project mentor have expressed to this DNP student the level of commitment to this project idea and in assisting in educating staff for this project. Their support will be used to gain staff buy-in.

Description of the Practice Change

The Model for Healthcare Improvement is guiding this practice change project. In this section, the practice change plan for each step of the PDSA is described.

Plan Phase

This DNP student will meet with the Medical Doctor and owner of the practice setting as well as the project mentor to review the evidence and recommendations found in the research.

This DNP student will implement the PHQ9 survey to opioid dependent patients at their monthly, or more frequent, office visits. This phase will address goal 1.

Do Phase

This phase will begin with an educational session for staff (e.g., medical technicians, office manager and clerk, and additional APRNs) regarding the importance of routine depression screening for opioid dependent adults. Measuring knowledge after the educational session will ensure the participating staff understand and can execute the proposed practice change successfully. The DNP student will use a handout for staff to discuss the risk for depression in opioid dependent patients as well as barriers to diagnosis and failure to treat. The goal is to educate 100% of the participating staff prior to implementation of the practice change. A log of staff participation will be documented to assess percent of staff educated. An email with all educational material will be sent to the staff regardless of attendance status. Staff that does not achieve 80% on the post-education survey will receive 1:1 education with the DNP student until a score greater than 80% is achieved.

A resource binder will be made available in the office with the education handouts and this DNP student's phone number and email for increased access to reference material and assistance to any questions. In addition, the DNP student will be present in the office for the first few weeks of implementation of the PHQ9 survey. The project mentor will ensure that the survey is being conducted to the patient population when this DNP student is unavailable. This phase will address goals 1, 2, and 3.

Study Phase

Daily and weekly audits will be performed by this DNP student and project mentor to confirm the appropriate use of the PHQ9 survey and adherence to the practice change.

Adherence will be monitored by the DNP student, project mentor, and practice owner and MD. Adherence will be monitored weekly for the first two weeks then biweekly until end of the implementation period. To collect staff opinions, satisfaction, potential barriers, and facilitators the project mentor will relay any feedback on the new practice change to this DNP student. A resource binder will be present in the office with a section dedicated for staff to report issues or ideas on how to improve the intervention. The data collected will be organized into a pie graph to display results. The goal is to increase patients screened for depression utilizing the PHQ9 survey to all patients from baseline (no screening) within a three-month period. This DNP student will review data with the practice owner and MD, project mentor, and other project affiliates.

Act Phase

The DNP student will address and revise the practice change and process based on the data collected from the first PDSA cycle.

Evaluation Plan

Goal #1 will be evaluated by completion of the PHQ9 screening survey by December 8, 2023. At least 100% of the office staff will receive the education on the new policy and process by September 8, 2023. The go-live date for using the new PHQ9 screening survey will be September 15, 2023.

Goals #2 and #3 will be evaluated by comparing the number of PHQ9 screenings completed and the number of positive screenings in the 12-week period of September 15 to December 8, 2023.

Barriers to Implementation

Table 2 describes the anticipated barriers to implementation and the strategies to mitigate these barriers.

Table 2. Barriers to Implementation and Strategies for Mitigation

Barrier	Strategy for Mitigating
Lack of nationally used PHQ9 screening surveys for opioid dependent patients	Reviewing the evidence on the use of the PHQ9 and the risk for comorbid depression in opioid dependent adults
Lack of patient willingness to complete	Educating patients on the importance of screening for comorbid depression and the benefits of identifying undiagnosed depressive symptoms and improving overall quality of life
Resistance to change from current practices	Illustrate benefits of practice change using the evidence
Provider biases based on current knowledge of patient population	Provide education on evidence-based practice changes to providers to address potential biases
Lack of remembrance by office staff to hand out surveys to appropriate patients	Reminder notifications three times per week to project mentor to educate staff to hand out surveys to appropriate patients

Sustainability with Mitigation Plan

The implementation of a standardized screening tool (PHQ9) for the opioid dependent patients seen at the practice setting is sustainable for future use with support and consistency from the staff and patients. To sustain the use of the PHQ9 survey, the APRNs will continue to educate their patients on the reason for the survey to promote understanding and adherence as well as their medical technicians to ensure the surveys are given to the appropriate patients.

Timeline

Appendix F displays the DNP Project Roadmap with the dates that the DNP project advisor reviewed and approved.

Resources/Budget

Table 4 displays the estimated project costs.

Table 4. Estimated Project Costs

Expense	**Cost**	**Budget**
Material		
PHQ9 Survey Handouts	Copy Paper (8x11) $0.00	$0.00
Poster Board	Elmer's Tri-Fold Foam Presentation Board, 4' x 3', White = $8.69 x2	$17.38
Educational Handouts for staff	Copy Paper (8x11) $0.00	$0.00
Resource Binder for staff	Plastic three ring binder $10.00	$10.00
Technology		
PowerPoint Presentation (Microsoft Office)	$114.99	$114.99
Practice Fusion EHR	$0.00	$0.00
Human		
Project Manager	$0.00	$0.00
Total Budgeted cost	$132.37	$132.37

Dissemination Plan

The dissemination plan includes a poster board presentation, and a publication in an accredited journal. A poster will be created using the framework set forth by the project office. A

publication will be submitted to the appropriate journal based on target audience, impact factor, access, and cost to publish. An executive summary for the practice setting, an abstract, and a poster board for the Sacred Heart University DNP program will be completed.

Ethical Review and Project Approvals

After a detailed application was submitted to the Sacred Heart University IRB, this DNP project was approved on September 11, 2023. Ethical review included the purpose of the project which was to utilize the PHQ9 survey for opioid dependent adults who have been on maintenance therapy for at least 30 days to identify depressive symptoms that often coincide with opioid use or misuse. If depressive symptoms were identified based on the PHQ9 score, the goal was for the provider to either begin new treatment, adjust current treatment, or refer patients to other treatment options for depressive symptoms. Confidentiality was maintained as the names of participating patients were not utilized in any way. Please see Appendix G for the approval letter from the project mentor and site. Please see Appendix J for a visual of the PHQ9 survey.

Project Implementation

The Institute for Health Care Improvement (IHI) Model (PDSA) was used to guide this project implementation and evaluation (IHI, 2023). A 12-week implementation phase was initiated on September 15, 2023, to December 8, 2023. Two PDSA cycles were conducted over the 12-week implementation phase.

PDSA Cycle One

Plan Phase

Once approval was received from the Sacred Heart University IRB, this DNP student held a meeting with the project mentor and owner of the practice setting to discuss the project timeline, goals, and evaluation measures of utilizing the PHQ9 survey. This DNP student

obtained final support and approval to utilize the PHQ9 survey as a routine depression screening tool for opioid dependent adults who are seen monthly or more frequently if needed and a go-live date of September 15 was set. This DNP student educated the staff using educational handouts which included explanation of the PHQ9 survey, the goal of patient care and outcomes with use of the survey, and potential barriers to implementation. This DNP student's contact information including email and phone number were also included in the educational handout. Copies of the screening tool were printed and left in a designated folder at the desk where the medical technicians are located to provide quick and easy access when rooming patients. Completed PHQ9 surveys were given by the patient directly to their APRN, who would then record the score of the survey in the patient's chart and place the survey in a separate designated folder located at the practice mentor's desk located in a locked office room. It was agreed on by the DNP student and practice mentor that all surveys would be shredded once final data collection was completed.

Do Phase

This DNP student held a staff education seminar on the afternoon of September 11th, after receiving final approval from the Sacred Heart University IRB. Staff education included reviewal of the PHQ9 survey, how to educate patients on the tool itself and why it is being implemented, the goal of implementation in this patient population, and potential barriers to the implementation phase. The medical technicians were educated to explain to the patients that the PHQ9 screening tool was being implemented to assess for symptoms of depression that may otherwise have gone undetected with the goal of improving quality of life by appropriate treatment recommendations and referrals. The medical technicians would also explain to the patients that the survey results would only be shared with their APRN. A resource binder was

left in the office for staff to reference as well as leave opinions on the process and ideas for change.

On September 15th, 2023, this DNP student and staff began screening all opioid dependent patients with at least 30 days of maintenance therapy using the PHQ9 screening tool. When the patient was roomed, the medical technician provided the patient with the PHQ9 survey and explained to them how to fill it out, the goal of the survey, and the confidentiality. Once the tool was filled out, the APRN would collect it from the patient and file it in the secure folder on the practice mentor's desk. This DNP student was available as a resource on the go-live day as well as by phone and email throughout the entirety of the 12-week implementation period. A weekly audit was completed for the first two weeks of implementation, followed by bi-weekly audits.

Study Phase

This DNP student collected and reviewed the surveys that were completed as well as the treatment options discussed with the patient and any referrals made. Throughout the 12 weeks of implementation, a total of 62 PHQ9 surveys were completed by opioid dependent patients. Because this patient population is seen at least monthly or more often, 21 patients filled out the PHQ9 more than one time and 9 patients filled out the PHQ9 more than two times. Of the 62 total surveys completed, 47 surveys had positive results indicating depression. Of the 47 positive surveys, 6 surveys were from the same patients from their second or third visit within the 12-week period.

A barrier that was identified throughout the implementation period was staff forgetting to hand out the PHQ9 surveys to the appropriate patients resulting in less than 75% of the opioid dependent patient population being screened. By the fourth week audit, only 12 of 22 patients

were given the survey to complete. Another barrier that was identified was patient refusal to complete the survey for personal reasons despite education.

Act Phase

This DNP student identified that further staff education was needed to ensure that all opioid dependent patients were being given the screening tool to complete. In addition to this, patients needed more education on the goal of this screening tool and that it was being implemented with the goal of improving their quality of life.

PDSA Cycle Two

Plan Phase

Additional staff education was needed for the success of this quality improvement project. It was decided that blank surveys would be left in exam rooms to make it easier and more visible for the medical technicians when rooming patients. It was also decided that the project mentor would remind the medical technicians to give out the surveys in the morning before the first patient appointment and at lunch time. The APRNs would also educate the patients who initially refused to complete the survey at some point during their visit to further promote the goal of the screening.

Do Phase

A second educational seminar was held for the staff of the practice setting by this DNP student on October 9th, 2023. The educational seminar reminded the staff of the purpose and goal of this project. The staff were told that the surveys would be moved into the exam rooms to make it easier for them to give them out to appropriate patients. The staff was also encouraged to continue educating the patient population on the purpose and goal of this project as patient refusal was another large barrier.

Study Phase

The week after the second educational seminar, there was an increase in surveys completed. Staff was better about handing the surveys out to the appropriate patients and educating them on the purpose of the survey. As the weeks went on, patient refusal continued to be a large barrier. The APRNs continued to educate their opioid dependent patients to the best of their ability. It was found during this phase that patient refusal was a larger barrier than the staff forgetting to give out the surveys.

Act Phase

This DNP student understood that despite increased staff and patient education, some patients did not wish to participate in the screening.

Description of Deviations from Project Plan

Lack of Participation by Patients

Despite continued education provided to patients by this DNP student as well as the staff, some eligible patients did not wish to participate. A total of 12 patients chose not to participate. Patients were respected in their choice and encouraged to let staff know if they changed their mind at a later time or future visit.

Lack of Remembrance by Staff

After the first few weeks of project implementation, it was found that staff began to forget to hand out PHQ9 surveys to the appropriate patients, resulting in a decreased amount of completed surveys in week three. Because of this an additional educational seminar was provided by this DNP student to the staff and blank surveys were left in a folder in exam rooms, creating easier access and a reminder for the staff to give the survey to the appropriate patients. This barrier resulted in an overall decrease in completed surveys over time.

Evaluation

Data collection and review was conducted by this DNP student and the project mentor. Reviewal of completed surveys was done in the office with the project mentor. Scores of the surveys were recorded in an excel document along with treatment discussion and referral. Patient identification was not included in the data collection and completed surveys were shredded after scores were documented. For surveys with positive scores, treatment discussion was recorded along with any medication initiation or referrals for therapy or other services. This information was collected in addition to positive scores.

Process Measurement

Data was collected and recorded using Microsoft Excel. There was a total of 62 PHQ9 surveys completed. Out of the 62 completed, 47 surveys showed positive scores indicating depressive symptoms in that patient. Of the 47 positive surveys, six were from the same patient as 21 patients completed the survey more than once and nine patients completed the survey more than two times. Ultimately, there were 41 individual patients (66%) who scored positive on the PHQ9 survey. A total of 12 patients chose not to participate in the survey. Refer to Appendix K for a visual of the final data.

Outcome Measurements

Of the 41 individual positive scores on the PHQ9 survey, 32 patients (78%) were open to discussing treatment options for their symptoms. Treatment options included medical management, referral to therapy, or referral to psychiatrist if question #9 on the survey was answered “yes.” There were no patients who answered “yes” to question #9 which evaluates the imminent risk for suicide or homicide.

For scores of 4 or less, or minimal depression, discussion included non-pharmacological ways to cope with symptoms that the patient was experiencing such as developing a regular sleep routine, walking, staying hydrated, eating a healthy diet, exercising regularly, and practicing self-care. For scores of 5-9, or mild depression, discussion included the potential for the need for treatment and was directed on patient preference at that time. For scores of 10-14, or moderate depression, a treatment plan was discussed including medication initiation or referral to therapy as well as closer follow up appointments. For scores of 15-19, or moderately severe depression, medication initiation and referral to therapy or psychiatry was strongly encouraged, close follow up appointments were planned, and discussion included risks for suicidal thoughts or plans. There were no scores greater than 19.

Results

Throughout the 12-week implementation period, four patients were started on anti-depressant medications for their positive scores on the PHQ9 survey. This data collection did not follow the outcome of these patients past the 12-week period. Because the survey was successful in identifying depressive symptoms in opioid dependent patients, the staff at the practice setting chose to continue implementing these surveys for this patient population. Please see Appendices K and L for pie graphs of the results of this quality improvement project.

Return on Investment

The use of the PHQ9 survey for opioid dependent patients was implemented with the goal of identifying depressive symptoms in this patient population that may have otherwise gone undetected. The 12-week implementation period proved that the surveys did help identify patients who had positive depressive symptoms and helped four patients begin treatment for depression. The survey is minimal to no expense of the practice setting and the practice will be

supplemented for medication management and treatment referrals. There were no additional costs added to the budget provided as seen in Table 4.

Key Lessons Learned

Implementing the PHQ9 survey to the opioid dependent patients at the practice setting was eye opening in many ways. The results showed that most patients who completed the survey scored positive (66%). If the implementation period had been longer than 12 weeks and there was more time to ensure that every single patient on opioid maintenance therapy was being educated and offered the survey, it is believed that there would have been more patients showing signs and symptoms of depression. Although I did expect many surveys to be positive, I am pleased with the fact that implementing this depression screening tool identified patients who would have otherwise not been screened or identified. Being able to help four patients begin treatment for their symptoms and create discussions about treatment options with a great number of others is very rewarding.

Sustainability

The utilization of the PHQ9 survey as a routine depression screening tool for the opioid dependent adult population at the practice setting is sustainable based on the ease of implementation and the results of this quality improvement project. The PHQ9 survey itself is minimal to low cost for the office to supply to patients. This project proved that it did help identify depressive symptoms in this patient population and began treatment discussions and initiation as well. Because it was successful in just a short time, the office staff at the practice setting believe that with more time it will become part of their standard practice for these patients. The staff is hopeful that their opioid dependent patients who have coexisting depressive symptoms will see a better quality of life after discussing treatment options including

nonpharmacological and self-care. This DNP student does not foresee resistance to change being a barrier for the sustainability of this screening tool.

Dissemination Plan

Implications of Project Results to Organization and Practice Community

The use of the PHQ9 survey as a screening tool for the opioid dependent patients at the practice setting helped to identify depressive symptoms in this patient population that may have otherwise gone undetected. The results of the 12-week implementation period showed that the PHQ9 appropriately identified depressive symptoms in 66% of the patients who completed the survey. The use of a standardized depression screening tool in this patient population successfully identified depressive symptoms and issued treatment discussions with all patients. 78% of the patients who had positive scores were open to discuss treatment options. Four patients began medical treatment because of the implementation of the PHQ9 survey. The patient population at the center of this project ultimately benefited by the adoption of a standardized depression screening tool.

Sharing Project Results

PowerPoint and posterboard presentations will be developed to present to students and staff of the Sacred Heart University community. A copy of the PHQ9 survey will be available for attendees to view.

Implementing a project is not easy, especially when you are not on site during operating hours to ensure it goes smoothly and as planned. The main barriers that were identified during the implementation period could have been avoided if this DNP student was able to be present. However, with great passion and educating the staff properly, this project was able to find

success. Also, despite educating the patients on the reason for this screening tool, refusals will happen and must be accepted.

Executive Summary

The depression screening process for opioid dependent patients at this practice setting was not routine, ultimately leading this DNP student to implement a pre-existing routine depression screening tool (PHQ9) into standard practice. The goal of this quality improvement project was to improve the overall quality of life for opioid dependent patients at the practice setting by routinely assessing possible symptoms of depression.

The practice change took place in a primary care clinic that specializes in substance misuse and manages opioid dependent patients with buprenorphine/naloxone. Routine visits for these patients occurred at least monthly, if not more frequently depending on the patient. At each visit, the patient was asked about their mood and if they had any thoughts of harm or suicide. Evidence shows that routine depression screening has been associated with better patient outcomes for this population of individuals (Bastien et al., 2021). The PHQ9 screening tool was given to the appropriate opioid dependent patients routinely, at each visit. The project implementation was guided by the The Institute for Health Care Improvement (IHI) Model (PDSA). A total of two PDSA cycles were completed.

From September 15th, 2023 to December 8th, 2023, a total of 62 patients completed the PHQ9 survey. Of the 62 patients that completed the survey, 47 patients had positive scores. Of the 47 positive scores, six were from the same patient that had completed the survey more than once. A total of 32 patients were open to discussing treatment options and four patients were started on medication for depressive symptoms.

The practice setting is hoping to sustain the use of the PHQ9 survey in their daily practice for opioid dependent patients. After seeing success, the office staff was motivated to keep up with the routine screenings in hopes of improving the quality of life of their patients.

References

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Risk of Major Depression: New Evidence, Plausible Neurobiological Mechanisms and Management to Achieve Depression Prophylaxis. *Missouri medicine, 111*(2), 148–154.

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Appendix A

Tool 5.2 Record of Search History and Yield

INSTRUCTIONS: When searching in bibliographic databases, save the search history, and record the terms used, how they were combined, and the yield.

	Date of Search	Database (Source and Link)	Search or MeSH Terms	Operators (AND, OR, NOT)	Limits Used	Yield (Number of Articles Identified)
Example	6/10/2022	PubMed	Postoperative pain, Complementary therapy	AND	English language, systematic reviews	94
	5/23/2023	CINAHL	PHQ9, opioid, opioids, opiates, opioid dependence, adults, depression screening	AND	English language, peer reviewed, systematic review, full text	5
	6/2/2023	CINAHL	Depression screening, opioid dependence, opioids,	AND	English language, systematic review, full text	42
	5/31/2023	CINAHL	Opioid dependence, “depression screening” “opioid dependence”	AND	English language, systematic review, full text	20
	6/2/2023	PubMed	(depression screening AND adults) AND (phq9)	AND	English language, systematic review, full text	985

MeSH = medical subject headings

Appendix B

The following is a Rapid Critical Appraisal of an article that will not be considered in the final body of evidence.

Project Title: Depression and Outcomes of Methadone and Buprenorphine Treatment Among People with Opioid Use Disorders: A Literature Review

Date: April 1, 2020

PICOT Question: Do opioid dependent adults with co-existing depression (P) who complete the PHQ9 survey at their monthly office visit (I) compared to those who do not complete the survey (C) receive earlier/prompt treatment for their depression (O)?

Article citation (APA): Ghabrash, M. F., Bahremand, A., Veilleux, M., Blais-Normandin, G., Chicoine, G., Sutra-Cole, C., Kaur, N., Ziegler, D., Dubreucq, S., Juteau, L.-C., Lestage, L., & Jutras-Aswad, D. (2020). Depression and outcomes of methadone and buprenorphine treatment among people with Opioid Use Disorders: A literature review. *Journal of Dual Diagnosis*, *16*(2), 191–207. https://doi.org/10.1080/15504263.2020.1726549.

Indicate the level of the study you are appraising: Level 7

Recommendation for article inclusion in the body of evidence to answer your question: This article will serve as supporting evidence of the relationship between depression and opioid use disorder however inconsistent data was found regarding the association between depression and buprenorphine treatment outcomes. The authors do state that adequate treatment of depression is promising to improve outcomes and treatment retention.

Overview

1. Purpose of article: To identify and describe the associated between depression and main outcomes (opioid use and treatment retention) of methadone and burprenorphine treatment among people with OUDs.
2. Summary of article: Link between depression and opioid use.

Quality of the Study

Validity: Are the results of this study valid?

1. Was the literature review conducted in a systematic way? ☒Yes ☐No ☐ Unknown

   Comments: Click here to enter text.
2. Did the literature review address a focused clinical question?

   ☒Yes ☐No ☐ Unknown

   Click here to enter text.
3. Was the search for relevant literature detailed and exhaustive?

   ☒Yes ☐No ☐ Unknown

   Comments: The search was conducted over five databases and the authors utilized an information specialist to develop and execute specific search strategies for each database.

4. Was the date range of the cited literature current? ☐Yes ☒No ☐ Unknown
   - What date ranges were included? 1976 to 2018
     - If older literature was included, why was it included? Older literature was included to broaden the sample size of participating subjects.
5. What were the level of the literature that were included?

   ☒Yes ☐No ☐ Unknown

   - Meta-analysis:
   - Systematic review:
   - Randomized control trial: 7
   - Controlled clinical trial:
   - Cohort/case control: 5
   - Systematic review of descriptive study: Click here to enter text.
   - Systematic review of qualitative study: Click here to enter text.
   - Single descriptive study: Click here to enter text.
   - Single qualitative study: Click here to enter text.
   - Expert opinion: Click here to enter text.

   Comments: 3 studies were open label and 3 were retrospective studies

6. Was criteria used to select articles for inclusion? ☒Yes ☐No ☐ Unknown

Comments: Studies were included if they were RCTs, case control, cohorts, or retrospective studies. Studies were either published in an English or French language peer-reviewed journal between January 1970 and April 2019 and reported the outcome of opioid maintenance therapy among OUD patients with concomitant depression.

7. Were populations in the included studies comparable and appropriate?
   ☐Yes ☒No ☐ Unknown
   Comments: The studies evaluated their patients depression varied greatly from weekly to every few years.

8. Were the measurements of the interventions and outcomes in the included studies comparable and appropriate? ☒Yes ☐No ☐ Unknown
   Comments: Data from each study was extracted in the same manor and tables were utilized to portray outcomes of depression and opioid use and treatment.

9. Was there freedom from conflict of interest?
   ☒Yes ☐No ☐ Unknown
   - Sponsors/funding agency
   - Investigators

   Comments: The authors reported no conflict of interest.

<u>Reliability: Are these valid study results important?</u>

10. Were the results of the literature reviewed summarized?
    ☒ Yes ☐ No ☐Unknown

Comments: Results were summarized and portrayed in great detail including in tabular form.

11. Were the results in the literature reviewed consistent across all the studies?
    ☒ Yes ☐ No ☐Unknown

    Comments:

12. Were adverse events discusses? ☐ Yes ☒ No ☐Unknown

    Comments: Adverse events were not discussed.

13. Were recommendations made based on the literature review?
    ☐ Yes ☒ No ☐Unknown
    Comments: No recommendations were made due to the authors finding inconsistent evidence associated between depression and buprenorphine treatment outcomes.

Applicability/Generalizability: Can I apply these valid, important study results?

14. Can the results be applied to my population of interest? ☒Yes ☐No ☐Unknown

a. Is the treatment feasible in my care setting? ☐Yes

☒No

b. Do the outcomes apply to my population of interest? ☒Yes ☐No

c. Are the likely benefits worth the potential harm and costs? ☒Yes ☐No

d. Were the subjects/participants in this study similar to my population of interest?

☒Yes ☐No

e. Were all clinically important outcomes considered? ☒Yes

☐No

Comments: Click here to enter text.

15. Will you use the study/article in your practice to make a difference in outcomes?

☒Yes ☐No ☐Unknown

f. If yes, why would you do this & how? I will use the data that was collected to show how treatment of depression can improve outcomes for patients receiving buprenorphine treatment for OUD.

g. If no, why would you not include the results to make a difference? Click here to enter text.

Strength of Study

Level of study: ☐ I ☐II ☐III ☐IV ☐V ☐VI ☒VII

Quality of Study: ☐High ☐Medium ☒Low

Strength = Level + Quality

What is the strength of this study? poor

What is your recommendation for article inclusion in the body of evidence to answer your question?

☐Include this article in the body of evidence (place article on evaluation and synthesis table)

☒Do NOT include this article in the body of evidence

Additional comments: I do not believe I will include this article as the evidence gathered is inconsistent although it proposes that adequate treatment of depression can improve outcomes of OUD patients on buprenorphine therapy.

Appendix C

Evidence Summary Table

PICO Question: Do opioid dependent adults with co-existing depression (P) who complete the PHQ9 survey at their monthly office visit (I) compared to those who do not complete the survey (C) receive earlier/prompt treatment for their depression (O)?

Citation	Design/ Method	Sample/Setting	Intervention	Major Variables Studied and Their Definitions	Findings	Level of Evidence/ Quality	Quality of Evidence: Critical Worth to Practice
Article 1							
Depression and Buprenorphine Treatment in Patients with Non-cancer Pain and Prescription Opioid Dependence without Comorbid Substance Use Disorders, 2021	Retrospective, dynamic cohort design	Adults over the age of 18 with POD (prescription opioid disorder) Final sample included 5,529 patients Patient qualifications included: non-cancer pain diagnosis requiring prescription opioids and at least one year free from substance abuse and with two or more ICD-9/10 codes for depression within the same year	Adherence of BUP treatment in patients who have coexisting depression	Association between depression, covariates and each BUP outcome	Patients with depression or bipolar disorder were 19% less likely to be BUP adherent compared to patients without either disorder among those with any type of opioid use disorder Results suggest depression may be a barrier to retention in BUP treatment in patients with POD	Level 3: Retrospective Cohort study	Results suggest that depression is a barrier to BUP treatment Does not included whether treating depression will improve BUP treatment adherence
Article 2							

Characteristics of new depression diagnoses in patients with and without prior chronic opioid use, 2017	Retrospective cohort study	VA patients ages 18-80 that used to VA from 2000-2012 Sample size: 4,758 Patients were free of psychiatric and substance use disorders before new depression episode Two groups: Patients who did not receive an opioid and developed depression and patients who were > 90d opioid users and subsequently developed depression	PHQ2 and PHQ9 screening before prescribing opioid and routine screening while using	Opioid use and + PHQ9 scores for new depression	New depression episodes (NDE) after > 90 days of opioid use is at least severe, if more more severe, than NDE unrelated to opioid use Findings add validity to prior conclusions that opioid use is associated with new onset, clinically significant depression	Level 3: Retrospective cohort study	Evidence suggests that screening prior to opioid initiation and routine screening throughout opioid use will assist in diagnosing and treating coexisiting depression
Article 3							
Long-term prescription opioid users' risk for newonset depression increases with frequency of use, 2022	Retrospective Cohort study	Random sample of 5 million adults > 18 Retrospective cohort of patients starting a new period of opioid therapy Patients had no history of depressive symptoms in the last year prior to 91 days after start of new opioid use	Comparison of patients with new period of > 90 day prescription opioid use who used opioids occasionally, intermittently, frequently, and daily and new onset depression	Daily or near-daily opioid use New onset depression	Increasing frequency of prescription opioid use is associated with greater risk for new-onset depression Patients with >90 day opioid use, daily users and frequent users, compared to intermitten	Level 3: Retrospective cohort study	Increasing frequency of prescription opioid use is associated with greater risk for new-onset depression This study inconsistent with previous studies suggesting comorbid psychiatric disorders in patients who use or misuse opioids

					t users had a 40% and 34% increased risk for new depressive episodes		
Article 4							
Longitudinal study of impact of medication for opioid use disorder on Hamilton Depression Rating Scale, 2022	Randomized Control Trial	Patients 18 years and older with diagnosed opioid use disorder and who have not used non-prescribed opioids in the past 30 days Participants were randomly assigned to receive either XR-NTX and BUP-NX Sample size: 570	Evaluate the treatment effect of extended release naltrexone vs buprenorphine/naloxone on depression severity as measured by HAM-D total scores Examine whether the impact of medication for opioid use disorder on HAM-D measures differed by lifetime of MDD status	XR-NXT vs BUP-NX and effect on depression severity measured by HAM-D total scores	No statistically significant group differences for demographic characteristics, lifetime anxiety and MDD, and past year substance uses Significant interaction between medication treatment and follow-up visit in HAM-D scores Significant interaction between treatment and visit in depression status based on HAM-D scores at weeks 1, 2, and 3	Level 2: RCT	Large sample size This is the first longitudinal study of the treatment effect of buprenorphine/naloxone and naltrexone on HAM-D scores and depression status – not comparible to other studies Study could not adjust the potential influence of antidepressants

Article 5							
Screening for opioid use disorder and co-occurring depression and post-traumatic stress disorder in primary care in New Mexico, 2023	Cross-sectional study	Adults 18 years and older who were patients of four specific primary care offices in the New Mexico area Sample: 1145 with 70 people who started but did not complete the survey	Universal screening survey provided to each patient who could either accept or decline to take the survey. If the patient took the survey the received $5 merchandise card. The screening surveyed for OUD. The PHQ-8 was also administered along with the universal screening survey to assess for DSM-5 depression criteria	Relation of OUD and MDD or PTSD	51/1145 people who completed the survey had probable OUD 200/1145 screened positive for probable depression 218/1145 screened positive for probable PTSD Probable OUD and co-occuring mental health disorders were identified in 27 participants	Level 3	Study shows how OUD and mental health disorders remain undertreated and are a persistent health problem in the US The study further shows that the use of screening tools helps to identify patients who may have otherwise gone undiagnosed This study is helpful in supporting the PICO question in that surveying is assistive in diagnosing individuals who may otherwise go undiagnosed
Article 6							
Preferences for research design and treatment of comorbid depression among patients with an opioid use disorder: A cross-sectional discrete choice experiment, 2021	Cross sectional study	165 participants reporting an OUD and undergoing an OAT for a minimum of eight weeks Participants recruited from a community-based convenience sample of volunteers	Participants were surveyed using a combination of a standard questionnaire and a discrete choice experiment methodology Participants were surveyed on depression treatment acceptance and	DV: DCE choice responses IV: the difference in levels for each dummy coded attribute	Most individuals with substance use disorder access mental health treatments through addiction treatment clinics or community	Level 3	Study shows the significant barriers for OUD patients accessing mental health treatment Urgent need to identify efficient and innovative strategies for depression management in OUD

		Participants were over 18 years of age and had a total score of > or = to 6 on the QIDS-SR-16	preference		organizations Access to psychotherapy is often challenging for these individuals Many patients reported obstacles to access mental health including wait times, stigma, and fragmentation of services		populations through research initiatives was identified

Appendix D

Levels of Evidence Synthesis Table

PICO Question: Do opioid dependent adults with co-existing depression (P) who complete the PHQ9 survey at their monthly office visit (I) compared to those who do not complete the survey (C) receive earlier/prompt treatment for their depression (O)?

X (copy symbol as needed)	**1**	**2**	**3**	**4**	**5**	**6**
Level I: Systematic review or meta-analysis						
Level II: Randomized controlled trial				X		
Level III: Controlled trial without randomization					X	X
Level IV: Case-control or cohort study	X	X	X			
Level V: Systematic review of qualitative or descriptive studies						
Level VI: Qualitative or descriptive study, CPG, Lit Review, QI or EBP project						
Level VII: Expert opinion						

Appendix E

Outcomes Synthesis Tables

Intervention	1	2	3	4	5	6
Depression screening for OUD patients	E+	E+	E+	E+	E+	NE
Treatment adherence for OUD patients with depression	E-	E-	NE	NE	NE	NE

Key: E+ = evaluated with positive outcome; NE = not evaluated; E- = evaluated with negative outcome

Recommendations:

Definitive Statements –

- Routine depression screening for OUD showed an increase in patients with depressive symptoms compared to patients who were not routinely screened.
- Adherence to treatment such as buprenorphine naloxone for OUD patients was decreased in patients who had co-existing depressive symptoms that were not properly treated.
- Mental health treatment is stigmatized leading to OUD patients avoiding care.
- Treatment adherence is lessened when the patient is undiagnosed with co-existing depression.

Recommendations –

- Screening for depression should be initiated prior to treatment initiation with prescription opioids for OUD patients.
- Screening for depression should continue routinely during treatment with prescription opioids for OUD patients in order to promote treatment adherence.

Appendix F

DNP Project Roadmap

Student Name: Taylor Fuhr

Project Title: Routine Depression Screening for Opioid Dependent Adults (DNP Project)

Project Mentor: Dr. Susan Penque

	Doctor of Nursing Practice Project Roadmap	
Component	**Definition**	**Date Done**
Phase 1: Problem Identification and Evidence Review		
Clinical Inquiry including background and significance of problem	Describe local problem and its significance. Include data to frame local problem.	05/2023
Organizational priority	Summarize information that supports topic/problem is an organizational priority.	05/2023
Searchable Question	Write a focused, searchable question using an established method (e.g. PICO).	05/2023
Evidence search	External evidence • Summarize search strategy (e.g. databases, keywords, filters/limits, criteria for article selection, tools for critical appraisal). Include practice-based evidence (e.g. evidence-based solutions that experts/other health systems have implemented to address practice problem).	06/2023
	Internal evidence • Summarize applicable unit/community/department/hospital/organizational level data or data required for national entities (e.g. CMS, NDNQI, AHRQ).	06/2023
	Perform needs assessment if applicable.	N/A
Evidence appraisal, summary, and recommendations	Organize evidence that answers focused clinical question in a clear concise format (e.g. table or matrix).	07/02/23
	Appraise literature for quality and applicability of evidence using established method (e.g. Johns Hopkins Nursing EBP Research Evidence Appraisal Tool, Joanna	07/31/23

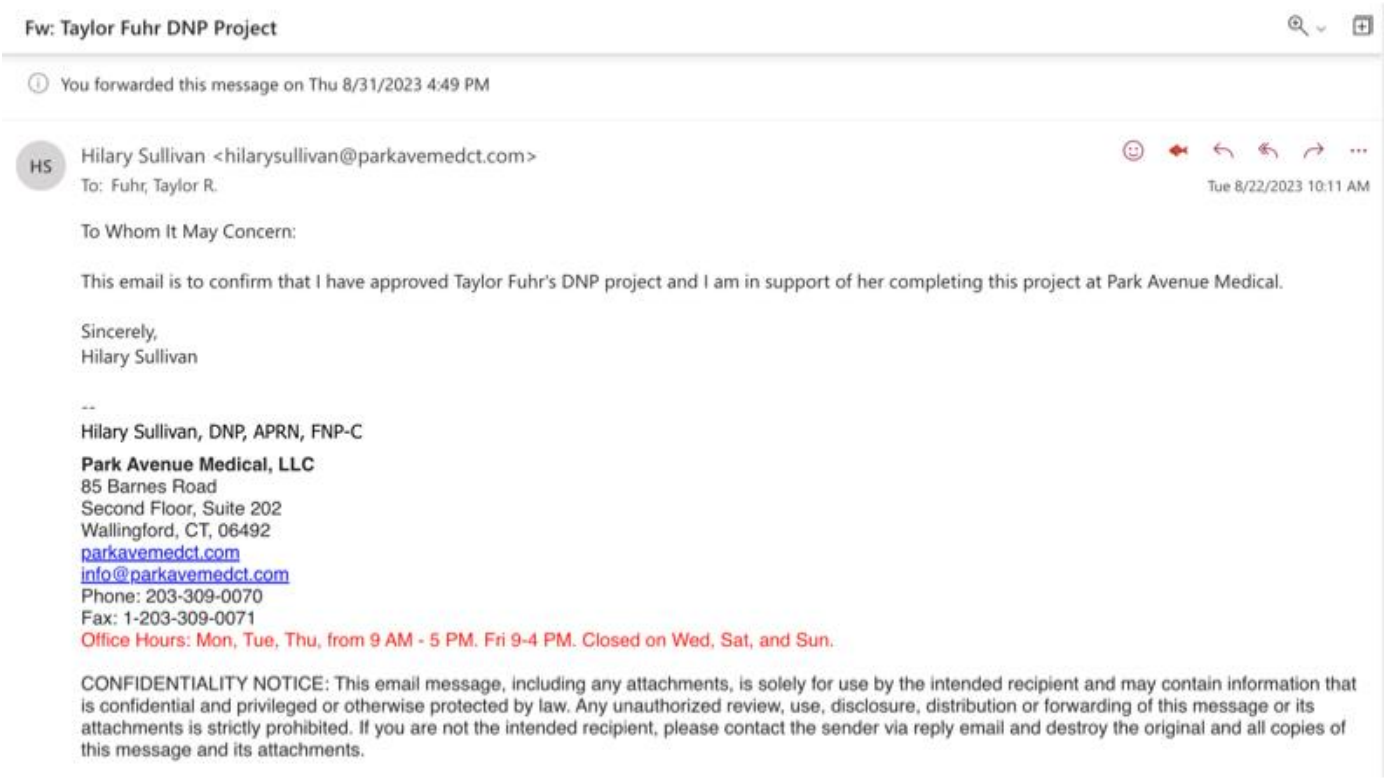
	Briggs Institute Critical Appraisal Tools, Fuld Institute for EBP critical appraisal tools etc.).	
	State recommendations(s) and link to evidence strength and quality and risk/benefits.	07/31/23
Phase 2: Project Planning		
Project goals	State intended, realistic outcomes of project using established method (e.g. SMART criteria).	07/31/23
Framework	Select framework/model to guide implementation (e.g. EBP model, QI framework, Change model).	07/31/23
Context	Describe project setting and participants or population, or other elements that are central to where the change will occur.	07/31/23
Key stakeholders	Identify agencies, departments, units, individuals needed to complete the project and/or affected by project, and strategies to gain buy-in.	08/31/23
Practice change/intervention	Provided detailed description of practice change or intervention (e.g. new or revised policy).	08/31/23
Evaluation	Summarize plan for evaluating the effectiveness of the practice change. Identify applicable process and outcome data to be collected/tracked and tools to do this. Identify the methods for analyzing/interpreting the data (e.g. control, run or Pareto charts).	08/31/23
Possible barriers to implementation	Identify possible barriers and implementation strategies to mitigate these barriers.	08/31/23
Sustainment	Identify strategies to sustain the change.	08/31/23
Timeline	Create a realistic timeline for project completion.	08/31/23
Resources	Identify all resources (e.g. indirect and direct) needed to complete the project.	08/31/23
Ethical merit	Identify and obtain the required review and approval needed for implementation (e.g. institution, community agency, IRB).	08/31/23
Phase 3: Implementation		
Implement project	Carry out the project using selected implementation framework/model.	09/01/23
	Track any deviations/changes from the project plan.	10/01/23
Phase 4: Evaluation		
Results/Interpretation	Using an established method (e.g. run or control charts) display data and interpret project outcomes.	11/30/23

	Report evaluation of the effectiveness of the practice change, including extent the practice change was implemented (process outcome) and extent to which the desired outcome(s) were achieved.	11/30/23
Return on investment	Identify the final resources that were used to implement the project. Calculate and report the return on investment.	03/31/24
Phase 5: Dissemination		
Traditional	Disseminate to the project setting in a manner meaningful to them (e.g. executive report, poster, presentation at a meeting, poster with QR code to access details of project, etc.) Disseminate in the format required by the academic institution (e.g. poster, public presentation) and Prepare final project write-up using established reporting guidelines (e.g. EPQA, SQUIRE) and academic institution requirements.	03/31/24
Non-traditional	Develop a website to display project, use personal or program social media (e.g. Twitter, Facebook) to share project information.	03/31/24

PICO, Population, Intervention, Comparison, Outcome; **CMS**, Center for Medicaid and Medicare Services; **NDNQI**, National Dataset of Nursing Quality Indicators; **AHRQ**, Agency for Healthcare Research and Quality; **SMART**, specific, measurable, attainable, relevant, timely; **IRB**, Institutional Review Board; **EPQA**, Evidence-Based Practice Process Quality Assessment Guidelines; **SQUIRE,** Standards for QUality Improvement Reporting Excellence

Appendix G

Clearance Letter for Project Implementation



Fw: Taylor Fuhr DNP Project

You forwarded this message on Thu 8/31/2023 4:49 PM

HS Hilary Sullivan <hilarysullivan@parkavemedct.com>

To: Fuhr, Taylor R.

Tue 8/22/2023 10:11 AM

To Whom It May Concern:

This email is to confirm that I have approved Taylor Fuhr's DNP project and I am in support of her completing this project at Park Avenue Medical.

Sincerely,
Hilary Sullivan

--
Hilary Sullivan, DNP, APRN, FNP-C
Park Avenue Medical, LLC
85 Barnes Road
Second Floor, Suite 202
Wallingford, CT, 06492
parkavemedct.com
info@parkavemedct.com
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Office Hours: Mon, Tue, Thu, from 9 AM - 5 PM. Fri 9-4 PM. Closed on Wed, Sat, and Sun.

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Appendix H

QI Checklist

Differentiating Quality Improvement and Research Activities Tool

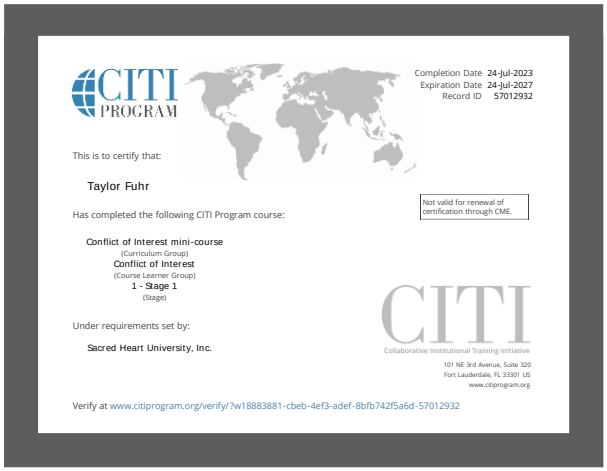
Question	Yes	No
1. Is the project designed to bring about immediate improvement in patient care?	X	
2. Is the purpose of the project to bring new knowledge to daily practice?	X	
3. Is the project designed to sustain the improvement?	X	
4. Is the purpose to measure the effect of a process change on delivery of care?	X	
5. Are findings specific to this hospital?	X	
6. Are all patients who participate in the project expected to benefit?	X	
7. Is the intervention at least as safe as routine care?	X	
8. Will all participants receive at least usual care?	X	
9. Do you intend to gather just enough data to learn and complete the cycle?	X	
10. Do you intend to limit the time for data collection in order to accelerate the rate of improvement?	X	
11. Is the project intended to test a novel hypothesis or replicate one?		X
12. Does the project involve withholding any usual care?		X
13. Does the project involve testing interventions/practices that are not usual or standard of care?		X
14. Will any of the 18 identifiers according to the HIPAA Privacy Rule be included?		X

Adapted from Foster, J. (2013). Differentiating quality improvement and research activities. Clinical Nurse Specialist, 27(1), 10–3. https://doi.org/10.1097/NUR.0b013e3182776db5

An answer of yes to all of the items in l-l0 and no to all of the items in 11-I4 indicates that this project meets criteria for a Quality Improvement Project. It also indicates that the project does not qualify as human subjects' research, and does not have to go through the Institutional Review Board at Sacred Heart University.

Appendix I

CITI Program Training Certificates



CITI PROGRAM

Completion Date 24-Jul-2023
Expiration Date 24-Jul-2027
Record ID 57012932

This is to certify that:

Taylor Fuhr

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

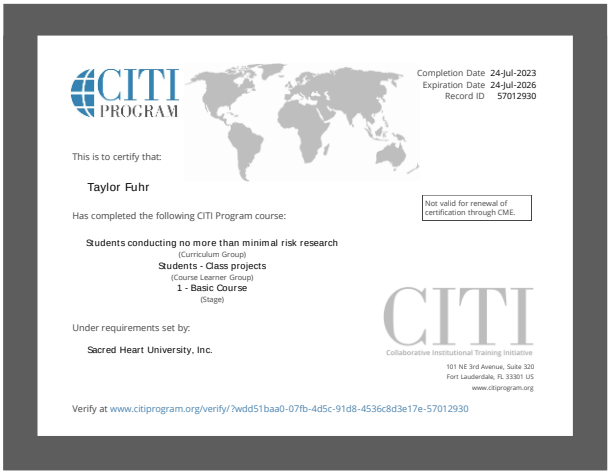
Conflict of Interest mini-course
(Curriculum Group)
Conflict of Interest
(Course Learner Group)
1 - Stage 1
(Stage)

Under requirements set by:

Sacred Heart University, Inc.

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Verify at www.citiprogram.org/verify/?w18883881-cbeb-4ef3-adef-8bfb742f5a6d-57012932



CITI PROGRAM

Completion Date 24-Jul-2023
Expiration Date 24-Jul-2026
Record ID 57012930

This is to certify that:

Taylor Fuhr

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

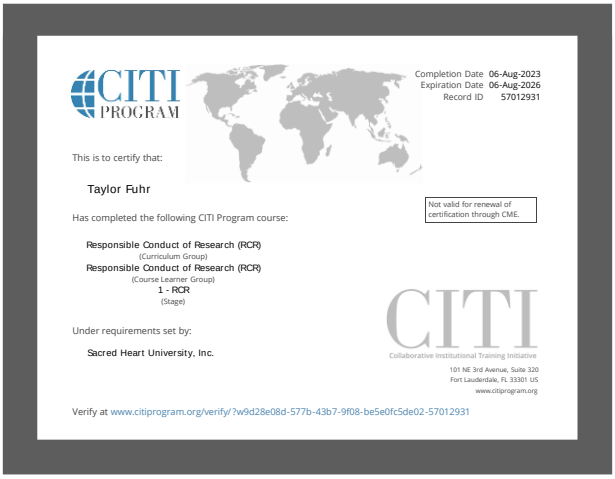
Students conducting no more than minimal risk research
(Curriculum Group)
Students - Class projects
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Sacred Heart University, Inc.

CITI
Collaborative Institutional Training Initiative
101 NE 3rd Avenue, Suite 320
Fort Lauderdale, FL 33301 US
www.citiprogram.org

Verify at www.citiprogram.org/verify/?wdd51baa0-07fb-4d5c-91d8-4536c8d3e17e-57012930



CITI PROGRAM

Completion Date 06-Aug-2023
Expiration Date 06-Aug-2026
Record ID 57012931

This is to certify that:

Taylor Fuhr

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - RCR
(Stage)

Under requirements set by:

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Appendix J

PHQ9 Screening Survey

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

ID #: _____ DATE:_____

Over the last 2 *weeks*, how often have you been bothered by any of the following problems? *(use "✓" to indicate your answer)*	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so figety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself	0	1	2	3
	add columns		+	+

(Healthcare professional: For interpretation of TOTAL, please refer to accompanying scoring card). TOTAL:

10. If you checked off *any problems*, how *difficult* have these problems made it for you to do your work, take care of things at home, or get along with other people?	Not difficult at all _____ Somewhat difficult _____ Very difficult _____ Extremely difficult _____

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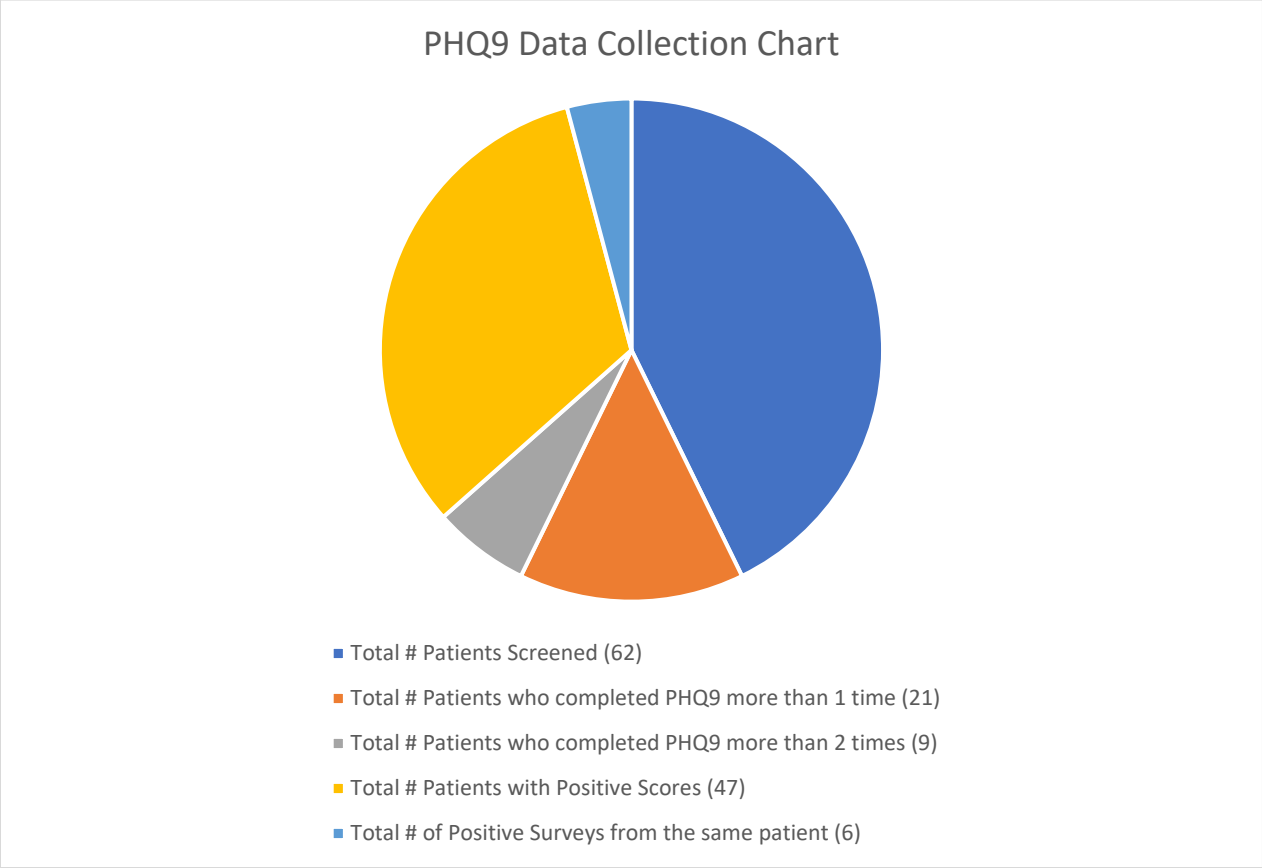
Appendix K


PHQ9 Data Collection Chart
Total # Patients Screened (62)
Total # Patients who completed PHQ9 more than 1 time (21)
Total # Patients who completed PHQ9 more than 2 times (9)
Total # Patients with Positive Scores (47)
Total # of Positive Surveys from the same patient (6)