CLINICAL PRACTICE CHANGE:

SUBOXONE USE IN INPATIENT PSYCHIATRY

by

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Dedication

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Abstract

The opioid epidemic is public health crisis with veterans twice as likely as civilians to die from opioid overdose (National Council on Alcoholism and Drug Dependence [NCADD], 2017). The VA prescribes Suboxone in the outpatient setting; however, data suggests that patients with inpatient induction and linkage to outpatient services have better outcomes. The purpose of this quality improvement project was to implement and evaluate a clinical practice guideline for Suboxone induction in the inpatient setting. An educational quality improvement project was implemented to assess provider knowledge and attitudes of medication management and clinical practice guidelines regarding Suboxone. Provider knowledge and views were assessed. Adherence to clinical practice guidelines was assessed using a provider self-report tool to document patients screened for eligibility, admitted, and given a prescription. Seven providers attended the education intervention and completed the pre- and post- surveys. Provider knowledge improved 49%. Provider views regarding the new practice were high at baseline and remained relatively unchanged. Ten veterans were screened for eligibility, with two veterans consenting to admission. This quality improvement project, while limited, demonstrates that educational support prior to adoption of a new practice may enhance provider knowledge and is feasible. Screening for opioid addiction and identifying eligible patients has the potential to help providers achieve optimal health for their patients. Future projects are needed to evaluate success of this practice adoption.

*Keywords*: opioid addiction, veterans, Suboxone, provider adherence, screening

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**Chapter One: Overview of the Problem of Interest**

 Effective management of acute and chronic pain can be challenging for healthcare providers. Approximately one-hundred million Americans are living with chronic pain; many of whom have not responded favorably to non-opioid treatments (Cooney & Broglio, 2017). As a result, many patients receive chronic opioid therapy which often leads to increased risk for abuse and dependence (Cooney & Broglio, 2017). While many patients benefit from the appropriate use of opioid analgesics to control pain, a growing number of individuals misuse and abuse opioids. According to the Centers for Disease Control and Prevention (CDC, 2017a), opioid dependency in the United States (U.S.) continues to rise and presents a global health concern. The U.S. Department of Health and Human Services (DHHS, 2018) reports that an estimated 2.1 million people had an opioid use disorder in 2016, which led to the accidental deaths of 42,249 people.

Not only has the opioid epidemic become a public health crisis, it has impacted veterans even more. According to the National Council on Alcoholism and Drug Dependence (NCADD, 2017), veterans are twice as likely as civilians to die from opioid overdose. And opioid statistics are not getting any better. According to the CDC (2017a), four times as many opioid prescriptions were sold in 2010 versus 1999. Opioid use is linked to diminished quality of life and functionality and the cost of misuse and abuse has been estimated to be upwards of $55 billion (Morse & Bride, 2017). Thus, the overuse of opioids leads to increased medical costs due to emergency room utilization and hospitalizations, as well as increased mortality (Morse & Bride, 2017). To minimize overuse of opioids and decrease the potential for dependency, clinical practice guidelines for the diagnosis of substance use disorders should be followed. The adherence to clinical practice guidelines regarding medication management can also help to decrease unnecessary costs and improve patient health.

 One treatment for opioid addiction is the use of Suboxone, a combination partial opioid agonist and opioid agonist used to treat individuals addicted to opioids. This medication helps individuals manage the cravings and loss of control associated with addiction (SAMHSA, 2015). According to Dunlap & Cifu (2016), Suboxone treatment is preferred to methadone treatment due to its lower risk of overdose, lower risk of diversion, and the ability to be used in induction, stabilization, and maintenance in the primary care setting.

 Currently, Suboxone is utilized by the Veterans Health Affairs (VHA) in the outpatient setting; however, this particular VHA facility does not currently administer the medication in the inpatient setting. Data suggests that hospitalized patients who receive induction and linkage to treatment in the outpatient setting have better outcomes in the six-month follow-up period (Liebschutz et al., 2014). Beginning in 2017, Tricare expanded treatment for substance abuse issues to include partial hospital treatment, an intensive outpatient program, or outpatient treatment with a Tricare-approved provider. Tricare also streamlined the process for mental health and substance use disorder providers to become authorized to deliver care within the institution (Jowers, 2017). The new streamlined process is expected to increase the number of providers certified and authorized to provide mental health and substance use disorder treatment to beneficiaries. Thus, adoption of protocols for Suboxone induction is needed in the inpatient setting.

**Background and Significance**

Pain is the most frequent cited reason US military veterans seek care. Nearly 50% of veterans reported experiencing pain on a regular basis (Office of Healthcare Inspections [OHI], 2017). Data suggests that in the presence of comorbidities such as depression, post-traumatic stress disorder (PTSD), and substance abuse, pain management becomes more complicated (OHI, 2017). In fact, 63% of veterans receiving opioid treatment also reported having a mental health diagnosis (OHI, 2017). In 2017 alone, 68,000 veterans were treated for opioid addiction (NCADD, 2017).

 The widespread use of opiates has created dangerous consequences for veterans suffering

from mental health issues. Opioid use disorder (OUD) is a chronic relapsing illness that requires long-term treatment. While there is no cure, sustained participation in treatment can result in more favorable outcomes. According to Liebschultz et al. (2014), longer-term opioid agonist treatment appears to decrease substance use and mortality. Suboxone is a semisynthetic mu-opioid receptor partial agonist medication with FDA approval for the treatment of opioid addiction. Treatment with Suboxone has also been found to reduce the risk for opioid overdose death, improve physical and mental health, and reduce the risk of human immunodeficiency virus (HIV) and hepatitis C in those who inject opioids (Cushman, Liebschutz, Anderson, Moreau, & Stein, 2016). The drug, classified as a schedule III restricted drug, can only be prescribed and managed by providers who have participated in the required Drug Enforcement Agency and SAMHSA training. It is a combination of buprenorphine and naloxone and is a treatment of choice because it can be prescribed and dispensed in medical offices, unlike methadone. Generally, treatment with Suboxone is sustained for at least 18 months, which allows patients time to become free of opioid cravings and learn self-management skills needed to remain drug-free. Veterans are also required to participate in ongoing psychosocial treatment as a prerequisite to Suboxone involvement.

 The Acute Inpatient Mental Health Unit (AIMH) serves the most acute and vulnerable veterans, including those with OUD most at risk for accidental opiate overdoses. Currently, the hospital unit does not have a practice process in place for Suboxone induction in the acute setting. The purpose of this quality improvement project is to implement and evaluate an interprofessional collaborative practice model for Suboxone induction in AIMH. The primary goal is to broaden interprofessional competencies to improve patient medication management, while increasing provider adherence to evidence-based practice guidelines. The overall goal is to reduce accidental opiate overdoses and potential deaths in this vulnerable population.

**Question Guiding Inquiry (PICO)**

Evidence-based practice can transform patient care and improve outcomes. The development

and implementation of a Suboxone induction protocol in response to the crisis plaguing veterans is aimed at using current knowledge to improve care processes and patient outcomes. Schmidt and Brown (2015) outlines five steps for evaluating and implementing evidence-based practice (EBP). The process begins with identifying the clinical question of interest, followed by a search

for and critical appraisal of literature and studies, and ends with the application and evaluation of

the recommendations applied to practice (Schmidt & Brown, 2015).

 A widely accepted model used to make decisions based on best current evidence is the PICO model, which stands for patient population, intervention or improvement strategy, comparison of interest, and outcome of interest (Schmidt & Brown, 2015). The overall aim that guided inquiry into the clinical problem of opioid overdose is: Among eligible OUD veterans admitted to the mental health unit, how effective is inpatient Suboxone induction at reducing opioid misuse?

**Population**. The population for this quality improvement project includes medical doctors (MDs), nurse practitioners (NPs), and social workers. This population was selected based on the VHA’s desire to address the growing trend among vulnerable patients.

**Improvement Strategies**. The improvement strategies include project team education of

a medication-assisted treatment modality and implementation of an algorithm providing

guidelines for the implementation of Suboxone into inpatient practice. Medication-assisted treatment is the use of approve medications, coupled with therapy, to provide holistic care in the treatment of OUD. It is often used in the treatment of addictions that exhibit physical withdrawal symptoms. This evidence-based therapy has proven to help recovering users stay in treatment longer (SAMHSA, 2018).

 The literature supports the use of medication-assisted treatment in the inpatient setting; however, improvement strategies focused on inpatient veterans is sparse. According to Noska, Mohan, Wakeman, Rich, and Boutwell (2015), inpatient treatment helps to manage withdrawal symptoms and facilitate treatment of acute illnesses. The preferred treatment for the veterans in this project is Suboxone. Suboxone has a lower risk of overdose compared to Methadone, as well as a lower risk of respiratory depression and cardiovascular side effects (Peddicord, Bush, & Cruze, 2015). Suboxone can also be continued on an outpatient basis, reducing patient visits for treatment and allowing them take medications in the comfort of their home. Methadone can only be prescribed by a physician and must be dispensed within a SAMHSA- certified treatment program (SAMHSA, 2015). Suboxone has an advantage due to the fact that it can be prescribed by NPs, in addition to physicians, and it can be continued on an outpatient basis.

**Comparison**. The comparison group consists of traditional strategies currently in place. The VHA offers several outpatient treatment options for veterans. They offer services where veterans can take part in one or two groups sessions per week, or they can participate in a more intensive program which encompasses three, three-hour group sessions per week for 12 weeks. There is also an intensive 35-day residential program known as the Substance Abuse Recovery and Rehabilitation Treatment Program (SARRTP) offering treatment seven days a week

**Outcome(s)**. Outcomes for this quality improvement project include: the proportion of

veterans admitted, screened for eligibility, and the proportion of eligible veterans receiving a

prescription, provider and staff attitudes toward clinical practice change, and provider knowledge

related to the use of Suboxone for medication management.

**Assumptions**

 The implementation of an evidence-based medication management algorithm has the assumption of increasing screening among opioid addicted veterans to help identify those at risk for accidental overdose and potential death. Other assumptions include: social workers identifying patients to provide resources and referrals, and Suboxone will be readily available from the pharmacy. Patient assumptions include veterans eligible for admission for OUD would be receptive to the idea of receiving Suboxone for treatment and possess the ability to follow the plan of care while inpatient and plan to continue treatment at discharge.

**Definition of Key Concepts**

**Opioid addiction.** A pattern of opioid use that causes impairment of distress (CDC, 2017). The term has also been referred to as OUD.

**Medication-assisted treatment.** The use of approved medications, along with counseling and therapy, to treat substance abuse disorders (SAMHSA, 2018).

**Suboxone.** A medication that combines buprenorphine, a partial mu agonist and kappa antagonist, with naloxone, an opioid antagonist, to reduce the prospect of parenteral abuse of buprenorphine (Bolek, Yargic, & Ekinci, 2016).

**Veteran.** A person with a military background who is no longer actively serving (Campbell et al., 2016).

**Inpatient treatment.** Treatment in a facility that provides 24-hour medical attention

(Noska, Mohan, Wakeman, Rich, & Boutwell, 2015).

**Provider adherence.** The extent to which prescribed procedures and engagement in specific behavior is followed (Beehler, Funderburk, Possemato, & Vair, 2013).

**Screening.** The use of standardized screening tools to assess for risky substance use and identify appropriate treatment (SAMHSA, 2017).

**Mental health.** A state of well-being that focuses on a person’s ability to cope with stress, be productive, and make contributions to society (World Health Organization [WHO], 2018).

**Summary**

 The prevalence of opioid addiction and overdose requires clinical and legislative action. The staggering pace of addiction and death are overwhelming and show no signs of slowing. Effective treatment options are necessary to improve physical and mental health and reduce the risk of accidental deaths. Despite the potential to reduce serious illness or injury, access to treatment is limited for this vulnerable population. By increasing the availability of treatment for veterans, there is a better chance that veterans can receive the care they need. The goal of this project is to improve the outpatient treatment dilemma and utilize an algorithm to initiate Suboxone in the inpatient setting. In order to ascertain appropriate evidence-based practice solutions, a thorough literature search will be performed.

**Chapter Two: Review of the Literature**

 The management of opioid addiction in the veteran population with mental health conditions poses a significant clinical problem that requires evidence-based solutions. The purpose of the literature review was to identify and review relevant literature to support the collaborative initiation of Suboxone in the inpatient setting.

**Methodology**

It is important for a researcher to select the appropriate method for the question being addressed. Grounded theory is commonly used in areas where there is little to no research on the subject. According to Schmidt and Brown (2015), when using grounded theory, just enough literature is examined to identify gaps in the literature. There is also no set sample size for grounded theory. The purpose of this project is to explore whether the implementation of inpatient Suboxone will be effective in reducing opioid misuse.

 **Sampling strategies.** Search strategies are used to organize terms searched in a database. Each database is organized differently, and as a result, strategies may need to be adapted accordingly. In order to generate a literature review to support the concept of opioid misuse and combination therapy, several search terms were used. Each article was dissected for pertinent information, data compiled, and a well-thought out definition was constructed. Data on the prevalence of opioid use among the veteran population and current treatment modalities was identified through a comprehensive literature search.

**Evaluation criteria.** A review of the literature focused on peer-reviewed evidence-based practice and studies analyzing the use of Suboxone in the inpatient setting. CINAHL, PubMed, ECU One Search, and Nursing and Allied Health Databases were searched for articles from 2013-2018 using key search terms: opioid addiction, medication-assisted treatment, Suboxone, veterans, inpatient treatment, provider adherence, screening, and mental health. The utilization of various MESH terms in each database resulted in over 4,000 articles. Results were then limited to clinical trials, randomized controlled studies, case-control studies, meta-analyses, surveys, and systematic reviews. Exclusion criteria included commentary and opinion articles. Sources were selected based on their focus on the use of Suboxone in the inpatient setting, provider screening, and provider adherence. Articles were excluded if they focused on methadone, emergency room visits, outpatient therapy, or Buprenorphine only treatment. In total, twenty-five articles were identified: fifteen were read in their entirety, while 10 were excluded based on their abstracts. Twelve articles were selected based on the aforementioned criterial while three were excluded, as they did not meet the inclusion criteria.

**Literature Review Findings**

 Based on a review of the relevant literature, three main themes were identified: screening for opioid misuse, feasibility of inpatient Suboxone use, and provider adherence to algorithm intervention.

 **Screening for opioid misuse.** Providers assess patients for substance use behaviors using standardized screening tools. Screening imparts a way to identify patients who may be at risk for substance abuse or who may already be involved in misuse. Current literature demonstrates that the rates of opioid use have risen in recent years, highlighting the importance of screening as a first step to identify high risk patients. Bhatt and Arespacochaga (2017) outline screening patients and identifying stigma and bias as key areas to addressing the opioid crisis. Providers have a responsibility to screen and identify the most vulnerable patients. Asking simple questions about opioid use can make the difference between life and death. Unfortunately, some providers feel they have not been adequately prepared to address the growing epidemic. Pohler and Nowak (2017) conducted an anonymous survey to examine 400 physician assistant (PA) students and 402 practicing PAs comfort levels with utilizing screening tools to identify opioid abuse. The study’s results concluded that the students and practicing PAs did not feel adequately trained to screen for opioid abuse. Karon (2017) echoed that sentiment with the revelation that until recently, medical schools offered little to no training on addiction, which left providers navigating the challenging arena of opioid abuse on their own. According to the article, schools are now invested in teaching providers how to screen and intervene in opioid addiction. Mahmoud et al. (2018) also looked at stigma associated with substance abuse as a barrier to screening by nurses. The purpose of the study was to look at the efficacy of Screening, Brief Intervention, and Referral to Treatment (SBIRT) training to change nursing student attitudes about opioid abuse among patients. According to the study, a history of unwillingness among various types of providers to screen exists due to feelings of hopelessness from negative stereotypes of addicted patients, increased workload, and insufficient time (Mahmoud et al., 2018). As a result, the study aimed to address the issue early in nursing curricula to help learners differentiate between myths and facts associated with OUD. The study utilized a pretest-posttest design to survey 49 junior level nursing students enrolled in a psychiatric mental health course during three points in time: at baseline, following SBIRT education, and after finishing the mental health course. The results indicated that providing education had a positive impact on perceptions and attitudes towards patients combating opioid addiction. The nursing students gained more knowledge and experience, recognized the patients as less dangerous, were less afraid to work with substance abuse patients, and felt more comfortable being in closer proximity to patients with OUD (Mahmoud et al. 2018).

 Common screening tools used to detect opioid misuse include the Opioid Risk Tool (ORT),

the Screener and Opioid Assessment for Patients with Pain- revised (SOAPP-R), and the Current Opioid Misuse Measure (COMM). However, evaluating the data from these tools is challenging. The revised SOAPP predicts risk for aberrant drug behavior using an eight-item self- report, while the COMM is a 17 item self-assessment tool that also helps providers identify those exhibiting aberrant behaviors association with misuse of opioids. The ORT is a six-item tool that predicts the probability of opioid misuse and is best used in primary care. Although screening is an important step in assessing patients at risk for opioid misuse, it is only to identify those at risk and is not a comprehensive clinical assessment. A study by Chalmers, Wilson, Mullinax, and Brennan (2016) assessed the effectiveness of screening tools in the emergency room to predict opioid misuse. The prospective observational study utilized the aforementioned screening tools and enrolled 154 patients. Study results showed that the tools poorly predicted which patients were at risk for aberrant behaviors related to opioids (Chalmers et al., 2016).

 **Inpatient Suboxone Use.** Pharmacological treatments, including the use of buprenorphine, naltrexone, and methadone, have shown to be effective in the treatment of opioid addiction. This project site has chosen to prescribe Suboxone as part of its medication management, and as such, this project will focus on Suboxone use among inpatient psychiatry veterans. Lee et al. (2018), compared the effectiveness of Suboxone versus naltrexone initiation in U.S. inpatient facilities during a 24-week trial. At the beginning of the study, 28% of the participants dropped out of the naltrexone induction versus 6% who dropped out of the Suboxone induction. This could be attributed to the fact that naltrexone does not produce opioid-like effects and cannot be initiated until the patient is in full detoxification. The study concluded that patients receiving naltrexone were at greater risk for relapse with induction being less successful. Patients receiving Suboxone were successfully inducted and the risk of relapse was lower at the beginning of induction. Induction failures for naltrexone on day 21 was 25% compared to 3% for Suboxone.

 Another study by Berland, Malinoff, Weiner, and Przybylski (2013) examined the need for chronic pain patients to receive hospitalization for monitoring of Suboxone conversion from high dose morphine due to the psychological state of the patients and to minimize withdrawal symptoms, among other things (Berland et al., 2013). The descriptive study looked at 76 patients admitted and followed them for 25 months. With Suboxone treatment, 66% of the patients reported better pain control, while 33% reported being pain free. More importantly, 66% had improved function, and 25% were employed (Berland et al., 2013). Similarly, Bolek, Yargic, and Ekinci (2016) examined 50 psychiatric unit inpatients admitted for opioid detoxification who were then followed after discharge. Measurements were obtained by the Perceived Stress Scale (PSS), the Visual Analog Scale (VAS), the Quality of Life Questionnaire (SF-36), and the Addiction Severity Index (ASI). The study revealed significant improvement in quality of life, decrease in illicit drug use, and increased functionality.

 Liebschultz et al. (2014), evaluated the efficacy for treating opioid dependency in hospitalized patients in their randomized controlled trial. The study sought to determine if initiation of Suboxone in the inpatient setting, coupled with immediate follow-up after discharge, would decrease opioid misuse. A total of 139 patients participated in the study, of which 79 were placed in the detoxification group and 72 were placed in the discharge follow-up group. The protocol consisted of five days of detoxification or induction, dose stabilization, and post-discharge transition. Patients in the follow-up group were given access to outpatient services within seven days of discharge. Results showed that 72.2% of those who received follow-up entered outpatient treatment by six months of discharge compared to 11.9% of those who solely did detoxification (Liebschutz et al., 2014). They were also less likely to report illicit opioid use. A similar study by Suzuki et al. (2015) also sought to determine if induction with Suboxone during hospitalization would facilitate treatment after discharge. The study involved 47 patients, with 46% of the patients successfully initiating outpatient treatment after discharge (Suzuki et al., 2015). This was thought to be due to greater engagement for patients who were referred to specific providers versus those without referrals. Overall, the findings suggest that hospitalization is an important bridge to treatment.

 **Provider adherence to clinical practice guidelines (CPGs).** Adherence to clinical guidelines by providers may support improved health outcomes in patients. Guidelines are developed to assist providers with clinical decision making, with the overall aim to improve patient outcomes (Pronovost, 2013). CPGs, or algorithms, offer well-defined instructions on how to complete a thorough assessment and offer complete care; however, due to the many guidelines used to manage care, it can be challenging for providers to be knowledgeable of all the available evidence.

 Research to improve patient outcomes has focused on identifying factors to increase provider uptake of recommendations or guidelines. According to Kastner et al. (2015), extrinsic approaches (change in practice setting) and intrinsic approaches (change in guidelines) have been investigated as factors to improving adherence. Six domains have been identified as having an influence on guideline uptake: stakeholder involvement, evidence synthesis, considered judgement, feasibility of implementation, simplicity of message, and format of guideline (Kastner et al., 2015). To better understand these influences, multiple works were referenced, which separated barriers into three domains having significant influence on adherence, specifically, provider knowledge, attitudes, and behavior (Barth et al., 2016). A framework relevant to the aforementioned domains, the Knowledge-Attitude- Behavior Framework, surmises that providers must be knowledgeable and aware of guideline content (Fischer, Lange, Klose, Greiner, & Kraemer, 2016). The attainment of knowledge and awareness influences attitudes, which in turn affects practice behavior (Fischer et al., 2016).

 ***Provider knowledge.*** Knowledge-based factors impacting the uptake of practice guidelines included familiarity with the guidelines and possession of skills needed to deliver them. According to Barth et al. (2016), 29% of the physicians surveyed reported that improved implementation would require advanced education on their part, and it was important to make accurate diagnoses in order to follow appropriate CPGs. Primary care providers (PCPs) who appreciated the use of guidelines related to OUD identified lack of awareness and familiarity with delivering treatment as barriers (Storholm, Ober, Hunter, Becker, Iyiewuare, Pham, & Watkins, 2017; Fischer et al., 2016; Kotzeva et al., 2014). Self-efficacy was also identified by mental health providers as a barrier (Storholm et al, 2017). Providers were concerned that they did not possess the skill to offer treatment for OUD or prescribe medications. Providers also reported that the varying details offered by each guideline, while helpful for experienced providers, may cause confusion for novice providers and lead to the guideline being abandoned (Barth et al., 2016). As such, “lack of efficient translation of research findings into routine practice is a common obstacle to improving quality of care” (Zgierska et al., 2018, p. 421).

  ***Provider attitude.*** Attitudinal barriers focus on the providers’ perceived applicability of CPGs, as well as their belief in their ability to implement and maintain change (Fischer et al., 2016). In their work, Fischer et al. (2016) and Mazrou (2013) identified lack of agreement with the guideline, outcome expectancy, and motivation as some of the main barriers to provider adherence. Sola et al. (2014) also identified motivation to carry out the recommendations, as well as a passive attitude toward workplace facilitation of guideline access, as key factors to adherence.

 Krebs, Bergman, Coffing, Campbell, Frankel, and Matthias (2014) identified attitudes and beliefs about opioid management as the most prominent barrier to adherence to CPGs. According to the study, providers often use their “gut feeling” to inform patient care decisions. Some of the providers did not feel that the requirement for opioid agreements or drug testing was relevant to long-term opioid users. They also believed that monitoring should be reserved for those patients exhibiting “red flag” behavior or presenting with vague complaints (Krebs et al., 2014). Recommended monitoring practices were viewed by providers in the study as a form of patient punishment. Providers did not agree with the framework in which patients were questioned about the genuineness of their pain rather than focusing on the risks and benefits of treatment (Krebs et al., 2014). Further research found significant differences in adherence based on the age of the provider. Experienced providers were more apt to render care based on experience; whereas, novice providers practiced team-based medicine (Barth et al., 2016).

 ***Provider behavior.*** Behavioral barriers include external factors that are out of the

provider’s control, such as time, costs, space, and staff (Storholm et al., 2017; Barth et al., 2016).

Providers reported that the extra time required to treat OUD patients was a large barrier to guideline adherence (Storholm et al., 2017). Long wait times for medical and mental health appointments, extra paperwork required to manage the population, and long travel distances for patients were noted as prime barriers for providers participating in the study (Krebs et al., 2014). One physician in a study conducted by Krebs et al. (2014), was concerned that the lack of time to make appropriate prescribing decisions could lead to grave consequences. Providers also expressed concerns over reimbursement for services, to include insurance authorization, and funding for additional staff for coordination of services. This was especially a concern among mental health providers because reimbursement for certain services such as psychotherapy was limited to those with a mental health diagnosis (Storholm et al., 2017).

**Approaches to Improve Adherence.** In order to address the challenges and barriers to guideline uptake and adherence by providers, several approaches and facilitators have been proposed in the literature. A study performed by Lugtenberg, Burgers, Han, and Westert (2014) examined provider preferences for strategies to improve guideline adherence in practice. A cross sectional survey was conducted among 264 general practitioners who rated interventions in terms of usefulness to improve adherence. The results of the study concluded that a majority of the participants preferred small group educational meetings as being very encouraging to improve adherence, while others rated changing of guidelines or computer support could support them to adhere to guidelines (Lugtenberg et al., 2014). Few found financial interventions or simple educational materials as encouraging.

 ***Content in guidelines.*** Four domains were identified by Kastner et al. (2015) as having the ability to improve guideline implementation: stakeholder involvement, evidence synthesis, considered judgement, and feasibility of implementation. In order to address stakeholder involvement, it is important to ensure that there is diverse and unbiased expertise when developing guidelines. The target population must be identified, addressing their preferences, along with end users (Kastner et al., 2015). Providers also expect to have confidence in the quality of evidence presented in the guidelines. The synthesis of the evidence is considered to be the most developed aspect of guideline expansion, along with ensuring validity and reproducibility, improving dissemination, and making sure the guidelines are up-to-date (Kastner et al., 2015). The literature also suggests that guideline developers be open to and explore alternative points of view, thoughtfully weighing evidence and seeking consensus. They should consider the views and opinions of those who would utilize the recommendations. Finally, facilitating and accelerating the successful implementation of guidelines requires that developers consider the fiscal, technological, administrative, cultural, political, and ethical feasibility of the guidelines (Storholm et al., 2017).

 ***Communication of guideline content.*** Other approaches to guideline adherence involved the messaging of the content, along with the format of the content (Kastner et al., 2015; Sola et al., 2014). To optimize provider adherence, guidelines must be presented in a clear, simple manner. Presenting information in a clear and concise manner increases understanding and retention, while decreasing cognitive overload, highlighting an inverse relationship between level of complexity and adoption (Kastner et al., 2015). Finally, the dissemination of information in several formats promotes their use in practice. Multiple versions, to include written and electronic, allows the guidelines to progress from a research tool to a clinical tool, and also to a patient education tool (Kastner et al., 2015). Electronic versions of guidelines also allow for frequent updating, allowing to providers to stay abreast of the rapidly evolving field of medicine.

**Limitations of Literature Review Process**

 Limitations of the literature review process included the lack of adequate studies in the

chosen area and lack of discussion about the use of Suboxone in the veteran population. The majority of the current literature focuses on outpatient opioid treatment. Few studies focused on the initiation of Suboxone in the inpatient setting followed by outpatient treatment. Also, limitations include the availability of studies using the methods outlined in the search methodology and the suitability of these studies.

**Discussion**

A comprehensive approach is essential in the management of pain in veterans. The literature review supports the use of medication and therapy to treat OUD in the veteran population. Previous studies have focused on treatment of OUD in the outpatient setting. Recently, studies have begun to examine the feasibility of initiating Suboxone in the inpatient setting with subsequent follow-up and treatment after discharge. While there is currently limited data available on the topic, the data that is available supports the use of Suboxone during admission for successful transition to discharge, thus leading to improved patient outcomes.

**Conclusion of findings.** Opioid use disorder is a major barrier in the care and management of patients with mental health diagnoses. The literature review provides vital information to address and support this quality improvement project. The literature discussed the growing problem of opioid misuse, abuse, addiction among various populations and discussed possible improvement strategies to combat this epidemic. Currently, there is limited data that examines the use of Suboxone in the inpatient setting, but the data that does exist supports inpatient induction for better patient outcomes.

 The findings support creating a protocol to implement Suboxone induction in the inpatient setting. Although outpatient treatment facilities do exist, there are not enough available to support the growing number of dependent patients. The literature also points to Suboxone as the treatment of choice due to its ability to be used in the inpatient setting as well as the outpatient setting. The veteran population is also discussed as being a vulnerable population with special challenges as it relates to opioid misuse and abuse. Overall, the literature points to opioid agonist

treatment as being effective for OUD when combined with therapy and counseling.

**Advantages and disadvantages of findings.** The advantage of Suboxone is that it

contains the ingredients buprenorphine and naloxone, that when combined offers relief from

cravings and withdrawal while acting as an opioid deterrent. Naloxone blocks the opioid receptor to help stop misuse of the drug. Suboxone helps to reduce cravings and withdrawal symptoms because the brain still believes it is receiving an opioid. Although the drug can still produce effects of euphoria or respiratory depression, the effects are weaker than other opioid agonist treatments (SAMHSA, 2018). Suboxone is also administered sublingually, making it an ideal medication for patients who may experience swallowing issues such as dysphagia. It is also important to note that initiating Suboxone in the inpatient setting is better than waiting to institute it at discharge. During the inpatient stay, the patient has access to interdisciplinary care and services for treatment can be coordinated before the patient is discharged. The patient is able to remain on the same medication and the patient can receive the medication in the outpatient provider’s office.

 There are not many disadvantages noted to the implementation of Suboxone in the inpatient setting. The medication does possess some side effects. Nausea, vomiting, muscle aches and cramps, irritability, and sleep disturbance are few of the side effects noted from taking the medication (SAMHSA, 2018). Also, the medication is carefully regulated, so all prescribing providers must acquire and maintain certifications to administer the drug. For this reason, many

providers shy away from prescribing this medication. This is also the reason why there are not

enough available treatment facilities.

**Utilization of findings in practice.** The findings from the literature will be utilized by

the project team to support the use of a protocol for Suboxone induction on the inpatient

psychiatry unit. Although there are limited prescribers, the plan is to initiate treatment when eligible patients are admitted to the inpatient unit. The social workers will work closely with the patients during their stay to coordinate services for discharge. Once discharged, patients will

attend group sessions and be encouraged to continue treatment in an outpatient setting.

**Summary**

The ongoing opioid crisis presents a major dilemma in healthcare. The available literature discusses the opioid crisis in detail and suggests various ways to address it. After reading various articles on possible strategies to help address the opioid epidemic, it is the expectation that an inpatient treatment protocol can be easily implemented on the psychiatric unit. The strategies that are currently in place to tackle this issue are not working. People are dying every day from prescription medication abuse and health care providers have an ethical and moral obligation to address this problem.

**Chapter Three: Theory and Concept Model for Evidence-based Practice**

 Theories provide a guideline for how evidence is collected, analyzed, and used in health care and they provide a systemic approach to explain phenomena that occurs in the world. Theories can be applied to understand problems and behaviors. The purpose of this quality improvement project is to implement a practice guideline for Suboxone induction in AIMH to improve medication management and provider adherence. The Health Belief Model (HBM) was used to frame and design key concepts in inpatient care for patients with OUD. While the HBM attempts to explain and predict behaviors, it has been used in public health to help determine individual health beliefs and if individuals will take the steps to protect their health. According to Bonar and Bohnert (2016), the model suggests that perceptions about outcomes may influence participation in preventive behaviors. As it relates to OUD, the model asserts that “perceived susceptibility (e.g., likelihood of overdose) and perceived severity (e.g., seriousness of overdose) of a health outcome influences whether one engages in preventive behavior (e.g., overdose prevention strategies) and that more perceived benefits of and fewer perceived barriers to engaging in the preventive behavior are also promotive” (Bonar & Bohnert, 2016, p. 1379).

**Concept Analysis**

Concept is defined as “a word or phrase that captures the essence of something” (Butts & Rich, 2018, p. 636). Per Berenskoetter (2017), a concept can also be defined as “an abstract frame that helps generating knowledge about the world by organizing, naming, and giving meaning to its features” (Berenskoetter, 2017, p. 154). Concepts are used in literature to develop a strategy and are often open to the interpretation of the reader. Once concepts are identified within the topic, synonyms, or key words are used as search terms. The two concepts discussed in this review are opioid misuse and combination therapy. Searches were conducted using

PubMed, CINAHL, Nursing and Allied Health Databases, and ECU One Search. The following

section will attempt to define the chosen concepts for reader clarification.

 An extensive review of the literature revealed many, diverse definitions of opioid misuse and combination therapy. After thorough review, opioid misuse is defined as an abnormal disease that alters brain biology, manifests itself through uncontrollable cravings and inability to control use, and leads to significant impairment or distress. This growing problem encompasses a wide variety of variables that require a multidisciplinary approach to care. The HBM, designed specifically for application to health behaviors, may be used to explain opioid misuse in individuals. Unsafe behavior due to differences in belief in the harmfulness of opioid misuse could be attributed to false information obtained from the individual’s environment. Understanding what motivates an individual to change will be key to addressing the opioid crisis.

 Medication-assisted treatment is the use of medications in combination with therapy to treat substance use disorders. Opioid use disorder requires a tailored treatment program with follow-up options in order to be successful. Medications may help with withdrawals and cravings, while counseling supports development of positive coping skills. The combination of buprenorphine and naloxone, known as Suboxone, works well to deter addicts from dissolving and injecting the Suboxone. The benefit of using this medication is that buprenorphine’s opioid effects prevail, while naloxone blocks opioid withdrawals (SAMHSA, 2018). If the sublingual tablets are crushed and injected, the naloxone effect dominates, bringing on opioid withdrawals. As a result, the addition of naloxone decreases diversion and misuse of the combination drug. The buprenorphine in Suboxone is a partial agonist, meaning that the effects increase until they plateau, allowing addicted patients to discontinue drug use without withdrawal. While buprenorphine can still produce side effects such as respiratory depression and euphoria, the

maximum effects are less than full opioid agonists. A synthesis of the literature reveals that

combination therapy is defined as medically supervised behavior therapy and counseling, combined with medication, that treats substance abuse disorders, teaches the recovering user to manage cravings, and helps to sustain recovery. Combination therapy helps to provide holistic care to vulnerable patients. According to Franckowiak and Glick (2015), the effectiveness of interventions is often dependent on an individual’s involvement in self-care activities. The belief that there will be some benefit due to change and that any barriers will be outweighed by the benefits is essential to engaging individuals to start the change process.

**Theoretical Framework**

Health behavior is “concerned with the development and application of knowledge, as well as with approaches to solving health and social problems-in other words, how to effect change” (Glantz, Burke, & Rimer, 2018, p. 241). Personal values and beliefs can have an impact on health maintenance, restoration, and improvement. Poor personal health practices are associated with chronic illness. Research suggests that an estimated 40% of premature deaths in the United States (US) are a direct result of risk behaviors such as substance abuse (Bouton, 2014). Reducing these types of risk behaviors and improving population health is the goal of preventive medicine. However, there is much debate on the best strategies to support behavior change.

Multiple theories exist to explain behavior change and create successful interventions. The HBM is one of the first theories of behavior and remains one of the most recognized. The model was developed in 1950s as a way to explain why people weren’t participating in prevention programs. The model is patient centered and postulates that perceptions of six different variables can predict behavior. Researchers theorized that people’s beliefs about susceptibility to disease and their perceptions of benefits influenced their readiness to act (Glanz et al., 2018). The first variable, perceived susceptibility, argues that people must believe they are susceptible to negative outcomes. The second variable, perceived severity, argues that people must believe that lack of action will lead to serious consequences. The third variable, perceived benefits, argues that a person is more likely to change behavior if there is a perceived benefit. The fourth variable, perceived barriers, argues that the more barriers that are introduced, the less likely the person is to make changes. The fifth variable, cues to action, looks at internal and external factors that help individuals or prevent them from making changes. Finally, the sixth variable, self-efficacy, explains that people must believe that they can make changes that result in the desired outcome (Jones, Smith, & Llewellyn, 2014). While it is useful for short and long-term behavior change strategies, the model is not without limitations. The model does not consider personal beliefs or attitudes that determine a person’s acceptance of a behavior change. It also does not consider educational, economic, social, or environmental challenges that may prohibit action. However, the model has been used to develop interventions to change health- related behaviors.

**Application to practice change**. The most difficult part of quality projects is behavior

change. Problems in quality can result in missed opportunities for better outcomes, unavoidable

outcomes, and unnecessary cost increases (Portela, Lima, Martins, & Travassos, 2016). Quality improvement is a systematic approach that leads to measurable improvement in health care and the health status of patient groups. Research suggests that successfully changing behavior increases when influences for motivation and enabling are engaged. The sources of influence referred to in the article include personal, social, and structural motivation, as well as, personal,

social, and structural ability (Nagy, 2017).

 Theory helps practitioners and others perform better in their roles. It helps by allowing

healthcare providers develop interventions that will have the greatest impact on their patient population. It is important, however, that practitioners do not solely base their work on theory, but to couple theory with clinical rationale. The critical steps to using theory include identifying the source of the problem, choosing the appropriate theory of change, and also identifying an outcome measurement plan.

 An extensive literature review reveals multiple applications of the HBM in current practice. An overview can be demonstrated by applying the model to veterans suffering from OUD. The first variable, perceived susceptibility, relies on the veteran believing that he is at risk for reaching a harmful state as a result of indulging in inappropriate opiate use. Secondly, perceived severity relies on the veteran receiving pertinent information on the extent of the harm that could result from inappropriate opiate use. The third variable, perceived benefits, relies on the veteran understanding the consequences, becoming motivated to change, and seeking advice on how to reduce risks. The fourth variable, perceived barriers, would be those obstacles the veteran feels would hinder his progress, such as available appointments at treatment centers or transportation to treatment. The fifth variable, cues to action, are those factors that make the veteran feel the need to act, such as perception of bodily state or receiving an invitation to participate in inpatient medication-assisted treatment. Finally, self-efficacy involves the patient feeling confident in his ability to manage cravings or triggers and sustain recovery.

 Frameworks are used as guides to pursue change efforts. Research stresses the importance of

flexibility in applying concepts of theory in diverse situations and has provided new advancements in the effort to improve population health. While theory alone may not lead to effective interventions, it helps to direct individuals in the right direction. “Effective use of theory for practice and research requires practice, but it can yield important dividends in efforts to enhance the health of individuals and populations” (Glantz et al., 2015, p. 357). Behavioral interventions can promote healthy individuals and environments and improve health outcomes. While health and behavior are related, the interactions are not simple or straight-forward. The US still struggles to use the knowledge gained to improve the health status of individuals and populations. The dilemma that practitioners continue to face is deciding what specific interventions will produce and sustain healthy lifestyle changes. Individual choices are often influenced by social connections, personal relationships, and the communities in which they live. As a result, programs must be oriented toward individual health behaviors and maintaining behavior change may require a multitude of strategies. There is no simple solution. Health behavior theories may illuminate the processes underlying behavior change, but ultimately, continued research is needed to overcome the barriers to change.

**EBP Change Theory**

The Diffusion of Innovation (DOI) Theory was chosen to guide this project in order to evaluate the conversion to effective use of evidence-based practice at the point of care.

The theory, developed by Everett Rogers in 1962, highlights the process of adoption of ideas, behaviors, or products. When diffusion occurs, change is communicated over time within social systems. According to Rogers (2003), social change occurs when “new ideas are invented, diffused, and adopted or rejected, leading to certain consequences” (Rogers, 2003, p.6). The theory consists of four main elements: innovation, communication channels, time, and social

system.

 Innovation may refer to a new idea or practice that may be used to create value for an

organization or it may refer to discontinuing an inefficient process. When the idea of a new innovation develops, it must be shared with other individuals in order to reach an understanding. Rogers (2003) defines communication as “the process by which participants create and share information with one another in order to reach a mutual understanding” (p. 5). The information, which may be shared through face-to-face communication or diffused through radio, television, or internet, may be desirable for some but cause resistance in others. In order to introduce an innovation, it is pertinent that the person who is knowledgeable about the innovation communicates the information to the person who is uninformed. For the purposes of this project, communication will occur via group teaching with a PowerPoint presentation. The third element of the theory is time. The innovation is communicated, an attitude toward the innovation is formulated, a decision is made to accept or reject the innovation, the innovation is implemented, and the decision is confirmed (Rogers, 2003). This rate of adoption occurs over time. Finally, engagement of individuals in problem solving to accomplish the task is essential. Social systems consist of individuals of varying beliefs, attitudes, and norms. These varying beliefs can either facilitate the diffusion of innovations or impede it.

**Application to practice change.** Rogers’ DOI theory highlights the process by which knowledge is accepted or rejected within social systems over time. The project examines the implementation of a new VA evidence-based algorithm and provider provision and coordination of care for opiate addicted veterans. It can be applied as a way to understand how individuals translate new ideas into practice. A survey questionnaire will be used to test concepts of the adoption phase of the theory.

 An inpatient psychiatry unit includes health practitioners, nurses, social workers, and therapists for the integration of diverse healthcare services to ensure quality care. Individuals usually make decisions more rapidly than organizations; therefore, it is important to understand the experiences of individuals and how personal and outside factors can affect their decision-making regarding innovation in the workplace. Several types of individuals exist within organizations: the innovators, the early adopters, the early majority, the late majority, and the laggards (Rogers, 2003). The attributes of the adopters, as well as the champions, opinion leaders, and change agents, can affect the diffusion of the innovation. The innovators want to be first and are ready to try the new idea. Early adopters are those individuals who embrace change and who do not need a lot of coaxing to adapt to the change. If the innovation is credible and the adopters trust its use, is it more likely to be implemented. The early majority need to see evidence that the change works before they are willing to adopt the change. The late majority are skeptical and must see the change being implemented by the majority before they will engage. Finally, the laggards are those individuals who are conservative and often times must be pressured to accept the change.

 The DOI theory will be used to guide project implementation and evaluate this quality improvement project. It is important to identify positive and negative influences that exist concerning the diffusion process. The project seeks to understand how the innovation (new algorithm and application in the work setting) will be adopted by the health care providers and what, if any, barriers may exist. The use of the theory supports the identification of variables that may influence the diffusion process and lead to successful implementation and support of the innovation.

**Summary**

Theoretical frameworks are important to guide the work that is being done. For the purposes of this project, the HBM is most appropriate. This model is a psychological model that seeks to explain health behaviors. While there are limitations to this model, it can be used for short-term and long-term projects. Using this model to gauge the patients’ readiness for change can help in

the design of appropriate improvement strategies.

 Health care providers must be aware of the need for change in order to adopt new innovations. The DOI theory can been successfully used to accelerate the adoption of programs that aim to change the behavior of organizations. It is important to understand the target population and the

factors that influence their behaviors and attitudes towards adoption of ideas for practice change.

**Chapter Four: Pre-implementation Planning**

A meeting with the multidisciplinary team at a local VA facility responsible for implementing the new algorithm was arranged to discuss acceptability and feasibility of conducting the project on the inpatient psychiatry unit. After several team meetings and a discussion with administration, approval to conduct the quality improvement project with the providers and staff was obtained. The team, which consisted of mental health providers, nurse practitioners, a social worker, physician assistants, and the Doctor of Nursing Practice (DNP) student, continued to meet and discuss the algorithm that would be implemented on the unit. Once the algorithm was in place, efforts were focused on supporting providers in their efforts to become credentialed to prescribe medications used in medication-assisted treatment. Resources used in planning include the facility’s conference room where the educational teaching will take place, a laptop computer, a projector, and a photocopier.

**Project Purpose**

The purpose of this scholarly project is to improve medication management of OUD in veterans through the utilization of a VA designed algorithm within an inpatient psychiatry unit. The goal of the project is to ensure that providers screen for opioid addiction and prescribe appropriately based on eligibility.

**Project Management**

 **Organizational readiness for change.** In order to address organizational change, it is important to clearly define the problem, state the goals in measurable terms, identify strategies to address barriers, and identify motivators for change. The providers at the project site have clearly exhibited readiness for change through the implementation of a project team dedicated to the implementation of Suboxone for opioid addiction in the inpatient setting. The project team

constructed an algorithm that outlines the steps that providers will follow to screen

potential patients and prescribe medications based on eligibility. There are also several providers

who are in the process of becoming credentialed to prescribe Suboxone on the unit.

 **Inter-professional collaboration.** The project team is comprised of psychiatric physicians who will screen the patients, nurse practitioners, physician assistants, an emergency room physician, and a social worker. Each team member will play a unique role in implementing the practice change. The physicians will be responsible for Suboxone induction on the unit. The nurse practitioner on the unit, along with the DNP student, will be responsible for overseeing adverse events that may occur as a result of the induction. In order to monitor the adverse events, it was important to identify possible reactions that could occur with Suboxone use, as well as list interventions (Appendix A). The physician assistant will collect and synthesize data related to the project. Finally, the social worker will educate and prepare the patients for discharge and transition to outpatient treatment.

 **Risk management assessment.** An assessment of the facility’s strengths and weaknesses was necessary to create a feasible plan, hence a SWOT (strengths, weaknesses, opportunities, threats) analysis was compiled that provided a better understanding of the quality improvement project. The SWOT analysis is used to assess organizational readiness for change. It can also be used to identify factors that influence or hinder overall functioning of the organization.

***Strengths***. Leadership and staff members on the unit are committed to providing safe, cost-effective, patient-centered care. Each team member has accepted their defined roles and responsibilities and are eager to work collaboratively to address the health care needs of veterans. The patients on the unit will receive focused education on opioid misuse, comorbidities, and medication-assisted treatment obtained from evidence-based practice. Patients

will also be linked to outpatient services prior to discharge from the unit.

***Weaknesses.*** The analysis alerted the team to barriers that could hinder the project. The lack of a formalized assessment tool to evaluate side effects and patient outcomes was identified. It was determined that the unit needed a reference outlining potential side effects of Suboxone use, as well as possible interventions. Another possible weakness identified was the potential to have too many opioid addicted patients on the unit, and not enough staff to adequately care for them. Finally, the lack of an existing policy outlining the use of Suboxone in the inpatient setting has the potential to hinder progress, due to the need to educate staff and achieve buy-in of a new policy.

***Opportunities.*** The project presents the opportunity for the VA to adopt a new practice with the intention of improving patient outcomes. The VA can make resources available to veterans by offering telehealth options for those who do not live near a treatment facility or by ensuring that veterans who are eligible for VA health care benefits have access to the Veterans Transportation Service (VTS).

***Threats.*** Opioid misuse contributes to overdose and high death rates per capita. Noncompliance to the recommended treatment plan poses a risk to successful project implementation. Veterans may be unwilling to change behavior or consent to treatment due to the post-discharge expectations.

 **Organizational approval process.** The expressed interest in working with the facility to address chronic pain and opioid addiction among veterans led to attendance at a team meeting at the facility. The project idea was presented to the site champion, then to administration who met on several occasions to review the overall project. Once the project was approved and goals established, I attended further team meetings. The team lead shared information on the implementation of a new inpatient induction protocol for Suboxone and an invitation was extended to participate. Once project goals and objectives were obtained, they were presented to the team lead. An outline of the project was then presented to the medical director who agreed to allow provider and staff participation if the project was approved by IRB. The proposal was presented to the chair of the VA IRB, who deemed the project quality improvement. They felt it would be valuable to have a better understanding of the attitudes of the providers and staff concerning this clinical practice change.

 **Information technology.** Paper survey responses of providers and staff were analyzed electronically using IBM Statistics Program for Social Sciences Version 24 (SPSS v. 24).

**Cost Analysis of Materials Needed for Project.**

 The project was low-cost to implement. The surveys, self-report tool, and educational handouts required pens, ink cartridges, and printer paper (Appendix B). Mileage was calculated using the standard $0.545 per mile from the project evaluator residence totaling $207.36 in fuel expenses. The total cost of implementing the project was $244.02.

**Plans for Institutional Review Board Approval**

The chair of the VA IRB deemed the project quality improvement and provided supporting documentation. Once this was obtained, ECU IRB reviewed and deemed the quality improvement, thus waived the requirement.

**Plans for Project Evaluation**

 **Demographics.** Demographics will include variables such as gender, age group,

years of experience, and educational level. Descriptive statistics using mean, standard deviation,

frequencies, and percentages will be used where appropriate.

 **Outcome measurement 1.** The primary outcome measurement for this quality

improvement project is the proportion of veterans admitted, screened for eligibility, and the

proportion of eligible veterans receiving a prescription.

 ***Evaluation tool.*** A self-report tool (Appendix C) will be completed by the inpatient mental health provider for a total of four two-week periods between August 2018 and December 2018. The tool consists of five questions aimed at collecting data on the number veterans screened, admitted for induction, and prescribed Suboxone. The tool will also be used to evaluate utilization of the newly implemented algorithm.

**Outcome measurement 2.** A secondary outcome measurement for this quality

improvement project is change in provider attitudes toward clinical practice change.

 ***Evaluation tool.*** A pre-implementation survey (Appendix D) and post-implementation survey (Appendix E) will be completed by participants. The pre- and post-survey consists of four demographic questions, five questions addressing attitudes, and seven questions addressing knowledge. The questions are compiled from relevant evidence-based knowledge and attitude surveys from the literature. The five attitude questions on the survey are on a 5-point Likert scale. For four of the Likert-type questions, the available responses were given a value of zero through four, with zero corresponding to the most negative response and four corresponding to the most positive response. The final Likert-type question was given a value of one through five, with one corresponding to the most negative response and five corresponding to the most positive one. Guided by the DOI theory, the Power Point presentation, which will last approximately 10 minutes, serves as the method for delivering information on opioid addiction and its effect on the veteran population. The post-implementation survey will be completed after the education session and again one month later.

**Outcome measurement 3.** Another outcome measurement for this quality improvement

project is the assessment of provider knowledge relating to the use of Suboxone for

medication management.

 ***Evaluation tool.*** A pre- and post- implementation survey will be distributed to participants that consists of seven knowledge-based questions (Appendix D & E). The seven questions on the survey will evaluate provider knowledge of Suboxone to include: side effects and relevant patient education, Suboxone maintenance for short-term and long-term usage, and understanding of the new algorithm. The post-implementation survey will be completed after the education session.

 ***Data analysis.*** Data will be collected, reviewed, and analyzed utilizing Statistics Program

for Social Sciences Version 24 (SPSS v. 24). All data will be reviewed by the project leader to ensure accuracy. Descriptive statistics will be conducted (mean, median, percentage, percentage change) for demographics and survey data.

**Data management.** Data collection will occur in a manner to ensure that privacy and

confidentiality is maintained. No identifiable data will be collected; all data will be aggregate.

Each dataset will be marked pre- and a post- for easy identification. The data will be secured in

an envelope and stored in a locked cabinet in the NP’s office until the conclusion of the project and no other person will have access to the data.

**Summary**

Project planning can be valuable to help guide the execution and closure phases of a project.

Planning helps the project team lead to manage time, costs, changes, and risks associated with

implementation. The implementation of a project team to address the growing opioid epidemic

among veterans was the first step in the planning phase. The feasibility of conducting a quality

improvement project on the inpatient psychiatric unit was assessed and approval was obtained.

Pre- and post- intervention surveys, along with a provider self-report tool, were created to measure the desired outcomes from the project implementation. De-identified data will be

analyzed using a statistics program and secured by the project team leader.

**Chapter Five: Implementation Process**

The purpose of this quality improvement project was to implement a practice guideline for Suboxone induction in AIMH to improve medication management in eligible veterans. The objectives of this project were to increase provider adherence to screening guidelines for opioid addiction and prescribe appropriate medications based on eligibility. The long-term goal is to improve and maintain an effective medication management program on the inpatient psychiatry unit at the VA. Participation in the project consisted of completing a pre-education survey, attending an education presentation, and completing a post-education survey. The mental health provider was also asked to complete a self-report tool for screening and prescribing of Suboxone during the project period.

**Setting**

 The project was implemented in a VHA facility in an urban area of the U.S., which provides inpatient and outpatient care to veterans enrolled in the VA health care system. The inpatient psychiatry unit was chosen for this project based upon the provider and staff desire to intervene in the growing opioid crisis among the veteran population. Inpatient psychiatry consists of two units with an average daily census of forty-four patients.

**Participants**

Participants included seven providers who care for veterans on the inpatient psychiatry unit. Providers included physicians, two nurse practitioners, and a social worker. Inclusion criteria included providers who worked on the inpatient unit providing direct patient care. Providers not providing direct care were excluded. Patient data was not collected as part of this project.

**Recruitment**

 A recruitment flyer detailing the educational session was created; however, the decision

was made by the VA team lead to not hold any further meetings due to time constraints (see Appendix F). Seven providers agreed to meet individually for the educational session. Each provider was also provided a printed handout of the presentation to review.

**Implementation Process**

A date was selected by the project team to hold the educational session during the team meeting. Unfortunately, the meeting was canceled by the project site. As a result, all providers were educated on a one-on-one basis in their offices. Prior to initiating the presentation, the providers each received a coded paper survey to complete regarding knowledge, beliefs, and attitude regarding Suboxone use. They were asked to remember the code and place the completed pre-test in a folder. The PowerPoint presentation lasted approximately 10 minutes and included current data about opioid addiction among civilians and veterans: incidence and prevalence, projected costs, and prescription rates. It then examined Suboxone use to include benefits, side effects, and relevant patient education. The presentation also discussed how to approach next steps for patients admitted to the inpatient unit and utilized the algorithm provided by the VA, specifically for psychiatric providers. The presentation ended with a review of ways to enhance patient buy-in. Immediately following the presentation, providers were asked to write their code on the post-survey and place the survey in the folder. The pre and post surveys were coded and not reviewed until completion of post-test to support the participant anonymity. Prescribing providers completed a self-report tool at four designated times regarding patient screening, eligibility check, and medication orders.

 **Data Collection.** Data collection began at the completion of all participant in-services.

Initially, a self-report tool was to be utilized to gather pertinent information related to the number

of veterans screened for eligibility, number of veterans admitted, number of veterans who

accepted the treatment plan, and the use of the algorithm. Due to a small sample size, information was requested from data management on emergency room patients who were seen for diagnoses of opioid dependence (uncomplicated), opioid dependence (with withdrawal), and opioid abuse (uncomplicated).

 **Data Analysis.** Distribution tables and graphs were used to analyze survey question responses, as well as provider self-report data. Pre-test and post-test data were analyzed using mean, standard deviation, frequencies, and percentages. The two scores were then compared. Improved mean scores indicated an improvement in perceived knowledge of Suboxone use for medication management and attitudes toward clinical practice change, while declining and unchanged scores indicated a lack of change in perceived knowledge and attitudes.

**Plan Variation**

 Variations from the defined implementation plan included the exclusion of the post-intervention survey on provider attitude at one month. For the project period of August 2018 through December 2018, there were only two patients who consented to Suboxone induction on the inpatient unit. As a result of low patient participation, the DNP student was unable to obtain a one-month post-intervention survey.

**Summary**

This project focused on provider education to successfully improve medication

management among vulnerable veterans. It presented a feasible pathway to enhance provider

knowledge about treatment options for opioid addiction with the goal of increased screening for

eligibility. Educational material for the staff was obtained from credible resources to ensure

accurate information was provided. Project data was collected and analyzed and plan variations

had no effect on the overall goal of the project.

**Chapter Six: Evaluation of the Practice Change Initiative**

**Participant Demographics**

 All seven providers assigned to the unit participated in the DNP project. See Table 2 for participant characteristics.

Table 2

*Participant Characteristics* (N=7)

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Frequency\_\_ Percent

Gender

Male 3 43

Female457

Age

30 – 39 3 43

40 – 49 3 43

50 – 59114**\_\_\_\_**

Education

MSN 2 29

DNP 1 14

MD4\_\_\_\_\_\_57\_**\_\_\_**

Experience

0 – 5 years 3 43

5 – 10 years 1 14

11 – 20 years 1 14

20+ years2 **\_\_\_\_\_** 29\_**\_\_\_**

**Intended Outcomes**

 The purpose of the scholarly project was to improve patient medication management, while

increasing provider adherence to evidence-based practice guidelines. The first outcome

measurement for this quality improvement project was the proportion of veterans admitted, screened for eligibility, and receiving a prescription. The second outcome measurement was change in provider attitudes toward clinical practice change. The final outcome measurement was the assessment of provider knowledge relating to the use of Suboxone for medication

management.

**Findings**

 An analysis of provider knowledge showed improved knowledge scores. Pretest scores averaged 67% while posttest scores averaged 100%, resulting in a 49% improvement in knowledge. The greatest areas of improvement were in evaluation of patient understanding of medication administration and algorithm comprehension (see Figure 1).

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*Figure 1.* Selected questions with greatest score improvement in knowledge from pre- to post-test.

 The results of the knowledge pre- and post-test were not surprising. The four providers with

medical degrees are mental health providers; however, two of the providers were in the process

of completing education to receive a DEA waiver, which authorizes providers to prescribe or dispense Suboxone. It was expected that the two novice providers, nurse practitioners, and social worker would possess a degree of knowledge deficit relating to Suboxone use, as they reported inexperience in this area. The providers understood that they play a pivotal role in the identification and mitigation of prescription opioid abuse and that continued education is an essential element of practice and service. Staying abreast of continuous changes in healthcare is critical and impacts the health and well-being of the public. The results reaffirm the importance

of education to improve outcomes, ensure quality of life, and protect individuals from harm.

 The next outcome measurement was change in provider attitudes toward clinical practice change. Overall attitudes were positive at the project start and remained the same across all providers. The highest positive attitudes focused on adoption of new clinical practice guidelines (see Table 3). There was an increase in positive attitudes regarding comfort with collaboration and beliefs about short-term goals at the end of the project period. The data reflects the providers’ desire to adapt to the new practice change and providers need to be supported in the transition; they may need more time to become comfortable with implementation.

Table 3

|  |  |  |
| --- | --- | --- |
|  |  Pre-test  |  Post-test  |
| Attitude Characteristics |  *M SD* |  *M SD* |
| Familiarity with Suboxone | 2.57 0.65 | 2.57 0.65 |
| Comfort with collaboration | 2.71 0.61 | 3.00 0.58 |
| Short-term therapy goal | 2.57 0.53 | 2.86 0.38 |
| Lifelong treatment | 2.29 0.95 | 2.29 0.95 |
| Adoption of practice change | 4.00 0 | 4.00 0 |

*Provider Views Regarding Suboxone Initiation*

 Providers demonstrated positive attitudes towards evidence-based practice and the use of

evidence to support decisions concerning the care of patients. The results were not surprising as this sample of providers were invested in improving outcomes of veterans. The providers demonstrated positive attitudes towards evidence-based practice and the use of evidence to support decisions concerning the care of patients. Organizations can best nurture these attitudes by supporting providers and ensuring providers possess the skills and tools needed to succeed, such as linking evidence to work-flow in a way that does not adversely affect productivity and flow of patients.

 The main outcome measurement was the proportion of veterans admitted, screened for

eligibility, and receiving a prescription. It was determined at the beginning of the project that there would be no exclusion criteria for Suboxone induction. During the four-month project period, there were a total of 10 patients seen in the emergency room to which the algorithm was applied. However, data was limited to four 2-week periods during that timeframe and as a result, potential patient numbers were limited. Self-reports were completed by two providers, with one provider completing the two admissions to the unit. The remaining providers did not see any veterans with OUD during the specified periods.

 The results of this outcome measure were not expected, as the study period did not capture all possible veterans. It was anticipated that there would be a greater number of veterans seen in the emergency department during the four specified periods. Increased visits from veterans during the specified weeks may have allowed other providers to be more engaged in the implementation of the algorithm. Despite the low numbers, the outcome showed 10 veterans screened for eligibility and two veterans consenting to admission and given prescriptions (see Figure 2).

*Figure 2.* Patient flow diagram from initial screening through to possible Suboxone initiation.

**Summary**

This project was focused on improving medication management while increasing provider adherence to practice guidelines. Screening for opioid addiction and identifying eligible patients has the potential to help providers achieve optimal health for their patients. One of the goals of this project was to increase provider knowledge of Suboxone use in the addicted patient and increase awareness of clinical practice guidelines in order to influence screening rates. The educational intervention aimed at increasing provider knowledge exhibited marked improvement among providers, while provider attitudes, which were positive to begin with, remained the same. The practice guidelines provided clinical oversight and standard expectations for a patient's clinical course in recovery.

 The findings underscore the importance of educational initiatives to ensure providers are

equipped with the knowledge needed to deliver competent care. The Health Belief Model was used to better understand the influence on provider behavior change, including attitudes and beliefs, and guided the approach to this project. The approach to the practice implementation was guided by the Diffusion of Innovation Theory. Although the DNP student nor the project site have control over sample size, the project underscores the importance of understanding how circumstances can affect how well the sample reflects the population and therefore how valid and reliable the conclusions will be. The education of providers to deliver high-value, cost-effective care suggests that learning is promoted by combining distinct knowledge transmission with a supportive environment.

**Chapter Seven: Implications for Nursing Practice**

**Practice Implications**

Opioid misuse and abuse have become a major epidemic in the US. Provider education is necessary to improve screening and medication management of patients with opioid use disorder. Doctorally prepared nurses are leaders and change agents responsible for the improvement of healthcare at the systems level, as well as in individual practice. TheAmerican Association of Colleges of Nursing (AACN, 2006) DNP Essentials outline the expected competencies of doctorally prepared nurses. DNP prepared nurse have an in-depth view of health and possess the knowledge and understanding to advocate for change. They also have the ability to utilize evidence-based recommendations to improve patient care. For this quality improvement project, provider knowledge and attitudes were transformed using an educational intervention aimed at improving screening and medication management of opioid use disorder in eligible Veterans.

**Essential I: Scientific underpinnings for practice.** A solid scientific underpinning is important for the implementation of change in healthcare, as it provides evidence-based knowledge for advance practice nurses to apply in practice. The application of concepts, theories, and research to implement evidence-based interventions were essential to the planning and implementation of this scholarly DNP project. This project utilized the Health Belief Model and Rogers’ Diffusion of Innovation Theory to improve clinical practice. The Health Belief Model served as the theoretical framework, while Rogers’ Diffusion of Innovation Theory served to explain how and why change occurs.

 This project presented an opportunity to improve clinical practice by introducing an evidence-based algorithm to improve screening and treatment for opioid use in the veteran population. The goal for this project was to improve patient outcomes, while increasing provider adherence to evidence-based practice guidelines. The guidelines provided a standardized process that could potentially improve clarity, quality of care, and provider productivity.

**Essential II: Organization and systems leadership for quality improvement and systems thinking.** Process improvement within an organization can be used to improve patient and healthcare outcomes (AACN, 2006). The provision of quality care by a DNP is congruent with goals to eliminate health disparities, promote patient safety, and deliver cost-effective, evidence-based care. The ability to utilize critical thinking and effective communication to promote leadership in quality improvement are just a few of the tenets of the DNP project as outlined by AACN (2006).

 Effective leadership is a significant factor to support stakeholder buy-in and support. The use of evidence-based clinical practice guidelines can reduce variations in practice and promote the delivery of quality care aimed at minimizing the opioid crisis. Unfortunately, barriers also exist that may hinder the dissemination of evidence-based care. One barrier for the practice site was the inability to include nursing staff in the project due to union rules and regulations. The nurses’ union policies protect staff from being coerced or influenced. Union representatives believed this project may fall outside their policy, thus, nursing staff was not allowed to participate. Suggestions for the future include briefing union leaders on proposed projects during the planning phase to identify union needs.

**Essential III: Clinical scholarship and analytical methods for EBP.** This essential focuses on the critical appraisal of literature, the ability to implement processes to evaluate outcomes, and apply relevant findings to promote safe, equitable, patient-centered care (AACN, 2006). Based on an organizational needs assessment and literature review findings, it was determined that best practice included the implementation of an updated clinical practice guideline or algorithm for the care of opioid addicted patients. Quality improvement methodologies were executed and the results were evaluated to generate meaningful evidence and promote best practice for the patient population. The project resulted in improvement in provider knowledge of medication management. As provider attitudes toward practice change were already high, project education may have supported sustainment. The findings were disseminated to the facility. The VA designed algorithm will continue to be utilized at the VA and future providers will be briefed on the algorithm during orientation training to the inpatient unit.

**Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare.** Technology provides a method for the diffusion of health information to improve patient care. Information systems or technology were used during the project for electronic communication with the project team, data mining, analysis and documentation. For this DNP project, the review of eligible patients was expedited by electronic records review.

 It is important for practitioners to understand the impact that technology has on patient outcomes, as well as the importance of meaningful use. The purpose of meaningful use is to improve the quality of care while reducing health disparities, improve care coordination, and ensure the privacy of protected health information (CDC, 2017b). Post-project recommendations include building the algorithm into the EHR with automatic reminders to ensure screening of eligible adults. Additional suggestions include future reviews for screening and medication management be completed through EHR auditing. The use of EHR will support larger scale projects as they permit long-term data collection on major clinical outcomes.

**Essential V: Healthcare policy for advocacy in healthcare.** This essential emphasizes

the importance of the involvement of doctoral prepared nurse practitioners in healthcare policy.

Healthcare policy can “facilitate or impede the delivery of health care services or the ability of the provider to engage in practice to address health care needs” (AACN, 2006, p. 13). As a result, it is crucial that nurse practitioners become involved in the redesign of health care systems. Engagement in the development and implementation of policies at all levels allows the doctoral prepared nurse to assume leadership roles that shape health care delivery.

 It was important that the DNP student be involved in moving the project through the VA. DNP preparation provided the student with knowledge of systems, leadership, and policy, along with interprofessional collaboration skills to support engagement and teamwork for the goal of improving patient outcomes. Provider attitudes in this project were positive with little room for improvement; however, project findings of minimal to no change in outside organizations may highlight a reason why policy needs to be improved at higher leadership levels so that patient needs are met. Future recommendations for the VA include on-going mandatory education and training on screening for opioid addiction and the inclusion of the algorithm in the EHR for provider consistency.

**Essential VI: Interprofessional collaboration for improving patient and population**

**health outcomes.** Collaboration among professions enables comprehensive patient care. This project included collaboration among psychiatrists, nurse practitioners, physician assistants, social workers, emergency room physicians, and the DNP student. The interprofessional team supported both development of the algorithm and implementation on the unit.

 Nurse Practitioners are a valuable asset to especially fill gaps in care for underserved

populations (John Locke Foundation, 2019) and act as a resource person for other nurses and

health professionals. For this project, the DNP student participated as the project leader in the

provision of care and interacted with various disciplines to provide comprehensive care.

**Essential VII: Clinical prevention and population health for improving the nation’s health.** Health promotion is indeed critical to preventing disease and illness, specifically risk reduction. Measures to reduce the frequency of risky behaviors is a vital part of improving population health. This scholarly project sought to assess whether veterans were screened for

eligibility, admitted, and given appropriate medication management.

 Clinical prevention and population health were addressed by ensuring that providers were educated on current opioid addiction issues and evidence-based interventions for this problem. The results of the study could be utilized by the VA to support increasing the number of providers knowledgeable about opioid use disorder and to provide comprehensive medication-assisted therapy to all individuals who meet criteria. The VA is currently taking measures to improve mental health care by hiring new providers to address mental health needs of veterans and by implementing telehealth direct care. A thorough orientation that highlights the current clinical practice guidelines and educates providers on medication management may produce benefits that later predispose veterans to better health outcomes.

**Essential VIII: Advanced nursing practice.** Advanced practice nurses receive advanced training and demonstrate advanced levels of clinical judgement and accountability in evaluating evidence-based care to improve outcomes (AACN, 2006). This advance mastery of skills allows the doctorally prepared nurse practitioner to provide high level patient care to vulnerable populations. This DNP student developed collaborative relationships with the staff to support implementation and evaluation of a clinical practice change initiative.

 Recommendations for educators who prepare advanced practice nurses include: promoting

evidence-based standards for prevention and education, discussing the importance of initiating

non-pharmacological and non-opioid interventions and prescribing opioids appropriately, and ensuring advance practice nurses properly screen and educate patients prior to starting opioid therapy. Recommendations for new DNP graduates transitioning to practice include a thorough orientation outlining clinical practice guidelines for opioid use and ensuring access to prescription drug monitoring programs.

**Summary**

Doctorally prepared nurse practitioners play an important role as change agents and are essential to meet the demands for safe, affordable, quality care. This scholarly project identified a topic that impacts the lives of veterans. The topic also has the potential to impact others outside the VA system dealing with opioid addiction. Screening for opioid addiction and providing avenues for patients to receive treatment can greatly improve both individual and community outcomes. Identifying alternatives to lack of services for these patients is significant and creates a pathway to risk management and improvement in population health. The significance of this project to nursing practice is that collaboration among providers, provider education, and screening of patients are needed to adequately address and manage the care of opioid addicted patients. The identification of at-risk patients early on not only gives providers an advantage, it gives patients the ability to modify their lifestyles and decrease the complications that could result. Opioid addiction can be managed if patients are given the resources they need to succeed.

**Chapter Eight: Final Conclusions**

 The growing opioid epidemic has affected millions of Americans. Access to medication-assisted therapy has been identified as an essential part of opioid use disorder treatment and a core strategy in reducing opioid abuse rates and improving population health. The introduction of a theory-based educational intervention to assess provider knowledge and attitudes of opioid use disorder, along with the use of clinical practice guidelines, was successful and has the potential to reduce accidental opiate overdoses and potential deaths in the veteran population. Although this project yielded positive results, further investigation is warranted. Organizations examining the strengths, limitations, and benefits of this project could make necessary modifications and duplicate the results with improved screening rates and admission to treatment.

**Significance of Findings**

The application of evidence-based guidelines in clinical practice are essential to guide quality care and support improved health outcomes. To facilitate the adoption of the new guidelines, the DNP student introduced an educational intervention targeting provider knowledge and attitude, which was implemented successfully. The significance of this project to population health is that addressing the opioid epidemic is a collaborative effort and will take all healthcare providers consistently screening, assessing, and implementing evidence-based guidelines to adequately address and manage opioid addiction.

Provider attitude toward clinical practice change was already positive and remained relatively unchanged across all providers. There was a 49% increase in provider knowledge after the educational session, supporting the use of education in practice change. The development of an inpatient, evidence-based algorithm for the management of Suboxone in opioid addicted patients can assist in the provision of safe, effective, evidence-based care. In order to increase access and availability of medication-assisted treatment, it is important to increase the number of providers who are knowledgeable and able to provide treatment for opioid addicted patients. An increase in access and availability might not only decrease the widespread impact of this growing epidemic, it could offer positive outcomes for everyone affected.

**Project Strength and Limitations**

 Several strengths were observed during the implementation of this project. Team meetings to discuss the implementation of the new guidelines proved to be beneficial, allowing all participants to address any concerns and discuss the project. The providers were eager to participate in the educational session and complete the pre- and post- surveys related to attitudes and knowledge. The providers were motivated to learn about the clinical practice guidelines and were accepting of the implementation of these specific guidelines into practice.

 There were several limitations observed during the implementation of this scholarly project which could have had a potentially significant impact on the project. One limitation was the omission of mental health staff nurses from the project. Nurses who would potentially care for the inpatients were not allowed to participate in the project due to union regulations. This limited the number of participants to be educated on Suboxone use in the inpatient setting. Another limitation was the small sample size. Not only was there a limitation to the number of providers participating in the project, there was a limitation to the number of patients available for evaluation of screening and admission to the inpatient unit during the implementation period. Very few opioid addicted patients were seen in the emergency room during the implementation phase and of those screened, only 20% consented to admission and treatment. Potential bias was also observed. This was a small convenience sample of the patients seen only at one health facility with few providers, which may not be representative of other provider training and thoughts on the medical management of Suboxone use for opioid addiction. Finally, time was another limitation observed during the implementation of this scholarly project. The project was implemented during a four-month period, focusing on two-weeks during each month, and may not show an accurate representation of the average number of opioid addicted patients triaged in the emergency department.

**Project Benefits**

 Project findings show improvement in provider knowledge and a sustained high level of provider attitude toward practice change. Previous research highlighted concern among providers that they lack the skill or knowledge to offer treatment for OUD or prescribe medications. Providers in this project benefitted from the educational sessions, and their positive attitudes toward adoption of clinical practice guidelines can be beneficial for organizations seeking to adopt new innovation. Though low, the fact that two veterans were screened, deemed eligible, consented, and were admitted to the inpatient unit for Suboxone induction supports that this algorithm can be appropriately adopted. The overall benefit of this project is that providers were educated on the medical management of opioid use disorder and introduced to an interprofessional collaborative practice model for Suboxone induction with the overall goal to reduce accidental opiate overdoses and potential deaths.

**Recommendations for Practice**

 Future recommendations include the use of evidence-based clinical guidelines. All healthcare organizations could benefit from regular educational in-services focusing on updated opioid use disorder management guidelines. Another recommendation includes screening all eligible patients annually. To track these screenings and provide reminders for providers, it would be beneficial for appropriate screening tools to be embedded into the EHR to create a streamlined

process.

 The role of providers in caring for patients with opioid addiction is a vital one. These providers administer specialized assessment, care, and interventions that contribute to the overall health of this population. This scholarly project shows that providers can use the knowledge gained through structured teaching programs to carry out patient- centered care in an effective manner. Providers should be supported with continuing education regarding knowledge and practice as it relates to the implementation of new treatment modalities. Deficiencies in knowledge can result in poor quality of care and services. As a result, the findings of this project can form the basis for further exploration. The recommendation is that a similar project be replicated on a large sample for wider generalization.

**Final Summary**

Quality initiatives are important to improve and enhance management of opioid addiction, yet they remain a challenge for providers. Appropriate screening for patients impacted by OUD is a great first step for providers. Increasing provider knowledge and awareness of Suboxone use, along with implementation of practice guidelines for early intervention in the inpatient setting, supports improved patient outcomes.

 This quality improvement project, while limited, demonstrates that simple interventions aimed at enhancing provider knowledge are feasible and sustainable. As with any quality improvement project, it is anticipated that change in clinical practice will be lasting and lead to activities that improve population health and deliver exceptional patient experiences. Although successful, sustained, quality improvement can be difficult to achieve, healthcare systems equipped with the most effective tools are more likely to achieve their goals. By focusing on collaboration and sustainability, healthcare systems can improve health, reduce healthcare costs, and transform care. This quality improvement project thus contributes to body of evidence supporting the use of educational interventions in conjunction with implementation of a practice guideline to enhance provider knowledge and influence provider attitude and behavior to improve patient outcomes.

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Appendix A

**Provider Education Sheet:**

SUBOXONE Film can cause serious side effects, including:

**Respiratory problems**

* higher risk of death and coma if you take Suboxone film with other

medicines, such as benzodiazepines, sedatives, tranquilizers, and antidepressants.

**Liver problems**

* jaundice
* urine turning dark
* stools turning light in color
* loss of appetite, or you have stomach
* abdominal pain or nausea

**Allergic reaction**

* rash,
* hives
* swelling of the face
* wheezing

**Orthostatic hypotension**

* dizziness

**Common side effects of Suboxone film:**

* nausea
* vomiting
* drug withdrawal syndrome
* headache
* sweating
* numb mouth
* constipation
* swollen and/or painful tongue
* oral erythema
* feeling lightheaded or drunk
* disturbance in attention
* palpitations
* insomnia
* blurred vision
* back pain
* fainting
* dizziness
* sleepiness

|  |  |
| --- | --- |
| Headache (common) | Consider ASA or acetaminophen, consider other causes |
| Nausea (common) | Usually will reside within days, consider dose-reduction if persists |
| Constipation (common) | Increase fiber, fluids, exercise |
| Weight gain | Lower dose, reduce fat and salt intake, exercise |
| Amenorrhea or oligomenorrhea | Address other causes, period may return following withdrawal from opioids |
| Lowered sex drive | Review dose, other causes |
| Dental issues | Oral hygiene, reduce sugar, refer for dental check-up |
| Respiratory depression/cardiac | Re-establish airway; assisted or controlled ventilation with O2; IV fluids, vasopressors and other supportive measures as indicated |

**Lessen side effects**

* For upset stomach, take Suboxone

after a meal or use an antacid

* For constipation, drink more fluids and eat more high-fiber foods.
* Exercise can also help.
* For sleep problems, try limiting caffeine, avoiding naps, and keeping a regular bedtime.
* For minor aches and pains, try OTC pain relievers (Ibuprofen).
* For pain or redness in the mouth, switch sides of the mouth each time drug taken.
* Test liver function intermittently

Appendix B

Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |   |   |   |   |   |   |
| *Implementation Cost Analysis* |  |  |  |
|   |  |  |  |  |  |   |
| Item |  |  | Cost Per Unit | # Units |  | Total (Dollars) |
| Printer paper |  | 3.72 | 1 |  | 3.72 |
| Ink cartridge |  | 25.00 | 1 |  | 25.00 |
| Pens |  |  | 3.97 | 2 |  | 7.94 |
| Mileage |  |  | 0.54 | 384 |  | 207.36 |
|   |  |  |  |  |  **Total: $244.02** |
| *Note.* Mileage is recorded based on Internal Revenue Service (IRS) 2018 standard mileage rate of 0.545 per mile.  |

Cost Analysis

Appendix C

**Inpatient Suboxone: Provider Self-Report (2018)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | WEEKS**8/6-8/19** | WEEKS**9/17-9/30**WEEKS**10/22-11/4** |  | WEEKS**11/19-12/2** |
| 1. How many Veterans were screened for eligibility? |  |  |  |  |
| 2. How many Veterans met criteria for Suboxone use? |  |  |  |  |
| 3. How many Veterans were admitted to inpatient psychiatry? |  |  |  |  |
| 4. How many Veterans accepted treatment plan for Suboxone initiation? |  |  |  |  |
| 5. How many times was the new algorithm utilized to direct care? |  |  |  |  |
|  ADDITIONAL COMMENTS |  |  |  |  |

Thank you in advance for your willingness to complete this form. Please place the form in the designated folder at the end of each designated week. The project leader will review the form periodically and collect it at the end of the project. Your participation is greatly appreciated.

Appendix D

**Provider Pre-Test**

***Clinical Practice Change: Suboxone Use in Inpatient Psychiatry***

**Demographic Information**

1. What is your gender?

 ( ) male

 ( ) female

2. What is your age group?

 ( ) 20-29

 ( ) 30-39

 ( ) 40-49

 ( ) 50-59

 ( ) 60 and above

3. What is your education level?

 ( ) Post-graduate degree

 ( ) Bachelors/Associates

4. How many years of clinical experience do you have?

 ( ) <5 years

 ( ) 5-10 years

 ( ) 11-20 years

 ( ) > 20 years

**Please circle your chosen answer to each question below.**

**Question 1**: How would you rate your knowledge guiding the use of Suboxone for opioid addiction?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Extensive Knowledge | 3Substantial Knowledge | 2Moderate Knowledge | 1Limited Knowledge | 0NoKnowledge |

**Question 2:** How comfortable do you feel collaborating with other providers to deliver current medication therapy management to opioid addicted patients?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Very Comfortable | 3Comfortable | 2Neutral | 1Uncomfortable | 0VeryUncomfortable |

**Question 3:** How strongly do you agree or disagree with the statement “the short-term goal of medication assisted treatment is to be off all opiates and stabilized on a medication such as Suboxone”?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Strongly Agree | 3Agree | 2Neutral | 1Disagree | 0Strongly Disagree |

**Question 4:** How strongly do you agree or disagree with the statement “opiate substitution therapy with Suboxone should be available as a lifelong treatment option”?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Strongly Agree | 3Agree | 2Neutral | 1Disagree | 0Strongly Disagree |

**Question 5:** According to the FDA, the most common side effects of Suboxone include:

1. Headache, constipation, and rhinitis
2. Impotence, loss of appetite, and diarrhea
3. Chest pain, urticaria, and seizures

**Question 6:** A provider is prescribing Suboxone to a patient. The provider recognizes that the patient understands the education provided when he states:

1. The Suboxone film can be held under the tongue for 2 mins. and then I can swallow it.
2. Absorption of Suboxone occurs in the stomach, so it is best to take Suboxone with a meal.
3. Talking while the film is dissolving can affect how well the medication is absorbed.

**Question 7:** A patient presents to the ER for opioid dependency. He states that he has not taken any opioids today and is complaining that he “feels like he is starting to go into withdrawal”. The provider understands that:

1. Withdrawal symptoms usually start within 2-3 hours and can last for up to 3 weeks.
2. Opioid withdrawal symptoms peak at 72 hours.
3. Withdrawal symptoms are usually mild and don’t require extensive supervision.

**Question 8:** Suboxone maintenance may reduce an addict’s risk of acquiring HIV or Hepatitis C.

1. True
2. False

**Question 9:** Under the “3-day rule” opioid agonists may be administered in the emergency department for the treatment of acute withdrawal (without a DEA “X” waiver) for no more than 3 consecutive days.

1. True
2. False

**Question 10:** What percentage of people who successfully taper off Suboxone will relapse and need to go back on medications?

1. 25-40%
2. 10-20%
3. 30-50%

**Question 11:** After an appointment for the outpatient Suboxone clinic is made, notes to the inpatient prescriber are cosigned with the appointment day/time. What is the next step in the algorithm?

1. The patient receives a Suboxone prescription for up to 7 days.
2. The patient attends his first outpatient clinic appointment.
3. The social worker writes an order for outpatient substance abuse services group.

**Question 12:** How likely would you be to adopt new clinical practice changes in the inpatient setting?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5Very Likely | 4Likely | 3Neutral | 2Unlikely | 1Very Unlikely |

Survey #:\_\_\_\_\_\_\_

Appendix E

**Provider Post-Test**

***Clinical Practice Change: Suboxone Use in Inpatient Psychiatry***

**Demographic Information**

1. What is your gender?

 ( ) male

 ( ) female

2. What is your age group?

 ( ) 20-29

 ( ) 30-39

 ( ) 40-49

 ( ) 50-59

 ( ) 60 and above

3. What is your education level?

 ( ) Post-graduate degree

 ( ) Bachelors/Associates

4. How many years of clinical experience do you have?

 ( ) <5 years

 ( ) 5-10 years

 ( ) 11-20 years

 ( ) > 20 years

**Please circle your chosen answer to each question below.**

**Question 1**: How would you rate your knowledge guiding the use of Suboxone for opioid addiction?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Extensive Knowledge | 3Substantial Knowledge | 2Moderate Knowledge | 1Limited Knowledge | 0NoKnowledge |

**Question 2:** How comfortable do you feel collaborating with other providers to deliver current medication therapy management to opioid addicted patients?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Very Comfortable | 3Comfortable | 2Neutral | 1Uncomfortable | 0VeryUncomfortable |

**Question 3:** How strongly do you agree or disagree with the statement “the short-term goal of medication assisted treatment is to be off all opiates and stabilized on a medication such as Suboxone”?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Strongly Agree | 3Agree | 2Neutral | 1Disagree | 0Strongly Disagree |

**Question 4:** How strongly do you agree or disagree with the statement “opiate substitution therapy with Suboxone should be available as a lifelong treatment option”?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4Strongly Agree | 3Agree | 2Neutral | 1Disagree | 0Strongly Disagree |

**Question 5:** According to the FDA, the most common side effects of Suboxone include:

a. Headache, constipation, and rhinitis

b. Impotence, loss of appetite, and diarrhea

c. Chest pain, urticaria, and seizures

**Question 6:** A provider is prescribing Suboxone to a patient. The provider recognizes that the patient understands the education provided when he states:

a. The Suboxone film can be held under the tongue for 2 mins. and then I can swallow it.

b. Absorption of Suboxone occurs in the stomach, so it is best to take Suboxone with a meal.

c. Talking while the film is dissolving can affect how well the medication is absorbed.

**Question 7:** A patient presents to the ER for opioid dependency. He states that he has not taken any opioids today and is complaining that he “feels like he is starting to go into withdrawal”. The provider understands that:

a. Withdrawal symptoms usually start within 2-3 hours and can last for up to 3 weeks.

b. Opioid withdrawal symptoms peak at 72 hours.

c. Withdrawal symptoms are usually mild and don’t require extensive supervision.

**Question 8:** Suboxone maintenance can reduce an addict’s risk of acquiring HIV or Hepatitis C.

a. True

b. False

**Question 9:** Under the “3-day rule” opioid agonists may be administered in the emergency department for the treatment of acute withdrawal (without a DEA “X” waiver) for no more than 3 consecutive days.

a. True

b. False

**Question 10:** What percentage of people who successfully taper off Suboxone will relapse and need to go back on medications?

a. 25-40%

b. 10-20%

c. 30-50%

**Question 11:** After an appointment for the outpatient Suboxone clinic is made, notes to the inpatient prescriber are cosigned with the appointment day/time. What is the next step in the algorithm?

a. The patient receives a Suboxone prescription for up to 7 days.

b. The patient attends his first outpatient clinic appointment.

c. The social worker writes an order for outpatient substance abuse services group.

**Question 12:** How likely would you be to adopt new clinical practice changes in the inpatient setting?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5Very Likely | 4Likely | 3Neutral | 2Unlikely | 1Very Unlikely |

 Survey #:\_\_\_\_\_\_

****Appendix F

Opioid Abuse Education

Let’s change the conversation about opioid addiction and mental health in the Veteran community.

 **You are invited to participate in a scholarly project of knowledge and attitudes towards the initiation of Suboxone in inpatient psychiatry. You were selected as a possible participant because you are a provider caring for patients experiencing opioid addiction. Please make plans to attend the informational in-service as part of a student led quality improvement project.**

**Procedures: By participating, you agree to:**

1. **Complete a short pre-test survey (~5 mins)**
2. **Participate in the education session (~10 mins)**
3. **Complete 2 post-test surveys (~5 minutes) over the course of the semester**



Appendix G

DNP Timeline

***Scholarly Practicum I: Nursing 8269***

**January-February 2018**

* Explore and define project topic
* Review the literature on topic of interest
* Finalize project site and meet with site champion
* Complete CITI training

**March 2018**

* Project kickoff meeting
* Establish and meet with project committee
* Explore and define theoretical framework to guide project

**April 2018**

* Obtain Curriculum Vita from site champion
* Establish how project will be implemented
* Submit first 3 chapters of final paper
* Submit practicum time log with 125 hours reflecting progress

***Scholarly Practicum II: Nursing 8272***

**May- July 2018**

* Obtain site approval and clarify contract between site and ECU
* Begin work on Chapter 4 and 5 of paper during summer practicum
* Prepare for project implementation
* IRB approval from site
* Create educational materials and obtain permission to use materials
* Submit practicum log hours with 125 hours reflecting progress

***Scholarly Practicum III: Nursing 8274***

**August 2018**

* Ensure materials and staff are ready for implementation
* Educate staff on opioid addiction, Suboxone use, and clinical practice guideline
* Ensure provider has copy of self-report tool

**August – November 2018**

* Implementation of project

**August – November 2018**

* Implementation of project
* Gather and analyze data from implementation
* Submit chapters 4 and 5 of scholarly paper
* Submit practicum log hours with 125 hours reflecting progress

***Scholarly Practicum IV: Nursing 8277***

**January 2019**

* Attend DNP intensives, work on poster presentation
* Complete data and outcome evaluation

**February – April 2018**

* Create poster presentation
* Present project outcomes to site
* Finalize chapter 6, 7, 8 for project paper
* Close IRB approvals
* Present poster presentation
* Submit final practicum time log hours with 125 hours reflecting completion