

Increasing Alcohol Screening Among Women

Donna Sandifer

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Abstract

Alcohol use disorder (AUD) is occurring at increasing rates among women in the United States. High-risk drinking, heavy alcohol use, and binge drinking are characteristics of the disorder. Screening for alcohol use can identify women with risky drinking patterns. Primary care providers can identify women with AUD through routine alcohol screening protocols. The purpose of this project was to increase screening among women at a primary care clinic in western North Carolina by implementing the United States Alcohol Use Disorder Identification Test (USAUDIT). There was no routine alcohol screening occurring at the clinic before the start of the project. Women ages 18 and over, who presented for routine healthcare visits were screened with the USAUDIT over 12 weeks. There were 652 women who met screening criteria and 68% (n=446) were screened. One percent (n=6) of women had positive screening results, representative of mild AUD. All positive screens received a point-of-care brief intervention. Brief interventions included conversations about women's drinking patterns and education on recommended alcohol limits. Findings revealed women with AUD were identified by using the USAUDIT. Future endeavors to improve screening rates at the clinic are indicated.

Keywords: Alcohol use disorder, primary care, women, screening, USAUDIT

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Chapter One: Overview of the Problem of Interest

While many consume low levels of alcohol without consequences, others develop patterns of misuse that represent risky behaviors and alcohol use disorder (AUD). For individuals with AUD, physical and social sequelae can produce life long, harmful effects. Women have an increased susceptibility to the effects of alcohol (Agabio, Campesi, Pisanu, Gessa, & Franconi, 2016). For this reason, attention is warranted towards identifying these women in the hopes that potential adverse outcomes can be prevented.

For women with high-risk drinking or AUD, primary care is one option where this can be addressed. Screening for alcohol use during primary care visits is an opportunity for alcohol problems to be identified. Women found to be at risk can be provided education, a brief intervention, or a referral for behavioral counseling. Women at risk of AUD can be identified through screening, and a treatment plan can be initiated.

Background Information

AUD is a chronic, reoccurring brain disease characterized by an impaired ability to control alcohol use despite negative consequences (National Institutes of Health [NIH], National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2018). It includes high-risk drinking, heavy alcohol use, and binge drinking (NIH, NIAAA, 2018). The Diagnostic and Statistical Manual (DSM-5) describes AUD as mild, moderate, or severe based on meeting two of 11 set criteria during the same 12-month period (NIH, NIAAA, 2018).

DSM-5 does not differentiate the number or size of alcoholic beverages consumed to meet these criteria (NIH, NIAAA, 2018); however, current national dietary guidelines recommend the amount of alcohol consumption to be no more than one drink per day for women and two drinks per day for men (U.S. Department of Health and Human Services [USDHHS],

Office of Disease Prevention and Promotion [ODPHP], Center for Nutrition Policy Promotion [CNPP], 2015). This amount equals no more than seven drinks per week for women and 14 drinks per week for men. Higher amounts than this signify high-risk drinking, defined as consuming four or more drinks on any day, or eight or more drinks per week for women, and five or more drinks on any day for men, or 15 drinks per week (USDHHS, ODPHP, CNPP, 2015). Binge drinking is defined as drinking above the daily recommended limit in two hours, on at least one day in the past month (NIH, NIAAA, 2018). These parameters are essential to understand when screening for alcohol use.

The prevalence of alcohol use in the U.S. is significant. Unhealthy alcohol use is currently the 3rd leading cause of preventable deaths in the U.S (Curry et al., 2018). Between 2006-2010 an estimated 88,000 deaths per year were attributed to alcohol use (Curry et al., 2018). Of these 88,000 deaths, 44% were from chronic conditions such as alcoholic liver disease, and 56% were due to injuries from motor vehicle crashes (Curry et al., 2018). The Centers for Disease Control and Prevention (CDC, 2018) reports that the effects of alcohol shortened the lives of those 88,000 individuals by 30 years. Additionally, high-risk drinking increased by almost 30% between 2001-2002 and 2012-2013 (Curry et al., 2018). Between 2006-2010, the major causes of alcohol-related deaths were alcoholic liver disease, alcohol dependence syndrome, alcohol abuse, and acute pancreatitis (CDC, 2013).

Primary care centers can provide opportunities for early identification and intervention for at-risk substance users before severe consequences occur (Strobbe, 2014). One opportunity can be a brief alcohol screening tool that quickly assesses the severity of alcohol use and determines if further interventions and referrals are needed (Strobbe, 2014). However, Pace and Uebelacker (2018) found that the identification of AUD with subsequent interventions were not

occurring in primary care. In 2011, only one in six adults in the U.S. reported talking about alcohol with their primary care provider (Pace & Uebelacker, 2018). These findings indicate gaps in reporting and in follow up.

Alcohol misuse has far-reaching effects that impact nursing and the healthcare system. As reported by Curry et al. (2018), of the 88,000 alcohol-related deaths between 2006-2010, excessive alcohol use contributed to 3.2-3.7% of cancer deaths, including breast, gastrointestinal, oral, and neck cancers. Overall, the impact of alcohol misuse in the U.S. is great, with an associated cost of \$249 billion in 2010 resulting from lost workplace productivity, increased health care expenses, criminal justice expenses, and motor vehicle crashes (Curry et al., 2018).

Other data reveal about 6.1 million children aged 17 or younger reside in two-parent households with at least one parent having AUD (Lipari & Vanhorn, 2017). Additionally, 1.4 million children live in a single-parent household with at least one parent who has AUD (Lipari & Vanhorn, 2017). College universities are impacted by the prevalence of underage drinking and drinking among college students, with 20% of college students meeting the criteria for AUD (NIH, NIAAA, 2018). The consequences of underage drinking range from the interference of brain development, failed college courses, and lower grades, revealing significant effects from AUD (NIH, NIAAA, 2018).

While the effects of alcohol misuse can present many problems, of importance is the trend among women. In the 1980s, AUD was approximately five times more prevalent in men than women (Agabio, Pisanu, Gessa, & Franconi, 2017). However, over the past few decades, AUD is now less than twice as prevalent in men than women (Agabio et al., 2017). With this current trend among women, significant health hazards warrant consideration. For example, women are more susceptible to the long-term effects of alcohol on their health, and they develop

alcohol-related medical problems after a shorter duration and lower levels of alcohol consumption compared to men (Milic et al., 2018). Blood alcohol levels are higher in women than men after ingesting the same amount of alcohol (Agabio et al., 2017). This vulnerability to the effects of alcohol indicates a need for timely and appropriate screening of AUD for women presenting for care in primary care settings.

According to the CDC (2015), binge drinking prevalence among women aged 18-44 in North Carolina increased from 12.8% in 2014 to 17.2% in 2016. Likewise, heavy drinking prevalence among women aged 18-44 increased from 4.1% in 2014 to 9.7% in 2016 (CDC, 2015). These data reveal that at-risk drinking among women has risen in NC and that there is a need for identification of these women.

Significance of Clinical Problem

As previously stated, in the 1980s, AUD was five times more prevalent in men than in women (Agabio et al., 2017). AUD is now less than twice as prevalent in men than in women, with current and lifetime prevalence being 17.6% and 36.0% in men and 10.4% and 22.7% in women (Agabio et al., 2016). Increased susceptibility to health problems while drinking the same amount as men, and differences in alcohol metabolism represent increased risk factors for women and related health complications from alcohol use (Agabio et al., 2016).

In 2015, there were 15.1 million adults aged 18 and older with AUD in the U.S. (NIH, NIAAA, 2018). Of these, 9.8 million were men, and 5.3 million were women (NIH, NIAAA, 2018). However, only 6.7% of these adults received any treatment the following year (NIH, NIAAA, 2018). In a study by Harris and Yu (2016), physicians reported screening patients for substance use only 57% of the time. These physicians only provided brief interventions for 46% of the time and referral to treatment 47% of the time (Harris & Yu, 2016). Cited reasons were

being uncomfortable with conducting the screenings, and an overall lack of confidence in knowing how to provide alcohol counseling (Harris & Yu, 2016). Likewise, Slaunwhite and Macdonald (2015) reported providers were aware of the effects of alcohol harm; however, barriers to referral were the limited mental health services for patients, waiting lists, or having to travel out of town to receive necessary treatment.

Implementation of an alcohol use screening tool with adequate staff education can help bridge this gap. Regulatory and medical agencies recommend routine alcohol screening, including the United States Preventative Services Task Force (USPSTF), the American Academy of Pediatrics, the American College of Obstetricians and Gynecologists (ACOG), and the American Medical Association (AMA) (Shogren, Harsell, & Heitkamp, 2017). At-risk behavior may not be identified without appropriate processes for screening in place.

Practice gap. This DNP project was implemented in a practice site where there was no process for alcohol screening outside of an initial clinic visit assessment. All new patients completed a health history questionnaire which included the Cutdown, Annoyed, Guilty, and Eye-opener (CAGE) questions. If patients scored higher than a two on the CAGE, their alcohol use was more thoroughly discussed at that time. They were offered pharmacotherapy, such as Acamprosate, along with a referral to the licensed clinical social worker (LCSW) on site if indicated. They were also referred to local Alcoholics Anonymous (AA) meetings. The providers at the clinic recognized the need to improve the process for increased screening beyond the initial visit assessment.

The county where the clinic was located had an excessive drinking rate of 14% in 2014, with an increase to 15% in 2017 and 16% in 2018 (County Health Rankings & Roadmaps, 2018). Excessive drinking was defined as binge and heavy drinking (County Health Rankings &

Roadmaps, 2018). From 2002-2012, binge drinking among women in this county increased 42%, as compared with binge drinking for males rising 15% (Institute for Health Metrics and Evaluation [IHME], 2016). From 2005-2012, heavy drinking increased by 40% in women and 28% in men (IHME, 2016). These data, coupled with the increase in alcohol use among women in NC, demonstrate a need for an improved screening process for women living in this county. The process began with partnering with the project site for this DNP project.

Question Guiding Inquiry (PICO)

A primary care clinic in rural NC recognized they did not adequately screen for alcohol use and desired to improve their identification of women with AUD and to implement referrals for positive screens. This DNP student and the practice collaborated on the implementation of a process to screen for alcohol misuse. This led to the following question: does the implementation of an alcohol screening tool increase brief interventions and referrals to behavioral counseling?

Population. The targeted population for this project was the three nurse practitioners providing care at a rural primary care clinic in North Carolina.

Intervention. The intervention was provider utilization of the United States Alcohol Use Disorders Identification Test (USAUDIT) screening tool for women 18 years of age or older being seen for routine visits. Routine visits included those for chronic disease management, or as an initial patient visit. The screening was not to be provided to those who presented with episodic visits, or for work-in patients. Upon rooming, the Medical Office Assistants (MOAs) assisted women with answering the first three questions of the screening tool. For women unable to read, the MOAs read the questions aloud. If women had positive scores on the first three questions, the providers were made aware, and the remaining seven items (the full USAUDIT)

would be completed. Conversely, if the USAUDIT-C had a negative score, the screening was complete after three questions, the patient did not meet criteria for AUD, and there was no need to ask the remaining seven questions. For positive screens, providers would review the screening score with the patient, and depending on the final score, either a brief education session would be provided, or the woman would be referred to the LCSW onsite.

Comparison. This clinic had a goal of screening all women annually. The current annual screening rate was 0%, as only new patients on initial visits completed the CAGE screen. Data were gathered that included the number of women screened compared to the number that presented for routine appointments. Women who were already screened during the project would be deducted from the total amount who presented for screening

Outcome. The anticipated outcome of this intervention was that women found with positive screening results be identified and provided brief alcohol education or referred for behavioral counseling. The providers had a goal that 100% of women who screened positive would be provided a BI or referred to the LCSW. Of those referred, the benchmark for follow-through was 75%.

Summary

AUD carries with it many negative consequences for men and women. Women are particularly susceptible to the adverse effects of alcohol. From physiologic changes that predispose women to significant alcohol effects, and to alcohol-related disease conditions, women carry increased risks with alcohol use. It is beneficial for measures to be in place in primary care settings to identify those at-risk women and implement appropriate interventions. With proper screening, women can be more quickly identified, and treatment initiated in a timelier manner.

Implementation of an alcohol use screening tool can be accomplished in primary care. Performing routine screening for AUD of all women is the recommendation of governmental and medical organizations. The addition of a brief screening tool can assist providers to quickly identify patterns of alcohol misuse and work with women to receive appropriate interventions for the disorder. Identifying these women through screening can be a crucial step to decreasing the rising numbers of alcohol misuse among women in NC.

Chapter Two: Review of the Literature

An overview of the literature was completed to assess the benefit of alcohol screening in primary care. Various types of interventions were reviewed with attention focused on articles with higher levels of evidence. Inclusion and exclusion criteria were evaluated using the PRISMA model (see Appendix A). Gaps in the evidence, challenges, as well as supportive research findings were included in article selection. This information helped guide the implementation of the USAUDIT as a screening tool at the project site.

Literature Appraisal Methodology

Sampling strategies. The database searches for relevant associated research included PubMed, CINAHL, and the East Carolina University Laupus Library. The first search in PubMed included the search terms “AUDIT” and “women” and used limiting filters of adults, English language, United States, female, and core clinical journals within the last five years. This search yielded 312 articles with five articles chosen for inclusion. The second PubMed search combined three terms, “AUDIT,” and “women,” and “primary care” with the same prior limitations. This search yielded 60 articles, of which two were chosen for inclusion. The third PubMed search used only one term, “AUDIT-C,” with limitations of the last five years, humans and adults. This search yielded 98 articles with two chosen for inclusion. A final PubMed search included search terms “World Health Organization,” “alcohol,” and “screening.” Limitations were 1983 to present due to historical information on the subject. This search yielded 200 articles chosen for inclusion.

A CINAHL search included search terms “Alcohol Use Disorders Identification Test,” “women,” and “alcoholism.” Limitations were the last five years, English, United States, women, adults, and academic journals. This search yielded 292 articles with 15 chosen for

inclusion. A final search using East Carolina Laupus Library One Search included search terms “alcohol screening” and “primary care.” Limitations were the last five years, humans, women, adults, English, and peer-reviewed. This search yielded 1000 results, with 19 articles chosen for inclusion. Each of these searches provided research articles of various levels of evidence to be synthesized throughout the literature review process.

Evaluation criteria. Multiple factors were involved with the evaluation of the literature. Further inclusions and exclusions are shown in the PRISMA flowchart (see Appendix A). The focus was placed on articles with levels of evidence I-VI. A total of 1974 articles and 13 internet resources were available for review but narrowed to 84 articles after removing duplicates and reviewing abstracts for relevance. Of these 84 articles, 24 were excluded for reasons such as relevancy, level of evidence, and other pertinent factors (see Appendix A). Forty-one articles were included in the final literature review.

Peer-review was verified for the remaining articles. Some did not meet the highest levels of evidence. There were 15 levels I, and six levels II articles. Other articles were levels III through IV, with several appraised at level VII. Articles from other countries were accepted when the information was of particular relevance. Sound evidence was gathered to move forward with the project.

Literature Review Findings

An extensive literature search was undertaken to examine alcohol screening in primary care. This search was further narrowed to include screening tools. Literature was assessed for the levels of evidence; levels I through VII were found. Major strategies for implementing an alcohol screening program were noted through the level I evidence and based on clinical guidelines. Many resources that explained, supported or challenged the intervention were

supported by evidence levels II through VII. Additional information was gathered from the CDC, the Substance Abuse and Mental Health Services Administration (SAMHSA), and the Centers for Medicare and Medicaid (CMS).

Origin of screening tools. A review of the literature revealed the tools and instruments used for alcohol use screening across history. The World Health Organization (WHO) published the first edition of *The alcohol use disorders identification test (AUDIT): Guidelines for use in primary care* in 1989 (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The second and current edition was released in 2001 with a companion document discussing early intervention approaches (Babor et al., 2001). Since then, other agencies have come forward with alcohol screening recommendation guides.

The USPSTF made its original recommendations on alcohol screening and counseling in 2004, with revisions made in 2013 and 2018 (USPSTF, 2018). The current USPSTF recommendation is for screening of unhealthy alcohol use to occur in primary care for all adults 18 years of age and older (USPSTF, 2018). This recommendation is categorized as Grade B, which is a service that is recommended with a high level of confidence that the net benefit is moderate to substantial (USPSTF, 2018).

The CDC released *Planning and implementing screening and brief intervention for risky alcohol use: A step by step guide for primary care practices in 2014* (CDC, 2014). In 2016, SAMHSA released the *USAUDIT: The alcohol use disorders identification test: A guide for primary care practitioners* (Babor, Higgins-Biddle, & Robaina, 2017). Additional support for alcohol screening came from the Affordable Care Act of 2010, which made alcohol screening and counseling a part of paid preventative services (CMS, HealthCare.gov, n.d.). As a result,

CMS covers annual alcohol screening and four brief behavioral counseling sessions per year under Medicare Part A or Part B (CMS, 2011).

Alcohol Use Disorders Identification Test. While a review of the literature provided guidance and recommendations for alcohol screening, further information was needed regarding screening tools. Additional research found that the use of screening tools began in 1987 with the publication of *The WHO collaborative project on the identification and treatment of persons with harmful alcohol consumption*, which focused on identifying persons with harmful alcohol use (Saunders & Aasland, 1987). This document was the beginning of the creation of the 10-question AUDIT tool (Saunders & Aasland, 1987). The AUDIT has become the most widely tested screening instrument in primary care (Higgins-Biddle & Babor, 2018). It is an instrument designed to identify different patterns of problem drinking, particularly hazardous and harmful consumption (Saunders et al., 1993). It emphasizes the frequency of hazardous and risky use, as opposed to examining drinking behavior and adverse consequences alone (Saunders et al., 1993).

Alcohol Use Disorder Identification Test-Consumption. The AUDIT tool was revised to a shorter version, the AUDIT-C, with C representing consumption, which includes the first three questions of the full AUDIT (Higgins-Biddle & Babor, 2018). This version is widely used by the Veteran's Administration and was first validated in their population through several extensive studies (Higgins-Biddle & Babor, 2018). Bush, Kivlahan, McDonnell, Fihn, and Bradley (1998) found that the AUDIT-C performed better than the full AUDIT for identifying heavy drinkers. However, the full AUDIT performed better than the AUDIT-C for detecting current alcohol abuse or dependence (Bush et al., 1998). As a result, the AUDIT-C was accepted as a valid tool (Bush et al., 1998).

The literature search revealed other screening tools for comparison. In a study by Letourneau, Sobell, Sobell, Agrawal, and Gioia (2017), the AUDIT-C and the Quick Drinking Screen were compared. While the Quick Drinking Screen also consists of three questions, it outperformed the AUDIT-C in identifying risky drinking and alcohol consumption (Letourneau et al., 2017). However, Lundin, Hallgren, Balliu, and Forsell (2015) found the AUDIT and AUDIT-C were exemplary in identifying alcohol dependency, risk drinking, and AUD.

Cutdown-Annoyed-Guilty-Eye opener. Another commonly used tool is the CAGE questionnaire (Chen, Ibragimov, Nehl, Zheng, & Wong, 2016). The CAGE was the only alcohol screening tool employed at the project site during a patient's initial visit to the clinic. According to Chen et al. (2016), the CAGE lacks sensitivity and specificity in differentiating current heavy drinkers from non-drinkers. Likewise, in a study by Riley et al. (2016), the CAGE was outperformed by another screening tool, the Hazardous Drinking Index, in assessing heavy drinking. The CAGE did not identify relationships between hazardous drinking and consequences, and there was insufficient evidence in supporting its use (Riley et al., 2016). In comparison, Al-Rifaie, Muazu, Abdulwahid, and Gleeson (2016) compared the AUDIT-C to the CAGE and found that the AUDIT-C identified hazardous drinking at three times that of the CAGE, indicating the AUDIT-C was a more sensitive tool.

United States Alcohol Use Disorders Identification Test. A final tool examined was the USAUDIT. This tool is an adaptation of the original WHO AUDIT and came about in 2014 (CDC, 2014). In 2016, SAMHSA also released guidelines for practitioners using this adaptation (Babor et al., 2017). The revision of the original WHO AUDIT came about due to differences in standard drink sizes among countries (CDC, 2014). In the original WHO report, one drink comprised 10 grams of alcohol (Saunders & Aasland, 1987). The standard drink size in the U.S.

is 14 grams of alcohol (USDHHS, ODPHP, CNPP, 2015). This difference in drink size means that the U.S. standard drink size is 40% larger than that used by the WHO in the original screen (Higgins-Biddle & Babor, 2018). As a result, the U.S. recommended levels under age 66 are almost double the WHO AUDIT cut off, and above the low-risk drinking guidelines (Higgins-Biddle, 2018). The WHO addressed this by stating that countries should rephrase questions and alter response categories to fit the drink standards in individual countries (Saunders et al., 1993).

Screening-Brief Intervention-Referral to Treatment. While a review of the literature provided guidance and recommendations for alcohol screening, further investigation was needed regarding brief interventions and referrals. According to Babor, Del Boca, and Bray (2017), SAMHSA has supported the implementation of screening, BI, and referral to treatment since 2003. At that time, they established the Screening, Brief Intervention, and Referral to Treatment (SBIRT) grant program, which provided funding to organizations that agreed to take part in substance abuse screening, interventions, and referrals (Aldridge, Linford, & Bray, 2017).

SBIRT consists of three major components: screening, BI, and referral to treatment (SAMHSA-HRSA Center for Integrated Health Solutions, n.d.). Screening includes assessing patients for risky substance use behaviors using standardized screening tools (SAMHSA-HRSA Center for Integrated Health Solutions, n.d.). BI refers to a brief conversation that provides feedback and advice to patients with risky substance use (SAMHSA-HRSA Center for Integrated Health Solutions, n.d.). The third component is a referral to treatment for brief therapy, or additional treatment as warranted (SAMHSA-HRSA Center for Integrated Health Solutions, n.d.).

SBIRT was designed to regularly screen patients for substance abuse in medical settings and provide appropriate treatment as needed (Aldridge et al., 2017). Aldridge et al. (2017)

completed a large multi-site study examining the impact of SBIRT services. They found the prevalence of alcohol use decreased by 35.6%, heavy drinking by 43.4%, and illicit drug use by 75.8% six months after implementation of SBIRT (Aldridge et al., 2017). Babor et al. (2017) found that SBIRT led to a 72% reduction in heavy drinking and a reduction of illicit drug use by 82%. Further support came from Alvarez-Bueno, Rodriguez-Martin, Garcia-Ortiz, Gomez-Marcos, and Martines-Vizcaino (2015) as they found BI to be moderately effective in decreasing alcohol use in non-alcoholic drinkers; leading to an increase in the number of individuals whose use was below limits that indicated a health risk.

In contrast to studies in support of SBIRT, other studies found no efficacy with BI among illicit drug users (Roy-Byrnes et al., 2014; Saitz et al., 2014). O'Donnell et al. (2014) examined its effect on alcohol consumption and found that some of the reported positive results from SBIRT could be a result of the Hawthorne effect. The potential Hawthorne effect occurred when the actual screening process increased participants' attention to drinking alcohol, thus prompting a reduction in drinking as opposed to any authentic effect from SBIRT (O'Donnell, 2014).

Limitations of Literature Review Process

Throughout the literature review, one fundamental limitation emerged; the inconsistency regarding the frequency needed for alcohol screening. The USPSTF makes a clear statement on the need for alcohol screening; however, there is no suggestion of a screening interval or frequency (USPSTF, 2018). The American Academy of Pediatrics recommends screening adolescents during annual routine clinical care using SBIRT guidelines (American Academy of Pediatrics, n.d.). The AMA (2017) and the American Academy of Family Physicians (2014) also recommend alcohol screening; however, no screening interval is given. Last, ACOG recommends screening intervals of at least yearly and within the first trimester of pregnancy

(ACOG, 2015.) As a result of regular screening using approved guidelines at identified intervals or frequencies, more women would be routinely screened and identified with AUD.

Discussion

Conclusion of findings. The literature review uncovered evidence showing the support and efficacy of alcohol screening, BI, and referral practices. Leading entities of healthcare recommend alcohol screening in primary care. Not only have recommendations been made, but specific training guides have been published to support primary care providers in developing processes for routine screening for alcohol use disorders.

The literature review discussed the efficacy of available screening tools. Literature reports the validity of the AUDIT tool and supports subsequent revisions of the tool due to U.S. serving sizes, resulting in an excellent framework for screening. The AUDIT tool, along with the accompanying training guides, can provide primary care providers with the tools needed to begin the process. The findings of the literature review provided evidence to support the DNP project. The validity of the AUDIT and the benefits of screening verified the need for the project and continued advancement toward project implementation at the project site.

Advantages and disadvantages of findings. The benefit of implementing alcohol screening for women is the identification of risky alcohol behaviors among women. The literature review revealed information that supported screening using the AUDIT. The literature review found evidence supporting screening, followed by BI and referral to treatment using the SBIRT framework.

A disadvantage of the findings was that there are inconsistent recommendations on screening intervals. Many organizations have come forth with recommendations to screen; however, only ACOG (2015) and the American Academy of Pediatrics (n.d.) has specified a

regular interval. With a standard process and interval in place, more women would be screened and potentially identified with AUD.

Utilization of findings in practice change. The literature review provided evidence for the implementation of screening for AUD among women 18 years of age or older at the project site using the USAUDIT at predetermined visits and intervals. Screening women would occur at visits for the management of chronic conditions and new patient visits. Women were not screened at visits for acute or episodic illnesses. Women were asked the questions from the screening tool once roomed. The providers reviewed the first three questions of the instrument, provided additional screening, if needed, and used the information to plan further care using the SBIRT framework.

Healthy People 2020. Healthy People 2020 provides an expansive set of 10-year national goals and objectives to improve the population health of Americans (USDHHS, ODPHP, Healthy People 2020, n.d.-a). There are currently 42 topic areas, including alcohol use (USDHHS, ODPHP, Healthy People 2020, n.d.-a). This initiative has prevention objectives to increase specialty treatment for those diagnosed with alcohol abuse, to decrease underage drinking, and to decrease binge drinking (USDHHS, ODPHP, Healthy People 2020, n.d.-b). Aspects of these objectives will be met through the DNP project implementation, assessment, and outcomes.

Triple Aim. Triple Aim objectives were created by the Institute for Healthcare Improvement, and include goals to improve population health, improve the experience of care for patients, and reduce costs associated with healthcare (Berwick, Nolan, & Whittington, 2008). This project helped meet the objective of improving population health by improving the health outcomes of women with AUD. The impetus to achieve this objective is that from 2006-2010,

excessive alcohol intake led to 88,000 deaths and 2.5 million years of potential life lost in the U.S. (CDC, 2018). The intent of this project was to improve the health of at-risk women drinkers by identifying them through screening.

This project helped meet patient experience objectives by providing easy access to the LCWS within the office for women needing a referral. An in-house referral can decrease delays in care, which could occur with waiting to see a provider in a different location. The site had a goal that 100% of women who screened positive would receive a BI or a referral. All women meeting criteria were to be screened in a compassionate and unbiased manner.

The last objective of cost could potentially be met by preventing hospitalizations and health-related costs, motor vehicle crashes, and time lost from work through the identification of AUD and appropriate, timely evidence-based treatment. For example, the cost of excessive alcohol consumption in 2010 was an estimated \$249 billion in the U.S. (CDC, 2018). Some costs can be avoided through early recognition of alcohol-related disorders and subsequent morbidities.

Summary

Implementation of routine alcohol screening at the project site can assist the providers in improving the health of their patients. Improving health outcomes can be done through the early identification of women with AUD and at-risk drinking. Screening is supported in the literature from Aldridge et al. (2017), in which the prevalence of alcohol use was lower following six months of SBIRT services. The AUDIT tool, as well as its U.S. adaptation, is a valid tool for detecting problem drinking in many studies (Al-Rifaie et al., 2016; Bush et al., 1998; Lundin et al., 2015). For women not identified early, their alcohol use may continue towards negative

consequences. Through this implementation, women have the opportunity of being identified so that a treatment plan can be initiated.

Chapter Three: Theory and Concept Model for Evidence-Based Practice

Increasing alcohol screening in primary care begins with the concept of healthcare screening. Healthcare screening is a widely used tool and was the basis of this DNP project. The theoretical basis for the implementation of this concept was Lewin's change theory. The application of this theory provided a better understanding of key components in an organization's change process. This theory was used to help understand the steps needed to bring about the process change at the project site. The Plan-Do-Study-Act (PDSA) model is the process that provided an evaluation of Lewin's three key steps to change and showed how a continual assessment of the process could lead to effective change.

Concept Analysis

Screening is a concept that is used in many facets of healthcare. Screening is described as a means to identify a disease or risk factor before it can cause negative consequences (Andersson, Hedström, Bergman, & Bergh, 2018). It allows certain conditions to be either ruled in or ruled out. It provides a score, or cut-off point, of which identification of at-risk conditions is identified. Through this process, referrals can be made as needed. While screenings identify health conditions, it could be surmised that those who are not screened may not be identified.

Screening benefits. Screenings are utilized for many conditions in healthcare. Major organizations such as the USPSTF, ACOG, and the AMA recommend screening for many health conditions (ACOG, 2015; AMA, 2017; USPSTF, 2018). Selections can range from simple questionnaires to assess anxiety or alcohol use, to more complex screenings that evaluate cancer or cardiovascular risk. The purpose of each of these methods is to identify health conditions that may warrant further investigation.

The literature contains many examples of the benefits of screening. Studies have found that screening successfully identifies health conditions that warrant intervention. For example, blood pressure screening was implemented in a study by Andersson et al. (2018) in dental offices. This location was found to be more frequently visited than primary care (Andersson et al., 2018). As a result, screening identified many hypertensive patients not previously identified due to infrequent primary care visits (Andersson et al., 2018). Likewise, according to O'Doherty et al. (2015), it was found that screening for intimate partner violence was an effective tool to identify women experiencing this phenomenon. Last, in a study by Bodenmann et al. (2014), a single question to evaluate the socioeconomic status of patients was found to be an effective tool in the identification of patients with financial burdens.

Alcohol screening. The anticipated outcome for this project was that alcohol screening would increase at the project site. Not only is the concept of screening a useful tool for many health conditions, but it is also effective in identifying alcohol use problems. Screening with the AUDIT-C or full AUDIT is effective in identifying heavy drinking, alcohol abuse, or alcohol dependence (Lundin et al., 2015). Other alcohol screening tools such as the Quick Drinking Screen are effective in identifying risky alcohol behavior, as well as the CAGE in identifying heavy drinkers (Chen et al., 2016; Letourneau et al., 2017). Screening of women who meet criteria provides an opportunity for problem drinking to be identified.

Theoretical Framework

Lewin's theory of change. Kurt Lewin's 3-step model of change is considered by many as the fundamental approach to managing change (Cummings, Bridgman, & Brown, 2015). Often referred to as the force field model, this 3-step change process includes the steps of unfreezing, moving, and refreezing (Bishop, 2018). Change is seen as a powerful, moving force

within organizations that moves in opposing directions (Bishop, 2018). A driving force, representing a change process, pushes individuals toward change, while a restraining force, or resistance to change, is used to push back toward the change (Bishop, 2018). These forces are played out during the three stages. By implementing the 3-step process, organizations can execute planned change endeavors (Wojciechowski, Murphy, Pearsall, & French, 2016).

Unfreezing represents becoming aware of a problem and challenging the status quo (Wojciechowski et al., 2016). In this step, the organization's current thought processes and behaviors are examined (Evans, Ball, & Wicher, 2016). *Moving* entails the creation of a planned change to allow individuals to change to new behaviors (Bishop, 2018). *Refreezing* is the integration and stabilization of the change so that it becomes the new process (Wojciechowski et al., 2016). By systematically working through each of these stages, organizational changes can more readily occur.

Examples of the use of this theory are found in the literature. In a study by Evans et al. (2016), Lewin's theory was used in adopting the use of Medical Orders for Life-Sustaining Treatment (MOLST) forms. This study found that Lewin's theory was useful in implementing MOLST forms by palliative care providers (Evans et al., 2016). Likewise, in a study by Vines, Dupler, Van Son, & Guido (2014), this theory was effectively used to facilitate and implement education for staff on the benefits of bedside reporting. In this study, the final stage of *refreezing* was evident when bedside reporting had become the sole means of nursing handoff (Vines et al., 2014).

Application to practice change. Lewin's theory of change applied to this DNP project. The stages of this theory were utilized throughout project implementation. During the *freezing* stage, the providers were confronted and challenged to change their daily processes.

Implementing the screening tool was a new idea for them to either accept or reject. Pivotal to this stage was the site champion's role. According to a study by Hussain et al. (2018), the leadership role is a crucial component necessary in unfreezing an organization. By establishing buy-in from the site champion to the recognition that a process change was needed, this could encourage the other providers to be open to the idea.

The second stage of *moving* consisted of educating staff on the new process and then implementation. The key to this step was allowing staff the opportunity of being actively involved in the process and obtaining their acceptance (Vines et al., 2014). Staff dispersed the questionnaire to patients, which they determined to be the best workflow for them. Providers were allowed to voice their ideas on what they felt would work best for them. For this stage to be successful, all staff were allowed to brainstorm ideas for the best implementation.

The final stage of *unfreezing* occurred when the staff had fully implemented the screening process, and it had become the new norm. During this stage, the staff was encouraged to provide feedback on the process. The process of screening continued to be evaluated, and any issues or concerns discovered were addressed.

Evidence-Based Practice Change Theory

Plan-Do-Study-Act. The PDSA cycle, also known as the Deming cycle, came from the works of Shewhart in the 1920s (Crowfoot & Prasad, 2017). It is the most widely used method for planning and improvement process changes today (Anderson, 2018). It consists of a four-step cycle of continual improvement of a process (Anderson, 2018). The steps are Plan, Do, Study, and Act (Anderson, 2018). This model is considered an efficient means of collecting data to be used in future cycles (Anderson, 2018). The repetitive cycles help minimize resistance

during the change process (Anderson, 2018). These cycles allow for necessary changes to the process, which can help create a more cohesive flow to the process (Anderson, 2018).

The *Plan* step consists of evaluating the current process, deciding what needs to be done to improve it, and gathering data to aid in the evaluation (Anderson, 2018). A strengths, weaknesses, opportunities, and threats (SWOT) analysis can be done to establish all factors that may influence the planned change (Crawfoot & Prasad, 2017). Identifying the proposed changes and the intended outcomes is essential at this step (Crawfoot & Prasad, 2017). Changes and outcomes can be identified more efficiently by establishing the input of key stakeholders in the process (Crawfoot & Prasad, 2017). Without their acceptance of the process, progress may not occur.

During the *Do* step, the identified change is implemented (Crawfoot & Prasad, 2017). Results are collected over time, and any patterns, problems, or unexpected findings are documented (Crawfoot & Prasad, 2017). The *Study* step identifies if the change led to the desired result and whether future changes are required (Crawfoot & Prasad, 2017).

The final step, *Act*, consists of standardizing the new process or implementing any further changes (Laverentz & Kumm, 2017). This step also recognizes that improvements may not have been made during the first cycle; therefore, planning begins for the next cycle (Crawfoot & Prasad, 2017).

Application to practice change. The PDSA cycle was utilized with the implementation of this DNP project. The ongoing process with repeated cycles allowed problems identified to be addressed and changes made. Key stakeholders were identified early in the project so that their input and potential influence on other team members could be garnered. Data was collected throughout the cycle to allow for process evaluation and future planning.

During the initial *Plan* step of this project, it was determined that alcohol screening was not routinely being done at the project site. A SWOT analysis was completed, which provided information on key aspects of implementation (See Appendix B). Future steps in this stage occurred after the initial cycle and included plans for any needed changes found in the original process. Continual planning occurred during each cycle.

During the *Do* step, the project was implemented based on the identified need for alcohol screening. Data were collected during this step, and any encountered problems were noted. Initial data included the number of women presenting who met criteria for screening compared to how many were screened. These data were entered into an Excel spreadsheet weekly for analysis and trending.

During the *Study* step, the screening process was evaluated, and data analyzed. This step identified if screening increased and whether changes to the process were needed. Based on the evaluation of this step, any new changes were implemented in the final *Act* step. This last step included making any needed adaptations or revisions to the process. Upon evaluating obstacles and problems encountered, alterations were made, and a new cycle began.

Summary

The concept of screening is an effective method for the identification of health conditions. Screening identifies at-risk populations through a variety of measures. Simple tools such as an alcohol screening tool or blood pressure evaluation can identify conditions warranting further evaluation. More complex screening methods are beneficial for other significant health concerns that require additional modes of screening. Screening allows providers to determine whether a health condition is present and whether further evaluation is needed.

Lewin's change theory has been shown effective in the process of organizational change. Research supports its use during process change. The stages of unfreezing, moving, and refreezing can be used to guide change processes, as well as provide an understanding of the complexity involved with change. Applying this theory to this DNP project provided valuable information for the evaluation of the process.

The application of the PDSA model supported the continued success of this project. Continually evaluating the new process of alcohol screening through staff engagement and vital stakeholder support helped ensure future adoption of the new process. The evaluation came through repeated PDSA cycles, which allowed for continued improvements in the new process.

Chapter Four: Pre-implementation Plan

Pre-implementation of this project comprised multiple steps. Organizational support and readiness for change were established for the project. Through contact with the site champion and other key stakeholders, a process for the proposed intervention was established. Pre-implementation included an assessment of the strengths and weaknesses of the organization, which provided a perspective on its current state. Content of the USAUDIT was transferred to a Word document, and a data collection tool was developed. Organizational, faculty, and university approval was obtained.

Project Purpose

The purpose of this project was to increase screening of women for alcohol misuse at one primary care clinic. Women ages 18 and over, being seen in the clinic for routine and well-visits, were screened using the USAUDIT. Women who screened positive were provided a BI at the point-of-care or referred to the LCSW based on their score. Process measures included the percentage of women meeting criteria who were screened, the percentage of those screened who had positive scores, and the percentage of women who received a BI or referral.

Project Management

Organizational readiness for change. Ongoing discussions with the site champion and clinical staff verified the organization's readiness for change. These discussions were through face to face conversations, calls, and emails. It was agreed that a process for routinely screening women for alcohol misuse with the USAUDIT would be beneficial. Evidence of acceptance was obtained in an approval letter (See Appendix C). The site agreed to adopt the use of the USAUDIT and stated a willingness to support its implementation. The site champion, office

manager, and clinical staff asked questions regarding the process and agreed to participate in the project.

Interprofessional collaboration. Key project team members included the site champion and office manager. The site champion was a Family Nurse Practitioner and the owner and chief executive officer of the clinic. He was responsible for employing staff and managing all administrative functions. His acceptance of the project was a crucial step, as he helped share the project idea with other providers. The office manager, also an MOA, was responsible for managing all ancillary staff. She was instrumental in establishing the workflow of the screening process and helping with data collection. Her role in the project was to ensure screening was completed and to assist with gathering data.

Risk management assessment. A SWOT analysis was performed to provide information on the current state of the site (See Appendix B). This analysis revealed the strengths of the proposed process, as well as potential risks to process success. This information was utilized to make plans moving forward.

Strengths. There were several strengths found in this evaluation. The project site demonstrated a willingness to participate in the project. The site champion supported the process and was proactive in sharing the idea with other providers. The office manager was well-versed in all aspects of managing the clinic and was accepting of the project proposal. Clinic staff worked well together and were efficient in their workflow. The LCSW was present at the clinic each Friday, which would help prevent positive screens from being referred to outside agencies and avoid a possible delay in care.

Weaknesses. Several weaknesses were identified. The site sees approximately 50 patients per day. Routine appointments are scheduled every 20 minutes, which could create time

constraints for staff to complete screening. The MOAs could fail to assist the women with the screening tool and fail to compile the completed forms, and thereby impede data collection.

Staff may tire of the process before project completion and choose to stop participating.

Providers may also feel uncomfortable with discussing alcohol use and choose not to provide a brief intervention.

Opportunities. Several opportunities existed with the implementation of screening. One opportunity was that the site would comply with national organizations that recommend routine alcohol screening. Regulatory and medical agencies supporting routine alcohol screening, include the USPSTF, the American Academy of Pediatrics, ACOG, and the AMA (Shogren et al., 2017). Screening can identify women with alcohol misuse, which can lead to diagnosis and treatment. Open clinical discussions about alcohol use could foster improved patient-provider relationships and increase trust. Last, there is a potential for increased revenue as BI a billable service.

Threats. Threats to project success included office or personnel changes during implementation. Short staffing of employees or employee turnover could pose risks. If the site champion or the office manager were not onsite, processes might not be followed. Computer system failure could cause a loss of data. Patients could choose not to participate in the screening or BI.

Organizational approval process. The first step in obtaining organizational approval was in establishing an interpersonal relationship with the site champion. The site champion and the DNP project student had a longstanding professional relationship. Project ideas were discussed, and all parties agreed on the topic. The site champion and office manager committed to project implementation in Fall 2019, and final approval was granted (See Appendix C).

Information technology. The project site purchased a copyrighted computer software called Amazing Charts. A benefit of Amazing Charts was the ability for providers to make a notation in a reminder box of when the screening tool was completed, or when it was next due. The reminder box allows providers to have screening information readily available on the computer each time they log into the patient's chart. Amazing Charts was used for data extraction during the project. Data were entered into a data collection tool, created in an Excel spreadsheet (See Appendix D). This tool was used to compile and calculate quantifiable outcomes for the project.

The content of the USAUDIT was transferred to Microsoft Word and served as a paper version of the tool, which facilitated ease of use. Microsoft PowerPoint was used to create a presentation at the end of the project to disseminate all findings.

Cost Analysis of Materials Needed for Project

The primary costs associated with this project included the purchase of paper supplies and office materials (See Appendix E). These costs included having duplex copies made of the USAUDIT throughout implementation, copies of AA schedules, a booklet of the USAUDIT training guide, and educational handouts. Additional office supplies included clipboards, pens, manila envelopes, and paper bins. Mileage costs to the clinic each week were also calculated.

Savings of personnel time can occur by having eligible women complete the first three questions of the screening tool before being seen by the provider. Having these questions answered can save the providers time by preventing disruption of their workflow and allowing them to maintain allotted schedule times and daily productivity.

Plans for Institutional Review Board Approval

There was no IRB process through the project site; therefore, project approval came through project faculty and university approval. Stage 1 requirement consisted of submission of the Quality Worksheet. This worksheet was submitted and approved through Blackboard on May 15, 2019. Stage 2 documentation was the Program Evaluation Self-Certification. This certification was submitted to university IRB through a Qualtrics Survey. It was not deemed to be human subject research, nor need any additional review.

Plan for Project Evaluation

Demographics. The site champion had a key role in facilitating the adoption of the project from the staff. His role included being a resource to the staff for questions, being a leader in the screening process, reviewing his patient's screening results, and providing a BI or referral, as needed. The office manager was key to ensuring screening was being done each day, that enough screening tools were available, and that the completed tools were secured for review. Other clinical staff included additional MOAs who were responsible for ensuring screening was completed when they roomed patients. The remaining two NPs were responsible for reviewing their patient's screening results and providing a BI or referral as needed.

Process measurement. The project had two process measures that would indicate the rate of success. The first process measure was the screening rate for women meeting criteria. This process measure indicated the rate at which staff integrated the new screening into their workflow. A consistent low rate could indicate workflow challenges or low staff motivation to complete the screening. Regularly evaluating screening rates allowed changes in the process to be made as problems arise.

The second process measure was the percentage of women with documented interventions, either BI or referral to the LCSW. This measure was essential in evaluating whether providers used the screening information to guide care and opened the door for improved treatment planning. Ultimately, this measure demonstrated that women who were identified with alcohol misuse received the recommended intervention. If BI or referral rates remained consistently low on positive screens, this could have indicated a lack of provider engagement or a lack of follow-through in scheduling referral appointments.

Evaluation tool. The USAUDIT is an adaptation of the original WHO AUDIT (CDC, 2014). This tool was chosen for the project because it considers standard drink sizes in the U.S., and values assigned to the first three questions show this adjustment (See Appendix F-G). The change in drink size and the corresponding change in the wording of several questions are the differences between the USAUDIT and the original AUDIT.

The AUDIT is the most widely used and validated alcohol screening tool in use (Higgins-Biddle & Babor, 2018). It is effective in identifying risky alcohol use and AUD in multiple studies (Al-Rifaie et al., 2016; Bush et al., 1998; Lundin et al., 2015). Comparatively, the USAUDIT is recommended by the CDC and SAMSHA (Babor et al., 2017; CDC, 2014). The USAUDIT is considered public domain with no permissions needed for its use (T. Babor, personal communication, February 8, 2019) (See Appendix H).

Data analysis. A data collection tool was developed using Microsoft Excel (See Appendix D). This tool was developed in an Excel spreadsheet with formulas inserted to calculate data results. Columns included the number of women meeting criteria, the number of women screened (process measure one), and the number of interventions (process measure two).

Rates of screening and interventions were calculated in the Excel spreadsheet using preset formulas.

The first process measure included two sub-points. The first measurement was calculated using the number of eligible women presenting to the clinic (denominator) and the number of eligible women who were screened using the USAUDIT (numerator). The second measurement was calculated using the number of women screened using the USAUDIT (denominator) and the number of women who had positive screening results (numerator). Analysis of this data revealed the percentage of women who screened positive for alcohol misuse. Awareness of this information provided clinicians context on the extent of alcohol misuse in their female population.

The second process measure also contained two sub-points; BI by the provider at the point-of-care and the number of referrals to the LCSW at the clinic. The first measure was calculated using the number of women with positive screenings (denominator) and the number of women receiving BI at the point-of-care (numerator). The second measure was calculated using the number of women with positive screenings (denominator) and the number of women with positive screenings referred to the LCSW (numerator). A total overview of referrals was calculated using the number of women with positive screenings (denominator) and the combined number of women receiving either intervention (numerator). This analysis showed the number of positive screens which warranted an intervention, and how many interventions were completed.

While there was variation in specific national guidelines and benchmarks on alcohol screening frequency, the clinic had set a benchmark that 100% of positive screens would receive an intervention or referral. Analyzing the data showed the extent of success in meeting the self-

identified benchmark. These data provided information on how well the site was capturing positive screenings and the extent to which subsequent follow-through was noted, as evidenced by interventions.

Data management. The evaluation tool designed for this project contained no protected health information (PHI). If either intervention was warranted, it was noted in the clinical documentation. MOAs collected the evaluation tools throughout each day and stored them in paper bins at the nurse's station. This station was the primary location for completed tool placement. A secondary site was the MOAs office, where additional storage paper bins were placed. At the end of each day, all evaluation tools were collected and placed in a manila envelope for this DNP project student that week. These were collected weekly, with the final counts of how many women were seen and screened entered into the data collection tool. After the information was entered into the data collection tool, the paper tools were shredded at the site. The data collection tool, with no PHI, was on a personal computer, which was password protected. These data were shared with the site after project completion and then deleted.

Summary

Pre-implementation of the project involved multiple aspects. Approval was gained from the project site, the faculty mentor, and the university, with key stakeholders voicing full support of project implementation. The role and commitment of each team member were crucial through planning and pre-implementation. Having a strong working relationship helped facilitate staff acceptance and cooperation with the project. It was essential to create a process that would work during busy clinic days. A process that would impede workflow would not be beneficial, nor would the staff have been agreeable to this approach. The end goal for pre-implementation was for the site to feel prepared and comfortable with the process.

The USAUDIT was the agreed-upon evaluation tool. The content of the USAUDIT was transferred to a Word document to facilitate simplicity and ease of use. An Excel spreadsheet was used to capture data and calculate process measures. The final pre-implementation step included a cost assessment for the project, which highlighted budgetary items and projected costs. Copies of materials were obtained, and the creation of documents was completed in preparation for implementation.

Chapter Five: Implementation Process

Implementation began in August 2019 and was conducted over 12 weeks. The project setting was a rural, privately-owned, NP clinic. After establishing a contract, key stakeholders were identified, and participants were recruited. Collaboration with staff included project planning and education needed for implementation. As screening began, variations in the plan were made as needed.

Setting

The project site was in a rural community in western NC. The site champion opened the practice in 2010. It was privately-owned, managed by NPs only, and was not affiliated with other agencies. The site was based on a sole-proprietorship structure and established as a professional limited liability company. There was no outside funding, with individual provider salaries based on the number of patients seen, minus overhead expenses. There were three NPs at the site and a small support staff. The site served diverse populations who had commercial or public insurance, as well as those paying for services out-of-pocket. The site's primary population were adults; however, some providers did see small numbers of children.

Participants

Onboarding of participants included face-to-face meetings and email communications. The USAUDIT screening tool, patient education tools, and a scoring card were presented to participants during education. Any initial reluctance to the process improved with education and ongoing team collaboration and input.

Recruitment

All available employees were selected for recruitment. Employees of the practice site were the project participants, with the practice owner being the primary participant and site

champion. Other participants included the office manager, chosen based on her involvement in the daily workflow of the clinic and management of office staff. All MOAs were included as they were responsible for rooming patients. Last, the remaining two NP providers were chosen for inclusion. Their role, along with the site champion, was reviewing the screening tools and deciding if a BI or referral was needed. If needed, they would implement this at the point-of-care.

Implementation Process

Preparation for implementation included visiting the site on multiple occasions to discuss project materials, process flow, and answer questions. During the 12-week implementation, the DNP student was present each week to guide staff or answer any questions. All staff involved in screening were shown the scoring algorithm and provided a laminated scoring card (See Appendix I). Patient educational materials (See Appendix J) and the USAUDIT manual were presented and discussed with each provider.

The screening began after women were roomed. Women, ages 18 and older, in for routine, non-emergent care, were screened. After the MOAs obtained vital signs, they provided instructions on completing the screening tool, allowing time for the women to answer the questions. Completing the tool consisted of answering either three or ten questions, depending on the scoring. If the patient had difficulty with reading, the MOA would read the questions aloud to allow tool completion. Once the paper tool was completed, it was left with the patient's chart for the provider to review upon entering the room. Based on the final score, providers would initiate a point-of-care BI with patient education materials given or make a referral to the LCSW.

Scoring of the tool consisted of the following (See Appendix I): if the first three questions totaled 0-6, the screening was complete. This score represented drinking at low-risk levels. If the first three questions totaled a score of seven or higher, the remaining items were answered with scoring as follows: if the total from all ten questions was 7-15, this represented mild AUD and hazardous alcohol use, which warranted a BI with patient education handouts and a discussion of their drinking patterns. If the score was 16-24, this represented moderate AUD and harmful use, with a referral to the LCSW warranted. For scores of 25 or higher, this represented moderate to severe AUD with alcohol dependence, which warranted a referral to a higher level of care. A higher level could encompass a referral to an addiction specialist or hospital for detox proceedings.

Project measures of the number of women screened, and how many received a BI or referral, were tracked weekly. The office manager assisted with calculating these totals. These data were placed into the data collection tool weekly. Successful implementation would be demonstrated by all women meeting criteria being screened. A successful outcome measure would be that women with alcohol misuse were identified, with appropriate interventions initiated.

Plan Variation

One variation was made before implementation. The original plan was for the secretary to have eligible women to complete the first three questions of the tool upon check-in. The completed paper tool was then to be given to the MOAs upon rooming the patient. If the first three questions yielded a positive result, the MOA would have the patient complete the remaining seven questions at that time. The tool was then to be left with the patient's chart for the providers to review with the visit.

A variation was made to have the women complete the tool upon rooming, based on input from the MOAs. After discussion, they concluded that having the tool completed in their presence, where assistance and explanation could be offered, would be the best process. This change was agreed upon by the providers and carried through to the project end.

Summary

The goal of this project was to increase alcohol screening among women in primary care. The project setting was a privately-owned rural clinic in North Carolina. An educational session was provided before implementation, and the project began August 26, 2019, with completion on November 15, 2019. The USAUDIT was the screening tool used throughout this project.

Project participants included all MOAs and three NP providers. The MOAs were responsible for ensuring eligible women completed the paper screening tool upon rooming. The providers assessed the final score of each screen and provided a point-of-care BI as warranted.

Weekly site visits were made to ensure the project was progressing and to assess any problems. These visits included time spent observing the screening process and workflow. The MOAs continued to have women complete the tool throughout the 12 weeks, with these data entered into the data collection tool each week. Final dissemination of findings was presented to the providers and staff in a voice-over PowerPoint.

Chapter Six: Evaluation of the Practice Change Initiative

The purpose of this project was to increase alcohol screening among female patients at the practice site. Following the 12-week implementation period, data analysis revealed the number of women screened, those who received a BI, or those who were referred to the LCSW. Evaluation of the data was performed to evaluate the practice change initiative.

Participant Demographics

The providers and staff at the primary care clinic were project participants. Participants included three NPs and five MOAs. The MOAs were responsible for ensuring screening was performed when women were roomed. The NPs were accountable for assessing screening results and determining if any intervention was needed.

Intended Outcomes

The primary intended outcome of this project was to increase alcohol screening among women ages 18 and older. This outcome was supported through best practice recommendations from the USPSTF, the American Academy of Pediatrics, ACOG, and the AMA (Shogren et al., 2017). The secondary intended outcome was that all women with positive screens would receive an intervention. This outcome was supported by the findings of Aldridge et al. (2017), which revealed that screening, brief intervention, and referral can decrease alcohol use.

The short-term outcome for the practice was to identify women ages 18 and older who presented for routine care visits and to screen the women for alcohol misuse. The intended intermediate outcome was to increase the number of women screened for alcohol misuse. The long-term goal was that all women who screened positive would receive a BI through education, or a referral to the LCSW.

Findings. During the 12-week project, 652 women met the criteria for screening. Of this total, 68% (n=446) were screened (See Figure 1). The highest screening rates occurred during the first week, 97% (n=57), and during the last week, 100% (n=43) (See Figure 2). One percent (n=6) of the total screens had a positive result throughout the 12 weeks. These positive screens occurred during the first two weeks of the project only, and 100% of positive screens received a point-of-care BI. There were no positive screens that warranted a referral to the LCSW.

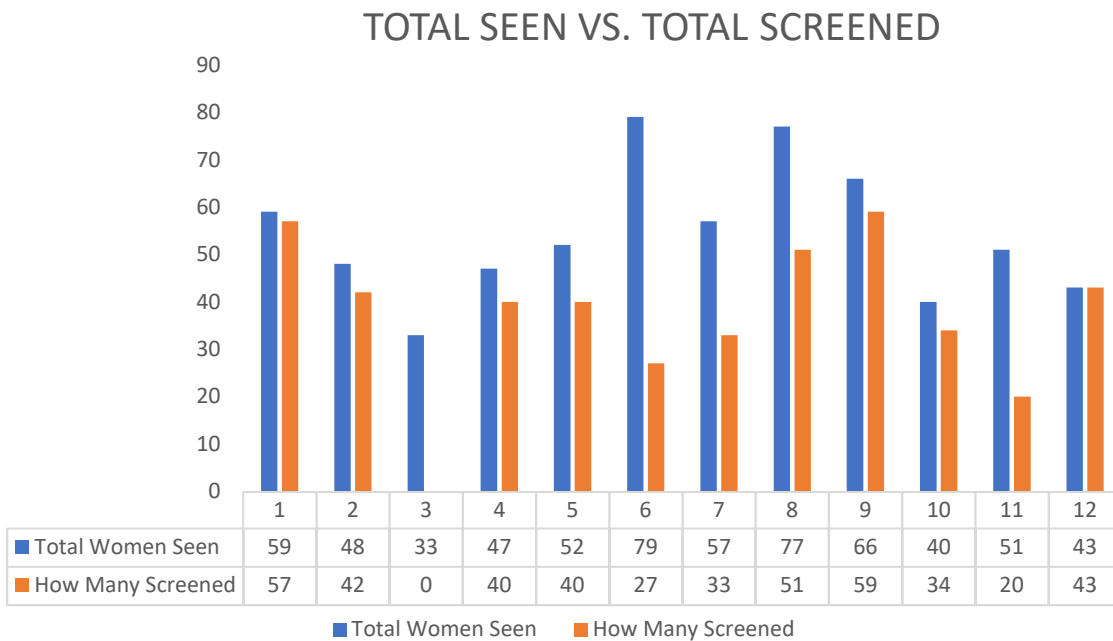


Figure 1. The total number of women seen throughout the 12-week implementation compared to the total number of women screened.

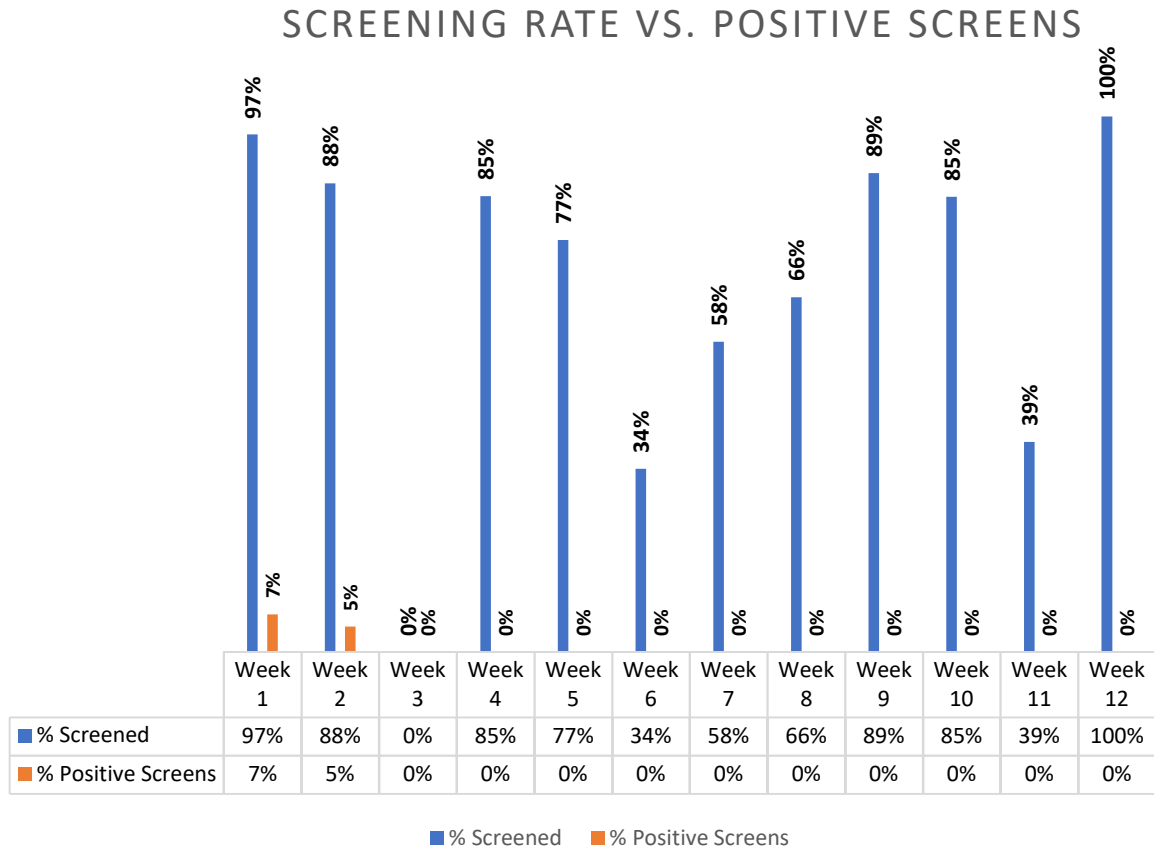


Figure 2. Weekly screening rates versus positive screens.

There was no annual alcohol screening in place when the project began. The final data analysis revealed a screening rate of 68%. Women with positive screenings were identified, and brief interventions were provided. The providers' goal that 100% of positive screens receive an intervention was met. There were several weeks in which screening did not occur or when screening rates were low. There was a 0% screening rate for week three, 34% for week six, and 39% for week 11 (See Figure 2). During weekly site visits, it was discovered that staffing shortages had contributed to low screening rates those weeks.

Summary

The intent of this project was to increase alcohol screening among women at the project site. When the project began, there was no routine alcohol screening in place. During the 12-week implementation, the screening rate was 68%. Women who screened positive were identified, and brief interventions were completed. Screening rates varied throughout the project. Weekly onsite meetings with participants allowed the DNP project student leader to identify staff challenges with completing screening. Overall goals were met by identifying women who should be screened, increasing screening rates, and providing interventions when warranted.

Chapter Seven: Implications for Nursing Practice

The American Association of Colleges of Nursing has outlined eight fundamental essentials that are the foundation of DNP programs across the country (American Association of Colleges of Nursing [AACN], 2006). Each essential has the necessary components required to meet the rigor of DNP curriculum. Regarding the planning and implementation of this project, all eight essentials will be discussed in this chapter.

Practice Implications

Essential I: Scientific underpinnings for practice. This essential consists of analyzing information and translating research to improve practice (AACN, 2006). Through collaboration with the project site, it was determined a need existed to increase alcohol screening among women in the practice. By analyzing their current process and integrating knowledge from the literature on alcohol screening, project planning began. With current evidence of the need for alcohol screening, Lewin's change model was applied to guide approaches towards improving process outcomes. As a result, screening began of women for alcohol misuse, which supported best practice recommendations from the USPSTF, the American Academy of Pediatrics, AGOG, and the AMA (Shogren et al., 2017).

Essential II: Organization and systems leadership for quality improvement and systems thinking. Essential II focuses on the continued improvement of health outcomes, nursing practice, and patient safety (AACN, 2006). Current evidence was used to create a process for alcohol screening among women using validated tools. The screening tools and educational handouts for use were prepared by this DNP project student. Verification of a valid screening tool was established through a literature review, and education materials with easy to

understand terminology were chosen. Education of the screening tool and the patient handout was carried out in a staff education session before the start date.

Future recommendations for advancing nursing practice in implementing an alcohol screening tool includes the following: identifying an evidence-based screening tool, such as the USAUDIT, educating staff on how to use and score the tool, providing patient education materials for brief interventions, and being present weekly to guide staff during implementation and answer questions. Not only this, but the DNP-prepared nurse must have the leadership skills to manage the project budget to keep costs at a minimum, as well as have effective time management skills to ensure the project is carried out in the set time frame.

Essential III: Clinical scholarship and analytical methods for EBP. Essential III focuses on critically analyzing the literature to determine best practices (AACN, 2006). Implications for this project included an extensive literature review in determining the need for alcohol screening in primary care. Based on the documented validation of the tool, the USAUDIT tool was selected for use in the project. The literature was used to develop specific interventions tailored towards the project site, such as the MOAs performing the screening tools and an internal referral to the LCSW with positive screens. PDSA cycles were implemented throughout the project as a means to operationalize and evaluate the process, as well as identify any needed changes.

Recommendations for future practice are that quality improvement teams begin with identifying a practice gap, followed by critically appraising the literature to determine a need for a change. This project followed this recommendation by establishing a practice gap and having literature support for the proposed intervention. With literature support of the change idea, collaboration with team members led to the development of a process for the site.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare. Essential IV provides the DNP-prepared nurse the means to utilize technology to analyze healthcare processes and systems (AACN, 2006). In this project, technology was used to show that alcohol screening of women was not occurring. Excel software was used during implementation by the DNP student to capture screening rates and brief interventions.

The site champion verified through the EHR that only new patients were being screened with the CAGE questionnaire on an initial visit and that no other alcohol screening was occurring. There was a location in the EHR to document when all types of screenings were done, as well as when they were due next. This area of the EHR was not consistently being used at that time. This finding revealed areas of needed improvement and lent support for the project focus.

Recommendations moving forward include having all providers add the annual alcohol screening completion date to the above-mentioned designated area in the EHR. If screening were documented in this location, all practice personnel could see when the screening was due during the following year. Ideally, there would be an alert built into the Amazing Charts software that would prompt providers when screenings were due, but there were no plans for this in the future.

Essential V: Healthcare policy for advocacy in healthcare. The DNP-prepared nurse is equipped to influence policies, regulations, and social equity (AACN, 2006). An analysis of the project site found there was no policy on annual alcohol screening for women. All patients were being asked to complete the CAGE questionnaire at their initial visit only. Patient

advocacy was demonstrated by creating a process for screening all women of appropriate age during routine visits.

Recommendations for future practice include advocating for women with alcohol abuse. Advocating can come through ensuring annual screening is being done to identify women with alcohol misuse. Lack of screening could lead to missed opportunities to intervene when alcohol abuse is a problem. The DNP-prepared nurse has the skills to recognize gaps in care and can bring best practices into place to close these gaps.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes. The DNP-prepared nurse is equipped to effectively collaborate and communicate with members of the healthcare team (AACN, 2006). A team approach was utilized for the project. From the beginning, collaboration with the site champion in finding a practice gap led to implementing alcohol screening. Input was sought from key stakeholders, and a process was designed based on group collaboration. This collaboration also included discussions on staff recommendations when changes in the process were needed to optimize workflow.

Collaboration was demonstrated through the DNP student being present each week of implementation to assess the screening process and guide staff through any needed changes. This ongoing collaboration was maintained by speaking with all members of the team weekly to gather their input on the process. The site champion and this writer discussed updated PDSA cycles to determine areas of success and potential areas of change.

Recommendations moving forward entail always including team members in the planning process. There is no benefit in attempting a change without acceptance or buy-in of

stakeholders. The value of this project's team input was demonstrated by implementing their suggestions for best workflow and in providing positive feedback on their work.

Essential VII: Clinical prevention and population health for improving the nation's health. The DNP-prepared nurse focuses on health promotion and disease prevention strategies (AACN, 2006). Implications for this essential lie in addressing the gap in routine alcohol screening for women receiving primary care at the practice site. Early identification of women with alcohol use disorder is a health promotion strategy.

Progression from mild alcohol use to high-risk behaviors of the population can be monitored and addressed efficiently when routine screening is completed over time. The delivery of care is optimized for women identified with alcohol use disorder, as appropriate interventions are employed. Population health outcomes are met through early identification of alcohol problems, with potential prevention of the negative consequences of alcohol misuse through early interventions.

Recommendations for future DNP-prepared nurses are to focus their project and quality improvement efforts towards strategies that can make a positive impact on health promotion and disease prevention. By recognizing gaps in care delivery and working towards developing plans to bring change in an identified area, quality care and health promotion can result.

National and statewide needs exist. For example, there are 15.1 million adults in the U.S. with AUD, with 5.3 million of these being women (NIH, NIAAA, 2018). In NC, heavy drinking prevalence among women has increased from 4.1% in 2014 to 9.7% in 2016 (CDC, 2015). The DNP-prepared nurse in a rural clinic can focus on bringing change that potentially has a positive impact on the community.

Essential VIII: Advanced nursing practice. The DNP-prepared nurse can design, implement, and evaluate nursing interventions to promote quality care delivery and patient outcomes (AACN, 2006). This project intersected with advanced nursing practice by implementing best practices in the project setting. Implications for this essential included providing support for the team members during the implementation phase. Through mentoring and encouragement of their efforts, the staff was offered ongoing support, which fostered positive teamwork. With the final dissemination of findings, outcome measures were displayed to show the impact of screening for the project site.

Recommendations for future practice are that DNP-prepared nurses focus on designing and implementing a quality process after conducting research. An example is implementing alcohol screening. Using an evidence-based screening tool such as the USAUDIT, while creating a process of routine screening, shows leadership and women's advocacy by the DNP-prepared nurse. Recognizing when gaps exist in clinic processes and realizing ineffective patient outcomes can become the focus of the DNP-prepared nurse with future process changes made.

In this project, process changes were created, and women with alcohol misuse were identified. Maintaining staff relationships during the process was important and was done through mentoring and encouragement. Last, being mindful of cultural diversity and sensitivity with all aspects of project planning and implementation is necessary. Some patients may be more hesitant in providing information due to cultural beliefs and fear of judgment. The DNP-prepared nurse is equipped to take note of these challenges and ensure respect and sensitivity in these instances.

Summary

Implications for nursing practice for the DNP-prepared nurse is encompassed in the eight DNP Essentials. These essentials are the foundation of DNP education programs, with all eight essentials providing the rigorous framework of doctoral nursing work. By embracing each of these essentials, the DNP-prepared nurse is adequately prepared to be a strong leader in the community.

Critically analyzing the literature, as well as collaborating with the healthcare team to develop the most efficient process of improving population health, is a vital component to DNP-prepared nurses. Being a leader on an interprofessional team in guiding and mentoring staff are elements to success. Overall, developing a well-designed project with evidence that supports the plan is the start of successful implementation. The DNP-prepared nurse is equipped to meet all eight essentials and to continue to bring needed healthcare advocacy and change for patients and the healthcare system today.

Chapter Eight: Final Conclusions

Women have an increased susceptibility to the harmful effects of alcohol (Agabio et al., 2016); therefore, it is vital to have early identification measures in place. Routine alcohol screening in the primary care setting is a method that can be used to identify women with alcohol use disorder (AUD). With early identification, brief interventions and education can be implemented at the point-of-care. These methods were employed at the project site for 12 weeks, beginning in August 2019. This chapter summarizes the implementation of the USAUDIT and addresses the strengths identified and challenges encountered throughout the process.

Significance of Findings

The USAUDIT was implemented during this project. There was a 68% overall screening rate, with 1% of women found to have mild AUD. All positive screenings received a brief intervention at the point-of-care. While there were few positive screens noted, women with positive screens were identified as a result of the USAUDIT. Without screening, women with mild AUD may not have been identified nor a BI implemented.

With no current method of alcohol screening in place when the project began, the USAUDIT did aide in identifying women with AUD. Having this standardized tool in place for use during routine visits created lines of open communication and prompted further dialogue about drinking patterns. The tool was quick to complete and score by the participants and did not impede the workflow of the nurse practitioners.

Project Strengths and Weaknesses

A strength of the project was the interest of the providers in increasing their alcohol screening rates. They acknowledged their lack of routine alcohol screening and were engaged in discussing the progress of screening during each site visit. The providers were receptive to this process change and were willing to provide brief interventions as needed.

Another strength of the project was that the staff became more mindful of screening for AUD. Reviewing the USAUDIT screening results every day and providing brief interventions allowed staff to become comfortable in the process and helped make them more aware of the need to continue screening. Each of these strengths will be beneficial to them for plans of continued screening.

A weakness of the project was the lack of engagement among the MOAs. There were three weeks in which screening rates were less than 50%, with week three having a rate of 0%. The weeks with low screenings affected the overall screening rate, but moreover, likely lost the opportunity to identify women with AUD. The low rates were discussed with the site champion, who tasked the office manager with speaking to the MOAs regarding compliance. As screening rates continued low during several weeks, it may have been beneficial for the site champion to address poor participation and follow-through and to reiterate the importance of continued commitment to the process.

Another weakness of the project was that the USAUDIT could not be incorporated into the EHR as a template for use. This created future challenges of using a paper tool that would require manually entering scoring results into the EHR. Tracking results over time, as well as when the next screenings were due, could also pose a challenge with not having EHR template capability.

There was no definitive determination on how to screen women who do not make routine visits. Some women only present to the clinic for sick visits, which creates a barrier for routine screening. For these patients, this required the site champion and other participants to consider alternative plans on identifying this population of women.

A final weakness was that although the providers voiced an interest in continuing to screen in the future, they did not solidify a new policy on this. Having a policy in place would create a standard process for all to follow and would help with screening compliance.

Project Limitations

One limitation encountered was that all regular MOAs were not at the clinic every day. Two providers, with their assigned MOAs, rotated being out of the office two days per week. On those days, there was one less MOA available for screening. Multiple weeks of low screening correlated with these staffing changes. Also, there was an element of staff fatigue with screening over time, as well as a lack of buy-in from staff tasked with screening on low staffing days.

Another limitation was due to frequent work-in visits added to the providers' daily schedule. Early in project planning, we decided to only screen women in for routine appointments. By not screening all women who presented to the clinic during the 12 weeks, we potentially lost identifying some women with alcohol misuse.

Project Benefits

The benefits of the project were two-fold. First, the site was able to demonstrate an increase in their alcohol screening rate. Before the implementation of the USAUDIT, there was no routine alcohol screening. Final data analysis revealed a screening rate of 68%. Brief interventions were provided for 100% of women who had positive screens. Therefore, the project was instrumental at increasing screening rates, as well as providing education to women

who screened positive. Continued screening at the site would be beneficial in identifying at-risk women, which is vital due to the increased susceptibility of women to the long-term effects of alcohol (Agabio et al., 2016).

The second benefit was an increased awareness of the providers of the need to continue screening for alcohol misuse. The providers were open to continuing screening but were undecided on which tool they would use, or when they would incorporate this into their future practice. If the site chooses to continue, they have USAUDIT paper tools available, AA brochures, and educational materials to be used with brief interventions. Participants had also demonstrated the capacity to screen women, and the clinic had created a partnership with the LCSW on-site to see all women who screened positive for moderate to severe AUD.

Practice Recommendations

The project was the first step in establishing a process to increase alcohol screening and care among women. Plans would include the site developing a policy on alcohol screening, deciding which tool to use, and when screening would occur. Developing a process of routinely screening women at an annual visit would be a standardized means that could be employed. This would be an excellent time to complete the USAUDIT, along with all other yearly screening inquiries. By informing women that the alcohol questionnaire is a part of all patients' annual examination screenings, they may be more at ease with answering the questions.

An obstacle to screening at an annual visit is for women who do not make or keep routine visit appointments. One alternative would be if these women were screened at another provider's clinic, such as through their gynecologist. However, even with this method, the project site would be unaware of whether screening had occurred or of the results.

There is a possible alternative to an annual wellness visit screening. This option would include the site having a pre-determined date to begin annual screening, such as the beginning of the year. At the first visit of the year, all women would be screened, and a notation made in the EHR of screening completion and results. This method may help capture women who do not keep regular appointments or those who do not have an annual wellness visit.

A key recommendation for increasing screenings for AUD is that all EHRs integrate a validated screening tool into documentation systems used by primary care providers. There is documentation software that allows customized templates, such as screening tools to be easily incorporated into the system. Relying on a paper tool that cannot be entered into the EHR is a less efficient manner to monitor patient responses over time.

Final Summary

Routine alcohol screening is endorsed by organizations such as the USPSTF, ACOG, AMA, and the American Academy of Pediatrics (Shogren et al., 2017). Many screening tools are available; however, the USAUDIT was specifically designed for screening in the U.S. (CDC, 2014). The USAUDIT was implemented to increase screening rates among women. Before implementation, an educational session was conducted with all participants. Educational materials, a USAUDIT training guide, and pocket cue cards for scoring were distributed to participants. Weekly site visits were conducted by the DNP student throughout the 12 weeks to guide participants and evaluate the process. Each of these measures was instrumental to the success of the project.

The primary intended outcome of increasing alcohol screening was met. The baseline pre-implementation screening rate was 0%, with a 68% screening rate during the 12 weeks. The secondary intended outcome was that all women with positive screenings would receive an

intervention, a goal that was also met during the project. Therefore, the intended outcomes were met by the participants screening efforts. Despite low screening rates of some weeks, women with AUD were identified and interventions were provided. Continued screening at the project site can enable women with at-risk drinking patterns to be identified so that appropriate treatment plans can be initiated.

References

- Agabio, R., Campesi, I., Pisanu, C., Gessa, G. L., & Franconi, F. (2016). Sex differences in substance use disorders: Focus on side effects. *Addiction Biology, 21*(5), 1030-1042. doi:10.1111/adb.12395
- Agabio, R., Pisanu, C., Gessa, G. L., & Franconi, F. (2017). Sex differences in alcohol use disorder. *Current Medicinal Chemistry, 24*(24), 2661-2670. doi:10.2174/0929867323666161202092908
- Al-Rifaie, A. A., Muazu, Z., Abdulwahid, M. A., & Gleeson, D. (2016). CAGE questionnaire as a screening tool for hazardous drinking in an acute admissions ward: Frequency of application and comparison with AUDIT-C questionnaire. *International Journal of Health and Medical Engineering, 10*(2), 85-88. Retrieved from <http://waset.org>
- Aldridge, A., Linford, R., & Bray, J. (2017). Substance use outcomes of patients served by a large U.S. implementation of screening, brief intervention and referral to treatment (SBIRT). *Addiction, 112*(Suppl.2), 43-53. doi:10.1111/add.13651
- Álvarez-Bueno, C., Rodríguez-Martín, B., García-Ortiz, L., Gómez-Marcos, M. Á., & Martínez-Vizcaíno, V. (2015). Effectiveness of brief interventions in primary health care settings to decrease alcohol consumption by adult non-dependent drinkers: A systematic review of systematic reviews. *Preventive Medicine, 76*, S33-S38. doi:10.1016/j.ypmed.2014.12.010
- American Academy of Family Physicians. (2014). Screening and behavioral counseling interventions in primary care to reduce alcohol misuse: Recommendation statement. *American Family Physician, 89*(12), 970a-970d. Retrieved from <http://www.aafp.org>

- American Academy of Pediatrics. (n.d.). Substance use screening and brief intervention for youth. Retrieved from <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Pages/Substance-Use-Screening.aspx>
- American Association of Colleges of Nursing. (2006). *The Essentials of doctoral education for advanced nursing practice*. Retrieved from <https://www.aacnursing.org/Portals/42/Publications/DNPEssentials.pdf>
- American Medical Association. (2017). *Reports of the Council on Science and Public Health*. Retrieved from <https://www.ama-assn.org/sites/ama-assn.org/files/corp/media-browser/public/hod/a17-csaph-reports.pdf>
- Anderson, P. (2018). Theoretical approaches to quality improvement. In J. Butts & K. L. Rich (Eds.), *Philosophies and theories for advanced nursing practice* (3rd ed., pp. 375-391). Burlington, MA: Jones & Bartlett Learning.
- Andersson, H., Hedström, L., Bergman, S., & Bergh, H. (2018). The outcome of two-step blood pressure screening in dental healthcare. *Scandinavian Journal of Public Health, 46*(6), 623-629. doi:10.1177/1403494818759840
- Babor, T. F., Del Boca, F., & Bray, J. W. (2017). Screening, brief intervention and referral to treatment: Implications of SAMHSA's SBIRT initiative for substance abuse policy and practice. *Addiction, 112*(Suppl.2), 110-117. doi:10.1111/add.13675
- Babor, T. F., Higgins-Biddle, J. C., & Robaina, K. (2017). *USAUDIT: The alcohol use disorders identification test: A guide for primary care practitioners*. Retrieved from <https://www.ct.gov/dmhas/lib/dmhas/publications/USAUDIT-2017.pdf>
- Babor, T. F., Higgins-Biddle, J. C., Dauser, D., Burlinson, J. A., Zarkin, G. A., & Bray, J. (2006). Brief interventions for at risk drinking: Patient outcomes and cost-effectiveness in

- managed care organizations. *Alcohol and Alcoholism*, 41(6), 624-631.
doi:10.1093/alcalc/agl078
- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *The alcohol use disorders identification test: Guidelines for use in primary care*. Retrieved from <http://www.who.int/iris/handle/10665/67205>
- Berwick, D. M., Nolan, T. W., & Whittington, J. (2008). The triple aim: Care, health, and cost. *Health Affairs*, 27(3), 759-769. doi:10.1377/hlthaff.27.3.759
- Bishop, S. (2018). Theories of organizational behavior and leadership. In J. B. Butts & K. L. Rich (Eds.), *Philosophies and theories for advanced nursing practice* (3rd ed., pp. 359-374). Burlington, MA: Jones & Bartlett Learning.
- Bodenmann, P., Favrat, B., Wolff, H., Guessous, I., Panese, F., Herzig, L., . . . Vaucher, P. (2014). Screening primary-care patients forgoing health care for economic reasons. *PLOS ONE*, 9(4), E94006. doi:10.1371/journal.pone.0094006
- Bush, K., Kivlahan, D. R., McDonell, M. B., Fihn, S. D., & Bradley, K. A. (1998). The AUDIT alcohol consumption questions (AUDIT-C): An effective brief screening test for problem drinking. *Archives of Internal Medicine*, 158(16), 1789-1795.
doi:10.1001/archinte.158.16.1789
- Centers for Disease Control and Prevention. (2013). *Alcohol and public health: Alcohol-related disease impact*. Retrieved February 28, 2019, from https://nccd.cdc.gov/DPH_ARDI/Default/Report.aspx?T=AAM&P=f6d7eda7-036e-4553-9968-9b17ffad620e&R=d7a9b303-48e9-4440-bf47-070a4827e1fd&M=8E1C5233-5640-4EE8-9247-1ECA7DA325B9&F=&D=

- Centers for Disease Control and Prevention. (2014). *Planning and implementing screening and brief intervention for risky alcohol use: A step-by-step guide for primary care practices*. Retrieved from <https://www.cdc.gov/ncbddd/fasd/documents/alcoholsbiimplementationguide.pdf>
- Centers for Disease Control and Prevention. (2015). *Chronic disease indicators*. Retrieved January 26, 2019, from <https://www.cdc.gov/cdi/index.html>
- Centers for Disease Control and Prevention. (2018). *Alcohol and public health*. Retrieved January 26, 2019, from <https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>
- Centers for Medicare and Medicaid Services. (2011). *Decision summary*. Retrieved February 28, 2019, from <https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=249>
- Centers for Medicare and Medicaid Services, HealthCare.gov. (n.d.). *Preventive care benefits for adults*. Retrieved February 28, 2019, from <https://www.healthcare.gov/preventive-care-adults/>
- Chen, Y., Ibragimov, U., Nehl, E. J., Zheng, T., He, N., & Wong, F. Y. (2016). Validity of the CAGE questionnaire for men who have sex with men (MSM) in China. *Drug and Alcohol Dependence, 160*, 151-156. doi:10.1016/j.drugalcdep.2015.12.039
- County Health Rankings & Roadmaps. (2019). *Alexander County demographics: Health behaviors*. Retrieved January 31, 2019, from <http://www.countyhealthrankings.org/app/north-carolina/2016/rankings/burke/county/outcomes/overall/snapshot>
- Crowfoot, D., & Prasad, V. (2017). Using the plan–do–study–act (PDSA) cycle to make change in general practice. *InnovAiT: Education and Inspiration for General Practice, 10*(7), 425-430. doi:10.1177/1755738017704472

- Cummings, S., Bridgman, T., & Brown, K. G. (2015). Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management. *Human Relations, 69*(1), 33-60.
doi:10.1177/0018726715577707
- Curry, S. J., Krist, A. H., Owens, D. K., Barry, M. J., Caughey, A. B., Davidson, K. W., . . . Wong, J. B. (2018). Screening and behavioral counseling interventions to reduce unhealthy alcohol use in adolescents and adults. *JAMA, 320*(18), 1899-1909.
doi:10.1001/jama.2018.16789
- Evans, J., Ball, L., & Wicher, C. (2016). Implementation of medical orders for life-sustaining treatment. *Clinical Journal of Oncology Nursing, 20*(1), 74-78. doi:10.1188/16.cjon.74-78
- Harris, B., & Yu, J. (2016). Attitudes, perceptions and practice of alcohol and drug screening, brief intervention and referral to treatment: A case study of New York state primary care physicians and non-physician providers. *Public Health, 139*, 70-78.
doi:10.1016/j.puhe.2016.05.007
- Higgins-Biddle, J. C., & Babor, T. F. (2018). A review of the alcohol use disorders identification test (AUDIT), AUDIT-C, and USAUDIT for screening in the United States: Past issues and future directions. *The American Journal of Drug and Alcohol Abuse, 44*(6), 578-586.
doi:10.1080/00952990.2018.1456545
- Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2018). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge, 3*(3), 123-127.
doi:10.1016/j.jik.2016.07.002

- Institute for Health Metrics and Evaluation. (2016). *County report: Burke County, North Carolina*. Retrieved February 3, 2019, from http://www.healthdata.org/sites/default/files/files/county_profiles/US/2015/County_Report_Burke_County_North_Carolina.pdf
- Laverentz, D. M., & Kumm, S. (2017). Concept evaluation using the PDSA cycle for continuous quality improvement. *Nursing Education Perspectives, 38*(5), 288-290.
doi:10.1097/01.nep.0000000000000161
- Letourneau, B., Sobell, L. C., Sobell, M. B., Agrawal, S., & Gioia, C. J. (2017). Two brief measures of alcohol use produce different results: AUDIT-C and quick drinking screen. *Alcoholism: Clinical and Experimental Research, 41*(5), 1035-1043.
doi:10.1111/acer.13364
- Lipari, R. N., & Van Horn, S. L. (2017). *Children living with parents who have a substance use disorder: The CBHSQ report*. Retrieved https://www.samhsa.gov/data/sites/default/files/report_3223/ShortReport-3223.html
- Lundin, A., Hallgren, M., Balliu, N., & Forsell, Y. (2015). The use of alcohol use disorders identification test (AUDIT) in detecting alcohol use disorder and risk drinking in the general population: Validation of AUDIT using schedules for clinical assessment in neuropsychiatry. *Alcoholism: Clinical and Experimental Research, 39*(1), 158-165.
doi:10.1111/acer.12593
- Milic, J., Glisic, M., Voortman, T., Borba, L. P., Asllanaj, E., Rojas, L. Z., . . . Franco, O. H. (2018). Menopause, ageing, and alcohol use disorders in women. *Maturitas, 111*(2018), 100-109. doi:10.1016/j.maturitas.2918.03.006
- National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism. (2018). *Alcohol facts and statistics*. Retrieved January 31, 2019, from

<https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/alcohol-facts-and-statistics>

- O'Doherty, L., Hegarty, K., Ramsay, J., Davidson, L. L., Feder, G., & Taft, A. (2015). Screening women for intimate partner violence in healthcare settings. *Cochrane Database of Systematic Reviews*, (7). doi:10.1002/14651858.cd007007.pub3
- O'Donnell, A., Anderson, P., Newbury-Birch, D., Schulte, B., Schmidt, C., Reimer, J., & Kaner, E. (2014). The impact of brief alcohol interventions in primary healthcare: A systematic review of reviews. *Alcohol and Alcoholism*, 49(1), 66-78. doi:10.1093/alcalc/agt170
- Pace, C. A., & Uebelacker, L. A. (2018). Addressing unhealthy substance use in primary care. *Medical Clinics of North America*, 102(4), 567-586. doi:10.1016/j.mcna.2018.02.004
- Riley, B. B., Hughes, T. L., Wilsnack, S. C., Johnson, T. P., Benson, P., & Aranda, F. (2016). Validating a hazardous drinking index in a sample of sexual minority women: Reliability, validity, and predictive accuracy. *Substance Use & Misuse*, 52(1), 43-51. doi:10.1080/10826084.2016.1214150
- Roy-Byrne, P., Bumgardner, K., Krupski, A., Dunn, C., Ries, R., Donovan, D., . . . Zarkin, G. A. (2014). Brief intervention for problem drug use in safety-net primary care settings: A randomized clinical trial. *JAMA*, 312(5), 492-501. doi:10.1001/jama.2014.7860
- Saitz, R., Palfai, T. P., Cheng, D. M., Alford, D. P., Bernstein, J. A., Lloyd-Travaglini, C. A., . . . Samet, J. H. (2014). Screening and brief intervention for drug use in primary care: The ASPIRE randomized clinical trial. *JAMA*, 112(5), 502-513. doi:10.10.201401/jama.2014.7862
- SAMHSA-HRSA Center for Integrated Health Solutions. (n.d.). *SBIRT*. Retrieved February 28, 2019, from <https://www.integration.samhsa.gov/clinical-practice/sbirt>

Saunders, J. B., & Aasland, O. G. (1987). *WHO Collaborative Project on the identification and treatment of persons with harmful alcohol consumption: Report on Phase I*. Retrieved from <http://www.who.int/iris/handle/10665/62031>

Saunders, J. B., Aasland, O. G., Babor, T. F., de La Fuente, J. R., & Grant, M. (1993). *Development of the alcohol use disorders identification test (AUDIT): WHO Collaborative Project on early detection of persons with harmful alcohol consumption-II*. *Addiction*, 88(6), 791-804. doi:10.1111/j.1360-0443.1993.tb02093.x

Shogren, M. D., Harsell, C., & Heitkamp, T. (2017). Screening women for at risk alcohol use: An introduction to screening, brief intervention, and referral to treatment (SBIRT) in women's health. *Journal of Midwifery & Women's Health*, 62(6), 746-754. doi:10.1111/jmwh.12659

Slaunwhite, A. K., & Macdonald, S. (2015). Alcohol, isolation, and access to treatment: Family physician experiences of alcohol consumption and access to health care in rural British Columbia. *The Journal of Rural Health*, 31(4), 335-345. doi:10.1111/jrh.12117

Strobbe, S. (2014). Prevention and screening, brief intervention, and referral to treatment for substance use in primary care. *Primary Care: Clinics in Office Practice*, 41(2), 185-213. doi:10.1016/j.pop.2014.02.002

The American College of Obstetricians and Gynecologists. (2015). Alcohol abuse and other substance use disorders: Ethical issues in obstetric and gynecologic practice: Committee Opinion No. 633. *Obstetrics & Gynecology*, 125(6), 1529-1537. doi:10.1097/01.aog.0000466371.86393.9b

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Center for Nutrition Policy Promotion. (2015). Appendix 9: Alcohol. In

- Dietary Guidelines for Americans 2015-2020* (8th ed., pp. 101-103). Retrieved from <https://ebookcentral.proquest.com>.
- U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People 2020 (n.d.-a). *Leading health indicators*. Retrieved February 28, 2019, from <https://www.healthypeople.gov/2020/Leading-Health-Indicators>
- U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, Healthy People 2020 (n.d.-b). *Substance abuse: Policy and prevention*. Retrieved February 28, 2019, from <https://www.healthypeople.gov/2020/topics-objectives/topic/substance-abuse/objectives>
- U.S. Preventative Services Task Force. (2018). *Final recommendation statement*. Retrieved February 28, 2019, from <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/unhealthy-alcohol-use-in-adolescents-and-adults-screening-and-behavioral-counseling-interventions>
- Vines, M. M., Dupler, A. E., Van Son, C., & Guido, G. W. (2014). Improving client and nurse satisfaction through the utilization of bedside report. *Journal for Nurses in Professional Development*, 30(4), 166-173. doi:10.1097/nnd.0000000000000057
- Wojciechowski, E., Murphy, P., Pearsall, T., & French, E. (2016). A case review: Integrating Lewin's theory with Lean's system approach for change. *OJIN: The Online Journal of Issues in Nursing*, 21(2). doi:10.3912/OJIN.Vol21No02Man0

Appendix A

PRISMA Flowchart

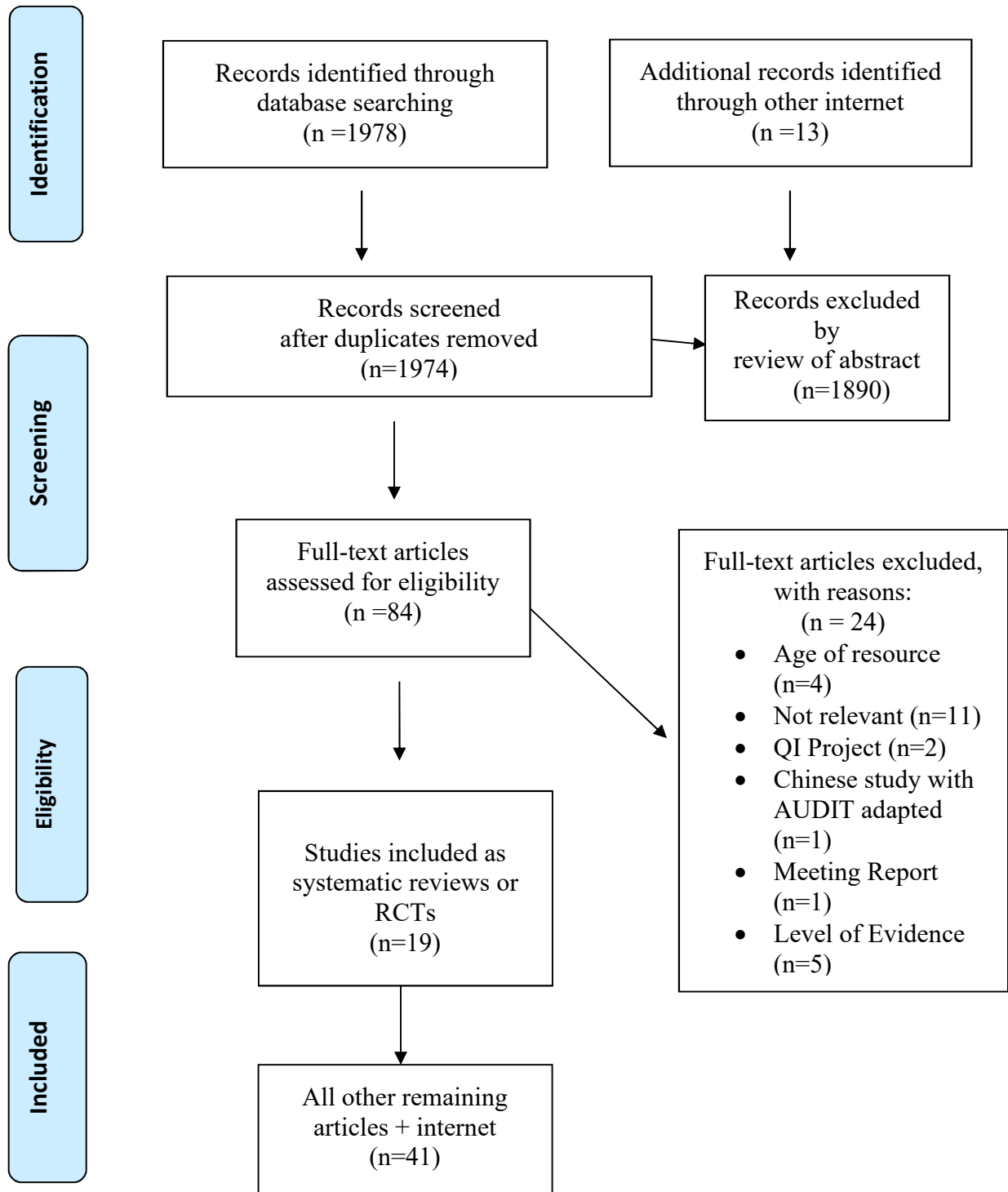


Figure 3. PRISMA flowchart

Appendix B

Table 1

SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
Providers and staff willing to implement the screening tool.	Busy practice seeing 50 patients per day.	Compliance with meeting leading organizational guidelines for screening.	Short staffing of office personnel during implementation.
Efficient teamwork in office.	Participants not screening women.	Billing for BI can increase revenue.	One of the providers leaving during implementation.
Practice manager highly skilled and can assist me with gathering of weekly data.	Staff may tire of the process before project completion.	Develop better relationships with patients through open communication about alcohol.	Office being bought out by corporation during project.
LCSW present on site one day per week for referrals.	MOAs may not compile screens after completion.	Improved patient outcomes by identifying those with at risk drinking.	Computer system failure during project.
Site champion open to ideas and proactive in assisting with the process.	Providers may feel they don't have time to provide a brief intervention during the patient visit.	Provide additional services to their patients.	Losing patients due to them becoming angry over screening & brief intervention.
	Not all providers may want to participate in BI or be a part of the project.		

Note. MOA = Medical office assistant; LCSW = Licensed Clinical Social Worker; BI = Brief intervention

Appendix C

Organization Approval Letter



Date: 2/18/19

To East Carolina University College of Nursing:

We at [REDACTED] have reviewed Donna Sandifer's DNP Project Proposal "Increasing alcohol screening in women through implementation of an alcohol screening tool". Mrs. Sandifer has organizational support and approval to conduct this project within our institution. We understand that the timeframe for this project is from the date of this letter through April 30, 2020. Implementation at the project site will occur August/September through November 30, 2019, unless otherwise negotiated. We understand that for Mrs. Sandifer to achieve completion of the DNP program, dissemination of the project will be required by the University which will include a public presentation related to the project and a manuscript submission is encouraged.

Our organization has deemed this project as a process development. Our organization does not have an IRB and we understand that this project will be processed through the University and Medical Center Internal Review Board of East Carolina University.

Thank you,



Appendix E

Table 3

Project Budget

Line Item	Unit Cost	Quantity	Total
Project Budget			
Office Supplies			
Clip boards with pens	\$2.84	6	\$17.04
Paper bins	\$5.00	3	\$15.00
Manilla envelopes	\$1.00	5	\$5.00
			\$0.00
Paper Supplies			
Duplex copies USAUDIT x 12 weeks	\$0.10	1200	\$120.00
AA Brochure copies (duplex)	\$0.10	40	\$4.00
Educational handouts (color)	\$0.53	50	\$26.50
USAUDIT provider handbook with binder (color)	\$40.00	1	\$40.00
Mileage			
To and from site x 12 weeks	\$0.54	528	\$285.12
			\$0.00
			\$0.00
Total			\$512.66

Note. Project budget throughout implementation. USAUDIT = United States Alcohol Use Disorder Identification Test; AA = Alcoholics Anonymous

Appendix F

Table 4

USAUDIT 1-3

One drink equals:



12 oz.
beer



5 oz.
wine



1.5 oz.
liquor
(one shot)

****Please answer all 3 questions by circling your answer in the boxes****

Questions	0	1	2	3	4	5	6	Score
1. How often do you have a drink containing alcohol?	Never	Less than monthly	Monthly	Weekly	2-3 times a week	4-6 times a week	Daily	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1	2	3	4	5-6	7-9	10 or more	
3. How often do you have 4 or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	2-3 times a week	4-6 times a week	Daily	

Total =

Appendix G

Table 5

USAUDIT

****Staff: Have patient complete last 7 questions if 1st three questions total ≥ 7 ****

Questions	0	1	2	3	4	Score
4. How often during the last year have you found that you were not able to stop drinking once you started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	

Brief Intervention:

Referral to LCSW:

Total Score:

Appendix H

Public Domain Confirmation for USAUDIT



Fri 02/08/2019 06:32 PM

Sandifer, Donna Crowder ✓

	AJDAA USAUDIT 2018.pdf
	971 KB

✓ Show all 2 attachments (3 MB) Download all Save all to OneDrive - East Carolina University

Donna

You do not need permission, as stated I believe in the AUDIT Manual that is available on the WHO website. Both the WHO AUDIT and the USAUDIT are in the public domain. See attachments for a newer version of the AUDIT designed for the USA. Good luck with your work.



Appendix I

Table 6

Scoring Card

Risk Level	Intervention	USAUDIT Score	Possible AUD Risk
Zone I	Feedback/Praise	0-6	None
Zone II	Feedback/Brief Intervention (Education Handouts)	7-15	Mild AUD, Hazardous Use
Zone III	Feedback/monitoring/**Referral to LCSW**	16-24	Moderate AUD, Harmful Use
Zone IV	Referral for Evaluation and Treatment	25+	Moderate/Severe AUD, Alcohol Dependence

Appendix J

Patient Education-Page 1

Adult Alcohol Use

What is risky drinking?

Do you enjoy a drink now and then? Many people do, often with friends and family. However, drinking enough alcohol over time can create new health problems or make current health problems worse. Risky drinking means drinking more than the number of drinks shown below:

Low-risk drinking limits:



	Drinks per week	Drinks per day
Men	14	4
Women	7	3
Age 65 or older	7	3
Pregnancy	0	0

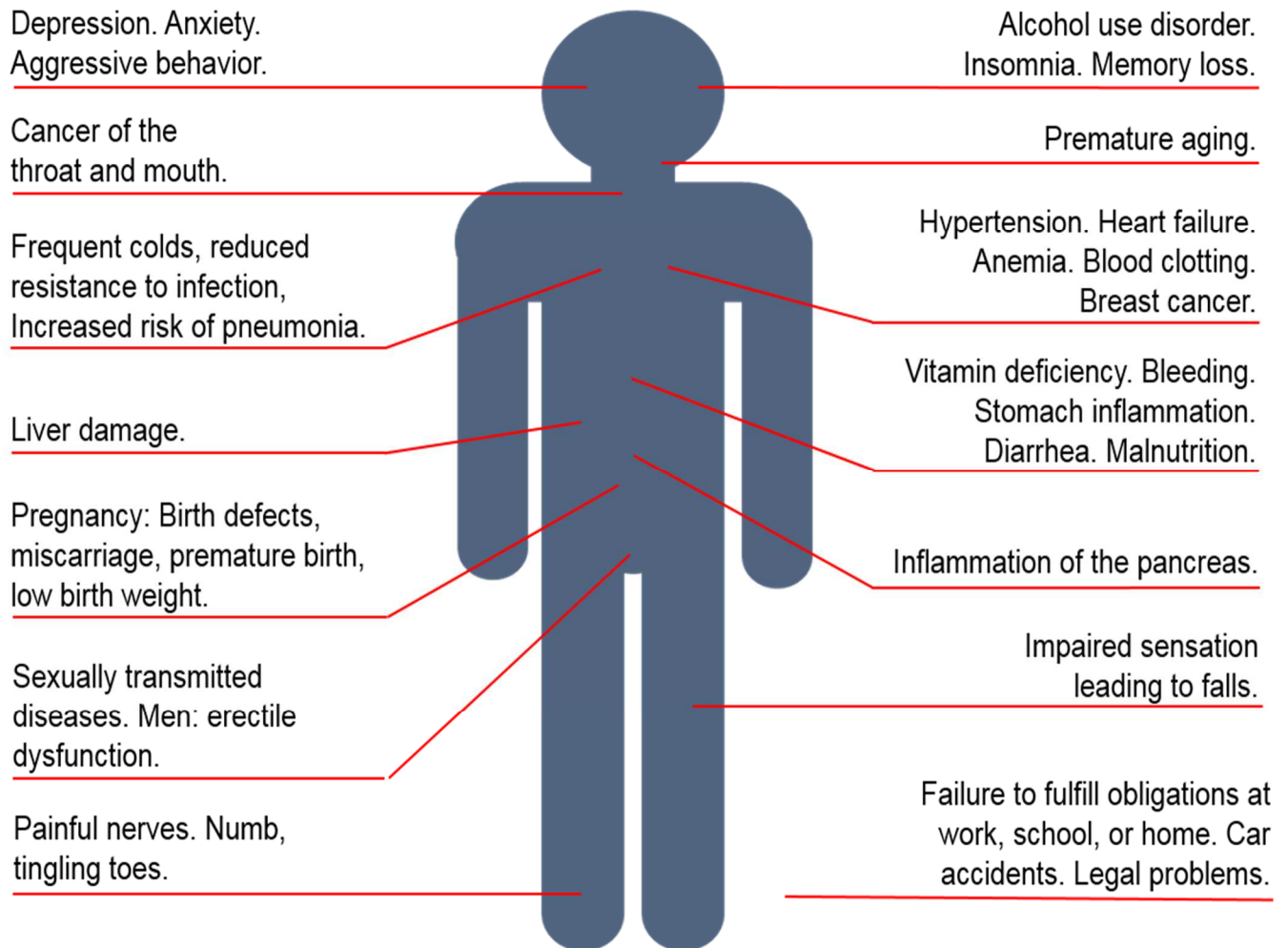
Men have to drink more than women to become risky drinkers because they weigh more, on average. Also, women have less water in their bodies, making it easier to be harmed by alcohol even when they drink the same amount as men. What counts as a drink? See below.

One drink is:

<p>12 ounces of regular beer</p> 	<p>8 ounces of malt liquor</p> 	<p>5 ounces of wine</p> 	<p>1.5 ounces of liquor</p> 
 <p>40 ounces of malt liquor is 4 and-a-half drinks</p>	 <p>A bottle of wine is 5 drinks</p>	 <p>A pint of liquor is 11 drinks (80 proof)</p>	

Appendix K

Patient Education-Page 2



Adapted with permission from the Department of Family Medicine at Oregon Health and Science University.

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