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## **Implementation of a Protocol to Improve the Intake Assessment and Treatment with Suboxone among Patients' Dependent on Opioids on Two Mental Health Crisis Units**

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**Implementation of a Protocol to Improve the Intake Assessment and Treatment  
with Suboxone among Patients' Dependent on Opioids on Two Mental Health Crisis Units**

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Submitted in Partial Fulfillment of the Requirements for the Doctor of Nursing Practice Degree

Project Committee

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## Abstract

**Background:** In 2021, 106,699 people died from a drug overdose and of these deaths, over 75% were related to illicit or prescription opioids (Centers for Disease Control, 2023). At two in-patient community crisis stabilization units for psychiatric care, many patients have a comorbid diagnosis of a substance use disorder and another mental illness. Treatment with Buprenorphine/naloxone (Suboxone) is associated with decreased opioid overdoses and related deaths; however, Suboxone inductions have not been a part of admission treatment.

**Methods:** This quality improvement (QI) project initiated a Suboxone protocol for eligible patients on two crisis in-patient stabilization units. The outcomes included measuring the number of Suboxone prescriptions prescribed, the time it took for patients to start Suboxone when admitted to the unit, the number of referrals to Suboxone providers at discharge, and to evaluate the nurse's knowledge, comfort and confidence in identifying and assessing for opioid use, dependence and withdrawal symptoms.

**Interventions:** A Suboxone protocol was developed and adapted from the Boston Medical Center's Outpatient Based Addiction Treatment (OBAT) program. A skills based educational session for nurses and team members was created that reviewed the Suboxone protocol and motivational interviewing techniques. Within the skills based educational session, pre/posttests were used to assess the nurses' understanding of this new protocol with follow-up post assessments at one and two months. Checklists were developed to measure outcomes.

**Results:** Four patients were eligible to receive Suboxone during the QI project timeline, three of which required an induction and outpatient referrals at time of discharge. All four patients were able to receive the induction or an increase of Suboxone on the same day they met the nurse practitioner. Nurses' knowledge, confidence, and comfort increased in assessing for opioid withdrawal. Beliefs about medication adherence treatment (MAT) and a patient being sober also improved as did nurse provider's comfort working with patients receiving MAT.

**Conclusion:** The educational session will now be an integral part of the orientation process of new nurses and providers that work on the crisis Stabilizations Units.

## Introduction

### Problem Description

Opioid use disorder and its related overdoses and deaths continue to rise in the United States of America, leading to a national opioid emergency being declared in 2017 to address the public health crisis of opioid deaths and the associated costs of opioid treatment. More opioid-related deaths have occurred per year than motor vehicle accidents, gun violence, recent wars, and human immunodeficiency virus (Neville & Foley, 2020). Between the years 2013 and 2016, there was a significant increase in the national death rate from opioid overdose deaths increasing from 7.6 per 100,000 to 21.7 per 100,000 respectively (Neville & Foley, 2020). The Centers for Disease Control (CDC) in 2021 reported that 106,699 people died from drug overdoses and of these deaths, over 75% were related to illicit or prescription opioids. Since 2017, more than 70,000 people died by overdose and 68% of these deaths were related to opioids (Wilson et al., 2020).

The cost of treating opioid use disorder also escalated from \$78 billion to \$1.02 trillion dollars per year from 2013 to 2017 (National Institute on Drug Abuse [NIDA], 2020; CDC, 2021). Rising fatal opioid overdoses in 2021 suggest the cost of care will likely continue to increase. Notably, since 2013, only 2.3 percent of \$78 billion, or \$2.8 billion dollars has been allocated towards prevention treatment (NIDA, 2020).

To reduce opioid deaths and use, medication assisted treatment (MAT) is used as a dual approach of medication and counseling to reduce substance use, and one available medication option includes Suboxone (buprenorphine-naloxone) (PCSS, 2020). Suboxone has not only been a cost-effective treatment for patients' dependent on opioids, but also lifesaving (NIDA, 2020). A stable patient receiving outpatient treatment, including medication and twice weekly visits,

averages a cost total of \$115.00 per week and therefore \$5,980 per year, which is similar to the annual costs of those receiving healthcare for diabetes mellitus or kidney disease, \$3,560.00 and \$5,624.00 respectively (NIDA, 2020).

MAT can be provided in an office-based setting; though prior to the pandemic it was unavailable to many patients who could benefit due to a lack of approved prescribers and a waiver requirement. Previously, the Drug Enforcement Agency (DEA) X Waiver was only possessed by 5% of the prescribing workforce in the United States (Jones et al., 2023). However as of January 12<sup>th</sup> 2023, the DEA DATA waiver was eliminated in order to increase access to Suboxone and combat the opioid overdose related deaths (Jones et al., 2023).

### **Local Problem**

Opioid use disorders frequently affect patients admitted to the two inpatient crisis stabilization units near Boston, Massachusetts. Although clinics affiliated with these two units offer treatment with Suboxone for opioid use disorder in the outpatient setting, Suboxone was not readily available on either of the inpatient crisis stabilization units prior to this QI project. Furthermore, some of the patients who are admitted also have a mental health diagnosis such as, schizophrenia, bipolar affective disorder, major depression, anxiety and personality disorders, and are homeless which adds a greater complexity to starting or continuing Suboxone. In addition, the two inpatient crisis stabilization units are fast paced whereby most patients stay only three to five days, and at the time this project was implemented, there were limited Suboxone providers and nurses who felt comfortable initiating and assessing the need for this therapy.

### **Significance of Local Problem**

The impetus for this project occurred when the administrative and clinical staff realized that many of the nurses on the crisis stabilization unit did not feel comfortable assessing for dual medical and substance use history or evaluating patients for active substance use/dependence. For example, many nurses relied on reading the clinician's notes or urgent care referral report to learn about the patient and did not conduct their own assessment to determine if active opioid use was an issue and if Suboxone was needed. This led to missed opportunities to begin motivational interviewing with the patient to assess for interest in sobriety and treatment. In addition, patients often minimized their substance use when first speaking to clinicians at urgent care which in turn led to patients having unmonitored withdrawal symptoms and increased risk of relapse while on the unit. Hence the need to implement a Suboxone protocol and educate the nurses on how to identify signs of opioid withdrawal versus intoxication, increase knowledge on how Suboxone can be an effective treatment for opioid use disorder, and also how to speak to patients effectively using motivational interviewing skills.

### **Available Knowledge**

There were almost 17,000 prescription drug overdose deaths that occurred in 2010, a number that doubled from 2001 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2015). Notably, in 2022 the number of people who died from a drug overdose rose to over 100,000, and of these deaths, 75,673 were related to opioids (Jones et al., 2021). Yet each year, more and more people seek treatment for opioid use disorder. For example, in 2002, 277,000 people received treatment, in 2013, this number rose to 526,000 people (Walsh, 2015), and in 2021, the number was even higher at 890,000 adults in treatment, or 35.6% of adults diagnosed with an opioid use disorder (Jones et al., 2021). While it is good that people are

increasingly seeking treatment for opioid dependence, this number also offers a glimpse of the rapidly increasing rate of people who are becoming dependent on opioids.

Notably, people who use illicit opioids are at higher risk of contracting other common comorbidities such as HIV, AIDs and viral hepatitis. When receiving treatment for opioid dependence, clients can be tested for antibodies related to these diseases which if positive, can lead to earlier treatment (Walsh, 2015). Initiating Suboxone therapy has shown that it can reduce the risk of contracting these diseases by lessening cravings/withdrawals of opioids and by limiting intravenous use or other unsafe behaviors. A majority of patients admitted with opioid use disorder also have a comorbid mental illness which adds to the risks of complications in their overall health and wellbeing. In addition to medical and psychiatric illnesses, many of the patients on this unit are homeless, which adds to the complexity of the treatment plan.

Suboxone was the first medication to treat opioid use disorder that could be dispensed in physician's offices and is used as part of MAT (Walsh, 2015). Suboxone therapy has been shown to lower the risk of misuse, increase safety in cases of overdose, and alleviate effects of physical dependency of opioids including cravings and withdrawal symptoms (Walsh, 2015). Suboxone works through the phenomena of a "ceiling effect" where the effects of the medication increase with each dose until reaching a moderate dose where the effects become level despite further increases (Walsh, 2015).

Beginning in 2002, a combination of counseling and behavioral therapies along with prescribed Suboxone became a safe and effective treatment for opioid use disorders when taken as prescribed (Walsh, 2015). As of January 2023, the DEA DATA waiver was eliminated (Jones et al., 2023) which means that physicians, physician assistants, and advanced practice nurses do

not need to complete the buprenorphine waiver management training course thereby increasing access to treatment.

### **Rationale**

Pender's health belief model (HBM) considers that healthcare education and support can increase optimal behavioral change when perceived barriers are successfully targeted among other constructs such as benefits, self-efficacy, and threat (Jones, 2015). Typically, the HBM has been utilized to ascertain patients' responses to symptoms and compliance with medical treatments; this was essential to understand why a patient would want to start and continue Suboxone therapy and to create an environment for increased access. This model considers that a person's belief in a threat (or risk of overdose) in tandem with a person's belief in the effectiveness of the recommended behavior or action (belief that Suboxone can decrease cravings/urges to use opioids, reduce risk of overdose) can increase the chances of the person adopting a desired behavior (Jones, 2015). Within the skills based educational session, it was imperative to demonstrate how the initiation of this protocol was able to promote better health for patients and how nurses/staff were able to be a part of this journey.

For a standardized protocol to be implemented successfully on the crisis stabilization units, nurses and healthcare workers needed support and education in the initiation of new protocols or care expectations (Kerr et al., 2018). If nurses and staff were not comfortable in their skills, it could be hypothesized that these new interventions would either not be used at all or not be used to their full potential. In a study by Harden et al. (2017), a skills based educational intervention increased staff nurse knowledge and improved comfortability surrounding difficult conversations by 20% with patients in oncology that qualified for palliative care. In a different study by Kerr et al. (2018), an educational intervention increased self-perceived levels of confidence and



comfortability with the skill not only right after completion of an intervention, but also continued to positively influence self-perceived levels of confidence at one and two months afterward. Increased ability to utilize interventions were higher when participants had increased exposure/experience ( $p = 0.01$ ) (Kerr et al., 2018).

Motivational interviewing improves behavioral counseling skills and prepares healthcare workers to address behavior modification with patients; per a study by Chang et al. (2019), health care workers who were able to receive skills based educational interventions for motivational interviewing noted a significant increase in confidence from preintervention to post-didactic ( $p = .001$ ). Education for motivational interviewing helped inform staff on how to best support patients who were seeking change or who were pre-contemplative to change; staff were able to be better guides for patients by creating techniques to change behavior related to opioid use, including Suboxone treatment and harm reduction (Fox et al., 2017). In a study by Fox et al. (2017), training for motivational interviewing not only increased staff satisfaction and staff knowledge but also had been shown to improve patient retention rates in Suboxone treatment.

Deming's theory of change and cycle of continuous quality improvement (plan, do, study, act) guided the development, implementation and evaluation of this project (Appendix A). In tandem to Deming's theory of change, Kurt Lewin's change theory was also be incorporated. Lewin's three step method was applied to help create a framework for this initiative (Appendix B). The first of the three steps was Unfreezing which was the stage where change was identified as necessary; the nursing staff on the crisis stabilization unit already had identified illicit opioid use as detrimental to patient's health, but further information and evidence-based research/literature to support change was organized and presented to staff during the skills based

educational intervention. The second step was Change where uncertainty was resolved. This step was where the skills based educational intervention was held and questions/concerns for this new protocol were addressed to help staff adopt the utilization of the new Suboxone protocol. This phase also included the initial use of the protocol. The third and last step was Refreeze, where change was taking shape and staff were embracing the new ways of working. To ensure that the new changes were used regularly, posttests and follow up check-ins were used to ensure that staff found this protocol effective and feasible in the day-to-day workflow of the two crisis stabilization units (Appendix B).

### **Purpose/Specific Aims**

The purpose of this project was to implement a Suboxone protocol that improved the assessment and treatment of patients dependent on opioids at two in-patient crisis units. The specific aims/objectives were to: 1) Increase the number of Suboxone prescriptions to eligible patients, 2) Decrease the time it took for patients to start on Suboxone when admitted to the unit, 3) Increase the number of referrals at discharge for patients to follow up with outside Suboxone providers, and 4) Increase the knowledge and confidence of staff nurses in identifying and assessing for opioid use, dependence and withdrawal symptoms.

## Methods

### Context

The Suboxone assessment and treatment protocol was initiated on two inpatient crisis stabilization units near Boston, Massachusetts. One unit consisted of seven beds and the other consisted of six beds, both with an average length of admission time of three to five days. At the time of the QI project being initiated, only one Suboxone induction had been completed in the previous six months. In addition, Suboxone prescriptions were expected to be refilled by the patient's outpatient provider; however, this was seldom achieved due to difficulty contacting their outpatient provider during the admission.

Although both units have six full time nurses and there is 24/7 nursing coverage, only one nurse is present per shift. Seven other registered nurses are employed as per diem nurses and work on both units. Often, especially on the weekend, per diem nurses that hadn't been to the unit in weeks or months worked, which at times led to gaps in continuity of patient care.

A multidisciplinary team consisting of a nurse practitioner, supervising psychiatrist, staff nurse, and clinical coordinator collaborate daily during the work week to ensure appropriate care for each patient. Other available prescribers include three prescribers who provide on-call coverage along with the director of nursing and supervising psychiatrist. On call providers are contacted for after-hours admissions and medical concerns (any time after 5p and before 9am during the week and at any time over the weekend). One unit is staffed by a pharmacy that delivers medication, typically once early in the afternoon and again later in the evening if any other prescriptions are ordered for new admissions/medication changes; whereas the other unit has staff pick up prescriptions from the pharmacy due to the location of the crisis stabilization unit.

Each day, Monday through Friday, a portion of the team meets for a workflow huddle and then rounds on each patient. Both huddle and rounds are held in a conference room for spacing and privacy reasons. During the huddle the clinical coordinator, staff nurse, and nurse practitioner review any new admissions, possible discharges and current patients on the unit. This helps the team to plan what will be discussed with each individual patient during rounds. Then, during rounds, this team meets for approximately 15 to 30 minutes with each patient to discuss the individualized treatment plan; the length of time spent with each patient is dependent on if they were a new admission or a follow up and the acuity of the patient's current presentation. The treatment plan may include starting new medication to target mental health symptoms, assessing toleration of said medication, referrals to shelters or outpatient providers, reestablishing care with past providers and assessing the patient's overall mental status.

A cause and effect (fishbone) diagram was completed to identify the potential barriers of nurses initiating a Suboxone assessment and treatment protocol (Appendix C). Some of the barriers identified included poor communication and lack of sufficient time for staff to meet with patients, along with patients' ambivalence towards sobriety and underreporting of substance use when meeting with the team. For example, there was limited time for rounds on the crisis stabilization units where the team could meet with each patient individually. Having limited time could lead to poor planning/inadequate care if communication is not made clear. When patients were first admitted to one of the crisis stabilization units, it was a goal to have them be able to discuss their history of substance use right from the first conversation they had with the admitting nurse, including the amount of opioids and other substances they had been using.

Frequently the under reporting of substance use had been an issue on the crisis stabilization units, which led to the risk of unrecognized withdrawal symptoms, substance use during

admissions, and poor care. This indicated an importance for nurses, who had first contact with admitting patients, to be better educated so they could readily assess for these risks. Patient's ambivalence towards sobriety was often an issue as well; yet when patients could have more motivational interviewing conversations with staff, specifically with the admitting nursing staff, it increased the likelihood that the patient would be able to give thoughtful consideration towards accepting treatment (Appendix C). As of January 2023, due to the lift of the DEA X Waiver, all adult crisis stabilization units in Massachusetts are expected to provide Suboxone treatment to help combat the opioid epidemic, thus this created even more urgency in having nursing staff be able to appropriately assess for opioid use risks (Jones et al., 2023).

The two crisis stabilization unit teams provided support by offering referrals to continue treatment during and after the admission. However, there was a lack of providers who prescribed Suboxone in the outpatient community, which added another layer of complexity to implementing this protocol in that we needed to identify where ongoing treatment could continue after discharge from either crisis stabilization unit. To add to this challenge of seeking appropriate care, not all providers accept Medicaid or take patients without insurance. Of note, within the past two years, the sister clinics began to provide Suboxone therapy in the outpatient setting while also assisting patients in applying and connecting to state insurance. Thus, a referral to a Suboxone provider needed to be placed for follow up to either of these offices for outpatient treatment pending the patient's preference on location. As of January 2023, both clinics also offered urgent care services to assist in bridging medication, including Suboxone, while waiting for placement with outpatient providers. With these urgent care clinics opening, access to care for Suboxone prescribing services has increased. These referrals were completed regularly prior to discharge by the clinical coordinator.

## **Intervention**

### ***Description of the Intervention: The Protocol***

The protocol instituted at the two inpatient crisis stabilization units follows the guidelines for Suboxone initiation that is widely used at Boston Medical Center's OBAT program but was adapted to meet the specific needs of our patients. The primary difference between the two versions of the protocol is that we implemented the protocol at two inpatient crisis stabilization units and not in an outpatient or home setting. In addition, micro dosing of Suboxone was also made available while on the crisis stabilization units, which allowed for faster inductions of Suboxone, rather than needing to wait several days for opioids with longer half-lives to leave the patient's body to avoid precipitated withdrawal.

The protocol includes a restructured outline for the admission assessment to ensure appropriate medical/substance use questions were being asked during this process (Appendix D). Questions included last use of opioids, along with any other substances; use of substances intravenously, smoking or snorting; history of withdrawal symptoms or detox treatment; and current interest in opioid treatment (Appendix D). This prompted nurses to assess opioid withdrawal/intoxication symptoms, vital sign parameters and obtain a more thorough medical history (Appendix D). The protocol was reviewed and approved by the chief medical officer of the clinics, the clinics and crisis units' administration.

### ***Skills Based Educational Session***

Staff were informed of the one-hour educational session when they received an email from the nursing director. The content of this session was designed to increase nurses' knowledge and confidence in identifying and assessing patients for opioid use, dependence, and withdrawal; increase the initiation of Suboxone among eligible patients; and increase the number of referrals

to outside providers before discharge. During this educational session the protocol was explained and reviewed. For those who were unable to be present during the skills based educational intervention, nurses were able to access an online recording of the educational session which was re-recorded by the director of nursing and disseminated via email. Time was allotted during the workday for nurses to attend the initial educational session or to be able review the recording had they missed the initial educational session.

The skills based educational session was required for the nurses of the crisis stabilization units, however it was open for all staff within the crisis unit (social workers, recovery coaches and mental health clinicians) and within the affiliated emergency services. Prescribers at the clinic were also encouraged to attend this educational session to ensure that all prescribing staff were aware of the occurring changes to allow for continuity of care when providing coverage. The additional staff were given the option to set aside an hour in their schedule to view the online recording. The pharmacists were not expected to attend the educational session; instead, they were informed of this new protocol by the nurse manager to ensure timely delivery of Suboxone when needed.

A PowerPoint was presented during this session to review the information of the protocol and how to converse with the patients regarding illicit opioid use with motivational interviewing. The educational session included information about Suboxone, indications, actions, side effects and dosing as the nurses needed to be well versed in its use and effects if they were to encourage utilization of this treatment. Background information was first reviewed, followed by the protocol for Suboxone initiation and paper orders that were to be used as well. The paper orders were made available on the clinic's google doc share drive for ease of access for all staff in the clinic, specifically the crisis stabilization unit nurses who were expected to be using this during

the admission process. Expectations for questions asked by nursing to patients were discussed such as last use of opioids/method of use, other substance use, treatment history and current interest in opioid treatment. Signs and symptoms of current intoxication and withdrawal were reviewed along with vital sign parameters, expected starting doses and related timelines for Suboxone initiation (Appendix D).

Motivational interviewing skills were reviewed for staff to use when discussing preventative health options with patients; for instance, transitioning from illicit opioids to Suboxone therapy. Motivational interviewing essential skills were presented to help staff be guided in their conversations with patients regarding substance use, such as: expressing empathy, developing discrepancy, avoiding confrontations, meeting patients where they are at in terms of their stages of change/adjusting to their resistance and lastly supporting the patient's self-efficacy and hope during this process. A brief case study was used to teach nurses how to use motivational interviewing in practice, and staff were encouraged to offer suggestions for treatment.

All pre/posttests from the staff were kept anonymous via an online survey. Follow up check-ins occurred intermittently with the crisis stabilization units nursing staff throughout the month between the educational session and the initiation of the protocol being in use to ensure that as many questions were answered as possible. These informal check-ins occurred as often as daily each morning prior to the beginning of rounds depending on how many patients were started on Suboxone and staff's vocalized uncertainty; it was led by the director of nursing with assistance from the nurse manager.

### ***Specifics of the Team Involved in the Work***

Summarization of appropriate documentation required that staff input the assessments into the computer within each shift for efficient communication with the rest of the team as per the



protocol. By doing so, the nurse practitioner was able to review the admission information from the evening before when rounds occurred on the following day. When the patient presented for rounds to meet with the team, an immediate discussion occurred regarding Suboxone initiation/opioid use if this was flagged during the admission assessment, streamlining care (Appendix E).

If the patient consented to Suboxone initiation, the medication was ordered electronically by the nurse practitioner, allowing the prescription to be received in the morning by the pharmacy, which in turn facilitated the pharmacy having the medication readily available on the day that it was prescribed. Timely delivery of Suboxone to the unit was deemed essential to patients starting Suboxone earlier in their hospitalization due to the short admission stay of patients (Appendix E). Therefore, each pharmacy at the respective crisis stabilization unit was made aware of the Suboxone protocol. Additionally, initiating Suboxone therapy as soon as possible was critical as many patients could be experiencing cravings or withdrawal symptoms, leaving these symptoms untreated places patients at higher risk of relapse.

Before the patients were discharged, referrals were put in place by the clinical coordinator, clinicians, and/or nurse so that the patients could continue Suboxone therapy in the outpatient community (Appendix E). Other referrals were offered if indicated, including referrals for a therapist, a psychiatric prescriber, a primary care doctor, shelters and at times for visiting nurses to assist in medication management and adherence. At times assistance was needed to provide appropriate transportation to the clinic to ensure the patient can attend these outpatient Suboxone appointments, however due to the recent pandemic telehealth is more broadly used throughout the clinic. This also led to the importance of making sure that the patient had the available technology to participate in telehealth.

## **Study of the Intervention**

A list of nurses was compared to the names in attendance for the skills based educational session. Nursing staff unable to attend were asked to complete the pre/posttest online as well. These were kept anonymous, and comparisons were reported only on the aggregate. Completion of these pre/posttests and the skills based educational session whether during the initial educational session or the recorded educational session was mandated by administration for all the crisis unit's nursing staff prior to initiating this protocol.

Following the skills based educational session and open question time, a posttest was administered; another posttest was administered again one month and again in two months after. Posttests continued to use the same multiple-choice questions to assess knowledge and along with a consistent Likert scale including options one to five to assess for confidence and knowledge. Posttests also included an open-ended question/comment section for additional input from staff. The following outcomes were evaluated for:

### ***Outcome 1: Increase Number of Prescriptions for Eligible Patients***

Data were collected on a worksheet that was monitored by the director of nursing. Suboxone had only been initiated once in the previous six months prior to the QI project being initiated; with this baseline any increase in prescriptions would demonstrate an increase in the number of prescriptions for eligible patients.

### ***Outcome 2: Decrease in Time It Takes for Patients to Be Started on Suboxone***

During the one Suboxone induction that had occurred between the units in the six months prior to the QI project, Suboxone had not been delivered until the late evening as this was typically when all medications were delivered from the pharmacy. The time it took in hours and

minutes from admission to delivery of Suboxone were collected on a worksheet and managed by the director of nursing.

***Outcome 3: Increase in Number of Referrals at Discharge for Eligible Patients***

The number of referrals given at discharge to an outside provider were tracked on a worksheet managed by the director of nursing.

***Outcome 4: Increase in Nurses' Knowledge and Confidence in Identifying and Assessing for Opioid Use***

Prior to the start of the educational session, a pretest was administered to assess the knowledge and confidence in staff's knowledge regarding opioid use disorder and the use of treatments such as Suboxone. A ten-item questionnaire was developed by this author and included multiple choice questions such as: Which of the following are symptoms of opioid use? (Appendix F). To assess confidence in Suboxone initiation, a self-created Likert scale instrument was developed ranging from one to five: not at all confident, slightly confident, somewhat confident, moderately confident, extremely confident (Appendices G-K). Seven items were collected regarding participant's demographics such as position at clinic (nurse, doctor, nurse practitioner, social worker, or mental health clinician), highest educational level, and number of years working in mental health or substance use treatment (Appendix L). Posttest questionnaires were measured immediately after the skills based educational session, one month after and two months after.

For a summary regarding the quality of these outcomes, see Appendix M.

**Analysis**

Descriptive statistics (frequency, percentages, and means) were used to summarize data on demographic characteristics of the participants; pre and posttests of knowledge and confidence

scores of participants; and pre and post intervention measures regarding number of prescriptions, referrals, and time to start Suboxone for eligible patients. Comparative statistics were used to analyze pre and posttest knowledge and confidence scores after the educational session, and then one month post educational intervention; and two months post educational intervention.

For the staff surveys, the aggregated mean score indicated how effective this project had been and suggested where further changes would be beneficial. The results were compared immediately after the skills based educational session and one month and two months afterwards; ongoing improvement in knowledge and confidence was expected one month after the skills based educational session and initiation of the Suboxone protocol and again at two months. The percentage improvement was computed comparing pre to two-months post using the following formula:  $(V_2 - V_1) / V_1 \times 100$ , wherein  $V_2$  is the two-months post mean score and  $V_1$  is the pre-intervention mean score.

The number of patients initiated on Suboxone was evaluated weekly after implementing the protocol and the number of Suboxone prescriptions was monitored. Referrals made at the time of discharge for ongoing Suboxone therapy were compared to prior to the intervention, which were minimal to none. The time it took to initiate Suboxone while admitted on either crisis stabilization unit was also considered and compared; prior to the QI project being initiated, Suboxone was not typically prescribed and/or administered unless prescribed by an outpatient provider, therefore the time of initiation was expected to drastically decrease by having Suboxone initiation as an option. A measures table was created to help format the outcomes, measures and analysis of this process (Appendix N).

**Ethical Considerations**

The population served at both crisis stabilization units was vulnerable and required much support and guidance. With the complications of mental illness and substance use, it was critical to assess for ability to consent to treatment. If a patient appeared to be under the influence of substances or, for example, was too psychotic to understand the recommended treatment, the Suboxone protocol was not initiated for them until they were in a clearer state of mind and able to give informed consent; this required careful assessment skills with each patient and was one of the first steps in the protocol that had been developed. These were standard ethical issues that were considered for all psychiatric patients admitted to either crisis stabilization unit and were not specific to this quality improvement project.

The proposed project/innovation was quality improvement and did not meet the definition of human subject research because it was not designed to generate generalizable findings but rather to provide immediate and continuous improvement feedback in the local setting in which the project was carried out. The University of Massachusetts Boston IRB had determined that quality improvement projects did not need to be reviewed by the IRB (Appendix O).

## Results

The results are presented according to the outcomes of the project. The first three aims focused on Suboxone prescriptions, time to initiation, and referrals for patients with inductions. The final aim was designed to examine nurses' confidence, comfort, and knowledge. Prescriptions, time to initiation, and referral outcomes are presented using descriptive statistics (*n*, %).

### Description of Sample

A total of 15 nurses and providers agreed to participate in the project with an equal distribution of nurse practitioners (providers) (*n* = 7, 46.7%) and RNs (*n* = 7, 46.7%), and one LPN (6.6%) participating (Appendix H). Providers on average worked at the clinic for more than six years whereas nurses were there between one to three years. Overall, their ages ranged from 26 to over 45 years; however, most were between the ages of 36 and 45 years old (*n* = 10, 66%). The nurses were well educated with more than 80% holding a master's degree (*n* = 7, 46.7%) or a bachelor's degree (*n* = 6, 40.0%). Years of experience working at the facility ranged from less than one (*n* = 5, 33.3%) to six or more years (*n* = 6, 40.0%). Fourteen of the fifteen participants (93.3%) were full-time.

### Outcome 1: Number of Suboxone Prescriptions for Eligible Patients

During the project period, four patients were eligible to receive Suboxone. Of the four patients, three required an induction because they were dependent on an illicit opioid or were experiencing cravings for opioids. For these three patients, Suboxone was started to treat their cravings and was titrated over the span of a few days to target cravings and withdrawal symptoms as indicated. The fourth patient was admitted to the unit with a Suboxone prescription; however, this patient had cravings and urges to use opioids and thus required an increase in their

Suboxone dose. This indicates a 100% success rate in offering/increasing Suboxone prescriptions for eligible patients.

### **Outcome 2: Time to Initiate Suboxone Induction**

Of the four eligible patients to start or continue on Suboxone, all four started or continued Suboxone on the first day after meeting with the provider ( $n = 3$ ) or while a patient on the unit ( $n = 1$ ). Previously, patients would need to be referred out to alternative clinics that could prescribe Suboxone and this was not offered on the unit. Patients requiring an induction were prioritized to be admitted during the week so that they would be seen by a prescriber within approximately 24 hours to alleviate risks of withdrawal from, or relapse on, opioids. The staff nurses communicated to the pharmacy the importance of having the Suboxone script delivered as soon as possible, allowing the medication to be started within three to four hours after meeting with the prescriber. Though historically there have been delays of medications not being delivered until the following day, this was not something that was experienced with the Suboxone inductions during the project timeline.

### **Outcome 3: Increase the Number of Referrals at Discharge for Patients**

Of the four inductions, only three patients were eligible for referral, as one patient was already connected to outpatient providers within the clinic system. All three eligible patients (100%) were referred to outpatient services within the prescribing clinic during their admission and were expected to follow up with their assigned outpatient team upon discharge for further management and support of their opioid use disorder.

### **Outcome 4: Nurse Providers' Knowledge, Confidence, and Comfort**

Knowledge regarding the Clinical Opiate Withdrawal Scale (COWS) assessment was examined using an author created 10-item questionnaire at the four stated times (Appendix F).

The percentage of correct responses was computed for pre, post, one-month post, and two-months post educational intervention. Knowledge improved for all ten knowledge assessment items; however, the greatest increase in knowledge occurred with the item “Which of the following day ranges/times are when Suboxone induction admissions can occur at CCS? At pre-educational intervention, 7.1% of respondents reported a correct response and this increased to 100% of respondents with a correct response at two-months post educational intervention. For two items on the knowledge test, scores of 100% were not obtained at any of the four measurement points. The items included “What score on the COWS indicates that Suboxone should be given?” with a correct response of 11 and “What stage of change indicates a patient is ready for treatment?” with the correct answer being “action” stage. Although the educational intervention contained this information, the findings show that at least one participant did not answer these questions correctly at all four measurement periods.

Confidence and comfort in completing and assessing the patient using the COWS assessment tool were examined pre-educational intervention ( $n = 14$ ), post-educational intervention ( $n = 12$ ), one-month post educational intervention ( $n = 3$ ), and two-months post educational intervention ( $n = 4$ ) (Appendices G-K).

For assessing opioid withdrawal, the pre-intervention mean score was 4.14 ( $SD = 1.03$ ) and improved to 5.00 ( $SD = 0.00$ ) at the two-month post timepoint, indicating a 20.8% improvement (Appendix G). The confidence in completing a COWS assessment for patients improved from a mean of 4.21 ( $SD = .58$ ) at pre to a mean of 5.00 ( $SD = 0.00$ ) at two-months post (Appendix H). The mean scores showed an 18.8% improvement, from 4.21 to 5.00. The confidence in utilization of the Suboxone initiation documentation (Appendix I) improved from a mean of 3.36



( $SD = 1.01$ ) at pre to a mean of 5.00 ( $SD = 0.00$ ) at two-months post. The mean scores showed a 48.8% improvement.

Beliefs about MAT and a patient being sober showed a pre-intervention mean of 3.43 ( $SD = .94$ ) to a mean of 5.00 ( $SD = 0.00$ ) at two-months post intervention, indicating a 45.8% improvement (Appendix J). Figure 5 displays the mean scores across the four timepoints on nurse provider's comfort working with patients on MAT (Appendix K). The results indicate improvement from pre ( $M = 4.46$ ,  $SD = .66$ ) to two-months post ( $M = 5.00$ ,  $SD = 0.00$ ), a 12.1% increase in reports of comfort.

### **Missing Data**

Several participants did not complete the surveys for unknown reasons. For those that did complete the surveys, most did not include a unique four-digit identifier as requested at the start of each survey, which does not allow analysis of the number that completed some or all of the surveys, nor how many of the participants across timepoints were similar. To increase completion of surveys at one or two months after the educational session, email reminders were sent to all eligible participants along with verbal reminders when in person.

## Discussion

Although the number of patients eligible to benefit from the intervention was small for the project, the findings suggest that the intervention was successful in increasing provider knowledge, comfort, and confidence in identifying and assessing for opioid use. For the five confidence items, all showed improvement from pre to two-months post, with one item showing a 48.8% increase in mean confidence across the timepoints. The ten knowledge items indicated that the intervention was effective, as indicated by improvement on all items from pre to two-months post, with 100% of respondents showing a correct response at the two-month timepoint for seven out of the ten knowledge items. The staff were receptive to the educational session and purpose of the project which led to overall positive results, speaking volumes to the dedication and willingness of the staff to provide supportive care.

The intervention also increased nurse and provider knowledge and confidence in identifying and assessing for opioid use which translated into eligible patients starting Suboxone in a timely manner and/or having their Suboxone dose increased if they showed signs of opioid withdrawal or cravings. Patients were referred as indicated to outpatient providers at discharge for follow-up care. There were no encountered issues with patients having access to Suboxone with the associated pharmacy delivering the prescribed scripts, allowing for patients who may have had to wait outpatient for days or weeks to be able to start Suboxone the same day they were able to meet with a crisis stabilization unit provider. With this project, the treatment of patients dependent on opioids admitted to a mental health crisis unit were able to have prompt treatment in a safe environment that may have otherwise not been available to them. Patients who did receive this treatment on the crisis stabilization unit vocalized appreciativeness of having the

option to receive Suboxone therapy and an alternative treatment for their opioid dependency treatment.

### **Interpretation**

Patients admitted to the crisis stabilization unit are often homeless or lack stable housing which can often interrupt ongoing consistent care and adherence to treatments, such as taking Suboxone as prescribed or completing outpatient inductions. This QI intervention-allowed for patients who did not meet inpatient level of care or did not want inpatient level of care on a locked unit, to have access to Suboxone inductions that would have not been feasible on a unit otherwise.

Emergency departments that began offering Suboxone inductions in 107 various locations to hundreds of patients showed that over half of those started on this treatment, remained in treatment as evidenced by ongoing refills of relevant scripts even up to six months after the induction (Stone et al., 2023). About half of patients who were referred for ongoing treatment attended their first outpatient appointment (Stone et al., 2023). Despite this QI project having a small number of eligible participants, related studies show that having access to Suboxone will help patients remain in opioid use disorder treatment, therefore reducing the risk of opioid use and possible overdose.

In studies by Fox et al. (2017) and Chang et al. (2019), staff satisfaction, knowledge and confidence increased when training was provided for motivational interviewing (MI). Another study showed that offering a skills based educational session increased staff's confidence in being able to apply the information they learned during the intervention (Harden et al., 2017). Per Kerr et al. (2018), an educational intervention increased self-perceived levels of confidence and comfortability with the skill not only right after completion of an intervention, but also

continued to positively influence self-perceived levels of confidence at one and two months afterward. Staff offered during this QI project that learning about MI techniques and the process of Suboxone inductions in the educational session were helpful in increasing their general knowledge along with their confidence in speaking to patients who were using substances and were eligible for Suboxone as an intervention.

Anecdotally, nurses offered that they now have more confidence in assessing for withdrawal versus intoxication with opioids and understanding when a patient may need to begin an induction with Suboxone. This was also evidenced by the improved results on the posttests after the skills based educational session. Due to the inconsistent admissions of patients being eligible for the intervention, nurses did suggest that further check-ins and reminders of how to use the protocol would be helpful as these patients are admitted which has been taken into consideration and applied throughout this project. Nurse practitioners and doctors have noted that they have found the protocol to be helpful in making decisions surrounding what comfort medications are necessary for the patient along with having a standardized protocol of when to give more Suboxone if a patient is showing signs of withdrawal. Feedback given by an on-call nurse practitioner indicated that clarifying what occurs on the third day of the Suboxone induction would be helpful.

No further costs were required for this QI project to be completed as the two units were able to use their current mode of transportation for obtaining medications and patient's insurance covered the cost of Suboxone. Evaluations completed by nurses and nurse practitioners were done within regularly scheduled shifts and did not require additional staff support. Though adjustments within the electronic medical record need to be made to have the COWS assessment tool match the protocol's parameters, this should not accrue any further costs.

These results suggest that it would be helpful for nursing staff to continue to utilize this educational session. In addition, extending this educational session to non-medical staff within the clinic would allow for better continuity of care and knowledge. This would help to ensure all staff have a solid understanding of adequate assessment skills for identifying opioid withdrawal, dependence or overdose, even if the patients are not admitted to the crisis stabilization unit.

Due to multiple nurse practitioners leaving and nursing staff having alternating schedules, inconsistent completion of posttests occurred. To address this, a checklist is being created by the two nurse managers of the crisis stabilization units in tandem with the director of nursing. This should help to reduce new or per diem staff from missing this educational session, or the follow up tests should ongoing assessment of staff understanding want to be monitored.

For the two knowledge test items that did not reach 100% at any of the four measurement points, ongoing follow up is required with the staff. The first item included “What score on the COWS indicates that Suboxone should be given?” with a correct response of 11, though some responded saying 10. This is likely due to the COWS score on the electronic medical record reporting a different number than what this protocol follows. A critical recommendation would be to adjust this number to reduce confusion and to have the protocol and online COWS assessment match; IT is rectifying this issue. The second item included “What stage of change indicates a patient is ready for treatment?” with the correct answer being “action” stage, referring to MI skills and stages of changes. To rectify this issue, a poster is being created to be placed in the nurse’s office that reinforces MI skills. Having this readily available could help prompt staff in how to speak to patients struggling with opioid dependency or substance use in general. If patients requiring Suboxone treatment are not regularly admitted to either of the crisis

stabilization units, this poster could help staff feel less uncertain of how to use MI when a patient presents that would benefit from this type of therapy.

The overall outcome of this quality improvement project has been positive. The educational session was completed by most of the available nursing staff, allowing for increased confidence, comfort, and knowledge in utilizing these skills. Having this service available also permitted four patients struggling with opioid to dependence to receive Suboxone treatment where they may have otherwise not have had access to complete inductions or receive increases in their dose in a time effective manner. In addition, this has helped to change some of the staff's beliefs of whether someone who is on MAT, like Suboxone, is truly sober (Appendix J); this allows for decreased biases when working with this population.

These two crisis units would benefit from ongoing use of this educational session, while also working with community-based services in helping to increase the awareness of both staff of alternative facilities and patients alike that Suboxone is a possible available treatment modality for opioid use disorder and at this level of care. Contact hours or continuing education units (CEUs) may be a possibility for the training, therefore if this was pursued, this training may have even further enticement for nursing staff. To promote better accessibility to Suboxone treatment, the clinic is considering expanding the hours of when patients may be admitted to the crisis stabilization unit to include Friday evenings and weekends.

### **Limitations**

There were two crisis stabilization units involved in this QI project, both ranging from six to seven patients per unit at one time. Due to this, the number of eligible patients to benefit from the intervention was small; only five patients admitted were seeking treatment in specific to opioid dependency and only four were interested in Suboxone therapy and therefore eligible for the

intervention. More awareness will need to be made to the community that services, such as Suboxone, are an option now on crisis stabilization units.

Due to the high turnover of nursing staff during the period of the intervention being introduced, along with multiple changes within the clinic's available services, there were challenges to having posttests consistently completed which may have impacted our project findings. The nurse managers of both units and the nursing director continued to follow up with staff, in person and via email, to have the educational session completed along with the posttests. However, some nurses only worked on the weekends or nights, which may have contributed to their decrease in participation with posttests with decreased facetime with regular staff. With the check list being made, this should help to better track what has been completed by staff and to ensure completion of not only the educational session, but also the related posttests.

### **Conclusions and Recommendations**

Staff and patients alike have found this QI project to be effective and relevant in the day-to-day treatment we provide on both crisis stabilization units. Refresher check-ins with staff will allow for ongoing sustainability when there are periods of time without patients that require an induction or Suboxone dose adjustment. The educational session will now be an integral part of the orientation process of new nurses and providers that work on the crisis Stabilizations Units.

### **Funding**

There was no financial funding for this quality improvement project. Factors through the organization allowed for this project to be implemented. However no other roles influenced the design, implementation, interpretation or reporting of this quality improvement project.

## Acknowledgements

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My success and drive to seek further education would not have been possible without my late grandmother, Mary S. Currie, raising me to appreciate the power of knowledge and using this to better serve our community and those around us; I cannot begin to express my gratefulness and love for her and these life lessons.



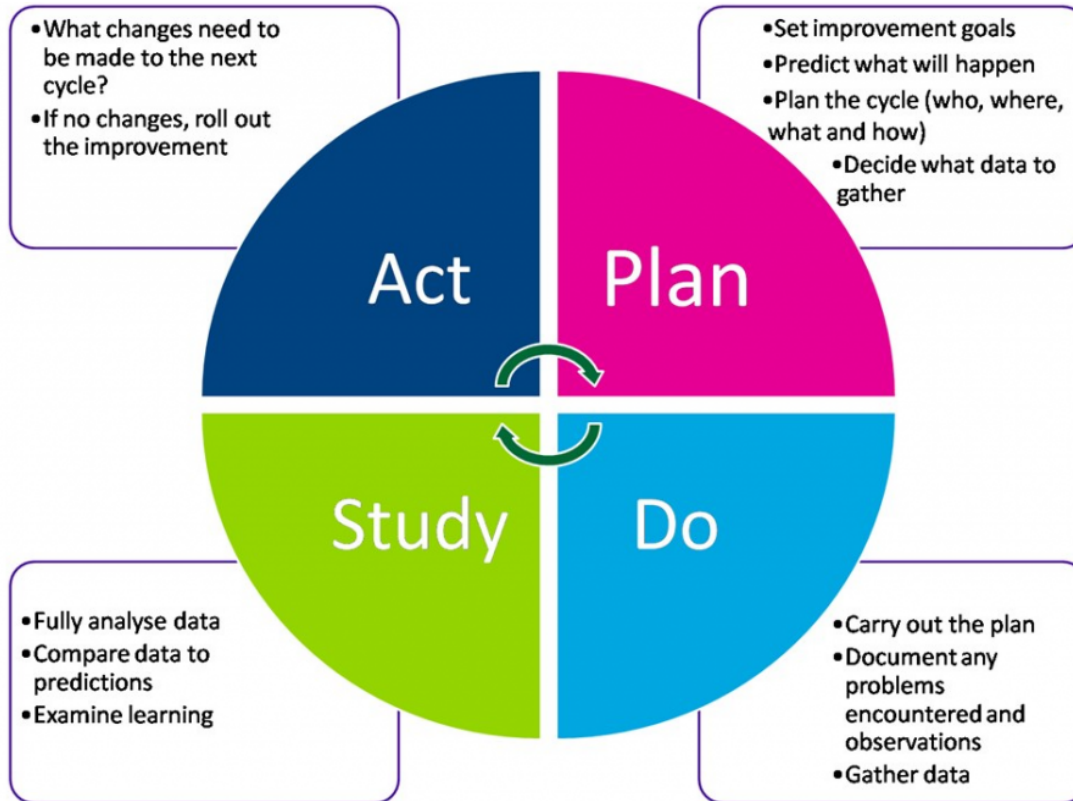
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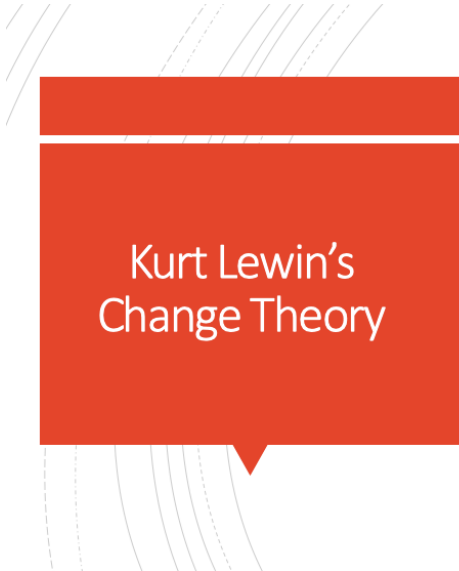
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## Appendix A

### Deming's Theory of Change and Cycle of Continuous Quality Improvement



## Appendix B Kurt Lewin's Change Theory



### Unfreezing

- Recognizing the need for change.
- Encouraging the replacement of old behaviors and attitudes with new behaviors.

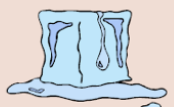


Image Source 2: Google Image

### Changing

- Implement change by taking specific actions.
- Helping employees to learn new concept or points of view.
- Role Models, mentors, experts, benchmarking results and training are useful mechanisms to facilitate change.




Image Source 3: Google Image

### Refreezing

- Changes are reinforced and stabilized.
- Leaders integrate the changed behavior or attitude into the normal way of doing things.
- Coaching and modeling help reinforce the stability of change.


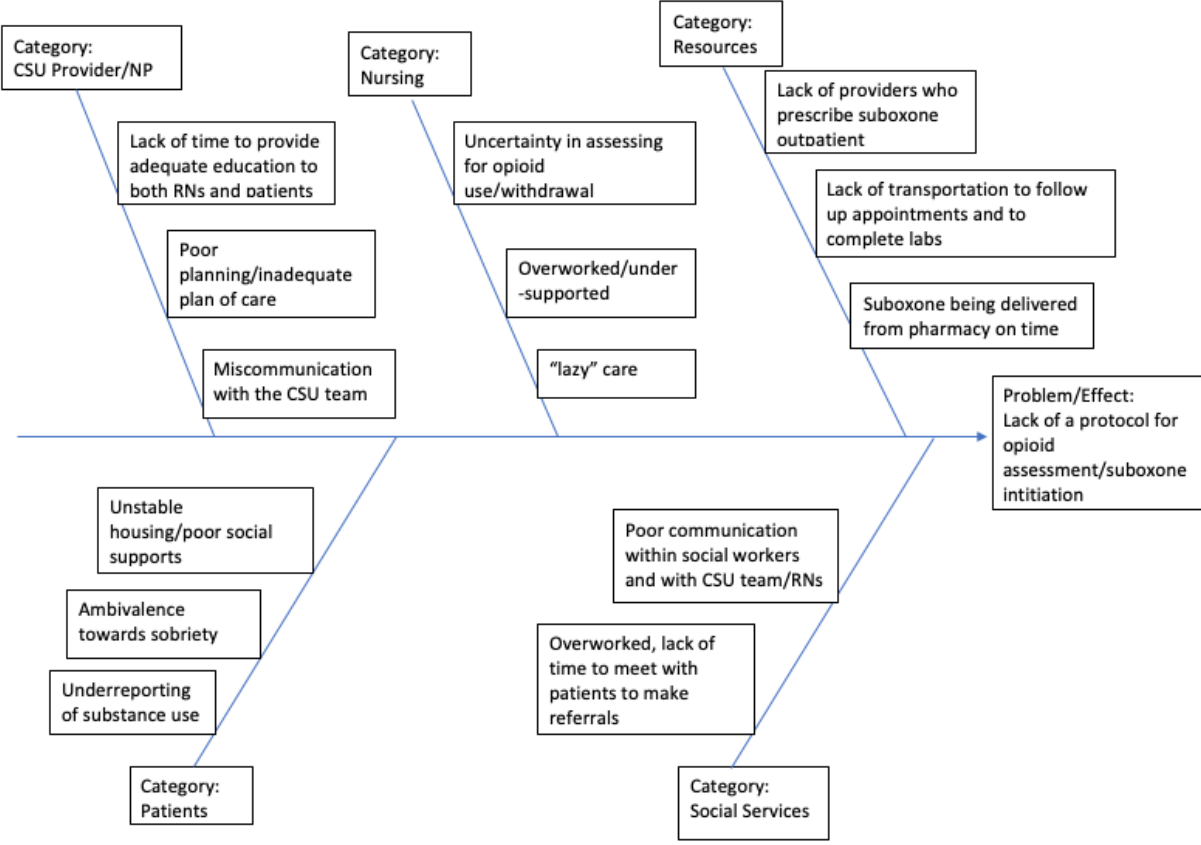


Image Source 3: Google Image

# Appendix C Fish Bone Diagram

Fishbone Diagram Tool – Cause and Effect Template



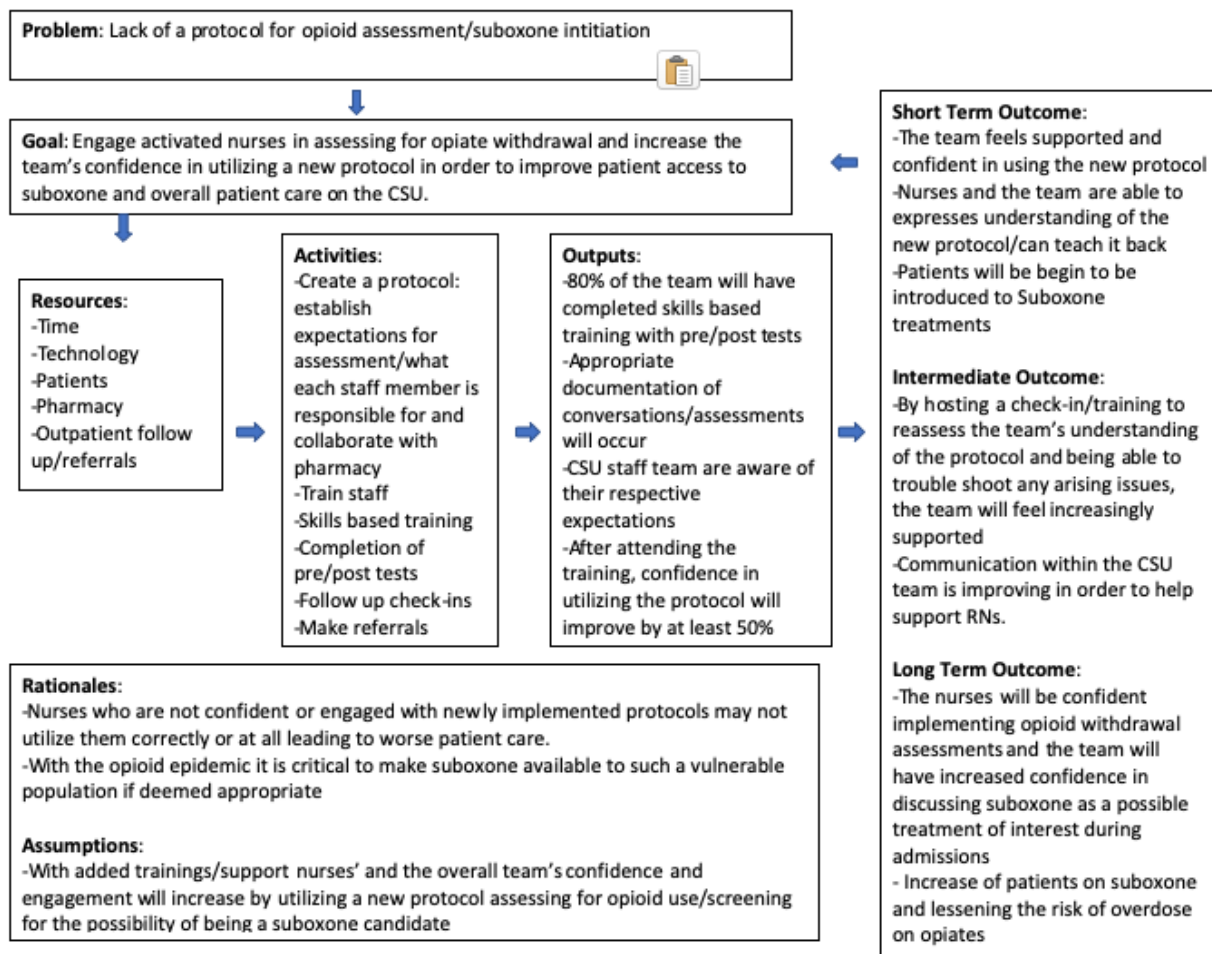
## Appendix D

### Suboxone Initiation Protocol

- Patient meets Community Crisis Stabilization (CCS) level of care and is approved for admission by the Emergency Services Program (ESP) Administrator.
- Admissions for possible Suboxone (buprenorphine/naloxone) initiation will be considered Sunday evening through Thursday 11am to ensure the patient is evaluated by NP/MD promptly and has adequate time to complete the induction process under NP/MD supervision.
- RN completes vital signs (VS) within 30 minutes of the patient entering the unit.
- RN completes psychiatric/medical/substance use assessment of patient.
  - During the initial intake patient is asked if opioids have been used. If yes:
    - Determine: last use of opioids, other substances; use of substances intravenously, smoking or snorting; history of withdrawal symptoms or detox treatment; and current interest in opioid treatment.
    - Signs/symptoms of current intoxication: altered mental status, breathing problems (slower respiration rate), sedation, and constricted pupils
      - If patient appears intoxicated and at risk of overdose, RN should consult with on-call physician/NP to determine need for further evaluation/stabilization in the emergency department. Narcan should be utilized per Eliot policy.
- RN reviews opioid use history with On-call physician/NP during usual admission review.
- Clinical Opiate Withdrawal Scale (COWS) to be initiated by On-call physician/NP q4hrs while awake until seen in rounds
  - RN to document COWS score and withdrawal symptoms (if any) in each shift note
- RN, Clinician/Social worker, and NP/MD meet with patient in rounds the following day to further assess opioid use and discuss options for treatment.
  - If patient elects to start Suboxone (buprenorphine/naloxone), team will review expectations for treatment at CCS, including attendance in dual-recovery group held twice a week by unit clinician and/or Adult Day Treatment (now virtual due to the pandemic).
  - MD/NP will order Suboxone (buprenorphine/naloxone) and RN will administer initial dose per induction orders.
    - Initial dose is either 2mg/0.5mg or 4mg/1mg, to be determined by MD/NP after assessment and depending on type/amount/last use of opioids.
    - Timing of induction to be determined by MD/NP and will depend on hours of abstinence since last use (12-16 hours for short-acting agents, 17-24 hours for intermediate-acting, and 30-48 hours for long-acting)
    - RN to collaborate with pharmacy to ensure medication delivery prior to scheduled induction time.
  - Day 1
    - Pre-induction: COWS >10 ⇒ RN to administer Dose 1

- COWS 10-16 is mild/moderate and, at 10-12 hours after use, is typically sufficient to avoid precipitated withdrawal
    - 30-60 minutes s/p Dose 1: COWS >10 ⇒ administer Dose 2
    - 6 hours s/p Dose 2: COWS >10 ⇒ administer Dose 3/last dose for the day
      - Note: Day 1 total should not exceed 12mg
  - Day 2
    - Pre-dose COWS
    - Administer Dose 1 = Day 1 Total
    - 30-60 minutes s/p Dose 1: COWS >10 ⇒ Consult MD/NP regarding additional dose(s)
      - Note: Day 2 total should not exceed 24 mg
- Discharge planning to begin at time of admission
  - Discharge is expected within five days of admission.
  - Coordinate with existing providers (*Clinician*)
  - Connect to a recovery coach (*Clinician*)
  - Refer for Office Based Addiction Program (OBAT) at Eliot outpatient (or other clinic of patient's choice if available) (*Clinician*)
  - Refer for Outpatient Therapy and Psychiatric care, as indicated (*Clinician*)
  - Consider Visiting Nurse Associations/VNA (for medication support/adherence) (*RN*)
  - Assess for other referral needs:
    - Shelters & PATH (for homelessness)
    - BHCP (for care management)
    - Department of Mental Health/DMH (for case management of severe mental illness)
    - PT1/The Ride (for transportation) (*Clinician/ community team members*)

## Appendix E Logic Model





**Appendix F**  
Table 1

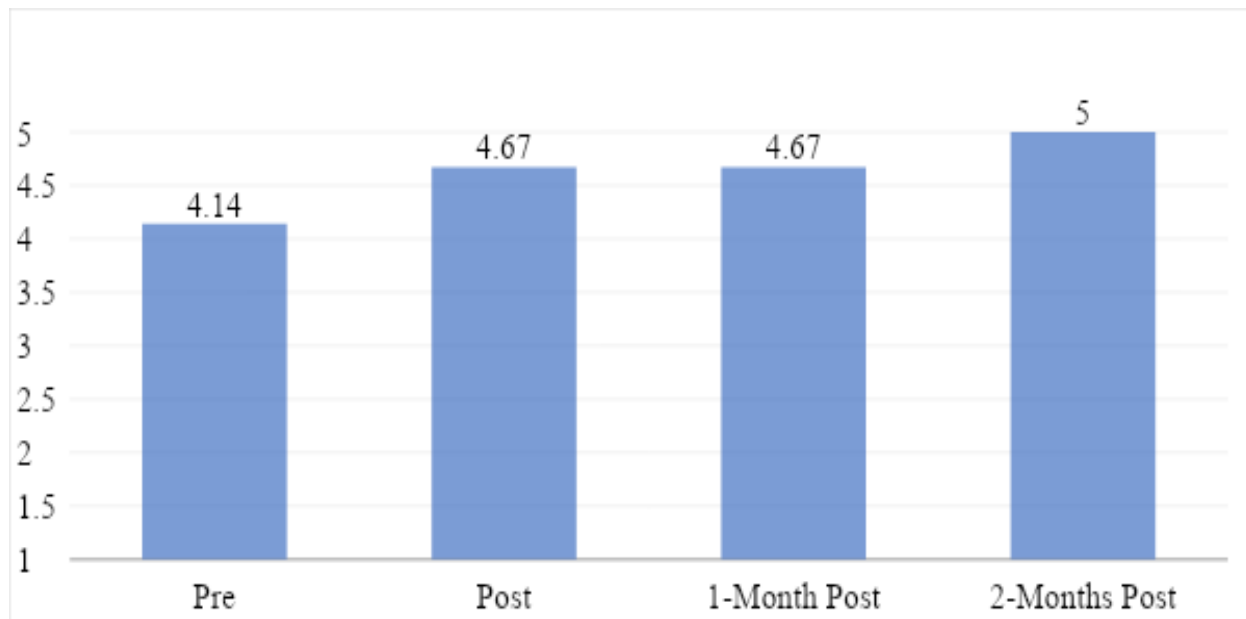
*Knowledge Results*

Knowledge Question (Correct Answer)	Pre	Post	One Month Post	Two Months Post
	(n = 14)	(n = 12)	(n = 3)	(n = 4)
	% of correct respondents			
Suboxone requires daily attendance to the clinic for medication administration (False)	78.6%	100%	100%	100%
Which of the following symptoms is a sign of opioid intoxication? (Pupillary constriction)	85.7%	100%	100%	100%
Which of the following symptoms is a sign of opioid withdrawal? (Diaphoresis)	71.4%	91.7%	100%	100%
What score on the COWS indicates that Suboxone should be given? (11)	21.4%	50%	66.7%	50.0%
Opioid overdose death rates increased across all racial and ethnic groups between 2018 and 2020 (True)	100%	100%	100%	100%
Which of the following day ranges/times are when Suboxone Induction admissions can occur at CCS? (Sunday evening through Thursday 11am)	7.1%	100%	100%	100%
Which of the following questions should nursing be asking patients in regard to substance use? (Last use of opioids, route of use, and interest in opioid treatment)	100%	100%	100%	100%
What stage of change indicates a patient is ready for treatment? (action)	35.7%	75.0%	66.7%	75.0%
What Motivational Interviewing skill may help engage patients in discussing their substance use? (reflective listening)	50.0%	91.7%	100%	75.0%
On the second day of Suboxone inductions, the first dose of the day is the total amount of mgs the patient received the day before. Patients may then need further titration. (true)	78.6%	100%	100%	100%

*Note.* Values presented are the percentage of respondents with a correct response. Pre = pre-educational intervention; Post = post-educational intervention; 1-Month Post = one-month post-educational intervention; 2-Months Post = two months post-educational intervention

**Appendix G**  
Figure 1

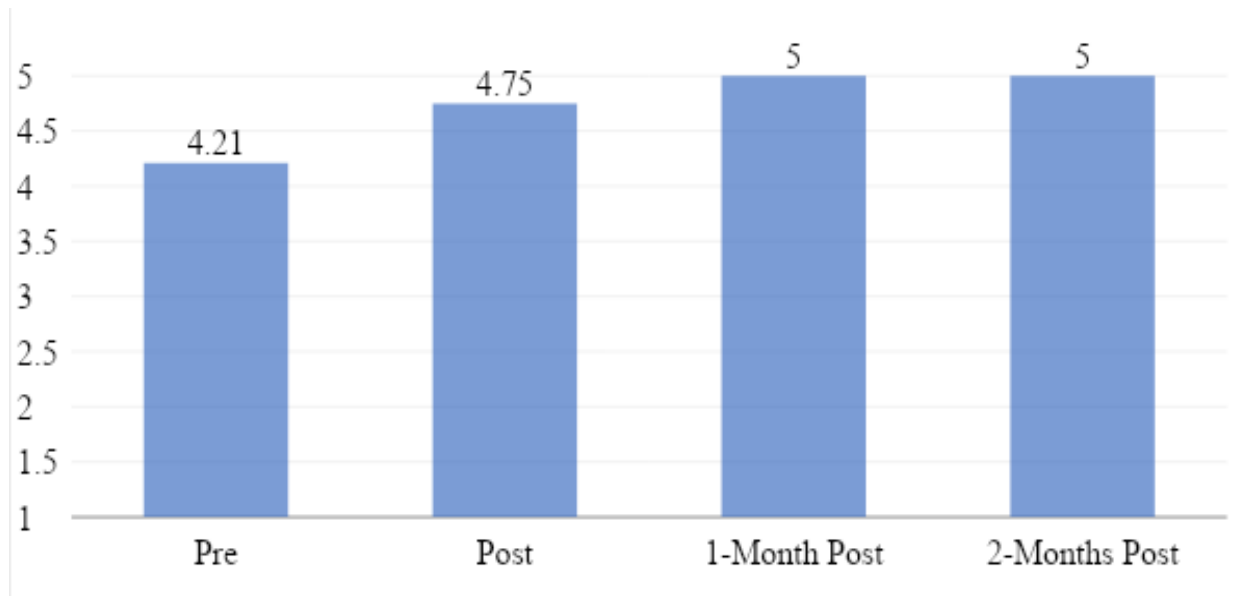
*Confidence in Assessing for Opioid Withdrawal (COWS)*



*Note.* Means scores on a range from 1 (strongly disagree) to 5 (strongly agree); Pre = pre-educational intervention; Post = post-educational intervention; 1-Month Post = one-month post-educational intervention; 2-Months Post = two months post-educational intervention

**Appendix H**  
Figure 2

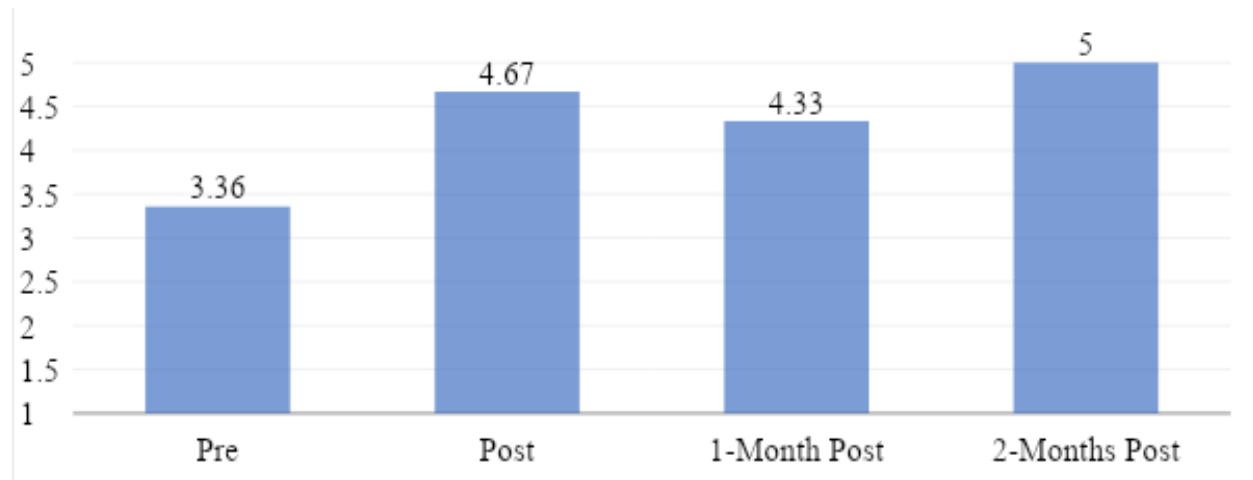
*Confidence in Completing a COWS Assessment*



*Note.* Means scores on a range from 1 (strongly disagree) to 5 (strongly agree); Pre = pre-educational intervention; Post = post-educational intervention; 1-Month Post = one-month post-educational intervention; 2-Months Post = two months post-educational intervention

**Appendix I**  
Figure 3

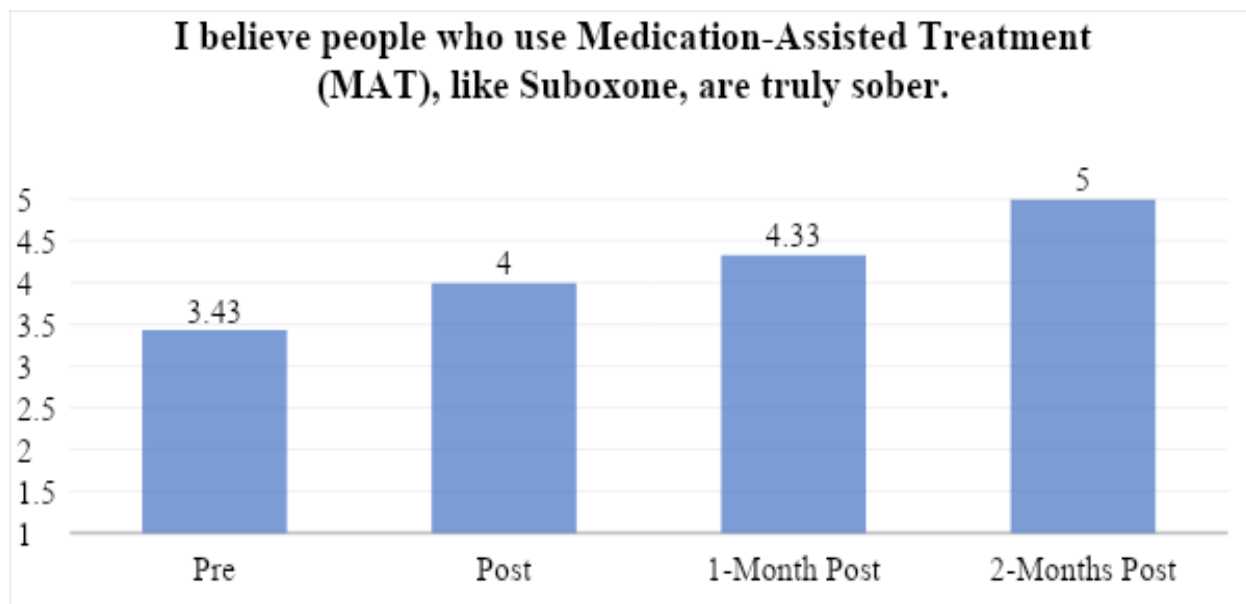
*Confidence in Using Suboxone Initiation Documentation*



*Note.* Means scores on a range from 1 (strongly disagree) to 5 (strongly agree); Pre = pre-educational intervention; Post = post-educational intervention; 1-Month Post = one-month post-educational intervention; 2-Months Post = two months post-educational intervention

**Appendix J**  
Figure 4

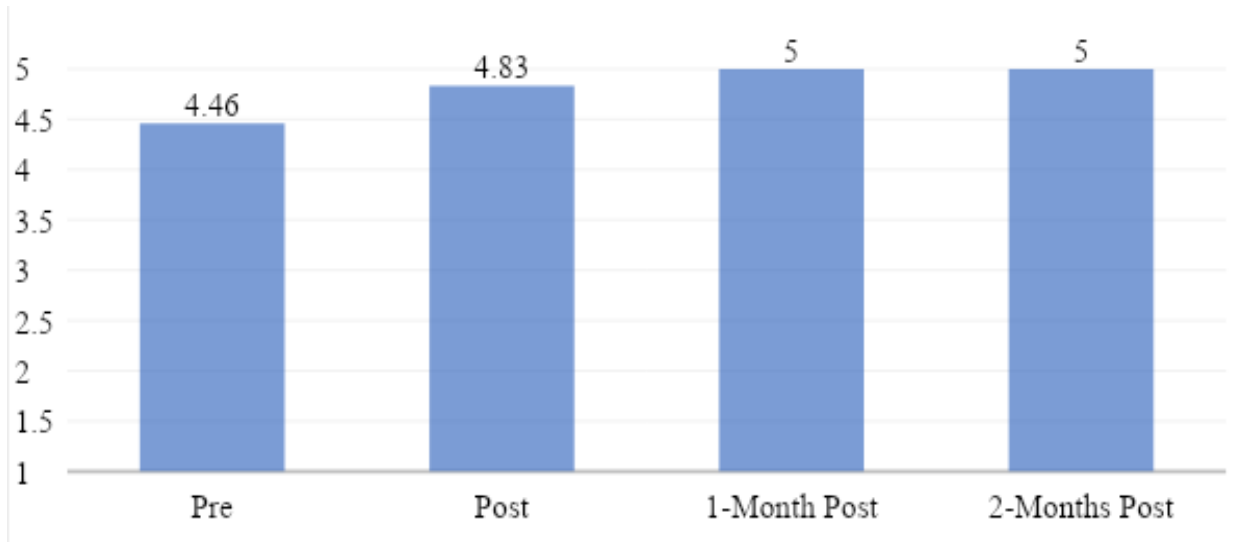
*Beliefs about MAT and Sobriety*



*Note.* Means scores on a range from 1 (strongly disagree) to 5 (strongly agree); Pre = pre-educational intervention; Post = post-educational intervention; 1-Month Post = one-month post-educational intervention; 2-Months Post = two months post-educational intervention

**Appendix K**  
Figure 5

*Feeling Comfortable Working with Patients who are on MAT*



*Note.* Means scores on a range from 1 (strongly disagree) to 5 (strongly agree); Pre = pre-educational intervention; Post = post-educational intervention; 1-Month Post = one-month post-educational intervention; 2-Months Post = two months post-educational intervention

**Appendix L**  
Table 2

*Nurse Provider Demographics*

Demographic Variable	<i>n</i>	%
Highest Level of Nursing Degree		
Diploma	1	6.7
Associates	1	6.7
Bachelors	6	40.0
Masters	7	46.7
Years Worked at Facility		
0-1 years	5	33.3
2-3 years	3	20.0
4-5 years	1	6.7
6+ years	6	40.0
Work Status		
Full Time	14	93.3
Part Time	1	6.7
Role		
LPN/LVN	1	6.7
RN	7	46.7
NP (masters or DNP)	7	46.7
Years Worked in Role		
0-1 years	2	13.3
2-3 years	3	20.0
4-5 years	4	26.7
6+ years	6	40.0
Age Range		
26-35	3	20.0
36-45	10	66.7
Over 45	2	13.3

*Note.* *n* = count; % = percentage

**Appendix M**  
SOS Summary Table

Level and Quality of Evidence	Number and Type of Studies	Summary of Significant Findings
II, B	5 Quasi-experimental	Skills-based educational session led to higher confidence and understanding of new protocols and were initiated in varying healthcare settings with staff/nurses
III, A	2 Non-experimental 1 Qualitative	The initiation of new protocols was adequately assessed via questionnaires/surveys to ensure that nurses found the training to be helpful with increasing their confidence/understanding



## Appendix N Measures Table

Expected Outcome(s)	How will you operationalize/measure the outcome?	Where will you get the information?	Will you have a comparison group?	Analysis
-80% of staff will attend the initial training leading to an increase in confidence and sense of support with the utilization of the suboxone protocol	-Pre and post tests given before and after the skills-based training to assess confidence and knowledge concepts -Follow up assessment questionnaire 1 months and 2 months after initiation to assess both confidence/knowledge/comfort, but also feasibility of utilization	-Questionnaires completed by staff before and after the skills-based training and again as a follow up to ensure understanding at one and two months later	-The comparison would be the initial pretest that is given prior to the skills-based training. There will be no separate comparison group as the CSU is a small unit	-Utilize a Likert scale to review the pre-posttests to compare mean scores pre/post of the skills-based training and one and two months afterwards
-Improved communication between CSU team members	-Offer an anonymous survey to staff to assess if they find the communication to be effective which would be embedded with the above pre/posttest	-The offered survey will be combined with the above questionnaire and via check-ins with staff	-Within the pretest there will be a qualitative question assessing staff's perception of communication between the team. This will be the comparison.	-Utilize a Likert scale to review the pre/posttests to compare mean scores pre/post of the skills-based training and one and two months afterwards
-Increase of patients initiated on suboxone	-Monitor how many patients can be enrolled into suboxone therapy on the CSI as currently is not an available treatment and assess how many are referred to the outpatient clinic for ongoing treatment	-Documentation of patients beginning suboxone and number of those being referred to the outpatient clinic	-Technically the comparison group would be the current situation at CSU, where no patients can start suboxone therapy from prescribers on the CSU. They are referred to other suboxone therapy clinics.	-Review the number of patients started on suboxone after starting the opiate withdrawal protocol monthly and reviewing change scores/percent improvement/variance

**Appendix O**  
Clinical Quality Checklist

<b>CLINICAL QUALITY IMPROVEMENT CHECKLIST</b>		
<b>Date:</b> 11/3/2019	<b>Project Leader:</b> Maeghan Dillon	
<b>Project Title:</b> Implementation of a Protocol to Improve the Intake Assessment and Treatment with Suboxone on a Crisis Unit		
<b>Institution where the project will be conducted:</b> Eliot Community Human Services CCS in Lynn, MA		
Instructions: Answer YES or NO to each of the following statements about QI projects.	<b>YES</b>	<b>NO</b>
The specific aim is to improve the process or deliver of care with established/ accepted practice standards, or to implement change according to mandates of the health facilities' Quality Improvement programs. There is no intention of using the data for research purposes.	<b>X</b>	
The project is <b>NOT</b> designed to answer a research question or test a hypothesis and is <b>NOT</b> intended to develop or contribute to generalizable knowledge.	<b>X</b>	
The project does <b>NOT</b> follow a research design (e.g. hypothesis testing or group comparison [randomization, control groups, prospective comparison groups, cross-sectional, case control]). The project does <b>NOT</b> follow a protocol that over-rides clinical decision-making.	<b>X</b>	
The project involves implementation of established and tested practice standards (evidence based practice) and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does <b>NOT</b> develop paradigms or untested methods or new untested standards.	<b>X</b>	
The project involves implementation or care practices and interventions that are consensus-based or evidence-based. The project does <b>NOT</b> seek to test an intervention that is beyond current science and experience.	<b>X</b>	
The project has been discussed with the QA/QI department where the project will be conducted and involves staff who are working at, or patients/clients/individuals who are seen at the facility where the project will be carried out.	<b>X</b>	
The project has <b>NO</b> funding from federal agencies or research-focused organizations, and is not receiving funding for implementation research.	<b>X</b>	
The clinical practice unit (hospital, clinic, division, or care group) agrees that this is a QI project that will be implemented to improve the process or delivery of care.	<b>X</b>	
The project leader/DNP student has discussed and reviewed the checklist with the project Course Faculty. The project leader/DNP student will <b>NOT</b> refer to the project as research in any written or oral presentations or publications.	<b>X</b>	
<b>ANSWER KEY:</b> If the answer to <b>ALL</b> of these questions is <b>YES</b> , the activity can be considered a Clinical Quality Improvement activity that does not meet the definition of human research. <b>UMB IRB review is not required. Keep a dated copy of the checklist in your files.</b> If the answer to <b>ANY</b> of these questions is <b>NO</b> , the project must be submitted to the IRB for review.		