



University of
Massachusetts
Amherst

A Quality Improvement Project for Co-occurring Disorders in Outpatient Behavioral Health

Item Type	Capstone Project
Authors	Sheehan, Erin
DOI	10.7275/12024924
Rights	Attribution-NonCommercial-NoDerivatives 3.0 Unported
Download date	2026-04-23 01:04:59
Item License	http://creativecommons.org/licenses/by-nc-nd/3.0/
Link to Item	https://hdl.handle.net/20.500.14394/37849

A Quality Improvement Project for Co-occurring Disorders in Outpatient Behavioral Health

Erin Sheehan

University of Massachusetts, Amherst

College of Nursing

DNP Project Chair: Gabrielle Abelard, DNP, PMHNP, PMHCNS-BC

DNP Project Mentor: Vinod Patwa, MD

Date of Submission: April 30, 2018

Table of Contents

Abstract4

Introduction5

 Background5

 Problem Statement/PICOT Statement6

Review of the Literature8

Evidence Based Practice Model/Theoretical Framework11

 Project Design and Methods15

 Project Setting and Sample17

Organizational/Gap Analysis..... 19

 Setting Facilitators and barriers21

 Goals, Objectives & Outcomes24

 Implementation Plan..... 26

Measurement Instruments30

Data Collection Procedures30

Statistical Analysis Plan.....31

Cost/Benefit Analysis33

Ethical Considerations/Protection of Human Subjects34

Results.....35

Discussion.....54

Conclusion66

References.....70

Appendix A (Timeline).....76

Appendix B (Pre-test and Post-test)77

Appendix C (AUDIT-C tool)79

Appendix D (Education One-Co-occurring disorders)80

Appendix E (Education Two-Stages of Change)84

Appendix F (Education Three-Rethinking Drinking)90

Appendix G (Education Four-Medications)97

Appendix H (Education Five-Referrals to Appropriate Care)101

Appendix I (Human Subjects Determination Form)104

Appendix J (Education Outline)109

Abstract

Purpose: Patients with mental health diagnoses often have co-occurring alcohol use disorders, which can exacerbate their psychiatric symptoms. A standardized assessment tool should be utilized for screening for alcohol use disorders in outpatient mental health programs so that interventions can be implemented when a co-occurring disorder is identified. The purpose of this project was to provide clinicians with education and to improve the process for screening patients with mental health disorders for problematic drinking behaviors to implement recommended interventions when appropriate to improve the overall quality of the patient's care and increase the clinician's knowledge and confidence in treating co-occurring disorders.

Methods: The project design is a quality improvement model in a psychiatric intensive outpatient program that included education for clinicians, implementation of a standardized assessment tool and application of evidenced-based interventions for co-occurring disorders. The clinicians took a pre-test before the initial education session began and a post-test at the end and they participated in interviews throughout the entire project. Each education session included more evidenced-based interventions that clinicians could implement to improve the overall quality of care for their patients. The pre-tests, post-tests and interview data were collected, organized and analyzed for learning needs throughout the project and for evaluation and effectiveness of the interventions at the end of the project. **Results:** Out of 36 clinicians at the facility, 34 took the pre-test and 31 clinicians took the post-test. Findings revealed an increase in the mean scores of each of the Likert-scale questions on the post-tests after the education sessions were conducted except in question one because of a technical error. Qualitative data from interviews and responses to open-ended questions on the surveys were also collected, organized and analyzed. This qualitative data also indicated an improvement in the clinician's knowledge and confidence in treating co-occurring disorders after the education sessions were provided. **Conclusion:** The participants of this project showed improvement in their knowledge and comfort level when assessing and treating patients with co-occurring disorders after participating in the education sessions. The short-term goals of the project were met, and clinicians also felt that the interventions were improving the overall quality of patient care. Future recommendations include adding a more comprehensive assessment for patients that scored positively on the AUDIT-C and continuing to provide education for clinicians on topics such as motivational interviewing, psychotropic medications, group psychotherapy and treatment and causes of delirium.

A Quality Improvement Project for Co-occurring Disorders in Outpatient Behavioral Health

Introduction

The United States has a high prevalence of alcohol use disorders according to the National Center for Health Statistics (Blackwell, Lucas & Clarke, 2014). Over 50% of adults in the United States report regular alcohol use despite the known risks associated with its consumption (Blackwell et al., 2014). Alcohol abuse leads to many health problems in addition to legal and social difficulties (Hideki, Naoki, Seiko, Osamu, Masato, Wataru, & Okawa, 2016). Substance use disorders are estimated to cost more than \$600 billion dollars annually in the United States alone (Substance Abuse and Mental Health Services Administration {SAMHSA}, 2017). There is a circular relationship between alcohol use and mental health disorders, meaning that those who have alcohol use disorders are more likely to have mental health disorders, and those with mental health disorders are more likely to have alcohol use disorders (SAMHSA, 2014). Problematic drinking is also known to exacerbate mental health issues and symptoms (Mäkelä, Raitasalo, & Wahlbeck, 2015). It is estimated that by the year 2020, mental health and substance use disorders will exceed all physical conditions as the top causes of disability around the world (SAMHSA, 2017). Identifying problematic drinking behaviors in patients with mental health disorders is necessary for clinicians to implement the recommended interventions that may improve their overall health and quality of life (SAMHSA, 2014).

Background

Many patients with mental health disorders also have alcohol use disorders and problematic drinking behaviors, so it is extremely important to identify these patients and offer interventions for the co-occurring disorders in one treatment setting (National Institute for Health and Clinical Excellence {NICE}, 2011). It also makes fiscal sense to treat co-occurring disorders

preventatively with every \$1 spent yielding a \$2 to \$10 savings in future healthcare and criminal justice costs (SAMHSA, 2017). A cross-sectional study conducted on 2724 adults, showed an improvement in life satisfaction and sense of mastery when binge drinking was reduced or eliminated noted with an increase on a linear curve (Mäkelä et al., 2015). Furthermore, the United States Preventative Services Task Force recommends that all adults be screened for problematic alcohol use and when alcohol misuse is identified that clinicians provide brief interventions to help their clients decrease the behaviors (United States Preventative Services Task Force {USPSTF}, 2013).

The Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) tool is recognized by multiple sources as reliable, easy to implement and fast to administer (NICE, 2011). The AUDIT-C tool can be used to determine if patients with mental health disorders also have problematic drinking behaviors or alcohol use disorders to provide treatments concurrently (Hideki et al., 2016). The AUDIT-C tool is available for use on the public domain (World Health Organization {WHO}, 2001). When a patient is identified as having an alcohol use disorder that co-occurs with a mental health diagnosis, there are brief interventions that can be implemented by clinicians to improve their outcomes for both of the co-occurring diagnoses and provide holistic care (National Guideline Clearinghouse {NGC}, 2012).

Problem Statement and PICOT Statement

The risk of worsening symptoms and destabilization among patients with co-occurring mental health diagnoses and alcohol use disorders is indicated by frequent readmissions to inpatient psychiatric units and results from unidentified alcohol use disorders and a lack of systemized assessment and treatment of these disorders in a pro-active, holistic manner in outpatient treatment for mental health. This problem statement was identified, and time was

spent categorizing the areas of interest for this particular project including the population, intervention, comparison group, outcome and timeframe to be evaluated. The PICOT question was utilized to identify the areas of interest and refine the scope of the project.

P- Population and problem. Clinicians in an intensive outpatient behavioral health program (IOP) were not utilizing a standardized assessment tool to identify patients with co-occurring alcohol use disorders and therefore they were not implementing the best practice interventions for these patients if the problem was not identified through other assessment methods

I- Intervention. A quality improvement project model that included an education program for clinicians on assessing and treating co-occurring disorders using evidence-based practices including implementing a screening assessment tool and other recommended interventions when an alcohol use disorder was identified. The education included but was not limited to: the AUDIT-C assessment, stages of change model, rethinking drinking education, brief interventions, offering patient referrals to the appropriate levels of care and medications to assist with alcohol cessation

C- Comparison Group. Clinicians that worked in the behavioral health departments took a pre-test before they participated in the education and training program and then they took a post-test after they participated in the education and training program and implemented the new assessments and interventions. These clinicians also participated in interviews and the data collected before the project started was compared with the data collected after the project was implemented

O- Outcome. Clinician scores on the pre-test and the post-test including their attitudes on co-occurring disorders, their level of knowledge on assessment and treatments of co-occurring

disorders, and their perception of value from the interventions implemented were collected in addition to qualitative data conducted from interviews with the clinicians for comparison and analysis before and after the interventions

T- Timeframe. The pre-test was conducted before the initial education and training session and the subsequent education, training and interventions were implemented over the next six months followed by the post-tests. Interviews were conducted before, during and after the project to assure continued quality improvement (See Appendix A for timeline).

Review of the Literature

A comprehensive literature review was conducted using the following databases: The National Guideline Clearinghouse, PsycINFO, Medline, CINAHL, and The Cochrane Library. The search terms used in combinations with the word “and” were: Substance Use, Alcohol Use Disorder, Mental Health, Co-occurring Disorders, Assessment, AUDIT-C, Problematic Drinking, Interventions, and Assessment Tools. This search returned hundreds of articles, but the review of the literature was limited to two systematic reviews with several randomized controlled trials (RCTs) included from The Cochrane Library, two national clinical guidelines, and two cross-sectional clinical research studies. Level one and level two evidence that was written within the last ten years was preferred and reviewed for content and validity. The articles that included well conducted studies and research were selected for the synthesis and the other articles with substandard studies or research were eliminated. A synthesis of the selected research and evidence provided a framework for the clinical project proposal.

Collaborative care interventions for co-occurring disorders can improve patient outcomes in several ways including: reducing inpatient psychiatric hospitalizations, preventing recidivism to jails and prisons for patients with both mental health disorders and alcohol use disorders and

improving the overall health and quality of life for patients with co-occurring disorders. In a Cochrane systematic review that included at least one randomized controlled trial with over 300 adult participants, data indicated that treating patients with a collaborative care approach for co-occurring disorders reduced hospital re-admissions and improved quality of life for the veterans included in the RCT. (Reilly, Planner, Gask, Hann, Knowles, Druss, & Lester, 2013). The randomized controlled trial included in this systematic review included 306 veterans with bipolar disorder and an intervention that employed collaborative care interventions in an experimental group versus standard care in the Veterans Administration Healthcare System for the control group (Reilly et al., 2013). This study included in the systematic review found that after two years the patients in the experimental group were hospitalized less often than those without any collaborative interventions. However, the limitations were that no candidates with schizophrenia were included in the study and the costs between the control group and experimental group did not differ much. The review states that larger and more well-designed studies should be conducted to gather additional information before designing any policy or clinical decisions (Reilly et al., 2013).

Another Cochrane systematic review on incarcerated patients with co-occurring mental health and substance use disorders included eight studies published between 1999 and 2014 with over 2,000 participants (Perry, Neilson, Martyn, Glanville, Woodhouse, Godfrey, & Hewitt, 2015). Two of the studies included in the review found a reduction in participant recidivism to jails and prisons when collaborative interventions were implemented such as offering therapeutic communities and providing discharge planning (Perry et al., 2015). It is important to treat at risk patients with co-occurring disorders holistically in their mental health settings to prevent them from getting incarcerated. It is estimated that over half of the incarcerated population in the

United States has chronic or acute mental health symptoms and about 25% of these persons have severe mental illnesses (Honneger, 2015). Treating patients with co-occurring disorders in outpatient mental health settings is more cost-effective and humane than incarceration (Perry et al., 2015).

A Finnish cross-sectional study questioned 2,725 participants about their drinking habits and their mental health using the AUDIT-C assessment tool and the 12-item General Health Questionnaire (GHQ-12) (Mäkelä et al., 2015). Logistic regression statistical methods were used with odds ratios presented for the results with 95% statistical significance (Mäkelä et al., 2015). The study's conclusion was that problematic drinking leads to an exacerbation of mental health symptoms and conversely a reduction of alcohol use leads to improved mental health (Mäkelä et al., 2015). This study also endorses the AUDIT-C tool as a valid measuring instrument to test a patient's drinking behaviors (See Appendix C for the AUDIT-C assessment tool).

Another cross-sectional study involving 334 outpatients showed that the AUDIT-C assessment tool was a more reliable measure to determine harmful drinking behaviors than lab values (Hideki et al., 2016). Although a weakness of cross-sectional studies is self-reported data, in these two studies the self-reported data was a good indicator of the drinking behaviors. In the Hidecki et al. study, the AUDIT-C assessment tool proved to be a more reliable indicator than lab values such as aspartate transaminase (AST)/alanine transaminase (ALT) ratio and mean corpuscular volume (MCV) (2016). These lab tests are also more costly and invasive to run on patients than the utilizing the AUDIT-C assessment tool as well (Hidecki et al., 2016).

Two peer reviewed clinical guidelines were evaluated using The Appraisal of Guidelines for Research and Evaluation (AGREE-2) tool and they both endorse the use of the AUDIT-C tool for assessment of problematic drinking or alcohol use disorders. The clinical guideline from

the National Institute for Health and Clinical Excellence recommends performing alcohol assessments using the AUDIT-C tool and offering alcohol treatment for patients with mental health comorbidities (NICE, 2011). The National Guideline Clearinghouse also lists the AUDIT-C tool in its major recommendations category, stating that the assessment takes about two minutes for a clinician to administer and has sensitivity scores ranging from 0.74% and 0.84% and specificity around 0.90% in two diverse groups detecting alcohol misuse (NGC, 2012).

Both of the guidelines that were evaluated also recommended interventions to implement in patients where problematic drinking was identified which include but are not limited to: further assessments on the patient's drinking behaviors, monitoring the patient for detoxification as needed, evaluating the patient for medications and providing interventions including education and referrals. If problematic drinking is identified by the AUDIT-C assessment tool score, this would then alert the clinician to do a more thorough assessment for an alcohol-use disorder and implement the recommended interventions for harmful drinking behaviors (NICE, 2011). The guidelines go on to give more detailed recommendations for assessment and interventions for patients with alcohol use disorders. The interventions vary depending on the stages of change model and depending on the severity of the patient's alcohol use disorder. Different interventions are appropriate for mild, moderate, and severe alcohol use disorders (NICE, 2011). In order to determine the appropriate interventions for a patient's problematic drinking behaviors, it is necessary to first identify that there is a problem and the AUDIT-C assessment tool is the first step for clinicians in this process.

Evidence-Based Practice: Verification of Chosen Option

The quality improvement project included the implementation of the AUDIT-C assessment tool for the clinicians to assess the patients and determine if they met the criteria for

problematic drinking. The education for the clinicians included recommendations from the peer-reviewed clinical guidelines that include but are not limited to: the stages of change model, the rethinking drinking education, education on FDA approved medications for alcohol cessation, evidence-based brief interventions and referrals to the appropriate levels of care.

Theoretical Framework and Evidence Based Practice Model

Lewin's Change Theory was utilized as the theoretical framework in this quality improvement project for educating the clinicians on the best practices associated with assessing and implementing interventions for co-occurring disorders in an intensive outpatient mental health setting. Lewin's Change Theory is often used in healthcare organizations because it gives the facilitators a systematic process to follow to look at human behavior and anticipate the barriers of the endeavor and to recognize the individuals that could assist in driving the change (Sutherland, 2013). This model also assumes that changes will be met with some resistance and therefore allows the change agents to prepare for this as a barrier (Saylor, 2012). The facilitators in this project were able to recognize possible barriers before implementing the education and they were also able to assess the strengths and weaknesses of the organization and address them by getting the right people in place to implement the changes and to eliminate the barriers and the perceptions of the barriers with additional communication, motivation, education and redirection (Sutherland, 2013).



Figure 1. Lewin's Change Theory (Saylor, 2012).

There are three major steps in Lewin's Change Theory. The first stage is called unfreezing, and this is where the motivation for change in the clinicians began (Moran, Burson, & Conrad, 2014). Discussion and education about the proposed changes and the benefits of those changes were introduced to the clinicians in the unfreezing stage. Interviews were conducted with clinicians in September and October of 2017. A few of the clinicians that were involved recognized a need for the changes once they were given information on best practices and they wanted to participate in the project (Boyd, Luetje, & Eckert, 1992). These individuals were identified and recognized as stakeholders in the project. The medical director, the IOP supervisor, the lead tech and a few nurses and social workers were highly engaged and acted as stakeholders. These participants were empowered to drive change with open communication, involvement and transparency throughout the change process (Sutherland, 2013). Discussion and brief education with the clinicians on the need to treat patients holistically for co-occurring disorders was the first step in unfreezing the organization for this project. When the clinicians learned more about the recommendations and benefits to patients, some of them became motivated to begin using these new best practices. The clinicians who were motivated were encouraged to assist with the planning and implementation of the education and it increased their engagement. Empowering the motivated clinicians and including them as stakeholders reduced

resistance to change in the other staff members and gave the other clinicians more incentive and encouragement for implementing the changes (Sutherland, 2013).

The second stage of Lewin's change theory was where the actual changes were made, and the clinicians moved to the next level in the process (Current Nursing, 2011). The second stage is called the moving stage, and this was where the final stages of planning and implementation of the project happened (Sutherland, 2013). In this project, the moving stage included the clinicians taking the pre-test, attending the education and training sessions, implementing the AUDIT-C assessment tool and applying the evidence-based interventions in clinical practice. The moving stage has the potential to be a confusing time for participants if there is not a well-defined implementation plan, clear communication or if there are clinicians that are opposed to the changes in an outspoken manner (Boyd et al., 1992). It was important to have a key stakeholder that was an active leader during the moving stage to continually ensure open communication, support and encouragement for the project (Sutherland, 2013). In this project, there were two key stakeholders that included the medical director and the IOP supervisor which created a positive work environment and helped the DNP student to set and meet appropriate goals successfully.

Regularly meeting with the clinicians for feedback and discussing the positive benefits of the changes during the moving stage was important to keep the momentum building and also to prevent frustration or reversion of change with the participants (Sutherland, 2013). Interviews and education were offered on an ongoing basis throughout the moving stage. Several clinicians were willing to participate in the delivery of the education, the implementation of the assessments and in the on-going training of the recommended interventions. It was important to continually monitor ongoing training needs, issues with the workflows and the culture and

attitudes of clinicians involved during the moving stage which was done with recurrent staff meetings and in interviews (Sutherland, 2013). Maintaining the engagement of the key stakeholders allowed the changes to move through this stage successfully and consistently (Sutherland, 2013). Because the moving stage went well, and the clinicians did not resist the changes, the assessments and interventions that were implemented are more likely to remain in place in regular clinical practice after the project is done (Sutherland, 2013).

The third and final stage of Lewin's change theory is called the refreezing phase, and this was where the changes were made permanent (Moran et al., 2014). There was continued support for the changes and all of the licensed clinicians are now proficient at performing the assessments and continue to improve implementing the recommended interventions (Sutherland, 2013). The changes and goals were consistent and attainable during the refreezing stage, and the clinicians seemed to appreciate the changes and reported an increase in satisfaction in their practice during interviews (Boyd et al., 1992). Once the changes were completely implemented and operational, the entire process was evaluated, and the information was disseminated to the clinicians (Sutherland, 2013). The post-test and more interviews with clinicians were conducted during the refreezing stage for evaluation of the project. Lewin's change theory was used to facilitate changes in the clinician's practices and to transform the culture of the organization. The evidence-based practice model that was utilized to implement the education, assessments and interventions was the Plan-Do-Study-Act Model.

Project Design and Methods

The project design was a quality improvement model that included education for clinicians, implementation of a standardized assessment tool and application of evidence-based interventions for patients with co-occurring disorders in an outpatient behavioral health program.

The clinicians took a pre-test before the initial education session began and a post-test following the initiation of the assessments and after multiple subsequent education sessions (See Appendix B for the pre and post-test). These clinicians also participated in interviews throughout the entire project. The goal of the project was to improve the process for screening patients with mental health disorders for problematic drinking behaviors to improve the overall quality of their care and improve the clinician's knowledge and comfort level with treating patients with co-occurring disorders.

Education and training was developed for the project participants that were referred to as clinicians for the duration of the project. The participants included: psychiatrists, nurses, social workers and behavioral health technicians. The education was developed based on evidence-based recommendations from clinical guidelines for assessment and treatment of co-occurring disorders. Nurses and social workers began implementing the AUDIT-C assessment tool for all new patients that were admitted to the IOP after they participated in the first two education and training sessions. After this step, further education sessions were provided on co-occurring disorders and the recommended interventions that should be offered to patients (See Appendix J for education outline). The clinicians then began to apply the recommendations when appropriate in practice for patients that were identified with co-occurring alcohol use disorders.

Short-term goals of the project were to implement a standardized assessment tool to screen all patients for problematic drinking behaviors and also to improve the clinician's knowledge of the recommendations for patients with co-occurring disorders to treat them holistically. When a patient with a mental health disorder was assessed and a co-occurring alcohol use disorder was identified, the clinicians were given a variety of evidence-based treatment interventions to offer the patients to improve their outcomes and provide patient-

centered treatment plans. The scores from the pre-tests and post-tests were collected and then compared and analyzed to determine if the clinicians retained some of the education provided and also to compare their perception of their abilities and comfort levels when assessing and implementing interventions for patients with co-occurring disorders before and after the project. Descriptive statistics were used to analyze this quantitative data. Interviews with clinicians were also done throughout the span of the project to get more information, provide education, clarify points of confusion and to modify education and interventions to continue to improve the quality of care in the program. The qualitative data from the interviews and open-ended questions were also organized and analyzed for themes to focus the education around as the project continued.

Project Setting and Sample

The setting for the project was in an intensive outpatient program at a regional medical center in Florida. Psychiatric patients come to this program three times each week for at least three hours each time they come to participate in individual therapy, group therapy and also to continue their psychiatric medications. This program is often a step-down for patients that are being discharged from the acute inpatient psychiatric unit in the same hospital. However, there are some patients in the program that are referred and admitted to the IOP when they may just need a higher level of care than a traditional mental health outpatient appointment. The patients that are admitted to the program must have a primary mental health diagnosis, but many of these patients also happen to have co-occurring alcohol use and substance use disorders. The medical director and some of the clinicians that were interviewed had concerns prior to the start of the project that the substance use disorders were not always assessed or detected in their patients and that this was an area that could be improved. Additionally, the medical director felt that this area was under assessed and treated because there was a lack of a standardized assessment in place

and a knowledge-deficit related to the available treatment options in the clinicians. Because the patients were not always assessed for alcohol use disorders, they might not discuss these issues with clinicians and therefore treatment options for these disorders were not regularly offered in practice prior to the project interventions. The clinicians reported that many of the patients in the program did struggle with substance use and they felt that this was a treatment challenge and resulted in a worsening of their mental health symptoms. The clinicians felt that alcohol misuse was a common occurrence not only in the intensive outpatient program, but in Key West and the Florida Keys in general.

Dr. Mark Whiteside, the medical director for the Florida Department of Public Health in Monroe County states that Key West is unique because it is a four-mile island with limited resources for patients with co-occurring disorders (2015). The geographic location of the project site places it over one hundred miles from the continental United States, closer to Cuba than to Miami. The island is known mostly as a tourist destination with good weather, a laid-back attitude and a culture of excessive drinking. It should be noted that a study included in *The American Journal of Public Health* indicated that the permanent residents of Monroe County drink more than the visitors (Whiteside, 2015). In fact, twenty five percent of the local residents in Monroe County participate in frequent binge drinking, which is the highest rate out of 67 counties in Florida (Whiteside, 2015). The Florida Keys Health Department's 2013 Community Health Almanac also placed the local residents in the community over the state averages in most of the other drinking categories, which is part of the reason that Monroe County also has the most expensive marketplace health insurance rates in all of Florida, with few plans offered for less than \$400/month (Whiteside, 2015). A common affliction known in Monroe County is known as the "keys disease." This is the terminology for individuals that relocated to the area

and drink heavily and they typically work jobs where they can drink all the time, such as boating or bartending. These individuals often have grave medical and social consequences because of their excessive drinking (Whiteside, 2015). This information about excessive drinking in the community reflects the reports that the medical director and clinicians provided at the project site about their perception of their patient population's problematic drinking behaviors.

Organizational “Gap” Analysis of Project Site

The services offered at the intensive outpatient program included: group therapy, individual therapy, family therapy, educational groups, nursing assessments, psychosocial assessments, case management and psychiatry appointments for medication management. The clinical staff was comprised of a diverse group of males and females from ages 18-74. There are several clinicians that speak Spanish and Creole and individuals that speak Polish, Italian, Portuguese, Japanese, and Hindi. Insurances accepted include Medicare, Medicaid, private insurance and self-pay options based on a sliding-scale. There were two psychiatrists, eight social workers, seventeen registered nurses and nine patient care technicians that were employed in the behavioral health units at the medical center at the beginning of this project. All of the staff members were included as participants and referred to as clinicians for the duration of the project. The patients served in the IOP included males, females and transgender individuals. The clients were all over the age of 18 and varied widely in ages and backgrounds and were all residents of the Florida Keys in Monroe County.

According to NICE (2011) best practices for screening include performing the AUDIT-C screening assessments for all psychiatric patient's alcohol use to identify patients that have problematic drinking behaviors and alcohol use disorders. Previously there was not a standardized tool to assess the patient's alcohol use at the outpatient project site. The majority of

the information known about patient's alcohol use was retrieved during the psychosocial assessment or self-reported by patients in group therapy. Another best practice that was implemented was utilizing brief interventions for alcohol use disorders and problematic drinking behaviors when applicable including offering medications for alcohol cessation or providing referrals to the appropriate levels of care and treatment (National Alcohol Strategy Working Group {NASWG}, 2007). The stages of change model was recommended, and clinicians were educated on this model to determine the appropriate interventions for patients based on their stage. The rethinking drinking tools are educational tools that were recommended for patients with alcohol use disorders or problematic drinking behaviors (NASWG, 2007). There were also three different medications that may be recommended or prescribed for patients that were identified with alcohol use disorders when appropriate and the clinicians were educated on those as well (NICE, 2011). Because there was no standardized assessment tool in use for identifying patients with alcohol use disorders at the outpatient project site before the project, no interventions were instituted unless the patient requested treatment or unless there was a problematic behavior as a result of the patient's drinking. The clinicians initially felt when interviewed that many of the patients minimized their alcohol use and were not interested in reducing their drinking. The staff had not been trained on the stages of change model, the rethinking drinking tools or the various alcohol cessation medications that were available. Interventions to address drinking were instituted on an as needed basis based on clinical judgment or a self-disclosed patient report prior to the project implementation.

It is recommended in the literature that clinicians provide referrals to specialized treatment centers for alcohol use disorders when they are needed. It is also recommended that referrals are made to healthcare providers for health conditions due to drinking, long term

substance abuse treatment, detoxification in an acute unit and for individual counseling depending on the patient's needs (NASWG, 2007). Clinicians requested a simple sheet on referral locations with phone numbers and websites which was provided. The clinicians were also educated on using the stages of change model, so they could provide appropriate referrals and education for the patient's individualized needs. Assessing the severity of a patient's alcohol use disorder also began to guide the clinician's recommendations and referrals based on mild, moderate and severe disorders. Previously referrals and recommendations for alcohol use disorders were made only on an as needed basis by clinical judgment or patient request. Many of the patients were not assessed for alcohol use disorders at all by clinicians so certain needs were not discussed or treated. Implementing the AUDIT-C assessments was the first step after providing the initial education sessions and was followed by adding systematic interventions based upon the clinician's learning needs.

Setting Facilitators and Barriers

The facilitator of the education was the Doctorate of Nursing Practice (DNP) student and various clinicians. The clinicians included social workers, the medical director and registered nurses that were educated and trained on implementing the assessments and interventions for the patients. The stakeholders were several motivated staff members that were eager to implement best practices including the medical director, the social work supervisor, the IOP supervisor, five nurses and two behavioral health technicians. The medical director and IOP supervisor were the key stakeholders, which worked wonderfully in achieving compliance. There were some anticipated barriers discussed prior to implementing the best practices and interventions and they included:

- Staff resistance to adding another assessment

- Time that it takes to perform the assessments
- Staff dislikes and resists what they perceive are “cookie-cutter” treatment approaches
- Time and cost to provide education to staff
- Many patients are not ready to face consequences of their problematic drinking and must be in the correct stage of change to accept referrals or recommendations
- Referring patients out at times means losing a patient, at least temporarily to another provider/facility
- Hurricane Irma hit the Florida Keys in September of 2017 and the intensive outpatient program was closed for over a month and many of the patients were displaced and did not return to the area.
- Some staff members were unable to attend the scheduled education sessions because of working on the inpatient units or on a scheduled day off or vacation.

Some of the perceived barriers did not seem to have an impact on the implementation of the project. The medical center absorbed the cost of the project which was minimal, and the administration was happy to have the education provided and the interventions implemented as part of their quality improvement effort. The medical director and the IOP supervisor were not concerned about the program losing patients to different levels of care if that was the appropriate place for the patient. Although some clinicians resisted the new assessments initially, they were amenable once they realized how quick and easy it was. The clinicians requested that the assessment be moved in the chart order to a more convenient location and that was easily done with help from the IT department. It was true that some of the patients with co-occurring disorders were not initially receptive to the idea of sobriety, however it began a conversation

with the patients that may not have happened otherwise, and it even became a more popular group topic in some of the group therapy sessions.

One of the barriers that was not planned for was the category five hurricane that hit the Florida Keys on September 10, 2017. The hurricane changed the timeline of the project and the DNP student took the suggestion of the medical director to break up the education sessions into smaller segments to spread out over several months at staff meetings to attract more participants. The IOP was closed for over a month after hurricane Irma because the building suffered water damage and was under construction. Many of the IOP patients were displaced and one of the main group homes in the Florida Keys closed down because of the hurricane. Before the hurricane, the IOP was open six days each week and was running six groups each day to accommodate about 60 patients in both the mornings and the afternoons. When they were finally able to reopen after the hurricane, they only restarted with three groups on three days (referred to as one IOP program “track”) because many of the patients did not return right away. Although this was unexpected and unfortunate, it did not completely derail the project. The IOP employees were still coming into work every day once the inpatient units of the hospital reopened and they were helping in various areas of the hospital. They were also calling their IOP patients to touch base, calling in prescriptions and doing therapy and case management over the phone. There was a lot more down time during this period of time and the DNP student was able to spend more time interviewing staff and providing education than was originally planned. There also seemed to be a feeling of comradery and teamwork after the hurricane that was important to the DNP student and improved rapport with the clinicians.

Changing the education sessions to be held at the monthly staff meetings did cause a barrier that was not planned for originally. Although this change allowed more clinicians to

participate in the project, some of the participants could not attend all of the scheduled education sessions because they were either working on the inpatient units or had a scheduled day off on the day that the education was offered. The DNP student tried to overcome this obstacle by doing some one-to-one education with the clinicians that missed the staff meetings and in interviews. The alternative meetings with the clinicians that missed the education sessions did provide some benefits however. These one-to-one sessions gave the DNP student an opportunity to clarify questions, ask for feedback and spend more time with the clinicians which was positive. All of the project education materials were made available in paper hard-copies and on the shared computer drive for the department. The DNP student also sent out some emails, posted memos and left hard copies of the education in staff mailboxes that missed the staff meetings. The DNP student was also asked to make a “story board” on the quality improvement initiative for hospital’s Joint Commission survey, which was also used for the hospital’s skills fair and a community health fair.

Goals, Objectives & Outcomes

The purpose of the quality improvement project was to improve the process for systematically screening all patients with mental health disorders for problematic drinking behaviors to improve the overall quality of their care. In addition to this, another project goal was to provide extensive education and training to clinicians on managing and treating co-occurring disorders, so that they could implement best practices and improve their knowledge, skills and confidence in treating patients holistically. A long-term goal that may come from implementing a standardized assessment tool and offering these clinicians education is that they will be able to identify more patients in the intensive outpatient setting that are problematic drinkers or who meet the criteria for alcohol use disorders to provide them with recommended treatments to

reduce their readmissions to acute inpatient psychiatric units, prevent them from getting arrested and improve their overall health and quality of life.

This quality improvement project was related to The Institute of Medicine's dimension of quality called person-centered care and is an important topic (Beattie, Shepherd, & Howieson, 2013). Assessing each patient for their co-occurring disorders provides them with an integrated treatment plan and customized interventions to improve their care and health outcomes (Beattie et al., 2013). Patients expect that their care plans are tailored to meet their changing needs and want integrated quality services when possible (Beattie et al., 2013). It is important to encompass co-occurring alcohol use disorders while providing mental health services because the two are intrinsically linked together. The education for the clinicians was presented in several sections and the implementation of the assessment and interventions was spaced out over several months.

The AUDIT-C was implemented to determine if the patients with mental health disorders also had problematic drinking behaviors or alcohol use disorders to provide holistic treatments concurrently (Hideki et al., 2016). When a patient was identified as having a co-occurring alcohol use disorder, interventions started to be implemented according to the best practice guidelines that the clinicians were educated on. Clinicians learned how to conduct the assessments and implement the interventions with the patients according to the stages of change model. Providing the integrated care in the intensive outpatient program was expected to help to prevent readmissions to the inpatient unit, prevent patients from incurring legal problems, improve the overall quality of patient care, reduce costs, and in turn improve patient and clinician satisfaction through person-centered care and improved patient outcomes. The only objective data that was collected for analysis was the survey scores from the Likert-scale questions on the pre and post-tests. The comparison of these scores showed an increase in

clinician knowledge and an improvement in their comfort levels with implementing the assessments and interventions after the education sessions were conducted.

In summary three short-term goals of the project were:

- To provide education for clinicians that improved their knowledge of treatment options for patients with co-occurring disorders;
- Implementing the use of the AUDIT-C assessment tool in practice;
- And to follow-up with the clinicians during and after the education sessions to determine if the education was helpful and if they were consistently using the AUDIT-C tool to ensure ongoing quality improvement.

All of the short-term goals of the project were met. Education was provided in several ways over six months. The AUDIT-C assessment tool was implemented and was being used on every new patient upon admission to the IOP. The Likert-scale post-test mean scores increased in all areas of improved knowledge and perception of the usefulness of the interventions. In subjective interviews, most clinicians felt that there was an improvement in the quality of patient care as a result of the education.

Implementation Plan

This project design was considered a quality improvement model and the implementation plan was approached using a quality improvement tool that approaches performance improvement in a structured and consistent way (Assi, 2012). The Plan-Do-Study-Act Model was utilized during the stages of the project to allow the DNP student to break down the interventions that were implemented to evaluate, change, improve and then re-evaluate the project (Agency for Healthcare Research and Quality {AHRQ}, 2015).

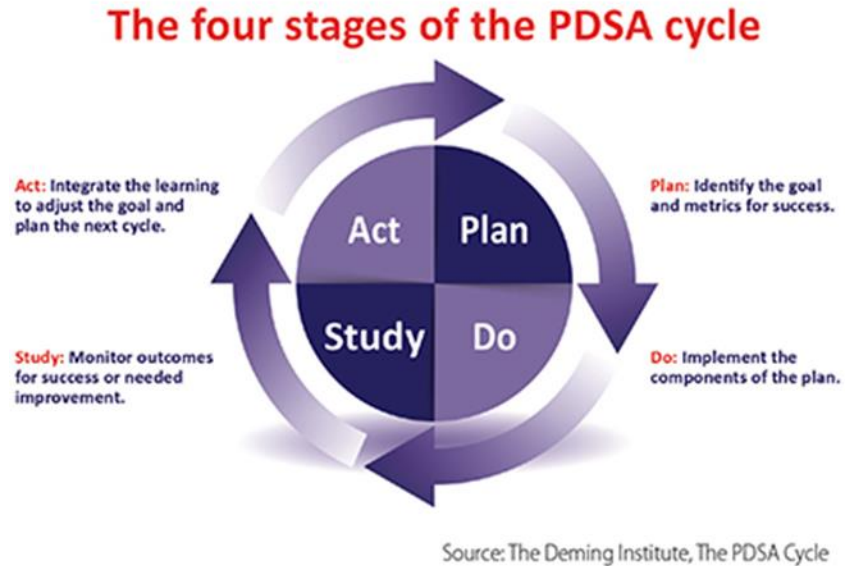


Figure 2. PDSA cycle (Assi, 2018).

Planning Stage. The “Plan” for the project began with a discussion with the medical director and the program supervisor of the IOP before deciding on a specific project focus and they discussed the number of readmissions to the inpatient behavioral health units and the difficulty with frequent drug and alcohol relapse in their patients. This was followed with a review of the literature on integrating care for co-occurring disorders in behavioral health and identifying evidence-based practices to implement in order to improve the quality of care provided (AHRQ, 2015). The DNP student met with various administrative personnel and attended organizational meetings to develop a greater understanding of the organization’s needs. Clinicians were interviewed, and relationships were fostered to promote a good working environment. The next step in the planning process was to gather and organize the data from the literature review to develop the initial education and training plan. The pre-test was given before the initial education was provided. Before the project began it was important to identify team members that were motivated for change and that would act as stakeholders for the project including a select number of nurses and social workers.

Do Stage. The “Do” stage or section of the project included compiling the information from the pre-tests and interviews and utilizing this information to customize education based on the learning needs that were found (AIMS Center, 2016). The do section also included the implementation of the AUDIT-C assessment tool which needed to be installed into the computer system with the hospital’s IT department. The assessment also needed to be moved to a different section after the implementation to make it more user-friendly for the clinicians. This information was obtained during on-going clinician interviews. The different education sessions that were provided for the clinicians were based on the learning needs found through the pre-tests and interviews, but a challenge was found when some of the clinicians were unable to attend the education sessions because they were working on the inpatient units or they were on a scheduled vacation. The DNP student had to regroup and decide how to proceed. The plan was always to conduct interviews with clinicians, so these interviews also became shorter one-to-one education sessions with most of the clinicians that missed the staff meetings. There were also several other mediums for disseminating the information, such as posting it on a shared drive for the department, emailing, posting memos, making hard copies of the education for the units, and finally making a “story board” that was placed in the staff breakroom and will also be used for the hospital’s Joint Commission survey, employee skills fairs and a community health fair. The clinicians began utilizing the new interventions as they were educated on them and the stakeholders continued to find additional learning needs that were added throughout the duration of the project.

Study Stage. The “Study” portion of the project included sending out the post-tests and compiling the scores and analyzing the data. It also included continuing interviews with clinicians to discuss their feedback, needs and perceptions of the project. The study portion also

encompassed chart audits by the supervisors to make sure that the assessment was regularly being used at admission. When the IOP supervisor reviewed the charts, the AUDIT-C was used on new admissions in February and March 100% of the time on all of the charts that were audited. Another part of the study portion was taking all of the information that was gathered and organizing it to present in a meaningful way to the clinicians and administration. It was important to present the improvements but also to identify further interventions that they might consider implementing and any operational issues that might need to be addressed to continue to improve quality and care.

Act Stage. The “Act” portion of the project included a lot of changing gears. It was necessary to add education and implement and modify interventions based on the new information gathered throughout the project. The barriers that were encountered needed to be worked through in order to move forward and still meet the project goals. This was possible because of the high level of involvement with the medical director and IOP program supervisor. These two key stakeholders were able to guide the DNP student through some alternatives to the original plans. There were a few barriers along the way and the project was modified to address and fix them as discussed above in the facilitators and barriers section. After the project evaluation was completed the DNP student made recommendations to the supervisors and clinicians for future planning. Some suggestions were adding an additional assessment for patients that score significantly on the AUDIT-C, additional training on motivational interviewing, reinstating the 12 step meetings in the hospital building after construction subsides and considering the possibility of opening a dual diagnosis IOP track. This stage also included sharing the findings of the interviews and survey results with the involved clinicians at the April staff meeting.

Measurement Instruments and Data Collection Procedures

The clinicians that participated in the initial education and training were given a pre-test before the first education and training session was conducted. The initial education and training was conducted at a staff meeting led by the DNP student with the assistance of the IOP program supervisor. Once the clinicians participated in the second training session they started to implement the AUDIT-C assessments during all new admissions to the program and for existing patients. The subsequent education and training sessions occurred at the next several staff meetings and included the recommended interventions that were to be rolled out for patients when applicable after the training. The clinicians took the post-tests after the fourth education session. The DNP student conducted interviews with clinicians before, during and after the education and training sessions and throughout the entire span of the project. Descriptive statistics were used to analyze the quantitative data from the Likert-scale questions. The qualitative data gathered from open-ended questions and interviews was also organized and analyzed for trends to continue to improve the education and interventions that were offered.

All of the new patients that were admitted to the outpatient program were assessed using the AUDIT-C upon admission to the program and some of the existing patients were assessed with the AUDIT-C during their next individual therapy session. If problematic drinking or an alcohol use disorder was identified, the clinician then assessed the patient with the stages of change model and assessed the severity of the patient's alcohol use disorder. Depending on the findings, interventions were implemented to treat the patients that included: discussion about medications, therapy, education or a referral to an appropriate level of care. The cases were discussed with this writer in interviews as a DNP student interning in the program. Patient cases were discussed following HIPAA guidelines on confidentiality in order to evaluate the quality of

the interventions and outcomes. The IOP program supervisor continued to educate the clinicians on the interventions that were to be implemented.

The clinicians also participated in interviews with the DNP student after implementing the assessments and some of the interventions. Feedback from the clinicians was gathered in order to evaluate the education and improve the process. The Centers for Medicare & Medicaid Services (CMS) contracts with other healthcare agencies to research, develop, and implement quality measures (2015). These measures were discussed using the Plan-Do-Study-Act Model at the psychiatric committee meeting and quality improvement meeting and evaluated for reliability and validity. After four education and training sessions, the clinicians took their post-tests and the scores were added, organized and analyzed. The mean scores of the post-tests were compared to the mean scores of the pre-tests and evaluated to monitor if their attitudes and self-assessed level of knowledge increased. This information was reviewed in addition to the information gathered from interviews and open-ended questions and the education and interventions were modified as needed to continue to improve the quality and effectiveness of the project.

Statistical Analysis Plan

The data that was collected to evaluate the project included scores from the pre-tests, scores from the post-tests, answers to open-ended questions, information gathered from clinician interviews and data collected from chart checks assuring compliance with the assessments. The scores from the pre-tests and post-tests included eight Likert-scale questions and two open-ended questions. The pre-tests were given, and the scores were collected before the initial education session and then the scores from the post-tests were collected after the fourth education session and also after the successful implementation of the assessments in practice. Qualitative data was collected from the open-ended questions and clinician interviews before, during and after the

education sessions. This information was kept safely in a notebook that was secured by the DNP student and maintained on spreadsheets that were password protected.

The total scores of the Likert-scale questions were calculated and organized on a spreadsheet. The mean, median, mode and standard deviation of the question's answers on the pre-tests and the post-tests were calculated and organized. The mean of each of the pre-test questions was compared to the mean of the same post-test question. The mean of each question was also compared to the mean of the other seven questions. All of the other quantitative data was compared and evaluated to each question and also comparing the pre-test and post-test numbers for each question. This data was analyzed, and themes and trends were drawn from the information gathered and discussed below in the results section. The answers from the open-ended questions were also organized on a spreadsheet and similar answers were grouped and tallied. These answers were analyzed by organizing the clinician workgroups to evaluate trends. The workgroups were divided into three categories: nurses, behavioral health technicians and social workers. The common themes were also tallied and compared. The answers to all of the questions were also compared to the information that was gathered by the DNP student in the clinician interviews. This qualitative descriptive data was collected, organized, and analyzed for evaluation and interpretation. The IOP charts were also audited for compliance in completing the AUDIT-C assessments on new admissions by the IOP program supervisor. The number of charts audited, and the number of charts audited with the AUDIT-C completed was provided to the DNP student for review. This information was compiled in a spreadsheet for comparison. All of the findings from the statistical analysis plan were discussed with key stakeholders for continued refinement and quality improvement.

Cost-Benefit Analysis

There were no capital expenses for this quality improvement project. The costs included were associated with education materials, the human cost of training clinicians to perform the assessments and interventions and the additional time that clinicians were spending with patients to complete the assessments once they were implemented. The costs for supplies were minimal and are outlined below.

- Clinician training. This cost was funded by the medical center because the initiative was treated as monthly staff education and quality improvement
- Cost of ordering a PDF of the AUDIT-C tool (\$50.00) and adding the assessment into the Forms on Demand System
- Cost of printing extra assessments for each patient. This cost was also funded by the medical center as part of their medical records expenses
- Cost of paying clinicians to administer the AUDIT-C and implement brief interventions. This cost was minimal and was expected to ultimately provide a benefit because the interventions follow best practices. Clinicians were already assessing patients without a standardized tool before the project and at times it took longer for them to research appropriate interventions
- Education materials. The paper cost for handouts was absorbed by the medical center as part of their staff meeting education and paper cost
- Poster board for “Story Board”. This was provided by the education director for The Joint Commission survey preparedness.

Currently psychiatric hospital readmissions are excluded from Medicare penalties; however, readmissions are costly and do not indicate good patient care or proper discharge

planning (Rau, 2016). Frequent readmissions to inpatient psychiatric units can also cause patients and staff to feel demoralized about the care they are receiving and giving (Agency for Healthcare Research and Quality {AHRQ}, 2014). Close to 50 % of patients with ongoing psychiatric diagnoses and hospitalizations are readmitted to acute inpatient units within one year of discharge (AHRQ, 2014). Successful outpatient treatment programs for patients with mental health disorders reduces the readmission rate to inpatient units especially when collaborative care approaches are utilized (AHRQ, 2014). Data collected in a randomized controlled trial of 306 Veterans found that treating co-occurring disorders in collaboration with mental health disorders decreased readmissions to hospitals in patients with severe mental illnesses (Reilly et al., 2013). The average cost for a psychiatric inpatient stay in Florida in 2013 was approximately \$2000.00/day and those costs continue to rise annually (Rappleye, 2015). Medicare may also start to financially penalize psychiatric hospitals for rapid readmissions in the future, so this is an important outcome to target in quality improvement. Implementing collaborative care interventions for patients with co-occurring disorders on an outpatient basis will prevent patients with mental health disorders from getting readmitted to inpatient settings and therefore will save money and provide a better quality of care for these patients.

Ethical Considerations and Human Subjects Protection

A Human Subjects Determination form was submitted to The University of Massachusetts Intuitional Review Board on the quality improvement project. The study design involved education, implementing a standardized assessment tool and initiating evidence-based recommendations for interventions when appropriate. The data that was collected was limited to clinician scores on Likert-scale questions on pre and post-tests and qualitative data from open-ended questions and interviews with clinicians. Chart audits were conducted by the IOP program

supervisor for completion of the AUDIT-C assessments on new patient admissions and no identifying patient data was collected or disseminated for this quality project. Discussion about the effectiveness of the interventions with the DNP student followed confidentiality and HIPAA guidelines according to the organization's policies. The project was approved by the Review Board (See Appendix I for approval).

Results

The DNP project used a quality improvement model design and included implementing a standardized assessment and providing an education component for clinicians in an intensive outpatient program at a regional medical center in Florida. The participants included all of the staff in the behavioral health units that attended the monthly staff meetings including doctors, nurses, social workers and behavioral health technicians. All participants in the project were referred to as clinicians for the entirety of the project. Out of 36 clinicians at the facility, 34 took the pre-test in November 2017. A total of 31 clinicians took the post-test in February 2018. Three clinicians that took the pre-test did not take the post-test because one clinician was on FMLA and two others had left the job. The project officially began in November 2017 when the clinicians took their pre-tests and attended the first segment of their education and training. The assessments were installed and initiated after the second education and training session was provided. Education and training continued through the last quarter of 2017 and the first quarter of 2018. The clinicians began to implement the recommended interventions as they were educated on them. Additionally, the clinicians took the post-test after the fourth education session was provided and they participated in interviews throughout the entire span of the education and project (See Appendix A for timeline).

The data was analyzed in the following weeks and prepared for review. There was an initial overview of the project in the October staff meeting in 2017. Then there were six education sessions and they were held in November, December, January, February, March and April. A summary of each education session is provided in the following paragraphs. The post-tests were completed after the February education session. Throughout the five main education sessions there were 42 incidences of clinicians missing staff meetings. One-on-one sessions were able to be provided 32 times and therefore there were only 10 incidences of a clinician missing a training and needing to receive the education only in a paper copy in their employee mailbox or electronically on their computer. The DNP student attended the April staff meeting to disseminate the findings with the clinicians, allow the clinicians to debrief and to offer some recommendations to consider for future plans but attendance was not taken in this final session.

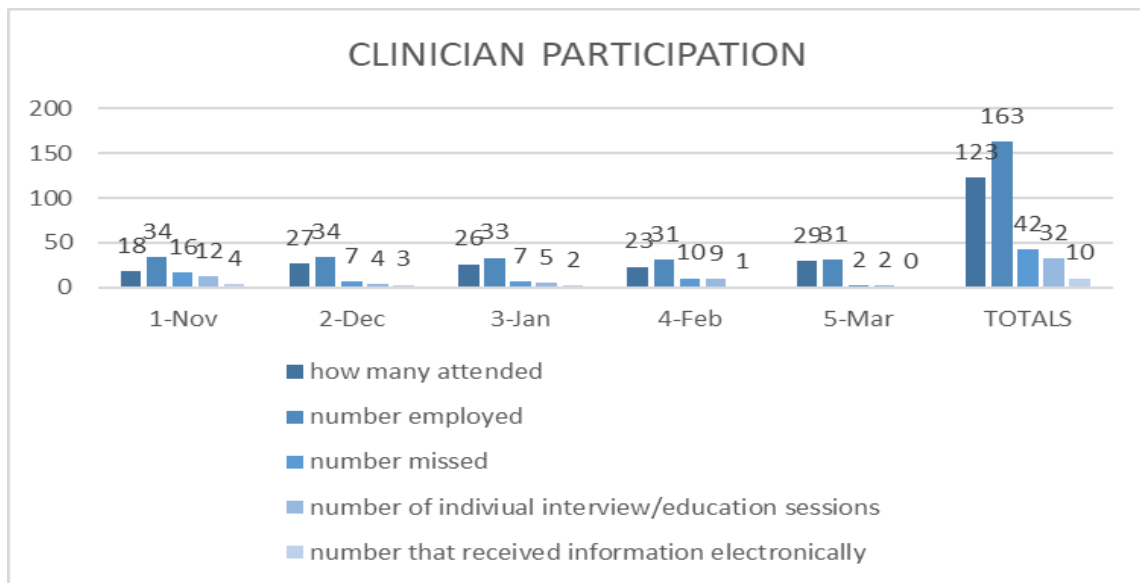


Figure 3. Participant Data.

November meeting. The clinicians took the pre-test prior to the November meeting. The education at this meeting was a general overview of co-occurring disorders and assessment using

the AUDIT-C assessment tool (see Appendix D for the first education session). In November 2017, 18 clinicians out of 34 attended the staff meeting and there were 16 clinicians that were not able to attend. Of the 16 clinicians that were unable to attend, this DNP student was able to meet with 12 of the clinicians, and four clinicians received the education electronically and were left paper copies to review.

December meeting. Before the December education, the AUDIT-C assessment tool was uploaded into the electronic system for the clinicians to utilize with patients. The education in this session included the stages of change model, brief interventions and more discussion about the benefits of the AUDIT-C tool (see Appendix E for the second education session). The clinicians were advised to start utilizing the AUDIT-C assessment tool after this session. Some role-play scenarios were conducted on brief interventions in this meeting. The IOP supervisor co-led this session with the DNP student. In December 2017, 27 clinicians attended the staff meetings out of 34 and seven were not able to attend. The DNP student was able to meet with four of the clinicians that were unable to attend, and three clinicians received the education electronically and were left paper copies to review and instructions on using the AUDIT-C.

January meeting. This education session included the rethinking drinking education, holistic care and some brief interventions to implement with patients. The medical director also discussed delirium and its causes (see Appendix F for the third education session). In January 2018, 26 out of 33 clinicians attended the staff meeting and seven were not able to attend. The DNP student was able to meet with five of the clinicians that were unable to attend, and two clinicians received the education electronically and were left paper copies to review and the instructions on performing the brief interventions.

February meeting. This education session included FDA approved medications that can be offered to patients for alcohol cessation and the clinicians were given the post-tests (see Appendix G for the fourth education session). The nurse educator co-led the fourth session with the DNP student. In February 2018, 23 clinicians were able to attend the staff meeting and 10 were unable to attend. The DNP student was able to meet with nine of the clinicians that were unable to attend, and one clinician received the education electronically and was left a paper copy to review.

March meeting. The March education session included an overview of the information taught in the previous sessions, education on referring patients to the appropriate levels of care and a resource list for treatment options and referrals (see Appendix H for the fifth education session). The social work supervisor co-led this session with the DNP student. Some of the future recommendations for education and training were also made in this session. The “storyboard” made for The Joint Commission was presented to the staff and placed in the staff breakroom. In March 2018, 29 out of 31 of the clinicians were able to attend the staff meeting and two clinicians were not able to attend. The DNP student was able to meet with both of these clinicians to provide the education and interviews.

April meeting. The DNP student attended this staff meeting to present the findings from the surveys, allow the clinicians to debrief and discuss further future recommendations. The DNP student did not take attendance for this final meeting, but the findings were summarized and provided in paper copies and electronically for anyone who missed the meeting or wanted to reference them at a later date. Future recommendations included: adding an AUDIT assessment into the charts for patients that score positively on the AUDIT-C assessments and continuing to offer relevant education topics on co-occurring disorders at future staff meetings.

Likert-Scale Questions

The quantitative data that was collected for this DNP project was the scores from the clinician's responses to a pre and post-test regarding their knowledge and comfort level on treating patients with co-occurring disorders. One assessment tool was used for both the pre and post-tests and this tool included eight questions with a Likert-scale in addition to two open-ended questions. Some of the Likert-scale questions were knowledge-based and the other questions were assessing the clinician's practices and self-reported confidence with utilizing recommended interventions for patients with co-occurring disorders (See Appendix B for the pre and post-test questionnaires). The results of each question from the pre and post-tests are discussed in the subsequent pages along with the mean scores for the Likert-scale questions and an analysis of the questions and scores before and after the education sessions.

Results on the pre and post-tests. 34 clinicians completed the pre-tests and 31 clinicians completed the post-tests. One employee was on FMLA and two employees left the job during the course of the project, while two employees did not participate. Participants included: doctors, nurses, social workers and behavioral health technicians. All of the participants answered every Likert-scale question on both the pre and post-tests. There was one of the Likert-scale questions that was accidentally scored in the opposite direction of the other questions and was an outlier on the pre-test (Question One). All of the mean scores of the Likert-scale questions showed an increase from the pre-test score to the post-test score except for question one because of the technical error. However, the content of question one still showed an improvement in the clinician's knowledge. The most significant changes in clinician knowledge and confidence were shown in the post-test scores for questions one, two and six.

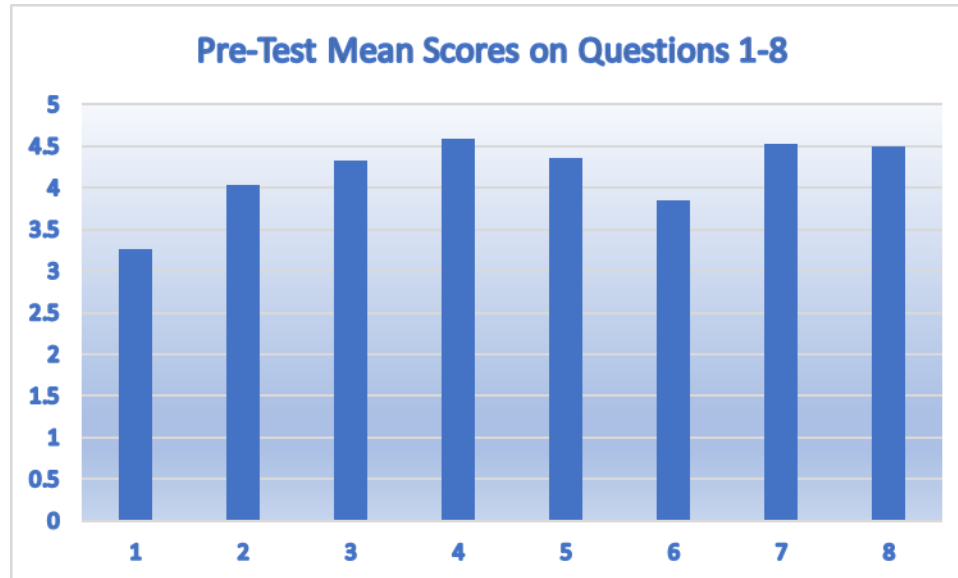


Figure 4. The results of the pre-test mean scores for questions 1-8.

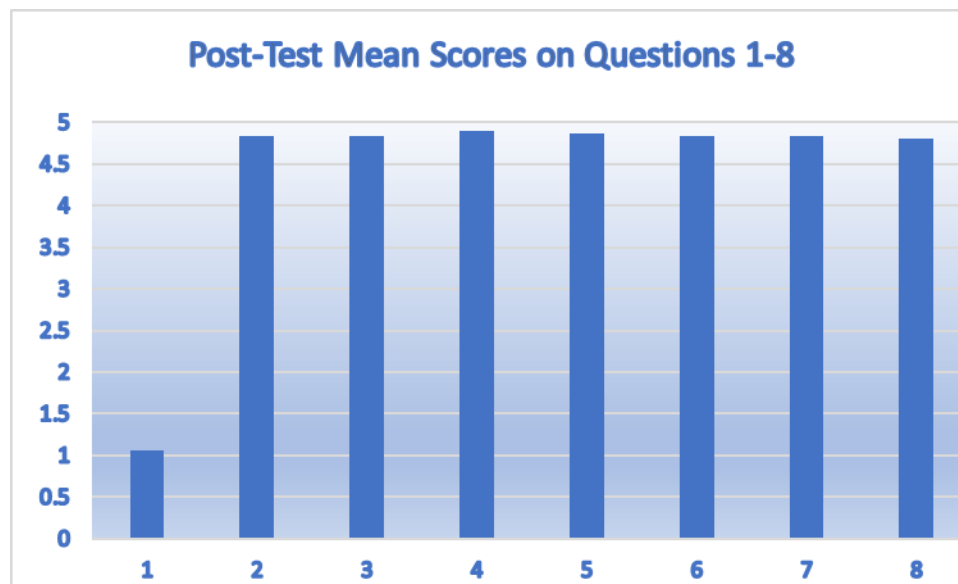


Figure 5. The results of the post-test mean scores for questions 1-8.

Question One-an outlier. Question one read, “A lab test is a better indicator than a self-reported assessment to gage a patient’s harmful drinking behaviors.” This was a knowledge-based question that was an outlier with a low mean score and varied responses on the pre-test.

The scale went from 1 (strongly disagree) and ranges to 5 (strongly agree). If the clinicians knew the correct answer they would have said 1-strongly disagree or 2-disagree because the AUDIT-C is a more reliable indicator than a lab test. This question was accidentally scored differently than the rest of the Likert-scale questions with the 1-5 scale placed in the opposite way of the other Likert-scale questions (numbers two through eight). It was unknown if this variation in answers was because the Likert-scale was going in the opposite way of the other questions or if it was a knowledge-deficit with the clinicians. The clinician's responses were varied in all disciplines, even in nursing. This discrepancy may have been confusing to the clinicians, but it became evident in the interviews that many of the clinicians did not know the correct answer to this question or were confused by this question. The responses on the pre-test had two clinicians answer 1-strongly disagree, ten clinicians answer 2-disagree, seven clinicians answer 3-undecided, seven clinicians answer 4-agree and eight clinicians answer 5-strongly agree. This was the question that had the most varied answers and also had a higher number of clinician responses to 3-undecided. The mean score was 3.28 on the pre-test.

The DNP student immediately realized that there was an opportunity for education on this topic and a fact sheet about the AUDIT-C assessment was created with information comparing the AUDIT-C to lab values for the first education session (see Appendix D for the first education session). On the post-test, this question had the largest mean change as a result of the education. The mean on the post-test was 1.07 with 31 responses. 29 clinicians answered 1-strongly disagree and two clinicians answered 2-disagree. This change demonstrates that the AUDIT-C education was effective, because the clinicians knew the correct answer on the post-tests even though the Likert-scale was not adjusted and remained going in the opposite direction from the other questions. The fact that the content improved on the post-test answers

demonstrates that the low scores on the pre-tests were likely a knowledge deficit at the beginning of the project and not a result of the misplaced Likert-scale.

Highest Scoring Questions. The questions that had the highest mean scores on the pre-tests were questions four, seven and eight with most of the clinicians selecting 4-agree and 5-strongly agree before receiving any education. These questions showed areas where clinicians already felt comfortable treating patients with co-occurring disorders.

Question four. Question four asked, “I believe that daily drinking can negatively affect a patient’s health.” The average mean score for the pre-test was 4.59 and that mean went up on the post-test to 4.9 which was the highest mean score for any of the questions on the post-test, which indicates that most of the clinicians knew that daily drinking was harmful before the education, and then this information was reinforced and strengthened as a result of the education sessions and or the clinicians felt more strongly about the correct answer.

Question seven. Question seven asked “When I feel that a patient has an Alcohol Use Disorder I think it is important to talk to them about 12-step meetings.” Most clinicians chose 4-agree or 5-strongly agree with the mean score on the pre-test as 4.53 which increased to a mean score of 4.84 on the post-test. Thus, the results indicated that most of the clinicians including the techs felt comfortable referring patients to 12-step meetings which was congruent with the information collected in the clinician interviews and in the open-ended questions.

Question eight. Question eight scored next on the top of the average mean scores for the pre-test questions with most clinicians responding with 4-agree or 5-strongly agree to the question: “When a patient has an alcohol use disorder I think it is important to discuss long-term rehabilitation with them.” The mean score was 4.5 on the pre-test and 4.84 on the post-test which indicates that the education improved some of the clinician’s knowledge and comfort with

providing appropriate referrals. During the interviews several of the nurses mentioned that they appreciated the information sheet that was created for the fifth education session because although the nurses discuss long-term rehabilitation as an option with patients, they would usually refer the patients to social work for the details prior to the session because they had not been educated on the specific possibilities previously (See Appendix H for the fifth education session).

Lowest Scoring Questions. The three questions with the lowest mean scores on the pre-test were on questions one, six and two. Question one was discussed previously because it was the main outlier. The low mean scores on these questions demonstrated a knowledge deficit in these areas and provided an opportunity for the DNP student to customize the education to include these topics and to improve the scores on the post-tests.

Question six. Question six had three clinicians answer 3-Undecided, two clinicians answered 2-disagree and one clinician answered 1-strongly disagree: “I feel comfortable in my knowledge surrounding medications to reduce drinking or cravings for alcohol.” The mean score on the pre-test was 3.85. This lower score was congruent with the information clinicians provided in interviews. Eight of the social workers mentioned that they did not know very much about medications that could be offered to patients for alcohol cessation and at least six of the nurses did not feel comfortable enough to discuss these medications with patients. Because there seemed to be a knowledge deficit about medications, education on this topic was provided in February on three medications that could be prescribed for alcohol use disorder that the medical director chose. After the education about medications was provided, clinicians reported that they felt more comfortable with this subject in interviews and the mean score for this question went up to 4.85 in the post-test. This increase in the mean score for this question shows that the

education was very effective in increasing the clinician's knowledge and comfort level when discussing these medications with patients. This increased confidence was also apparent in interviews with clinicians after the education session. Four of the social workers stated that they particularly enjoyed the medication education session because they felt that this was an area that they were not previously proficient with and in the past, they would usually refer medication discussions or questions to the doctors or nurses (see Appendix G for the fourth education session on medications for alcohol cessation).

Question two. Question two: "I feel confident in my abilities to do a brief intervention during treatment and that it can affect a patient's drinking behaviors." The average mean score for this question on the pre-test was 4.03. Nine clinicians answered 3-undecided on this question which was the highest number of 3-undecided answers from all of the pre-test or post-test questions. One clinician answered 2-disagree, and 12 answered 4-agree, and 12 answered 5-strongly agree. Because there was some uncertainty in the clinician's pre-test responses to this question, the third and fourth education sessions were modified to include additional sections on brief interventions and role-plays were added to the class to improve their confidence in this area (see Appendices G & H for education sessions three and four). Brief interventions and role-plays were the only topics that were covered in two separate education sessions and this decision seemed to be quite effective. The post-test answers were all 4-agree and 5-strongly agree from every clinician and the average mean score went up to 4.84. The two education sessions on brief interventions were successful and the role-playing seemed to give the clinicians more assurance in their abilities to intervene. The clinicians also described an improved comfort level with performing the brief interventions in the interviews that were conducted. Several of the clinicians

remarked that they did not realize how easy the brief interventions actually were and felt that they would be able to easily add them into their practice.

Median Questions. Questions three and five both had average mean scores on the pre-tests that were in the middle of the scores for the Likert-scale questions. These questions showed subject matter that some of the clinicians were proficient and comfortable with and others might not have been.

Question three. Question three: “I am aware that three or more drinks in men daily and two or more drinks in women daily can indicate a harmful drinking behavior.” The majority of the clinicians answered 4-agree and 5-strongly agree on the pre-test and the mean score was 4.33. There were two clinicians that answered 3-undecided. Although it seemed that the clinicians knew that drinking was detrimental to a patient’s health, they seemed to have a somewhat laissez-faire attitude towards drinking in certain instances, which may be attributed to the normalized drinking culture in their community. It was important to provide objective information on harmful drinking amounts and how it could negatively impact a patient’s health so that they felt comfortable discussing this with patients and intervening when appropriate. The third education session included the rethinking drinking tools and information and pictures about the parameters for harmful drinking and also the risks that are associated with harmful drinking. Particular time was spent discussing the pictures with parameters for harmful drinking in men and women. The post-test mean score increased to 4.84 with more of the clinicians answering 5-strongly agree and no clinicians answering 3-undecided (see Appendix F for the third education session).

Question five. Question five: “I often inquire in my practice about patient’s drinking behaviors and their desires to reduce or cut down their drinking.” All of the nurses and social

workers answered 4-agree or 5-strongly agree on the pre-test and there were only three techs that answered 2-disagree or 3-undecided. During interviews it was revealed that there are some questions about drinking behaviors on the nursing assessment and also on the psychosocial assessments which was most likely why there were high initial scores from the licensed clinicians on this question. The licensed clinicians admitted in discussions that although they always asked these questions, they did not always assess the patient's stage of change, the severity of the alcohol use disorder or discuss the benefits of reducing drinking with the patients. When looking at the different disciplines, the nurses and social workers did consistently ask patients about their drinking, but the techs did not.

Because most of the techs were ambivalent about their abilities when answering this question, the conversation was modified to discuss appropriate ways for them to be involved. One area that all of the techs felt comfortable with was suggesting that patients attend the 12-step meetings offered and giving patients 12-step literature when appropriate. The techs were empowered and encouraged to talk with patients about alcohol use within their scope and there was a discussion in the third education session about appropriate ways to get them more involved including sitting in on some of the groups. The mean score for the pre-test on this question was 4.35 and, on the post-test, it increased to 4.87. All of the clinicians answered 4-agree or 5-strongly agree on the post-test including the techs that were hesitant on the pre-test. The third education session on brief interventions was effective and also empowered the techs to be more involved in the patient care (see Appendix F for the third education session). There were also more 5-strongly agree answers on the post-test for this question from all of the clinicians. When interviewed, clinicians attributed the improved scores for this question to the education as well as the implementation of the AUDIT-C assessment tool on all new admissions. Mostly all of

clinicians were certain now that all patients were being asked about drinking because they were using this tool consistently on all new admissions.

Open-Ended Questions

There were two open-ended questions on the pre and post-test. There were less responses to the open-ended questions on the post-test than on the pre-test. All of the clinicians that took the pre-test filled out an answer for each open-ended question. On the post-tests, several clinicians left one or both of these open-ended questions blank.

Question Nine (Pre-test). The first open-ended question was: “What has been your approach to handling patients with alcohol and mental health disorders?” There were 58 separate answers from the pre-test participants and all of the answers were quite varied with only a few common themes throughout. These themes were: treating the disorders separately, referring patients to another discipline, using motivational interviewing, using a patient-centered approach and providing kind and compassionate care. These five common themes seemed to be divided by the three disciplines and also showed some areas that needed educational intervention. Ten of the nurses (more than half) replied that the alcohol use disorder should be treated before and separately from the mental health disorder. Four of the techs felt that they should refer patients with co-occurring disorders to a different discipline because they did not feel comfortable intervening. Three of the social workers mentioned the use of motivational interviewing. The most common answer across all of the disciplines was to utilize a patient-centered approach with 12 responses to that affect. Kind and compassionate care was also a common theme answered throughout different disciplines with 10 total responses.

The DNP student used these responses and themes to target areas for education. It was important to find out why so many of the nurses thought that co-occurring disorders should be

treated separately and educate them on a holistic approach. During interviews, a few of the nurses mentioned that some patients had recently gone into delirium tremens during acute alcohol withdrawal and they thought psychotropic medications might have contributed to the patient's compromised medical states. This information demonstrated why there were so many answers from nursing on the theme of treating the co-occurring disorders separately. It was important to address this misconception because it was contradictory to the concept of holistic care and treating the disorders concurrently. The third education session was modified to include a section on holistic care for co-occurring disorders to demonstrate to the nurses that it may be possible to treat some of the patient's mental health symptoms even when they are symptomatically detoxing and also to recognize that many of these symptoms were intertwined (see Appendix F for the third education session). The medical director also spoke at the third education session about delirium and it is recommended to do future education with the nurses on delirium tremens. After this education session, the staff educator decided to plan to prepare some additional information for the nurses on the causes of delirium and the treatment for the condition.

Another trend that emerged in the open-ended questions was one discipline referring patients to another discipline for treatment of co-occurring disorders. Four of the techs answered the question this way, but other disciplines also said similar statements in interviews. Nurses were referring patients to social workers for referrals and social workers were referring patients to nurses for medication discussions. It was important to give all of the disciplines basic information so that they felt empowered to intervene when it was appropriate, and they could each offer patients a holistic approach to care. The techs were encouraged to participate in the role-plays for the brief interventions education session which seemed to improve their

confidence and an open discussion revealed that most of the techs felt comfortable encouraging 12-step meetings to patients when they were offered. Future recommendations include more education for techs and possibly allowing them to sit in on some therapy groups.

The open-ended questions showed that the majority of the clinicians were thinking about patient-centered approaches and kind, compassionate care and this was acknowledged, and these were both encouraged as the correct treatment approaches. Three of the social workers listed motivational interviewing as their approach when treating a patient with a co-occurring alcohol use disorder. During interviews this approach was also encouraged by the DNP student. It is important to use a combination of behavioral approaches including motivational interviewing and cognitive behavioral therapy in patients with co-occurring disorders (National Institutes of Health {NIH}, 2016). Most of the other project participants did not feel as comfortable with their knowledge of this modality and expressed interest in learning more. The social workers that were proficient all felt comfortable with mentoring other staff members or providing in-services at staff meetings. Therefore, it is recommended that future education or mentoring is offered on these modalities for use in practice.

Question Ten (Pre-test). The second open ended question: “What resources would be helpful to you in your clinic site to provide to patients with alcohol problems?” There were 45 separate answers from the pre-tests and they seemed to have more common themes across all disciplines. The four main themes were: availability of 12-step meetings at the hospital, availability of 12-step literature for patients, printed lists of resources and various education materials. Each one of these four themes had responses from clinicians in each discipline and they were much more consistent through disciplines than the responses for question nine. 19 clinicians felt that more 12-step meetings should be offered in the hospital building and on the

inpatient psychiatric units. Nine clinicians wanted more literature to give to patients on 12-step programs and meetings. Six clinicians wanted printed information on rehabilitation centers and community resources for patients with alcohol use disorders. 10 clinicians wanted more education materials on alcohol use disorders and co-occurring disorders for patients. These clinicians varied in requests somewhat in that two were asking for online materials, six wanted printed literature and two wanted videos for the patients to watch. Five clinicians wanted more printed education materials for staff to learn more about co-occurring disorders. Most of these resources were appropriate and many of the requests were able to be added to the education sessions for the project. Some of the suggestions from the clinicians were discussed for further clarification in interviews and some were added to the DNP student's future recommendations.

Question Nine (Post-test). The post-test asked the question again, "What has been your approach to handling patients with alcohol and mental health disorders?" There were only 21 responses for question nine in the post-test. There were three major themes in the post-test answers to this question: referring patients to the appropriate levels of care, offering medications for alcohol cessation and utilizing the stages of change model. The themes were different for the post-test responses to this question and they were mainly taken from the education provided. Seven clinicians mentioned referring patients to the appropriate levels of care when they had a co-occurring disorder which was a topic from the education. Three clinicians listed offering medications to patients to reduce drinking as a treatment approach on the post-test which was also part of the education. These two new trends are significant because no clinicians listed them as approaches on the pre-tests. Five clinicians listed assessing the patient's stage of change before proceeding on the post-test. Only one clinician listed this as an approach on the pre-test. These themes were all taken directly from the education provided in the project and varied from

the pre-test responses, so it can be deduced that the clinicians retained the information that was presented and used this information to answer the post-test questions.

Another important change that was noted on the post-test was that none of the nurses responded that they should treat the co-occurring disorders separately which decreased from 10 responses to this effect on the pre-test. This change demonstrates that the nurses were impacted by the education on holistically treating the patients and on the discussion about delirium tremens from the medical director. Another positive variance on the post-test answers for question nine was that there were no responses from the techs or any other discipline to refer a patient with co-occurring disorders to another discipline for care. There were four responses from techs to question nine on the pre-test where their stated approach was to refer a patient with a co-occurring disorder to nursing or social work. This change in these responses demonstrated that the techs felt more empowered to discuss problematic drinking with patients as a result of the education provided.

Question Ten (post-test). The last open-ended question on the post-test was again, “What resources would be helpful to you in your clinic site to provide to patients with alcohol problems?” There were 24 individual responses for question 10 on the post-test. The common themes for question 10 on the post-test were the same as on the pre-tests: 12-step meetings, 12-step literature, referral materials and education. The clinicians remained focused on adding more 12-step meetings in the building and in the inpatient units as well as getting recovery literature with 14 responses for these two related themes. During interviews with clinicians it became apparent that before the hurricane there were 12-step meetings offered daily in the cafeteria of the building and these group members came to the inpatient units to hold meetings. These group members also donated literature to the mental health programs instead of paying rent. The

clinicians mentioned that it was also very easy to explain to patients where to go for meetings because it was in the same building and they were held daily. When the damage to the building happened during the hurricane, the contractors set up in the cafeteria and the meetings were put on hold. This reduced the meetings on the units and the literature was no longer provided.

Clinicians stated that it has been more difficult to explain to patients where to go for 12-step meetings because the meeting lists are outdated, and the meetings are held in various locations.

This information was added to the future plans and recommendations for the administration.

Another common theme for question 10 on the post-tests was that clinicians wanted to continue to receive education at future staff meetings. Five clinicians wanted education on motivational interviewing and four requested additional education on different kinds of medications. Two of the behavioral health technicians requested more education on how they could contribute to patient care.

Comparing the Responses for the Open-Ended Questions. The open-ended questions on the post-test had far less responses than the same questions on the pre-test. Question nine had 58 responses on the pre-test and only 21 responses on the post-test. Question ten had 45 responses on the pre-test and only 24 responses on the post-test. 34 participants took the pre-test and only 31 participants took the post-tests. The reduced number of participants did not seem to be entirely related to the reduced number of responses on the open-ended questions. It may have been beneficial to change these open-ended questions on the post-tests or to give the clinicians additional instructions about answering them. It may have been worthwhile for the DNP student to prompt the clinicians to answer these questions based on their knowledge from the education sessions. However, it can be noted that despite the decreased number of answers on the open-

ended post-test questions, the knowledge obtained as a result of the interventions was still reflected in the answers received as discussed.

Chart Audits

The addition of the AUDIT-C assessment was included in the IOP's quality improvement plan and the supervisors audited charts after the assessment was implemented. The IOP program supervisor audited 20 charts in February and 20 charts in March of new admissions to the IOP program for compliance with the AUDIT-C assessment upon initial intake. Both months had 100% compliance on all new admissions. The supervisor mentioned that they were going back to do the assessment on existing clients that were enrolled before the AUDIT-C was implemented and she had not done chart checks for compliance on these patients yet. This information demonstrated how successful the implementation of the AUDIT-C was and this was shared with the clinicians to recognize their hard work. The program supervisor is planning to continue to monitor this for the rest of the year as part of her quality improvement initiative.

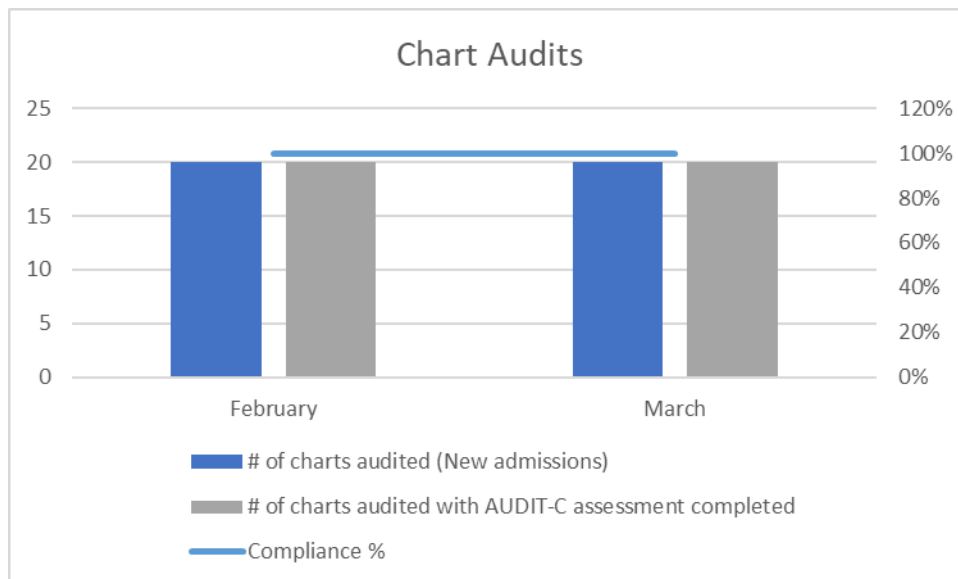


Figure 6. The results of the chart audits for compliance with AUDIT-C.

Discussion

As discussed in the literature review, collaborative care interventions are known to improve outcomes in patients with co-occurring mental health and alcohol use disorders. Problematic drinking frequently occurs in patients with mental health disorders and continued drinking often leads to a worsening of their mental health symptoms. When evidence-based recommendations are followed pro-actively and preventatively in outpatient settings, they can improve the patient's mental health symptoms, which can decrease inpatient hospital admissions, reduce arrests and legal problems and improve the patient's overall health and quality of life.

The AUDIT-C assessment tool is a recommended best-practice for assessing problematic drinking in outpatients because it is reliable, easy to administer and preferred over lab tests. The guidelines discussed in this paper outline many other recommendations for implementation once a co-occurring disorder is identified. Education was created for some of these recommendations and clinicians attended regular monthly staff meetings where the education was presented, and they were able to implement the interventions in practice afterwards. Some of the education topics included: assessment with the AUDIT-C tool, stages of change model, brief interventions, rethinking drinking education tools, holistic care, delirium tremens, identifying low, moderate and high-risk drinking, role-playing interventions, medications for alcohol cessation and referrals to the appropriate levels of care (see Appendix J for the education outline). The AUDIT-C assessment tool was installed on the IOP computer system and the clinicians were instructed to assess all new admissions with this tool while completing their regular intakes. If an alcohol use disorder or problematic drinking was identified on a patient with the AUDIT-C assessment, the clinicians would need to determine the appropriate treatment options and interventions to utilize based on the findings, education provided and their clinical judgement and training. Clinicians

continued to learn more recommended interventions and they also continued to increase their knowledge and confidence throughout the course of the project. The discussion includes the application of Lewin's Change Theory in the project implementation and the two major themes that were deduced from the project and the data analysis. The two key themes that were identified and discussed were: clinician knowledge deficits that were targeted for education during the project and the future quality improvement recommendations that may be considered for implementation in practice going forward.

Application of Lewin's Change Theory in the Project Implementation. The DNP student used Lewin's Change Theory in this quality improvement project to implement the AUDIT-C assessments and to provide the education to the clinicians on the other various best-practice recommendations discussed for patients with co-occurring disorders. The education needs were assessed and planned before the implementation of the project, but they were re-evaluated several times and modified based on the clinician's answers to the pre-test questions and discussions with clinicians in interviews. The education was adjusted and modified as the needs of the department changed throughout the course of the project.

The unfreezing stage. The project was initially delayed by a category five hurricane that hit Florida and other parts of the Caribbean in September 2017. The building where the IOP is located suffered water damage and needed some construction. The IOP program was closed for a month and many of the patients left the area. The hurricane and construction delayed the project but also gave the DNP student more of a chance to talk with clinicians during the unfreezing stage of the project and gave the clinicians more time to devote to the project. The stakeholders in this project were engaged, and they were willing to participate in the education sessions with

the DNP student. This increased the buy-in from the other clinicians and they were not opposed to doing the assessments or participating in the education which was invaluable.

The moving stage. The moving stage lasted for six months and encompassed all of the education sessions which really got started in November. In December the AUDIT-C assessments were uploaded into the clinician's computers, and they started to assess all new patients with them. The DNP student and the project stakeholders were regularly checking in with the other clinicians about the assessments. As a whole, the clinicians did not have any trouble utilizing the AUDIT-C, in fact most of them remarked that it was quite easy to administer. However, they did mention that the AUDIT-C was installed in an inconvenient location and may be forgotten if it could not be moved with the other intake assessments. As a result of feedback received, the AUDIT-C was removed from forms on demand and re-installed in the system in a more user-friendly location. The location of the assessment was easily corrected, and this was a good example of why communication and follow-up are important during the moving stage when using Lewin's Change Theory. If this assessment had not been moved, there was a potential for non-compliance and clinician frustration and something that was fixed so easily could have derailed the whole effort if it had not been identified.

The refreezing stage. The reprioritization and goal shifting happened throughout the moving and refreezing stages of the project. One of the first suggestions that the medical director made after the hurricane was to change the education sessions to make them shorter and to last over several months. This would allow all of the clinicians to participate in the project, but it also created an unforeseen challenge. The obstacle was that not all of the clinicians would be able to attend the "mandatory" staff meetings due to working on the inpatient units and or on their scheduled days off. There was varied attendance throughout the sessions, but the DNP student

realized that on-to-one education could be done with the clinicians that missed a meeting and, in some cases, it was more effective because they were able to ask questions and these interactions helped to develop a rapport. In some instances, it was not possible to meet with the clinicians that missed a meeting, but they were able to review the information placed in their mailbox and follow-up by email if they had questions. Another area that shifted frequently was the content of the education sessions. The desired education topics and best practices selected by the DNP student for implementation were discussed and planned prior to the collection of the pre-test results, however they were modified in many ways as a result of the information and themes that were obtained from the pre-tests and in the clinician interviews.

The refreezing stage was quite fluid during this project because it was divided into multiple sections for the educational components each month at staff meetings. After each session, the DNP student was conducting interviews and getting feedback from the clinicians and stakeholders and changes were made as needed. The project goals were constantly evaluated, and priorities shifted according to the clinician's education needs. It was important to make sure that the clinicians had attainable goals after each session and that they also had the ability to ask questions and receive feedback. The project continued to be evaluated on an on-going basis and the learning needs continued to increase, but not everything that was identified as a learning need could be added to this project. The clinicians also continued to make suggestions and requests for different things that they thought might be helpful, but again not all of the requests could be included in this project. The DNP student added some of the identified and desired elements, but there are also some that the facility may choose to pursue in the future. The information and suggestions that were identified were written down, organized and when appropriate were added

to the future recommendations section. This was discussed with the clinicians at the final staff meeting and a written list was disseminated to the administrative personnel.

Themes Deduced from the Data Analysis. The data analysis yielded two major themes: knowledge deficits to target and recommendations for continued quality improvement. The knowledge deficits that were targeted included: referring patients to the appropriate levels of care, medications for alcohol cessation and brief interventions. The recommendations for continued quality improvement included: further chart audits for AUDIT-C assessments, future measurable goals to track, growth opportunities, advanced assessments to implement, offering 12-step meetings and literature, disseminating appropriate information to clinicians and patients and continuing to offer education on the topic of co-occurring disorders.

Knowledge deficits to target. A theme that reoccurred in interviews and in several questions from the pre and post-tests was that clinicians were often referring patients with co-occurring disorders to other disciplines in their program because they did not have enough information or feel comfortable enough with certain subject matter that fell out of their perceived discipline. Nurses would refer patients to social workers for case management issues, social workers would refer patients to nurses for medications and medical issues and techs would refer patients to nurses or social workers for all clinical topics. The project education was modified to include education on holistic care and to specifically address the knowledge deficits in each discipline by providing simple information to increase the clinician's confidence and empower them to be a subject matter expert on co-occurring disorders to ensure continuity of care for their patients.

Referring patients to appropriate levels of care. Before the project, an area that was dominated by the social work department was referring patients to long-term rehabilitation

centers or other appropriate levels of care. Most of the nurses and techs reported that they felt comfortable recommending that a patient seeks treatment at a long-term rehabilitation center when it was needed, but the practice had always been for the social workers to do the referrals to these types of programs and the information about the process was not communicated to all of the clinicians. The nurses requested a simple fact sheet on the various facilities in the area including what types of insurance they take, which patients are appropriate to refer, their phone numbers and their websites. Most of this information was obtained easily and the requested fact sheet was created simply and added to the fifth education session (see Appendix H for the fact sheet). The clinicians felt that this was quite helpful and requested more fact sheets for other purposes to ensure the communication of simple information.

Medications for alcohol cessation. Alternatively, social workers reported that they did not feel comfortable discussing medications approved for alcohol cessation with patients and would usually refer these patients to the nurses or doctors before the project. Because the social workers needed more education on medication, the entire fourth education session was focused on FDA approved medications for alcohol cessation and another simple fact sheet was created (see Appendix G for medication education). The clinicians from all of the disciplines reported that they appreciated this education and the mean score for question six increased from one of the lowest mean scores on the pre-test (3.85) to one of the highest mean scores on the post-test (4.83) because of this education. The social workers seemed to be the most enthusiastic about the medication education session. Four of the social workers mentioned that they found the education on medications very helpful on their post-tests and requested more education sessions on other psychotropic medications in the future. In interviews after the medication education, three of the social workers stated that they feel more comfortable discussing medications with

patients now and have even seen more IOP patients starting to take medications for alcohol cessation since the training occurred. It is recommended that future education offerings include basic information for non-nursing disciplines on various frequently prescribed medications.

Brief interventions. Throughout the project, there were several techs that felt they did not have the training or skills to speak with patients about clinical topics including problematic drinking. The techs reported that they did not feel comfortable inquiring about a patient's drinking or intervening in any way for alcohol use disorder initially. Also, several techs answered that they would refer patients with co-occurring disorders to nurses or social work. The techs were encouraged to attend all of the education sessions and were also invited to participate in the role plays on brief interventions (See Appendices E & F for education on brief interventions and role-plays). Several techs were engaged in the education sessions and expressed a desire for more education and mentoring. This led to a further discussion and recommendations for future tech trainings. There was a suggestion from nursing to let the techs sit in on some groups, so they could learn more and gain confidence to intervene within their scopes. They were empowered to discuss 12-step meetings with patients when appropriate and give patients approved 12-step literature to read when it becomes available. If it is possible to let the techs sit in on some therapy groups, it is recommended. The nurse educator suggested that they might do this during new hire orientation for a whole day or annually for the techs that are currently employed. If this is cost-prohibitive, it might be beneficial to just allow them to sit in one psychotherapy group to start.

Continued quality improvement recommendations. The project followed a quality improvement model using Lewin's Change Theory, therefore future ways to continue improving the quality of care offered were considered throughout the project to provide recommendations

to the administration. The recommendations included: continued chart audits for AUDIT-C assessments, future measurable outcomes to consider tracking, growth opportunities, advanced assessments to consider implementing, adding 12-step meetings and literature, utilizing fact sheets to disseminate information to clinicians and patients and continuing to offer education on co-occurring disorders.

Continuing to monitor AUDIT-C completion. The social work supervisor and IOP supervisor conducted quality improvement chart audits in February and in March. The chart audits consisted of 20 chart reviews in February and 20 chart reviews in March on new IOP admissions respectively. All 40 charts that were audited during the months of February and March included an AUDIT-C assessment which showed 100% compliance from the clinicians on performing the assessments on new admissions to the program for two months in a row. The IOP supervisor said that she plans to continue these chart audits every month for the rest of the year for AUDIT-C completion on new admissions and it was added to her quality improvement plan. The IOP supervisor mentioned that she is encouraging the clinicians to do the AUDIT-C assessment on patients that were enrolled in the program before the assessments were implemented, but there is not a clear time or plan to do this on every patient. It is recommended that some chart audits are also done on patients that were already enrolled in the program prior to the implementation of the assessments so that the patients that were not assessed can be identified and an AUDIT-C can be completed to assess for an alcohol use disorder on these patients.

Measurable outcomes. In addition to the chart audits it will be important for the IOP supervisor to continue to identify measurable outcomes to track to sustain a continued quality improvement plan in the future. It was suggested in the literature review that treating patients

with co-occurring disorders collaboratively would reduce their inpatient admissions to the psychiatric unit, reduce their arrests and legal troubles and then ultimately improve their overall health and quality of life. It may be worthwhile for the IOP supervisor to track patients for readmissions to the acute inpatient psychiatric units or to track patients that get arrested while attending the IOP program. There are some measurements that could be collected and monitored to see if the patient's overall health improves such as their weight or vital signs and or medical appointments that were made and attended. It might also be possible to monitor the patient's perceived quality of life for fluctuations or improvements with questionnaires that are distributed periodically. Any of these measurements could be considered and tracked in the future for continued quality improvement on treatment of co-occurring disorders.

Growth opportunities. The IOP supervisor and social work supervisor had a discussion with this DNP student about the possibility of adding a new IOP track with added groups for patients with co-occurring disorders. The supervisors mentioned that the IOP census has still not completely recovered since the hurricane and the Spanish-speaking IOP track had not yet resumed due to minimal appropriate patients. If there are enough patients for a co-occurring disorders IOP track to begin it may be beneficial to these patients and should be considered by administration. Patients with co-occurring disorders are reimbursed by Medicare for IOP services if the mental health disorder is the primary diagnosis and if they meet the admission criteria for the IOP. The number of patients that are identified with co-occurring disorders in the program will be tracked by the IOP supervisor and reported at the psych committee meeting for further discussion about this topic and to determine if there is enough of a need to add any additional groups to serve this patient population and open a new IOP track.

Advanced assessments. Another quality improvement recommendation is to consider adding a more advanced assessment for patients that score positively on the AUDIT-C. The full AUDIT assessment is suggested for this purpose because the two assessments are similar, and the clinicians will be familiar with the format. This full AUDIT assessment is also available for use on the public domain and it can be purchased as a PDF and added to the forms on demand system similarly to the way the AUDIT-C was implemented. The main difference is that the AUDIT assessment should not print automatically with each new chart because this assessment should only be used on an as needed basis. The recommendation would be for clinicians to use the full AUDIT assessment on patients only when they have a score greater than three on the AUDIT-C to determine if their problematic drinking meets the criteria for an alcohol use disorder and if it is mild, moderate or severe. This information would be helpful for clinicians in determining the proper interventions to utilize with the patient and may help to clarify if the patient needs a referral to another level of care such as a medical doctor, acute detoxification or a long-term rehabilitation center.

12-step meetings and literature. The DNP student noted that a topic that inspired clinician's interest from open-ended questions, interviews and from question seven on the pre and post-tests was about 12-step meetings. The majority of the clinicians felt comfortable discussing 12-step meetings with patients and referring patients to meetings, but they wanted to have more meetings offered at the hospital and they also wanted more 12-step literature available for patients. During interviews, it was noted that a few of the clinicians are openly in recovery and discussed their experiences freely with staff and patients, which may explain the high scores from most of the clinicians on this topic. It was also noted that there were many 12-step meetings offered daily before the hurricane on both of the inpatient units and in the public areas of the

building, but after the hurricane all resources offered had stopped. The 12-step groups also donated large amounts of program approved literature to the behavioral health units before the hurricane and these resources were quite helpful to the clinicians. When the DNP student realized how important the 12-step meetings and literature were to the clinicians and patients, it was discussed with the social work supervisor. Another social worker was then able to contact liaisons from AA, NA and Alanon to find out how to order literature and increase the number of meetings offered. It appears that all of the groups are willing to return with meetings when the construction project is complete, and NA is working on bringing in a meeting to the inpatient unit through their hospitals and institutions committee. There were also updated meeting lists available online and one of the social workers was able to print off some copies for clinicians to share with patients. This social worker also found out that it is possible to order the literature directly from the liaisons. Therefore, it is recommended that the social workers continue to stay in touch with these contacts so that the meetings can resume when it is possible. Almost all of the clinicians thought that the program approved literature was a helpful tool to share with patients, so it may be worthwhile to consider purchasing some of the pamphlets and books in the interim to share with patients if the meetings cannot resume in the near future.

Disseminating information. The majority of the clinicians reported that they appreciated the fact sheets that were provided for them during the education sessions with information on community resources and on co-occurring disorders. Some of the nurses mentioned that they have similar fact sheets on medications that they already use with patients for medication education and they remarked that it is helpful for the patients to have printed information that they can read and take home with them. The nurses that were interviewed requested similar fact sheets that could be given to patients with information on community resources and on disease

processes. The nurse educator mentioned that there may already be an approved hospital site that has information on disease processes such as Medscape or Krames on Demand that can be printed out for patients. The nurse educator did not think that there was any comprehensive fact sheet available for patients on the local community resources for patients with co-occurring disorders. The community provider sheet that was made by the DNP student may need to be modified before giving it to patients because it was intended for clinician use only and is attached to a referral algorithm. The co-occurring disorders education handouts would also not be recommended for distribution to patients because they were intended for a clinician audience. The nurse educator was in the process of researching the information that was already available and felt that it would be easy to create some handouts on community resources geared for the patient population. The nurse educator and the DNP student discussed the process of creating and implementing future fact sheets for patients and approval for these resources at the psych committee meeting and the quality committee meeting prior to distribution to the patients.

Continuing education. Finally, most clinicians reported that they enjoyed the education sessions and felt that this education improved their practice and would ultimately improve patient care and patient outcomes. The clinicians felt more confident after attending the education sessions and reported that they felt more engaged in their positions and with patients. It is recommended that education continues to be offered at staff meetings, clinical meetings and during new hire orientation and annually. It is important for education to be offered in different formats for different kinds of learners. Hard paper copies, electronic copies, one-to-one hands on education and oral presentations are all suggested mediums for future education topics based on this project implementation. Some of the topics that should be offered for future education sessions include: treatment and causes of delirium, motivational interviewing, psychotropic

medications and tech trainings on group therapy. Most of this was discussed with the nurse educator and she was moving forward with some plans. In order to maintain an environment where quality improvement is sustained, education and training must be continuous. Clinicians will give better patient care in a development-focused organization where they are encouraged and empowered to grow and learn more each day and the patients will ultimately experience the benefits from this type of quality improvement.

Conclusion

Patients with mental health disorders often have co-occurring alcohol use disorders and if treatments are provided concurrently in one outpatient treatment setting it can improve the overall health and quality of life for these patients. In order to provide this type of holistic care, it is necessary to ensure that all patients are being assessed for alcohol use disorders in outpatient mental health programs. Implementing a standardized assessment tool like the AUDIT-C is recommended for use on all patients in outpatient mental health programs so that when a co-occurring disorder is identified, best practice interventions can be chosen and implemented based on the findings, the patient's preference and the clinical judgement of the clinician. This DNP project followed a quality improvement model that included implementing the AUDIT-C assessments for use in all of the newly admitted patients in the IOP program in addition to a multi-session education program on the recommended treatments and interventions for co-occurring disorders for the clinicians that participated in the project.

The clinicians took a pre-test before the education sessions began. The answers were collected and analyzed for themes and knowledge deficits. The education schedule was modified to address the learning needs that were identified. Six education sessions were conducted and covered topics which included: an overview of co-occurring disorders, AUDIT-C assessments,

holistic treatment, the stages of change model, the rethinking drinking educational tools, identifying low, moderate and high-risk drinking, brief interventions, role-playing interventions, medications for alcohol cessation, referrals to appropriate levels of care, delirium tremens and future recommendations for quality improvement.

The goals of the project were to improve the process for screening patients with mental health disorders for problematic drinking behaviors to improve the overall quality of their care and to improve the clinician's knowledge and comfort level with treating patients with co-occurring disorders holistically. The AUDIT-C assessment was installed and implemented after the second education session and the clinicians started to use the assessment on all new admissions to the program. When the IOP supervisor audited the charts, she reported that the assessment was utilized 100% of the time in all of the charts that were reviewed for the last two months of the project. The first short-term goal of the project was met with the successful implementation of a recommended standardized assessment tool.

The next short-term goal was to improve the clinician's knowledge on treating co-occurring disorders and increase their comfort level on using the recommended interventions. 31 clinicians participated in taking both the pre-test and the post-test surveys and most of the participants also attended the six education sessions that were conducted at staff meetings from November to April. When staff meetings were missed by clinicians, one-to-one education was provided by the DNP student in most cases. Interviews were also conducted throughout the course of the project and the post-test survey results were collected and analyzed in March. The post-test mean scores increased on every Likert-scale question from the pre-test mean scores, except for question one due to a technical error. This information indicates a quantitative improvement in the clinician's knowledge and an improvement in the clinician's perception of

their confidence with performing the recommended interventions for patients with co-occurring disorders which indicates that the second short-term goal was met.

The qualitative information that was obtained through interviews and in the open-ended questions also supports the quantitative data that was gathered from the Likert-scale questions. Most of the clinicians that were interviewed felt that the project was helpful and would ultimately improve patient care. Clinicians from all disciplines including social workers, nurses and behavioral health technicians stated that they felt more comfortable talking to patients about problematic drinking because of the project and the education provided. The clinicians also reported an improved ability to speak confidently about certain topics such as medications and brief interventions in the interviews after the education sessions which indicated that they increased their knowledge base on the topic. The second short-term goal of the project was also met because the clinicians showed an improvement in knowledge and confidence in the subject areas where they previously felt less secure. Therefore, it is expected that the long-term goals associated with following the best-practices discussed may also be met but those outcomes may be more difficult to evaluate. The IOP supervisor will need to identify measurable goals to monitor going forward which may include patient readmission rates to inpatient psychiatric units, patient arrests, objective medical outcomes and or questionnaires on patient's perceptions of their quality of life.

There were several recommendations identified by this DNP student during the course of this project that may be considered for future quality improvement. The first recommendation would be to add the full AUDIT assessment screening to the computer system for patients that score positively on the AUDIT-C assessment. A second recommendation is to have the supervisors audit the charts of long-term IOP patients to make sure that the AUDIT-C

assessment was completed in order to review existing patients for assessment and treatment of co-occurring disorders. A third recommendation is to address the reduced number of 12-step meetings offered as a lack of resources was reported as a perceived loss for patients and clinicians. To that end, purchasing program approved literature from the 12-step groups liaisons may be a viable alternative if the meetings cannot resume in the near future.

In summary, most of the clinicians that were interviewed thought that the education provided was helpful and they expressed an interest in receiving continued education. Staff meetings proved to be a good forum to provide education for clinicians and there are a few education topics that are recommended to continue the quality improvement initiative and they are including but not limited to: motivational interviewing, frequently prescribed psychotropic medications, causes and treatment of delirium and a tech group therapy training. Consequently, many of the clinicians requested more fact-sheets for community resources and needed information for use by staff members and patients. The fact sheets may be an easy way to provide quick education to clinicians and to disseminate information, so it is recommended to keep using them when appropriate. Quality improvement is essential in healthcare and must be a continuous organizational priority that is recognized from the top down in order for it to be effective. Leaders need to conceptualize best-practices for implementation and then choose and evaluate measurable outcomes to monitor on a continuous basis in order to evaluate and deliver quality patient care.

References

- Agency for Health Care Research and Quality (AHRQ). (2014). Evidence-based Practice Center Technical Brief Protocol Project Title: Management Strategies to Reduce Psychiatric Readmissions. Agency for Health Care Research and Quality. Department of Health and Human Services Retrieved from:
<https://effectivehealthcare.ahrq.gov/ehc/products/596/1959/psychiatric-readmissions-protocols-140904.pdf>. Retrieved on: November 6, 2016.
- Agency for Healthcare Research and Quality (AHRQ). (2015). Plan-Do-Study-Act (PDSA) Directions and Examples. U.S. Department of Health & Human Services. Retrieved from: <http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/healthlittoolkit2-tool2b.html>. Retrieved on: November 13, 2016.
- AIMS Center. (2016). Advancing Mental Health Solutions Implementation Guide. The University of Washington. Retrieved from: <https://aims.uw.edu/collaborative-care/implementation-guide/launch-your-care/address-unanticipated-challenges>. University of Washington. Retrieved on: September 22, 2016.
- Anton, R. F. (2008). Naltrexone for the Management of Alcohol Dependence. *The New England Journal of Medicine*, 359(7), 715–721. <http://doi.org/10.1056/NEJMct0801733>.
- Assi, M. (2018). The Quality Question. Pearls for Practice. *The American Nurse*. Retrieved from: <http://www.theamericannurse.org/2015/01/05/the-quality-question-pearls-for-practice>. Retrieved on: February 17, 2018.

- Beattie, M., Shepherd, A., & Howieson, B. (2013). Do the Institute of Medicine's (IOM's) dimensions of quality capture the current meaning of quality in health care? – An integrative review. *Journal Of Research In Nursing*, *18*(4), 288-304.
doi:10.1177/1744987112440568
- Blackwell, D.L., Lucas, J.W., & Clarke, T.C. (2014). Summary health statistics for U.S. adults: National health interview survey, 2012. National Center for Health Statistics. Retrieved from: http://www.cdc.gov/nchs/data/series/sr_10/sr10_260.pdf. Retrieved on September 29, 2016.
- Boyd, M., Luetje, V., & Eckert, A. (1992). Creating organizational change in an inpatient long-term care facility. *Psychosocial Rehabilitation Journal*, *15*(3), 47-54.
- Centers for Medicare & Medicaid Services (CMS). (2015). Inpatient Psychiatric Facility (IPF) Outcome and Process Measure Development and Maintenance. Measure Methodology. Retrieved from: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/Measure-Methodology.html>. Retrieved on: November 13, 2016.
- Current Nursing. (2011). Nursing Theories-A Companion to Nursing Theories and Models. Retrieved from: http://currentnursing.com/nursing_theory/change_theory.html. Retrieved on: March 11, 2017.
- Hideki, F., Naoki, N., Seiko, Y., Osamu, K., Masato, M., Wataru, U., & ... Okawa, K. (2016). The Alcohol Use Disorders Identification Test for Consumption (AUDIT-C) is more useful than pre-existing laboratory tests for predicting hazardous drinking: a cross-sectional study. *BMC Public Health*, 161-8. doi:10.1186/s12889-016-3053-6

Honegger, L. N. (2015). Does the evidence support the case for mental health courts? A review of the Literature. *Law and Human Behavior*, 39(5), 478-488. doi:10.1037/lhb0000141.

Mäkelä, P., Raitasalo, K., & Wahlbeck, K. (2015). Mental health and alcohol use: a cross-sectional study of the Finnish general population. *European Journal Of Public Health*, 25(2), 225-231. doi:eurpub/cku133.

Moran, K., Burson, R. & Conrad, D. (2014). *The Doctor of Nursing Practice Scholarly Project: A Framework for Success*. Burlington, MA: Jones & Bartlett.

National Alcohol Strategy Working Group. (2007). *Reducing alcohol-related harm in Canada: toward a culture of moderation. Recommendations for a national alcohol strategy*. Edmonton and Ottawa: Alberta Alcohol and Drug Abuse Commission, Canadian Centre on Substance Abuse and Health Canada; 2007. Retrieved from: www.ccsa.ca/Resource%20Library/ccsa-023876-2007.pdf. Retrieved on: November 24, 2016.

National Guideline Clearinghouse (NGC). (2012). *Guideline summary: Substance misuse and alcohol use disorders*. In: *Evidence-based geriatric nursing protocols for best practice*. In: National Guideline Clearinghouse (NGC) [Web site]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012 Jan 01. [cited 2016 Oct 16]. Available: <https://www.guideline.gov>.

National Institutes of Health (NIH). (2010). *Rethinking Drinking. Alcohol and your Health*. Retrieved from: https://pubs.niaaa.nih.gov/publications/rethinkingdrinking/rethinking_drinking.pdf. Retrieved on: December 5, 2017.

National Institutes of Health (NIH). (2016). *Helping Patients Who Drink Too Much*. A

CLINICIAN'S GUIDE. U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES.

National Institute on Alcohol Abuse and Alcoholism. Retrieved from:

<https://pubs.niaaa.nih.gov/publications/practitioner/cliniciansguide2005/guide.pdf>.

Retrieved on: December 3, 2017.

National Institute for Health and Clinical Excellence (NICE). (2011). Alcohol-use disorders.

Diagnosis, assessment and management of harmful drinking and alcohol dependence.

London (UK). National Institute for Health and Clinical Excellence (NICE).

Clinical Guideline no. 115.

Pacheco, I. (2011). The Stages of Change Model. Social Work Tech. Retrieved from:

<http://socialworktech.com/2011/03/25/creating-your-digital-social-work-tool-box>.

Retrieved on: November 18, 2017.

Perry, A., Neilson, M., Martyn, M., Glanville, J., Woodhouse, R., Godfrey, C., & Hewitt,

C. (2015). Interventions for drug-using offenders with co-occurring mental

illness. Cochrane Database of Systematic Reviews. Issue 6. Art. No.: CD010901. DOI:

10.1002/14651858.CD010901.pub2.

Rappleye, E. (2015). Average cost per inpatient day across 50 states. Becker's Healthcare.

Retrieved from: [http://www.beckershospitalreview.com/finance/average-cost-](http://www.beckershospitalreview.com/finance/average-cost-perinpatient-day-across-50-states.html)

[perinpatient-day-across-50-states.html](http://www.beckershospitalreview.com/finance/average-cost-perinpatient-day-across-50-states.html). Retrieved on: November 6, 2016.

Rau, J. (2016). Medicare's Readmission Penalties Hit New High. Kaiser Health News. Retrieved

from: [http://khn.org/news/more-than-half-of-hospitals-to-be-penalized-for-excess-](http://khn.org/news/more-than-half-of-hospitals-to-be-penalized-for-excess-readmissions)

[readmissions](http://khn.org/news/more-than-half-of-hospitals-to-be-penalized-for-excess-readmissions). Retrieved on: November 6, 2016.

Reilly S, Planner C, Gask L, Hann M, Knowles S, Druss B, Lester H. (2013). Collaborative care approaches for people with severe mental illness (Review). *The Cochrane Collaboration*. Pp. 1-44.

Saylor, S. (2012). Planning and Executing Change. Management Principles. Retrieved from: <https://2012books.lardbucket.org/books/management-principles-v1.0/s11-04-planning-and-executing-change-.html>. Retrieved on: February 17, 2018.

Skinner, M. D., Lahmek, P., Pham, H., & Aubin, H.-J. (2014). Disulfiram Efficacy in the Treatment of Alcohol Dependence: A Meta-Analysis. *PLoS ONE*, 9(2), e87366. <http://doi.org.silk.library.umass.edu/10.1371/journal.pone.0087366>.

Stahl, S. (2015). *Stahl's Essential Psychopharmacology: Prescriber's Guide*. Cambridge University Press. Fifth Edition.

Substance Abuse and Mental Health Services Administration (SAMHSA). (2014). Results from the 2013 National Survey on Drug Use and Health: Summary of national findings. Retrieved from: <http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf>. Retrieved on September 29, 2016.

Substance Abuse and Mental Health Services Administration (SAMHSA). (2017). Prevention of Substance Abuse and Mental Illness. Retrieved from: <https://www.samhsa.gov/prevention>. Retrieved on: December 6, 2017.

Sutherland, K. (2013). Applying Lewin's Change Management Theory to the Implementation of Bar-Coded Medication Administration. *Canadian Journal of Nursing Informatics*. Retrieved from: <http://cjni.net/journal/?p=2888>. Retrieved on: July 11, 2017.

US Department of Veterans Affairs. (1990). The Alcohol Use Disorders Identification Test.

Retrieved from: <http://www.hepatitis.va.gov/provider/tools/audit-c.asp>. Retrieved on: September 28, 2016.

United States Preventative Services Task Force (USPSTF). (2013). Alcohol Misuse: Screening and Behavioral Counseling Interventions in Primary Care. Retrieved from:

<https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/alcohol-misuse-screening-and-behavioral-counseling-interventions-in-primary-care>.

Retrieved on: October 16, 2016.

University of Virginia (2008). Changes of Stage Model. Step UP Program. Retrieved from:

http://stepupprogram.org/docs/handouts/STEPUP_Stages_of_Change.pdf. Retrieved on: December 12, 2017.

Whiteside, M. (2015). The Florida Keys: City Data on Alcoholism and Health. Florida Keys

News. Retrieved from: <http://www.city-data.com/forum/floridakeys>. Retrieved on: July 15, 2017.

Willenbring, M., Massey, S., & Gardner, M. (2009). Helping Patients Who Drink Too Much:

An Evidence-Based Guide for Primary Care Physicians. *American family physician*. 80. 44-50. Retrieved from: <https://www.researchgate.net/publication>. Retrieved on: March 7, 2018.

World Health Organization (2001). AUDIT: The Alcohol Use Disorders Identification Test:

Guidelines for use in primary care. Geneva: World Health Organization.

Appendix A

Timeline

Timeline	
October 11, 2017	Introduction to project at staff meeting
November 1, 2017	Pre-tests disseminated
November 8, 2017	Co-occurring disorders and AUDIT-C education and training at staff meeting
November 15, 2017	Pre-tests collected and analyzed
December 1, 2017	AUDIT-C assessment installed onto forms on demand system
December 13, 2017	Stages of change model education and training at staff meeting with role-plays
December 14, 2017	Implement Audit-C assessments
January 10, 2018	Rethinking drinking, holistic care model and brief interventions education at staff meeting
February 14, 2018	Medications for alcohol cessation education at staff meeting
February 15, 2018	Clinicians take post-test
February 22, 2018	Post-tests collected and analyzed
March 14, 2018	Education on referrals to appropriate levels of care with resource list, overview and future steps
April 11, 2018	Debriefing and discussion about results and recommendations at staff meeting
October 2017-March 2018	Interviews with clinicians and modifying education and processes based on needs of patients and clinicians

Appendix B

Participant's Initials: _____

Circle an answer that describes your thoughts and /or feelings on the comments presented below.

1. A lab test is a better indicator than a self-reported assessment to gage a patient's harmful drinking behaviors.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2. I feel confident in my abilities to do a brief intervention during treatment and that it can affect a patient's drinking behaviors.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3. I am aware that three or more drinks in men daily and two or more drinks in women daily can indicate a harmful drinking behavior.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4. I believe that daily drinking can negatively affect a patient's health.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5. I often inquire in my practice about patient's drinking behaviors and their desires to reduce or cut down their drinking.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

6. I feel comfortable in my knowledge surrounding medications to reduce drinking or cravings for alcohol.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

7. When I feel that a patient has an alcohol use disorder I think it is important to talk to them about 12 step meetings.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

8. When a patient has an alcohol use disorder I think it is important to discuss long term rehabilitation with them.

1	2	3	4	5
Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

9. What has been your approach to handling patients with alcohol and mental health disorders?

10. What resources would be helpful to you in your clinic site to provide to patients with alcohol problems?

Appendix C

AUDIT-C Tool

1. How often did you have a drink containing alcohol in the past year?

- Never (0 points) * If you answered Never, score questions 2 and 3 below as zero.
 - Monthly or less (1 point)
 - 2 to 4 times a month (2 points)
 - 2 or 3 times per week (3 points)
 - 4 or more times a week (4 points)

2. How many drinks did you have on a typical day when you were drinking in the past year?

- 1 - 2 (0 points)
- 3 - 4 (1point)
- 5 - 6 (2 points)
- 7 - 9 (3 points)
- 10 or more (4 points)

3. How often did you have 6 or more drinks on one occasion in the past year?

- Never (0 points)
- Less than monthly (1 point)
- Monthly (2 points)
- Weekly (3 points)
- Daily or almost daily (4 points)

The AUDIT-C (Alcohol-Use Disorders Identification Test - Consumption) is scored on a scale of 0 to 12 (a score of 0 reflects no alcohol use). A score of 3 or more in older adults is considered positive and suggests the need for further evaluation.

The AUDIT-C is available for use on the public domain.

Appendix D

Co-Occurring Disorders Overview**Prevalence and Risk**

- By 2020, mental and substance use disorders will surpass all physical diseases as a major cause of disability worldwide (SAMHSA, 2017)
- In addition, drug and alcohol use can lead to other chronic diseases such as diabetes and heart disease. Addressing the impact of substance use alone is estimated to cost Americans more than \$600 billion each year (SAMHSA, 2017)
- People with a mental health issues are more likely to use alcohol or drugs than those not affected by a mental illness and of those adults with any mental illness, 18.2% had a substance use disorder, while those adults with no mental illness only had a 6.3% rate of substance use disorder in the past year (SAMSHA, 2017).

Why treat co-occurring disorders on an outpatient basis?

- Cost-benefit ratios for early treatment and prevention programs for addictions and mental illness programs range from 1:2 to 1:10 (SAMHSA, 2017). This means a \$1 investment yields \$2 to \$10 savings in health costs, criminal and juvenile justice costs, educational costs and lost productivity (SAMHSA, 2017).



*Evidence-Based Practices for
Substance Use Disorders*

AUDIT-C Fact Sheet

Assessing for a problematic drinking behavior

- A cross-sectional study involving 334 outpatients showed that the AUDIT-C was a more reliable measure to determine harmful drinking behaviors than lab values such as aspartate transaminase (AST)/alanine transaminase (ALT) ratio and mean corpuscular volume (MCV) (Hideki et al., 2016).
- These lab tests are more costly and invasive to run than the AUDIT-C tool as well (Hidecki et al., 2016).
- The National Guideline Clearinghouse lists the AUDIT-C tool in its major recommendations category, stating that the assessment takes about 2 minutes for a clinician to administer and has sensitivity scores ranging from 0.74% and 0.84% and specificity around 0.90% in two diverse groups detecting alcohol misuse (NGC, 2012).
- If problematic drinking is identified by the AUDIT-C tool score, this would alert the clinician to do a more thorough assessment for an alcohol-use disorder and implement recommended interventions for harmful drinking behaviors (NICE, 2011).
- The AUDIT-C (Alcohol-Use Disorders Identification Test - Consumption) is scored on a scale of 0 to 12 (a score of 0 reflects no alcohol use). A score of 3 or more in adults is considered positive and suggests the need for further evaluation (United States Department of Veterans Affairs, 1990).
- The AUDIT-C is available for use on the public domain.

AUDIT
is a shorter form of
Alcohol Use Disorders
Identification Test
by allacronyms.com



AUDIT-C Tool

1. How often did you have a drink containing alcohol in the past year?

- Never (0 points) * If you answered Never, score questions 2 and 3 below as zero.
 - Monthly or less (1 point)
 - 2 to 4 times a month (2 points)
 - 2 or 3 times per week (3 points)
 - 4 or more times a week (4 points)

2. How many drinks did you have on a typical day when you were drinking in the past year?

- 1 - 2 (0 points)
- 3 - 4 (1point)
- 5 - 6 (2 points)
- 7 - 9 (3 points)
- 10 or more (4 points)

3. How often did you have 6 or more drinks on one occasion in the past year?

- Never (0 points)
- Less than monthly (1 point)
- Monthly (2 points)
- Weekly (3 points)
- Daily or almost daily (4 points)

The AUDIT-C (Alcohol-Use Disorders Identification Test - Consumption) is scored on a scale of 0 to 12 (a score of 0 reflects no alcohol use). A score of 3 or more in older adults is considered positive and suggests the need for further evaluation.

The AUDIT-C is available for use on the public domain.

References

- Hideki, F., Naoki, N., Seiko, Y., Osamu, K., Masato, M., Wataru, U., & ... Okawa, K. (2016). The Alcohol Use Disorders Identification Test for Consumption (AUDIT-C) is more useful than pre-existing laboratory tests for predicting hazardous drinking: a cross-sectional study. *BMC Public Health*, 161-8. doi:10.1186/s12889-016-3053-6
- National Guideline Clearinghouse (NGC). (2012). Guideline summary: Substance misuse and alcohol use disorders. In: Evidence-based geriatric nursing protocols for best practice. In: National Guideline Clearinghouse (NGC) [Web site]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2012 Jan 01. [cited 2016 Oct 16]. Available: <https://www.guideline.gov>.
- National Institute for Health and Clinical Excellence (NICE). (2011). Alcohol-use disorders. Diagnosis, assessment and management of harmful drinking and alcohol dependence. London (UK). National Institute for Health and Clinical Excellence (NICE). Clinical Guideline no. 115.
- Substance abuse and mental health services administration (SAMHSA). (2017). Prevention of Substance Abuse and Mental Illness. Retrieved from: <https://www.samhsa.gov/prevention>. Retrieved on: December 6, 2017.
- US Department of Veterans Affairs. (1990). The Alcohol Use Disorders Identification Test. Retrieved from: <http://www.hepatitis.va.gov/provider/tools/audit-c.asp>. Retrieved on: September 28, 2016.

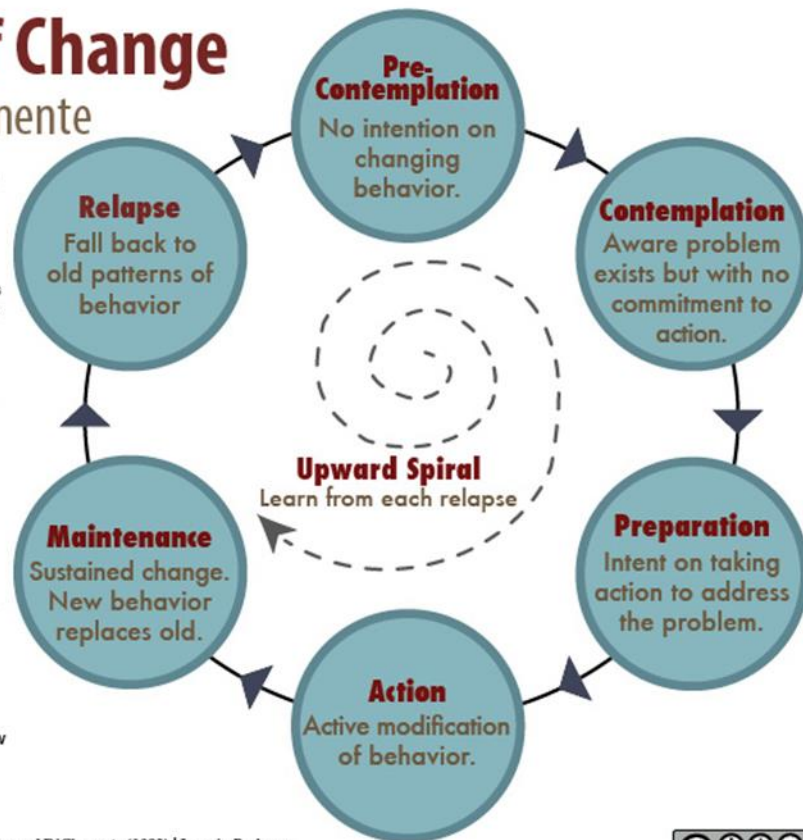
Appendix E

Stages of Change Model Education

The Cycle of Change

Prochaska & DiClemente

- **Precontemplation:** A logical starting point for the model, where there is no intention of changing behavior; the person may be unaware that a problem exists
- **Contemplation:** The person becomes aware that there is a problem, but has made no commitment to change
- **Preparation:** The person is intent on taking action to correct the problem; usually requires buy-in from the client (i.e. the client is convinced that the change is good) and increased self-efficacy (i.e. the client believes s/he can make change)
- **Action:** The person is in active modification of behavior
- **Maintenance:** Sustained change occurs and new behavior(s) replaces old ones. Per this model, this stage is also transitional
- **Relapse:** The person falls back into old patterns of behavior
- **Upward Spiral:** Each time a person goes through the cycle, they learn from each relapse and (hopefully) grow stronger so that relapse is shorter or less devastating.



The Cycle of Change
 Adapted from a work by Prochaska and DiClemente (1983) | Ignacio Pacheco
 This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License.
 Permissions beyond the scope of this license may be available at socialworktech.com/about



(Pacheco, 2011).

Prochaska and DiClemente	Stages of Change	Model
Stage of Change	Characteristics	Techniques
Precontemplation	Not currently considering change: "Ignorance is Bliss"	Validate lack of readiness; Clarify: decision is theirs Encourage re-evaluation of current behavior Encourage self-exploration, not action Explain and personalize the risk
Contemplation	Ambivalent about change: "Sitting on the fence" Not considering change within the next month	Validate lack of readiness Clarify: decision is theirs Encourage evaluation of pros and cons of behavior change Identify and promote new, positive outcome expectations
Preparation	Some experience with change and are trying to change: "Testing the waters" Planning to act within 1month	Identify and assist in problem solving re: obstacles Help patient identify social support Verify that patient has underlying skills for behavior change Encourage small initial steps
Action	Practicing new behavior for 3-6 months	Focus on restructuring cues and social support Bolster self-efficacy for dealing with obstacles Combat feelings of loss and reiterate long-term benefits
Maintenance	Continued commitment to sustaining new behavior Post-6 months to 5 years	Plan for follow-up support Reinforce internal rewards Discuss coping with relapse
Relapse	Resumption of old behaviors: "Fall from grace"	Evaluate trigger for relapse Reassess motivation and barriers Plan stronger coping strategies

(University of Virginia, 2008).

1. Pre-contemplation Stage

"Ignorance is bliss"

"Drinking is not a concern for me"

Goals:

1. Help patient develop a reason for changing
2. Validate the patient's experience
3. Encourage further self-exploration
4. Leave the door open for future conversations

1. Validate the patient's experience:

"I can understand why you feel that way"

2. Acknowledge the patient's control of the decision:

"I don't want to preach to you; I know that you're an adult and you will be the one to decide if and when you are ready to stop drinking."

3. Repeat a simple, direct statement about your stand on the medical benefits of reducing alcohol for this patient:

"I believe, based upon my training and experience, that your drinking is putting you at serious risk for liver disease, and that reducing your drinking is the most important thing you could do for your health."

4. Explore potential concerns:

"Has your drinking ever caused you a problem?" "Can you imagine how your drinking might cause problems in the future?"

5. Acknowledge possible feelings of being pressured:

"I know that it might feel as though I've been pressuring you, and I want to thank you for talking with me anyway."

6. Validate that they are not ready:

"I hear you saying that you are nowhere near ready to stop drinking right now."

7. Restate your position that it is up to them:

"It's totally up to you to decide if this is right for you right now."

8. Encourage reframing of current state of change - the potential beginning of a change rather than a decision never to change:

"Everyone who's ever stopped drinking starts right where you are now; they start by seeing the reasons where they might want to make a change. And that's what I've been talking to you about."

2. Contemplation Stage

"Sitting on the fence"

"Yes, my drinking is a concern for me, but I'm not willing or able to quit drinking within the next month."

Goals:

- 1. Validate the patient's experience**
- 2. Clarify the patient's perceptions of the pros and cons of attempted drinking reduction**
- 3. Encourage further self-exploration**
- 4. Leave the door open for moving to preparation**

- 1. Validate the patient's experience:**

"I'm hearing that you are thinking about reducing your drinking but you're definitely not ready to take action right now."

2. Acknowledge patient's control of the decision:

"I don't want to preach to you; I know that you're an adult and you will be the one to decide if and when you are ready to quit drinking."

3. Clarify patient's perceptions of the pros and cons of attempted reduction in drinking:

"Using this worksheet, what is one benefit of reducing drinking? What is one drawback of reducing drinking?"

4. Encourage further self-exploration:

"These questions are very important to beginning a successful sobriety program. Would you be willing to finish this at home and talk to me about it at our next visit?"

5. Restate your position that it is up to them:

"It's totally up to you to decide if this is right for you right now. Whatever you choose, I'm here to support you."

6. Leave the door open for moving to preparation:

"After talking about this, and doing the exercise, if you feel you would like to make some changes, the next step won't be jumping into action - we can begin with some preparation work."

3. Preparation Stage

"Testing the Waters"

"My drinking is a concern for me; I'm clear that the benefits of attempting sobriety outweigh the drawbacks, and I'm planning to start within the next month."

Goals:

1. Praise the decision to change behavior

- 2. Prioritize behavior change opportunities**
- 3. Identify and assist in problem solving re: obstacles**
- 4. Encourage small initial steps**
- 5. Encourage identification of social supports**

- 1. Praise the decision to change behavior:**

"It's great that you feel good about your sobriety decision; you are doing something important to decrease your risk for liver disease."

- 2. Prioritize behavior change opportunities:**

"Looking at your drinking habits, I think the biggest benefits would come from attending AA meetings and getting a sponsor. What do you think?"

- 3. Identify and assist in problem solving re: obstacles:**

"Have you ever attempted sobriety before? What was helpful? What kinds of problems would you expect in making those changes now? How do you think you could deal with them? Which people, places and things should avoid?"

- 4. Encourage small, initial steps:**

"So, the initial goal is to attend one AA meeting this week and talk to someone during the break or after the meeting."

- 5. Assist patient in identifying social support:**

"Which family members or friends could support you as you make this change? How could they support you? Is there anything else I can do to help?" (University of Virginia, 2008).

Pacheco, I. (2011). The Stages of Change Model. Social Work Tech. Retrieved from: <http://socialworktech.com/2011/03/25/creating-your-digital-social-work-tool-box>. Retrieved on: November 18, 2017.

University of Virginia (2008). Changes of Stage Model. Step UP Program. Retrieved from: http://stepupprogram.org/docs/handouts/STEPUP_Stages_of_Change.pdf. Retrieved on: December 12, 2017.

Appendix F

Rethinking Drinking

What is a drink??

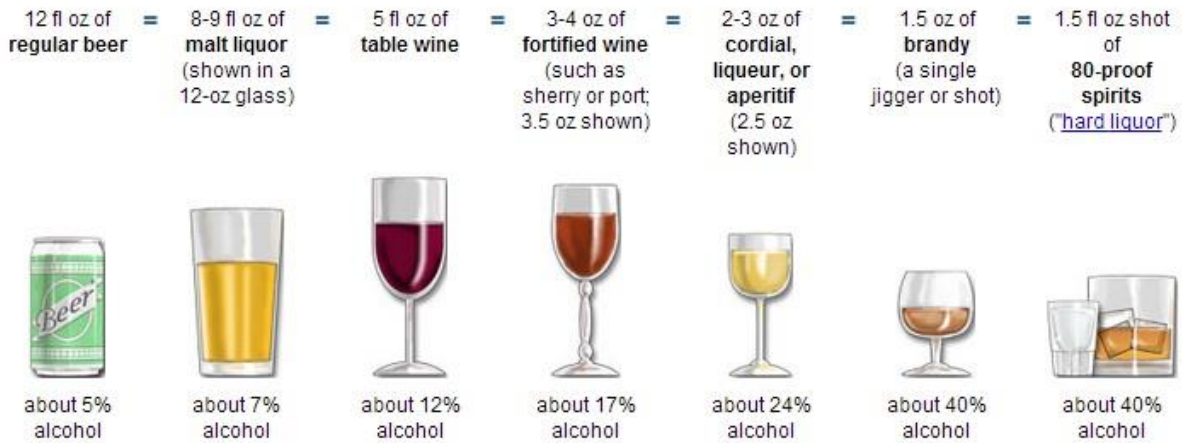


Figure 1 (NIH, 2010).

How much is too much??

3 or more drinks in men daily and 2 or more drinks in women daily can indicate a harmful drinking behavior (NIH, 2010).

What is low-risk drinking?



Figure 2 (NIH, 2010).

Low, Moderate and High-Risk Drinking

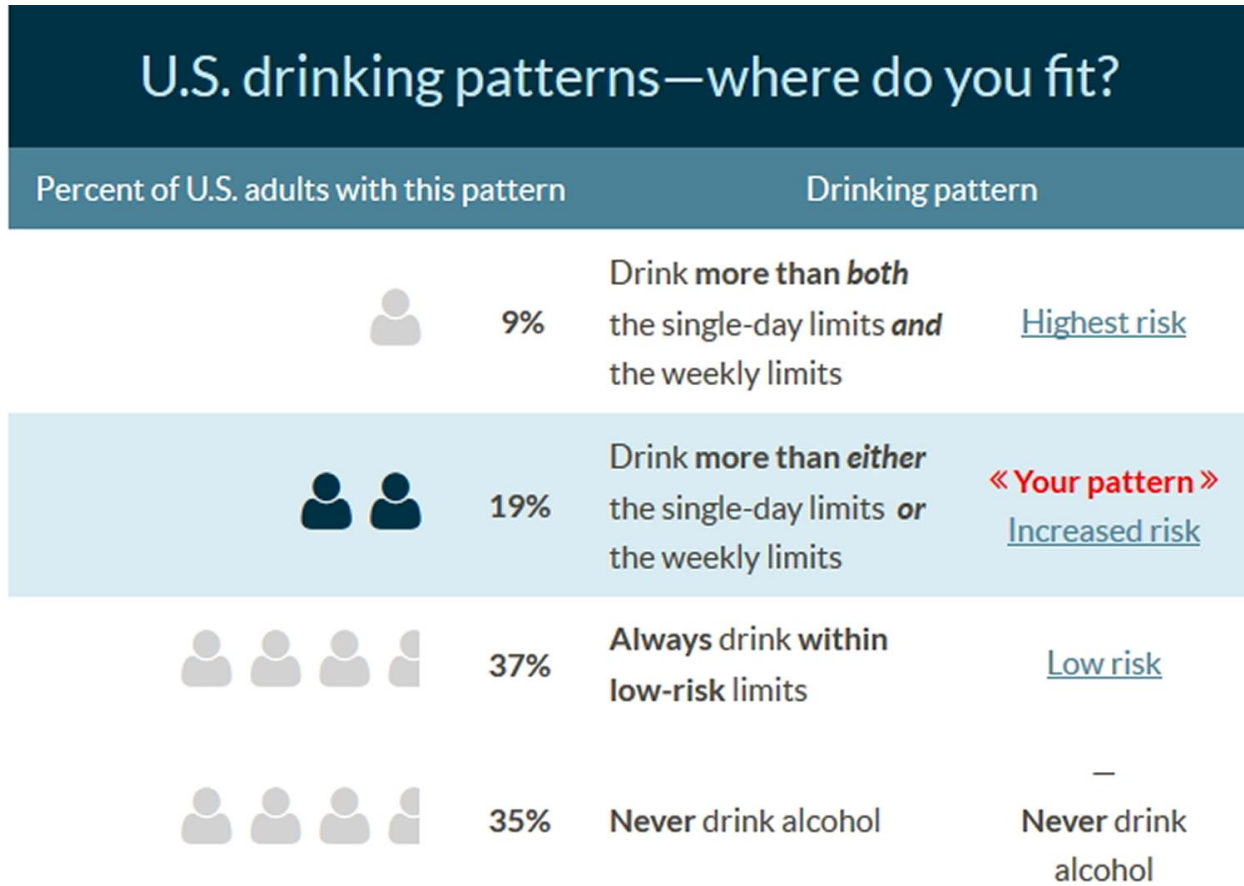


Figure 3 (NIH, 2010).

What is the harm??

- Injuries-alcohol is involved in about 60% of accidents that cause death
- Health Problems- "Heavy drinkers have a greater risk of liver disease, heart disease, sleep disorders, depression, stroke, bleeding from the stomach, sexually transmitted infections from unsafe sex, and several types of cancer. They may also have problems managing diabetes, high blood pressure, and other conditions"
- Birth Defects-Drinking while pregnant can cause brain damage and other fetal anomalies
- Alcohol Use Disorders-Daily drinking can lead to physical dependence and cause withdrawal when alcohol use is stopped. Problematic drinking can cause patients distress, harm and lead to painful consequences (NIH, 2010).



Brief Interventions for Patient's with Problematic Drinking Behaviors

- State the medical consequences to the patient and make a recommendation

“You're drinking more than is medically safe and that is contributing to your depression. I strongly recommend that you cut down (or quit) and I'm willing to help”
- Assess the patient's stage of change
- Discuss goals and a plan that you can agree upon if the patient is agreeable
- Provide Educational materials
- Have the patient do one of the patient exercises below
- Support any positive changes
- Ask the patient if their spouse or family can be involved to help.

Brief Interventions for Patient's with Alcohol Abuse or Dependence

- The brief interventions for more severe alcohol use begin similarly to the ones above and then continue as follows:
- Refer to a PCP for health problems related to alcohol use when appropriate (Dr. Tingle or Dr. Covington)
- Encourage the patient to attend a support group and give meeting lists when appropriate
- Discuss the importance of obtaining a sponsor in the support group
- Refer to the inpatient unit if the patient needs medically assisted detoxification. The patient can be referred to a long-term rehab center from the inpatient unit
- Discuss medications to assist the patient to stop drinking (Antabuse, Campral, Naltrexone and Revia). Refer to Dr. Patwa for prescribing (NIH, 2016).

Patient Exercises

- Make a Pro and Con list for drinking
- Make a chart to keep track of how often and how much you're drinking
- Write down how drinking affects you
- Fill out a "change plan" online at the Rethinking Drinking Web site
- Write a list of goals to look at when cravings for alcohol hits
- Make a list of alternative hobbies or interests that you would like to try
- Write down a list of people, places and things that are triggers
- Write down a list of people that are positive influences with their numbers, so you can call them when you are thinking of drinking
- Practice saying no before you are put in a situation where you are offered a drink
- Go to a 12-step meeting and try it out
- Talk to someone in the 12-step meeting afterwards or during the break (NIH, 2016).

Holistic Treatment of Co-Occurring Disorders

The national trend has been moving toward integrating the treatment of substance use and mental health disorders into medical practice to increase patient's access to care (NIH, 2016). Treatment for alcohol dependence is most effective when combined with behavioral support (NIH, 2016). This support doesn't need to be specialized or intensive alcohol counseling however (NIH, 2016). Practitioners in mental health settings can offer brief but effective behavioral support and education that promotes recovery (NIH, 2016). Applying this approach in these settings would greatly expand access to effective treatment for patients with alcohol dependence (NIH, 2016).

Managing the care of patients with co-occurring disorders is similar to other disease management strategies such as initiating insulin in a patient with diabetes (NIH, 2016). In a clinical trial, clinicians in outpatient settings delivered a series of brief behavioral support sessions for patients that were taking medications for alcohol dependence and these sessions promoted sobriety and led to an increase in medication compliance through education and building the patient's support network (NIH, 2016).

Several types of behavioral therapy are used to treat alcohol use disorders. Cognitive-behavioral therapy and motivational interviewing are two that are effective (NIH, 2016). A combination of behavioral approaches has also been shown to be effective for patients with co-occurring disorders but getting any type of help appears to be more important than the particular approach used (NIH, 2016). All approaches utilized should avoid heavy confrontation and apply encouragement, empathy, motivational support and an explicit emphasis on changing the drinking behaviors (NIH, 2016).

References

National Institutes of Health (NIH). (2010). Rethinking Drinking.

Alcohol and your Health. Retrieved from:

https://pubs.niaaa.nih.gov/publications/rethinkingdrinking/rethinking_drinking.pdf. Retrieved on: December 5, 2017.

National Institutes of Health (NIH). (2016). Helping Patients Who

Drink Too Much. A CLINICIAN'S GUIDE. U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES. National Institute on Alcohol Abuse and Alcoholism. Retrieved from:

<https://pubs.niaaa.nih.gov/publications/practitioner/cliniciansguide2005/guide.pdf>. Retrieved on: December 3, 2017.

Appendix G

Medications for Alcohol Cessation

There are three anti-alcohol drugs commonly prescribed at LKMC:

- Antabuse (disulfiram)
- Campral (Acamprosate).
- ReVia (naltrexone)

ANTABUSE (DISULFIRAM)

Numerous studies have proven that Antabuse is effective in the treatment of alcoholism and alcohol abuse (Skinner, Lahmek, Pham, & Aubin, 2014). Antabuse has been used since 1951. It works by making the patient nauseated if they drink ETOH.

Antabuse reduces cravings for alcohol. One study of over 250 people showed that Antabuse significantly reduces cravings for alcohol (Skinner et al., 2014).

Antabuse reduces the risk of relapse. A review of 13 clinical trials for alcoholism treatment confirmed that Antabuse in combination with treatments such as counselling, self-help groups and alcohol rehab significantly reduces the risk of relapse (Skinner et al., 2014) Antabuse also reduces the risk of relapse in adolescent addicts.

The Antabuse Reaction

It takes one drink to produce a reaction. It takes one bottle of beer, one glass of wine, or one shot of liquor to become sick. It may be prudent to wait several days after drinking alcohol before initiating Antabuse.

The normal sequence of the Antabuse reaction is:

- Flushing of the face
- Headache
- Low blood pressure
- Racing heart
- Dizziness
- Nausea and vomiting (Stahl, 2015).

If you have one drink, you will vomit about as much as if you had food poisoning.

The patient can have foods that have been cooked in wine, as long as they've been cooked the alcohol evaporates quickly. Some deserts that have a lot of uncooked alcohol in them, these should be avoided. You also have to be careful of some cough syrups and cold preparations that can contain as much as 40% alcohol.

Most people prefer to use non-alcoholic mouthwashes to be on the safe side. Although the amount of alcohol absorbed from mouthwash doesn't equal one drink, assuming you don't drink your mouthwash. Patients can use perfumes, colognes, or aftershaves. The amount of alcohol absorbed through your skin is minimal (assuming you don't drink it ☺).

Initial Dosage Schedule

In the first phase of treatment, a maximum of 500 mg daily is given in a single dose for one to two weeks. Although usually taken in the morning, disulfiram may be taken at night if patients experience a sedative effect (Stahl, 2015). Alternatively, to minimize, or eliminate, the sedative effect, dosage may be adjusted downward, and maintenance dose is usually 250mg QD and dosing should not exceed 500 mg daily. (Stahl, 2015).

Side Effects

Patients can feel fatigued for first few weeks

Some report a funny metallic taste in their mouth- this will go away in about a month.

Antabuse can cause liver failure. Liver enzymes should be evaluated before beginning treatment and 1 month after beginning Antabuse.

Patients should avoid Antabuse if they have a significant medical history of heart or blood vessel disease, diabetes, an underactive thyroid, brain disorders (e.g., seizures, brain damage), kidney disease, liver disease, a history of severe depression, a history of psychosis, or a history of suicide attempts (Stahl, 2015). Antabuse can alter the metabolism and blood levels of certain drugs, especially tricyclic antidepressants, Dilantin (phenytoin), coumadin, isoniazid, and theophylline.

Stop taking Antabuse and report immediately: dark urine, severe abdominal pain, persistent nausea or vomiting, yellowing of the eyes or skin.

CAMPRAL (ACAMPROSATE)

Campral is thought to stabilize chemical signaling in the brain that would otherwise be disrupted by alcohol withdrawal. When used alone, Campral is not an effective therapy for alcoholism in most individuals; however, studies have found that campral works best when used in combination with psychosocial support since it facilitates a reduction in alcohol consumption as well as full abstinence (Stahl, 2015). Treatment with Campral should be initiated as soon as possible after the period of alcohol withdrawal, when the patient has achieved abstinence, and should be maintained if the patient relapses.

Dosage

The recommended dose of Campral is two 333 mg tablets (each dose should total 666 mg) taken three times daily (Stahl, 2015). A lower dose may be effective in some patients

Side Effects

Clinically significant serious adverse reactions associated with Campral include suicidality, depression and acute kidney failure.

Common side effects include chronic diarrhea, nausea, depression and anxiety (Stahl, 2015). These side effects usually were reported as the reason patients chose to no longer take Campral.

REVIA (oral) and Vivitrol (injection) (NALTREXONE)

Approved for medical use in U.S. in 1984. Naltrexone has been shown to decrease the amount and frequency of drinking, but it does not make the patient sick from drinking. They just will not feel a "high". Its mechanism of action in alcohol dependence is not fully understood, but as an opioid receptor antagonist is likely to be due to the modulation of the dopaminergic mesolimbic pathway (one of the primary centers for risk-reward analysis in the brain, and a tertiary "pleasure center") which is hypothesized to be a major center of the reward associated with addiction that all major drugs of abuse are believed to activate (Anton, 2008). Mechanism of action may be antagonism to endogenous opioids whose production is augmented in the presence of alcohol

A naltrexone treatment study by Anton et al., released by the National Institutes of Health in February 2008 has shown that alcoholics having a certain variant of the opioid receptor gene (G polymorphism of SNP Rs1799971 in the gene OPRM1), demonstrated strong response to naltrexone and were far more likely to experience success at cutting back or discontinuing their alcohol intake altogether, while for those lacking the gene variant, naltrexone appeared to be no different from placebo (Anton, 2008). Studies have supported this and people of a Caucasian decent are most likely to benefit.

Dosage

A dose of 50 mg once daily is recommended for most patients (Stahl, 2015). IF OPIOD USE IS SUSPECTED A CHALLENGE TEST SHOULD BE PERFORMED AND THE PATIENT SHOULD BE MONITORED FOR SYMPTOMS OF WITHDRAWAL.

Monitor vital signs and observe the patient for signs and symptoms of opioid withdrawal. These may include, but are not limited to: nausea, vomiting, dysphoria, yawning, sweating, tearing, rhinorrhea, stuffy nose, craving for opioids, poor appetite, abdominal cramps, sense of fear, skin erythema, disrupted sleep patterns, fidgeting, uneasiness, poor ability to focus, mental lapses, muscle aches or cramps, pupillary dilation, piloerection, fever,

changes in blood pressure, pulse or temperature, anxiety, depression, irritability, backache, bone or joint pains, tremors, sensations of skin crawling or fasciculations. If signs or symptoms of withdrawal appear, the test is positive and no additional naloxone should be administered.

Side Effects

The most common side effects reported with naltrexone are gastrointestinal complaints such as, nausea, diarrhea and abdominal cramping (Stahl, 2015). These adverse effects are analogous to the symptoms of opioid withdrawal, as the mu receptor blockade will increase GI motility. Others side effects can include headache, anxiety, fatigue, and insomnia.

Naltrexone has been reported to cause liver damage (when given at doses higher than recommended). Liver function tests should be completed prior to starting naltrexone, and periodically thereafter.

Naltrexone should not be used by persons with acute hepatitis or liver failure, or those with recent opioid use (typically 7-10 days). It is an opioid antagonist, so it can make withdrawal worse. In an emergency situation when opioid analgesia must be administered to a patient receiving REVIA, the amount of opioid required may be greater than usual, and the resulting respiratory depression may be deeper and more prolonged

References

Anton, R. F. (2008). Naltrexone for the Management of Alcohol Dependence. *The New England Journal of Medicine*, 359(7), 715-721.

<http://doi.org/10.1056/NEJMct0801733>

Skinner, M. D., Lahmek, P., Pham, H., & Aubin, H.-J. (2014). Disulfiram Efficacy in the Treatment of Alcohol Dependence: A Meta-Analysis. *PLoS ONE*, 9(2), e87366.

<http://doi.org.silk.library.umass.edu/10.1371/journal.pone.0087366>.

Stahl, S. (2015). *Stahl's Essential Psychopharmacology: Prescriber's Guide*. Cambridge University Press. Fifth Edition.

Appendix H

Resource List

Anchors Aweigh-12 Step Meetings

404 Virginia St. Key West

305-296-7888

Dr. Norman Tingle-PCP

Key West Professional Building, 1111 12th Street, Suite 207, Key West

(305) 294-1706

Dr. Jerome Covington-Primary Care Clinic

1200 Kennedy Drive, Key West

305-517-6616

Patterson House-Sober Living Men

2221 Patterson Avenue, Key West

305-295-7580

Samuel's House-Sober Living Women

1614 Truesdell Ct., Key West

305-296-0240

The Willough-Dual Diagnosis LTT facility (Medicare)

9001 Tamiami Trail E. Naples, FL 34113

(239) 775-4500

Here's Hope-Halfway House (Unfunded/Medicaid)- Must be on SFBHN list

1907 NW 38th Street Miami, FL 33142

(305) 637-6720

Agape-Residential (Unfunded/ Medicaid)- Must be on SFBHN list

22790 SW 112TH AVE MIAMI, FL 33170

P: (305) 235-2616

Spectrum Programs (Unfunded/Medicaid)-Must be on SFBHN list

140 NW 59th Street Miami, FL 33127

305-774-3616

Long-term Rehabilitation Centers

Patients with private insurance usually have to call their insurance company to determine which rehabilitation center is in network and decide from there.

Guidance Care Center-Detox Beds and RTF beds

Cindy McKnight-Social Worker

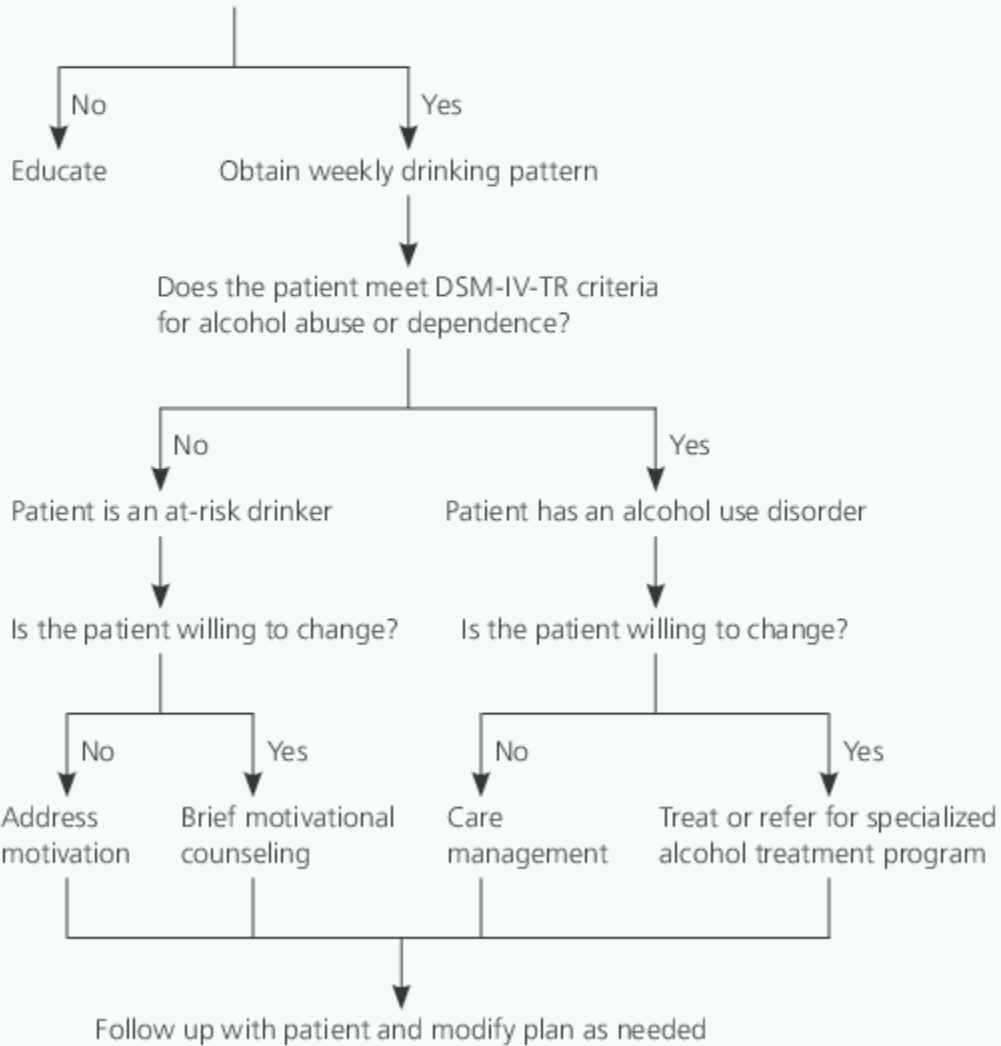
41st OceanSide Marathon, FL

305-434-7660

When to Refer Out?

Clinical Approach to At-Risk Drinking and Alcohol Use Disorders

Has patient exceeded daily drinking limits within the past year (more than three per day for women and more than four per day for men)?



(Willenbring, Massey & Gardner, 2009)

Appendix I

Determination of Human Subject Research

Human Research Protection Office

The UMass Amherst IRB is required to review and approve all research involving human subjects. This application helps determine if your project involves human subject research as defined by federal regulations.

INSTRUCTIONS for INVESTIGATORS:

1. If investigator is faculty, complete this form in its entirety and submit with any applicable survey instruments or questionnaires via email attachment to the Human Research Protection Office at humansubjects@ora.umass.edu **If investigator is a student, forward completed application to your Faculty Sponsor for review and approval. The Faculty Sponsor then submits the form to the IRB via email with his or her endorsement of the project or activity.**
2. The UMass Amherst IRB will determine whether your research needs additional IRB review and notify you with a Memorandum of determination in an email attachment.
3. Do **NOT** begin data collection prior to receiving IRB determination.
4. If you have any question or need further instructions, please visit our [website](#) or phone us at 413-545-3428.

INVESTIGATOR INFORMATION

Investigator Name: Erin Sheehan	Faculty Sponsor (if applicable): Gabrielle Abelard
Title: DNP PMHNP student intern	Title: DNP, PMHNP, PMHCNS-BC
Department: UMASS Amherst Nursing PMHNP	Department: UMASS Amherst Nursing PMHNP
Email: Erin14327@gmail.com	Email: gabelard@umass.edu

PROJECT INFORMATION

Project Title: A Quality Improvement Project for Co-occurring Disorders in Outpatient Behavioral Health

Is project supported by external funding?

No

Pending * Please identify your anticipated funding source:

Yes * Please identify your funding source:

* If funded, provide copy of grant proposal with this form.

State the purpose of the project and what you hope to learn:

To provide education and training to behavioral health clinicians on assessment and treatment of alcohol use disorders in patients with mental health diagnoses. The practitioners will implement a standardized assessment tool (AUDIT-C) and evidenced based interventions as part of the quality improvement project after the education and training are completed to improve patient outcomes and provide holistic patient-centered care.

Describe all project procedures including any data collection activities, methodological designs and plans for analysis:

The clinicians will take a pre-test before the education, training, and implementation of the assessments and interventions. The clinicians will take a post-test after the initiation of the education and interventions. They will also participate in interviews with the DNP student to provide qualitative data on the project. The pre-test scores and the post-test scores will be collected and analyzed in addition to the information from the interviews to determine if the clinicians perceived the project as helpful and a benefit to the patients. No patient data would be collected for the project.

Describe the participant population (age range, gender, ethnic background, type of participant such as student, faculty, health care professionals, etc.), an approximate number of participants, and the location where the project will take place :

The clinicians are behavioral health staff including psychiatrists, nurses, social workers and techs from various ethnic backgrounds and include both men and women that range in ages from 21-72. There are about 35 staff members at the site and at least 25 should be able to participate in the project. The site location is at an intensive outpatient program at a regional medical center in Key West, Florida.

*****NOTE: Please include copies of any project proposals (e.g. Honors or MA Theses, DNP projects, Dissertation Prospectus, etc.) AND surveys/questionnaires, interview questions, etc. with this form.*****

Instructions: Complete Section A as applicable to determine if activities in which you will be engaged meet the definition of human subject research.

SECTION A: Activities Determined by the UMass Amherst IRB not to Represent Human Subject Research

1. **Course-Related Activities:** The project is limited to course-related activities designed for educational or teaching purposes where data is collected as part of a routine class exercise or assignment and is **not intended** for use outside of the classroom. However, if students practice research methodologies on human being, they should still be instructed in the ethical conduct of such activities and be advised to obtain informed consent from their practice subjects.

NOTE: IRB approval is required if a student is involved in an activity designed to teach research methodologies **and** the instructor or student wishes to conduct further investigation and analyses in order to contribute to scholarly knowledge.

2. **Oral History:** The project is limited to oral history activities, such as open ended interviews, that only document a specific historical event or the experiences of individuals without the intent to draw conclusions or generalize findings.

NOTE: IRB approval is required when the oral history activities are intended to produce generalizable conclusions (e.g., that serve as data collection intended to test economic, sociological, or anthropological models/theories).

3. **Journalism/Documentary Activities:** The activities are limited to investigations and interviews that focus on specific events, views, etc., and that lead to publication in any medium (including electronic), documentary production, or are part of training that is explicitly linked to journalism. There is no intent to test a hypothesis.

NOTE: IRB approval may be required when journalists conduct activities normally considered scientific research intended to produce generalizable knowledge (e.g., systematic research, surveys, and/or interviews that are intended to test theories or develop models).

4. **Information-gathering interviews:** The activity focuses exclusively on interviewing or surveying participants about his or her expert knowledge about products or policies rather than people or their thoughts regarding themselves (e.g. interviewing city planners about new state regulations on mixed-use construction zones).

NOTE: Interview questions will need to be reviewed by the HRPO. If the activity involves collecting demographic information about participants it may require IRB approval.

5. **Case Report:** The project consists of a case report or series which describes an interesting treatment, presentation, or outcome. A critical component is that nothing was done to the patient(s) with prior "research" intent.

6. **Program evaluation /Quality Improvement/Quality Assurance Activities:** The activity is conducted to assess, analyze, critique, and improve current processes within the institutional setting to include projects designed to improve current processes involving health care delivery in the institutional setting. The intent is not to generate conclusions that can be applied universally outside of the immediate environment where the project occurred.

- a. The activity does not involve randomization into different treatment groups.
- b. The activity is not designed to be applied to populations beyond the specific study population.

Note: Quality improvement projects are designed to improve the performance of any practice in relation to an established standard. **Quality assurance** projects are activities that are designed to determine if aspects of any practice are in line with established standards. Service surveys issued or completed by University personnel for the purposes of improving University services/programs or for developing new services or programs for student, employees or alumni may fall into this category. Investigators who plan to conduct a QI/QA project, should ensure that they have receive approval from any applicable committees within their department or the site in which the activity will occur.

7. **Evidence Based Practice Intervention:** The project or activity is designed to use best available evidence to make patient care decisions. The project is focused exclusively on translating evidence and applying it to clinical decision-making to improve health care delivery, i.e. it is designed to close the gap between research being conducted and the practice.

Note: "Practice" refers to interventions that are designed solely to enhance the well-being of an individual patient or client and that have a reasonable expectation of success.

8. **Public Use Datasets:** The project is limited to analyzing de-identified data contained within a publicly available dataset. Public use data sets (such as portions of U.S. Census data, data from the National Center for Educational Statistics, General Social Survey, Bureau of Labor Statistics, etc.) are data sets prepared with the intent of making them available for the public and not individually identifiable, therefore their analysis would not involve human subjects.

NOTE: IRB review is required if the publicly available data set contains identifiers, or if the merging of multiple data sets might result in identification of subjects. In both cases, Exempt Category #4 may apply.

9. **De-identified Private Information or Human Biological Specimen:** The project is limited to the use of existing de-identified private information and/or human biological specimens (hereafter referred to as "specimens"). IRB Approval is not required if you can confirm the following:

- a. The private information or specimens were not collected specifically for the currently proposed research project through an interaction or intervention with living individuals; **and**
- b. The investigator can confirm that the use of the private information or specimens is not in violation of the terms of use under which the information or specimens were collected; **and**
- c. The investigator will only receive information or specimens that are fully de-identified. De-identified means that the materials to be studied are devoid of any identifying information (names, SSN, DOB, PHI, etc.) and any codes that would enable linkage of the information or specimens to individual identifiers do not exist.

NOTE: To be considered de-identified, nobody, including individuals who are not involved in the conduct of the project, should be able to link the information or specimens back to identifiers.

10. **Coded Private Information and/or Human Biological Specimens:** The project is limited to the use of existing coded private information and/or human biological specimens (hereafter referred to as

“specimens”). IRB Approval is not required if all of the following conditions apply to the project:

- a. The private information or specimens were not collected specifically for the currently proposed research project through an interaction or intervention with living individuals; **and**
- b. The investigator(s) cannot readily ascertain the identity of the individual(s) to whom the coded private information or specimens pertain because for example the specimen provider has agreed not to release the key to the code.

NOTE: If a contractual agreement or Data Use Agreement is required in order to gain access to the information, typically agreements are signed by university officials and not individual researchers. Please provide a copy of any contractual agreement/DUA with your submission.

11. **Decedents:** The project involves research that is limited to death records, autopsy materials, or cadaver specimens. If the project involves the use and/or collection of Protected Health Information (PHI), HIPAA regulations apply to decedent research.

NOTE: This exception may not be available for decedent Information that contains Psychotherapy notes or Information relating to HIV, mental health, genetic testing, or drug or alcohol abuse.

End of Section

IMPORTANT: If your activity does not fall into the categories described in Section A, continue to Section B to assess whether your activity is defined as research per regulations. NOTE: If your project falls under FDA regulations, please call our office at 413-545-3428.

Section B. Activities Defined as Research and Subject to Review by the UMass Amherst IRB

1. Is the activity RESEARCH: a systematic investigation designed to contribute to generalizable knowledge?

TIP: If the activity is characterized by a plan that incorporates data collection, either quantitative or qualitative, and data analysis to answer a question AND the intent of the investigation is to generate conclusions that can be applied outside of the immediate environment where the investigation occurred, then the activity meets the definition of research. *If you plan on presenting findings at a professional conference or publishing your results in an academic journal, your project may meet the definition of generalizable.* If you have questions about this, please contact our office at 413.545.3428.

- Yes, Go to #2 No, IRB review is not required

2. Does the research involve obtaining information about LIVING individuals?

- Yes, Go to #3 No, IRB review is not required

3. Does the research involve collecting data through intervention (i.e., physical procedures or manipulation of the environment) or interaction (i.e., communication or interpersonal contact between investigator and person) with the individuals?

- Yes, **IRB review required.** No, Go to #4

4. Does the research involve collecting identifiable information (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information)?

- Yes, Go to #5 No, IRB review is not required

5. Is the information private? (About behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, or provided for specific purposes by an individual and which the individual can reasonably expect will not be made public)

- Yes, **IRB review required** No, IRB review is not required

Section C. Investigator Responsibilities and Assurances	
<ul style="list-style-type: none"> • I certify that the information provided in this determination form and in all attachments is complete and accurate. • I understand that I have ultimate responsibility for the protection of the rights and welfare of human participants and for the ethical conduct of this activity. • I certify that the proposed project has not yet been done, is not currently underway, and will not begin until IRB determination and/or approval has been obtained. 	
Investigator Signature	
Name: Erin Sheehan	Date: 7/16/2017

HRPO USE ONLY	
<input type="checkbox"/> Project does NOT need IRB review. Date: _____ Initials: _____	<input type="checkbox"/> Project DOES need IRB review. Date: _____ Initials: _____
(HRPO use only) Determination based on the following rationale:	

Appendix J
Education Outline

1. Initial Education and Training (November)
 - a. Co-occurring disorders
 - (1) Prevalence
 - (2) Risks
 - (3) Cost-Benefit
 - (4) Benefits of holistic treatment
 - b. AUDIT-C factsheet
 - (1) Evidence-Based
 - (2) Administration
 - (3) Scoring
 - (4) Interpretation
 - c. AUDIT assessment can be done for positive score on AUDIT-C
 - (1) Administration
 - (2) Scoring
 - (3) Interpretation
2. Second Education and Training (December)
 - a. Stages of Change Model
 - (1) Precontemplation
 - (2) Contemplation
 - (3) Preparation
 - (4) Action
 - (5) Maintenance
 - (6) Relapse
 - b. Characteristics of each Stage
 - c. Techniques to Utilize in each Stage
 - d. Goals for each stage
 - e. Interventions for each stage
 - d. Role Play

3. Third Education and Training (January)

- a. Rethinking Drinking Education
- b. What is a drink?
- c. How much is too much?
- d. What is the Harm?
- e. Alcohol Use Disorder Severity
 - (1) Mild
 - (2) Moderate
 - (3) Severe
- f. Brief Interventions
- g. Problematic Drinking vs. Alcohol Abuse vs. Alcohol Dependence
- h. Patient Exercises
- i. Holistic Treatment Approach
 - (1) Motivational Interviewing
 - (2) Cognitive Behavioral therapy
 - (3) Support
 - (4) Brief Interventions
 - (5) Variety of modalities is effective

4. Fourth Education and Training (February)

- a. Medication
 - (1) Antabuse
 - (2) Campral
 - (3) Naltrexone
 - (5) Revia
- b. Dosing
- c. Benefits
- d. Side Effects
- e. Interactions
- f. Pearls of Wisdom from Dr. Patwa
- g. Open Discussion

4. Fifth Education and Training (March)
 - a. Review of Previous Education and Training
 - (1) Co-Occurring Disorders
 - (2) Stages of Change Model
 - (3) Rethinking Drinking and Brief Interventions
 - (4) Drugs that Prevent Drinking
 - b. Referral Education
 - (1) PCPs
 - (2) Detox vs. Rehab vs. RTF beds
 - (3) 12-step meetings
 - (4) Referral for Medications
 - (5) Individual Therapy
 - (6) Education
 - (7) Sober Living

5. Sixth Education and Training (April)
 - a. Dissemination of Survey Data
 - b. Recommendations for Next Steps
 - c. Open Discussion