

IMPLEMENTATION OF THE ALCOHOL USE DISORDERS IDENTIFICATION TEST TO
IMPROVE PRACTICE IN A RURAL PRIMARY CARE CLINIC

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North Dakota State University's regulations and meets the accepted standards
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ABSTRACT

The purpose of the project was to improve patient care and the clinical practice at the Barnesville Area Clinic (BAC) by introducing the providers to a guided method of evidence-based alcohol screening and brief intervention (SBI) for primary care patients. Previously, less formal methods for alcohol screening were utilized. The AUDIT with AUDIT-C modification screening form, which was created by the World Health Organization (WHO), was implemented. AUDIT is supported as an appropriate evidence-based method by the U.S. Preventative Services Task Force. Interventions were guided by the WHO's Brief Intervention Manual.

The project was implemented in the Barnesville Area Clinic from June 2013 until August 2013. Thirty adult primary care patients, who presented for an annual physical exam, were offered the AUDIT screening form and brief intervention as indicated by individual scores. Of the 30 patients, six declined participation. Five participants filled out the screening tool, but did not complete the attached consent form. The remaining 19 participants completed the screening tool and consent form. Seventeen patients scored within Zone 1 (low risk) and two patients scored in Zone 2 (increased risk for alcohol misuse). No one scored in Zone 3 (high risk) or Zone 4 (alcohol dependence).

The providers were surveyed on the perceived benefits and barriers of the project. Both providers strongly agreed the project was beneficial and the methods were easy to use. The impact on patient care varied, depending on individual results and willingness to participate in brief interventions. Barriers included suspected under-reporting of alcohol use, and patient resistance to discussing alcohol use. Despite the barriers, both providers felt that SBI methods could be utilized by the clinic in future practice.

Recommendations for future research include offering SBI to broader patient populations at provider discretion to include not only annual physicals but those with suspected substance use

on an episodic basis. Another recommendation is to seek out research on screening and brief intervention or to develop a method of SBI for prescription abuse.

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CHAPTER ONE. INTRODUCTION

Background and Significance

Alcohol misuse is a serious problem facing the United States. Annually, alcohol-related consequences generate \$185 billion in economic cost in the United States alone, through instances such as overuse of emergency services (Center for Disease Control [CDC], 2011). In addition to the financial burden, alcohol misuse also leads to wide-reaching physical, mental and social detriments for the affected individual. The alcohol-related risks are completely preventable. In recent years, many health agencies have begun providing support and encouraging healthcare providers to take a proactive approach in screening for alcohol misuse among patients, and in guiding necessary interventions to reduce risk. For these reasons, alcohol screening and brief intervention among primary care patients was chosen as the focus of this practice improvement project.

According to the Center for Disease Control (CDC) and World Health Organization (WHO), the term alcohol misuse describes any risky level of consumption, ranging from hazardous drinking to alcohol dependence (CDC, 2013). The standard drink size is considered 14 grams of alcohol. The WHO and CDC recommendations for minimal to low-risk alcohol consumption is considered an intake of two standard drinks or less per day for men, and one or less standard drinks per day for women, on no more than five days per week (CDC, 2013). Any consumption of alcohol exceeding the daily recommended amount is considered misuse for the purpose of this project and is associated with increased risk for harmful and hazardous drinking. Alcohol is blamed for being the most widely abused substance with 50.9 percent of individuals aged 18 and older reporting current alcohol use (Summary Health Statistics, 2010). Specifically for the state of Minnesota, the annual alcohol-related economic costs have reached nearly five billion dollars and hold wide-reaching effects for the state (Minnesota Department of Health,

2011). An increased prevalence of excessive alcohol use presents significant consequences. Excessive alcohol use contributes to over 60 known unnecessary and preventable disease processes, including cardiovascular disease, stroke, hypertension, and forms of cancer (U.S. Preventative Services Task Force [USPSTF], 2013). Excessive alcohol consumption reportedly causes 88,000 deaths nationally every year, and is the third leading cause of preventable deaths nationwide (CDC, 2013).

Primary care providers are an important contact point for individuals who struggle with alcohol misuse. Nurse practitioners in a primary care setting have the potential for encountering alcohol misuse in nearly 30-50% of patients presenting for care (Hiese, 2010). With the ever-increasing prevalence of alcohol misuse, it is imperative for primary care providers to understand the contributing factors and comorbidities, as well as have the ability to successfully screen for harmful and hazardous intake and identify needs for intervention. Alcohol misuse is not a new problem, but is one that presents a challenge to healthcare providers locally and nationwide, which is why alcohol screening, especially among primary care patients, remains a priority of the U.S. Preventative Services Task Force (USPSTF) and the National Commission on Preventative Priorities (NCPP). Alcohol screening and brief intervention has demonstrated effectiveness in reducing risky alcohol use and the associated effects. The NCPP has listed alcohol screenings in the top five priorities for the U.S., indicating a high level of clinical significance for primary providers (Gold & Aronson, 2011). In efforts to improve health promotion, the Minnesota Department of Health has also established a goal of reducing behavioral risks that contribute to the morbidity and mortality of the state's residents, which includes encouragement of alcohol screening and intervention (Minnesota Department of Health, 2011).

The Alcohol Use Disorders Identification Test

The Alcohol Use Disorders Identification Test (AUDIT) was developed by the World Health Organization in 1989 as a means to screen for excessive drinking and to guide brief interventions to reduce patient risks. AUDIT is geared toward identifying harmful use, which is defined as excessive alcohol intake that is causing damage to a person's health (Babor & Higgins-Biddle, 2001). The tool also helps identify alcohol dependence, which is excessive use associated with at least three of the following characteristics; strong compulsion to drink, difficulties controlling levels of use, a physiological withdrawal state when alcohol use has ceased, evidence of tolerance requiring increased doses of alcohol to reach a desired effect, progressive neglect of interests, and continued use despite clear evidence of harmful consequences (Babor & Higgins-Biddle, 2001). A manual for use was also developed and published in 1992 to provide a framework for brief clinical interventions to augment reduction and cessation of risky alcohol consumption (Babor, Higgins-Biddle, Saunders & Monteiro, 2004). The ten-item AUDIT tool addresses the quantity of alcohol consumed combined with the individual's experience in using alcohol (Gold & Aronson, 2011). The questionnaire includes the following questions: 1) How often do you have a drink containing alcohol?; 2) How many drinks containing alcohol do you have on a typical day when you are drinking?; 3) How often do you have six or more drinks on an occasion?; 4) How often during the last year have you found that you were not able to stop drinking once you had started?; 5) How often during the last year have you failed to do what was normally expected from you because of your drinking?; 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?; 7) How often in the last year have you had a feeling of guilt or remorse after drinking?; 8) How often in the last year have you been unable to remember what happened

the night before because of drinking?; 9) Have you or someone else been injured as result of your drinking?; and 10) Has a relative, friend, doctor, or healthcare worker been concerned about your drinking or suggested you cut down? (Hodgeson, Alwyn, John, Thom, & Smith, 2002). A score of greater than eight out of forty is considered positive for moderate alcohol-related risk to potential alcohol dependence. Any score less than seven is indicative of a low alcohol-related risk.

AUDIT scores are divided into four levels of severity. The first zone includes scores ranging from 0 to 7, and is the most common risk level encountered in the screening process. Zone 1 is considered low risk for alcohol-related consequences, meaning the individual likely either abstains from alcohol use or adheres to current recommendations for safe levels of alcohol use. Zone 2 scores range from 8 to 15, which indicate increasing risk for adverse alcohol-related outcomes such as stroke, myocardial infarction, or accidental trauma. Zone 3 scores range from 16-19 and signify harmful drinking and higher risk. AUDIT scores exceeding 20 are placed into Zone 4, which is strongly suggestive of alcohol dependence. The evidence behind placing the AUDIT scores into zones is based on the strong likelihood that greater scores indicate increasing severity of alcohol misuse and risk for adverse outcomes. Score clustering also allows providers to tailor brief interventions specifically to the individual's level of risk (Babor & Higgins-Biddle, 2001).

AUDIT followed by structured brief intervention (SBI) has been validated and supported by several studies. Research has shown that well-designed intervention strategies can effectively alter patterns of harmful alcohol use even in the brief nature of primary care encounters (Babor & Higgins-Biddle, 2001). The manual for SBI was developed for healthcare practitioners in a variety of clinical settings for self or assisted-administration (WHO, 2012). Brief interventions

are practices geared toward identifying actual or potential alcohol misuse, and subsequent efforts to motivate the affected patient to change the risky behavior (WHO, 2012). Brief interventions can be as simple as having a short conversation with the patient regarding the meaning of the individual's AUDIT score and general education on the effects of alcohol use. Interventions can also become complex, based on the severity of the individual's alcohol misuse and may call for very individualized treatment plans or referrals (Fleming, 2005). The WHO's Brief Intervention Manual outlines zone and score-specific guidelines that aide providers in matching the best intervention to each patient's individual risk level for alcohol use. This ensures that the patient receives the most pertinent guidance to reduce alcohol-related risks. Research supports that screening and brief interventions are cost-effective and are clinically effective across the spectrum of alcohol use in varying medical settings (WHO, 2012).

Statement of the Problem

Alcohol use is the third leading cause of preventable deaths in the U.S (Center for Disease Control, 2011). Despite overwhelming evidence to support screening and brief intervention to reduce harmful alcohol use, screening is rarely performed, identifying a gap in necessary service provision. According to the CDC, only one in six patients has been asked to discuss alcohol use by a healthcare provider (2013). The USPSTF guidelines call for alcohol screenings for adult patients in primary care settings at least on an annual basis, yet many clinicians are either unaware of the recommendation, or just choose not to incorporate screening into practice. A study has shown among alcohol dependent patients in primary care, only 10 percent received appropriate assessment and referral for treatment (Gold & Aronson, 2011). Additional studies have given a slightly more generous, but still woefully inadequate, estimate claiming that less than 50 percent of patients are adequately screened for alcohol misuse (Liszka-

Rose et al, 2008). With only a 10-50 percent utilization rate, providers including nurse practitioners are missing crucial health promotion and disease prevention opportunities. Additionally, healthcare is shifting toward a greater focus on payment based on provider performance measures, which further highlights the need for screening tools that will improve patient health outcomes (Brown, 2013). For these reasons, alcohol screening and brief intervention among primary care patients was chosen as the focus of this project.

Purpose of the Project

The purpose of the project was to implement a practice improvement change using an evidence-based screening tool to detect alcohol use and guide brief interventions. A primary goal was to increase the prevalence of alcohol screening and brief intervention in a primary care setting that serves a rural area of Minnesota by introducing the Alcohol Use Disorders Identification Test tool in conjunction with provider-friendly algorithms to plan appropriate brief interventions. The use of an established screening and brief intervention process has been thoroughly validated by the WHO and ensures that harmful patterns of alcohol use are identified and that individual risk levels are matched with the most appropriate healthcare interventions (Babor & Higgins-Biddle, 2001; USFSTF, 2013). Through project-provided guidance, another goal was to improve clinical practice by increasing provider comfort and ease of administration of an evidence-based screening tool for alcohol use. Ultimately, the project sought to improve patient care through screening, brief intervention, appropriate referral, and provision of education regarding alcohol cessation and health promotion.

CHAPTER TWO. LITERATURE REVIEW OF EVIDENCE-BASED PRACTICE

Problems Associated With Alcohol Use

The patterns of alcohol intake vary from state to state, and have been noted to be of consistently high prevalence among the midwestern states such as Minnesota. The rate of current (any use in past month) alcohol use among Minnesotans is 61.7 percent, compare with 51.3 percent nationally. Likewise binge drinking is reported by 27.9 percent of Minnesotans, compared with 22.8 percent nationally (Minnesota Department of Human Services, 2009). Current recommendations for alcohol use for adult males is less than two standard drinks per day and less than one drink per day for females, which is not a well-known fact among most patients (CDC, 2013). Alcohol is noted to be the most widely abused substance in Minnesota. Recent data showed that 50% of addiction treatment center admissions listed alcohol as the primary substance (Chemical Health in Minnesota, 2011). The data further supports the importance of providers in the state to taking note of alcohol use among their patient base in order to capitalize on teachable moments and reduce potential risks.

Many factors can play into why certain individuals consistently consume heavy amounts of alcohol, making alcohol use a complex clinical issue. The need for alcohol can be physical, psychological, and sociological. For some, alcohol has the effect of making the individual physically feel good. Research suggests there may also be a genetic component predisposing certain individuals to addiction and tendencies toward alcohol consumption if their parents or grandparents suffered from addiction as well (Foroud, Edenberg & Crabbe, 2010). Some use alcohol to cope with emotional stress, or depression. A study by Keyes and Hasin (2008) found a correlation between people of low socioeconomic status, people with comorbidities such as mental health disorders, and individuals who regularly consume heavy amounts of alcohol. There

is a strong correlation between heavy alcohol use and increased likelihood of suicide, homicide, and violence (McAuliffe, Dunn & Zhang, n.d.). Commonly known to most, alcohol is legal and is one of the most accessibly abused substances. Some individuals may be prone to over-use purely due to easy access. Others, who may suffer from anxiety sensitivity, distress intolerance, discomfort intolerance, and general issues with socialization are prone to increased alcohol use as a mechanism to cope and fit into social settings (Howell, Leyro, Hogan, Buckner, & Zvolensky, 2010).

Alcohol misuse can cause significant health problems. A study by Delaney, Shields, Willenberg and Huebner (2008) reported that alcohol use is associated with over 60 disease conditions. Health conditions solely attributed to alcohol consumption include alcohol psychosis, alcohol dependence, alcohol abuse, polyneuropathy, alcoholic cardiomyopathy, alcoholic gastritis, and ethanol or methanol toxicity (Delaney et al, 2008). Acute conditions in which alcohol is a contributing factor include motor vehicle crashes, drowning, occupational incidents, and machine-operated incidents (CDC, 2013; Delaney et al, 2008; USPSFT, 2013). Alcohol use is correlated with risky behavior such as IV drug use and promiscuous sexual practices, therefore sometimes leads to the comorbidity of sexually transmitted diseases and HIV (CDC 2013; Li, 2008). Chronic problems of alcohol use include cancers of the mouth, esophagus, stomach, pancreas, breasts and liver (CDC, 2013). Neurologically, alcohol use can lead to dementia (related to nutrient depletion) and epilepsy (Li, 2008). In terms of the cardiovascular system, alcohol use can lead to hypertension, coronary heart disease, cerebrovascular disease, and hemorrhagic or ischemic stroke (CDC, 2013). Alcohol is metabolized by the liver, so naturally some of the most prevalent comorbidities of excessive alcohol use take place in the liver, for example, in the forms of cirrhosis, hepatitis, and liver cancer (Li, 2008).

Barriers to Screening and Brief Intervention

The decision of whether to screen for alcohol misuse depends on the circumstance of the individual patient and situation, the ease and effectiveness of performing the screening test, and interventions that lead to outcome improvements in those with a positive screen (Gold & Aronson, 2011). Although the mode of screening is left up to the provider, the U.S. Preventative Service Task Force does recommend that all adult patients receive an alcohol screening test (2013). The optimal screening frequency for adult alcohol use is unknown, but many suggest alcohol screenings be included as a part of routine primary care exams on an annual basis (CDC,2013; Gold & Aronson, 2011; USPSTF, 2013).

Previous research suggests that causes for under-screening for alcohol use in primary care include limited patient access to healthcare and missed screening opportunities when care is sought. Reasons for missed screening opportunities potentially include lack of training about alcohol screening and brief counseling interventions, lack of provider comfort in discussing alcohol use, lack of referral resources if alcohol dependence is identified, lack of performance measures relating to alcohol screening, and lack of system-wide approaches to encourage adherence to screening guidelines (Johnson et al., 2011; Town et al, 2006). Studies by Gannon, Quaseem, Fahy, Croton, and Voogt (2011), Kypri, et al. (2008), Saitz (2009), Smith, Schmidt, and Allensworth-Davies (2009), and Snow and Turner (2011), all supported claims that there was a scarcity of physician time to dedicate to lengthy alcohol screening processes, so often times the screening process was just not done. Fahey et al. (2011), Gannon et al. (2011), Kypri et al. (2008) and Rose et al. (2010) also agreed upon the presence of low confidence levels of providers in approaching the uncomfortable subject of alcohol use with patients, fearing the working relationship may be compromised. Some providers have a misconception that primary

care is not an appropriate or effective setting to address alcohol use, despite numerous evidence-based studies that demonstrate otherwise (Babor & Higgins-Biddle, 2001). Most recently, the CDC has advocated for routine alcohol screenings. According to CDC Director Dr. Thomas Frieden, "It (alcohol SBI) should be a part of routine patient care. In the same way we screen for high blood pressure and high cholesterol, we should be screening for excess alcohol use and treating patients appropriately (CDC, 2013)." Primary care is the optimal setting for such screenings due to established patient-provider relationships, continuity of care, and the focus on health promotion and disease prevention. Screening in the primary care setting is supported by the Centers for Medicare and Medicaid Services (CMS) (2013), the CDC (2013), the USPSFT (2013) and the WHO (2012). CMS further supports SBI in primary care by covering annual alcohol screening and up to four brief interventions per year (CMS, 2013). Despite the recommendations, Gannon et al. (2011), Liszka-Rose et al. (2008), and Rose et al. (2010), found that a lack of system support, provider education, and feedback regarding appropriate screening methods posed significant barriers to implementation. Although some efforts have already been made to address why alcohol use is under-screened, there also appears to be a gap in efforts to remedy the problem. The need for primary care providers to implement systematic alcohol screening tools in practice, and implement brief interventions when necessary, is an imperative step in reducing the detriments of alcohol misuse.

Supported Methods of Screening in Primary Care

AUDIT with SBI techniques have been studied and used in primary healthcare in many countries and have demonstrated efficacy in early detection of the full spectrum of harmful drinking and delivery of counseling to reduce intake (Amaral et al., 2010; Fahy et al., 2011; Kypri et al., 2008). Even in single encounters, screening and brief interventions using AUDIT

have shown benefit in reducing frequency, total alcohol consumption, associated social consequences, and reduced repeat risk levels correlated to the AUDIT score on reassessment up to several months after the original encounter (Kypri et al. 2008). AUDIT is supported by the WHO and the National Institute on Alcohol Abuse and Alcoholism (NIAAA) clinician's guide (Gold & Aronson, 2011). The full AUDIT screen, although effective, is thought to be somewhat lengthy for busier primary care or emergency department environments, which has led to several modified shorter versions of the screening tool (Frank et al., 2008; Liska-Rose et al., 2008; Meneses-Gaya et al., 2010; Smith et al., 2009).

The AUDIT-C one such modification that utilizes the first three AUDIT questions as a screening tool for identifying unhealthy alcohol use. The tool has been tested and validated in several studies. The tool has an estimated reliability of 0.86 and validity of 0.78, which is slightly lower but comparable to AUDIT's effectiveness (Gold & Aronson, 2011). Williams et al. (2009) found that AUDIT-C combined with brief intervention counseling upon a positive screen was able to reduce unhealthy alcohol intake to within normal limits for 28% of primary care patients. Provider reminders within a patient's electronic medical record had even greater effects with 31% of patients reduced to within recommended levels of alcohol use (Williams et al. (2009).

As an alternative to the AUDIT, CAGE is a four-item questionnaire that asks about; feeling the need to "cut down" alcohol intake, annoyance with criticism of personal alcohol intake, guilt about level of drinking, and use of an "eye-opener" or a drink in the morning to overcome hangover (Gold & Aronson, 2011). CAGE has been validated in ages 16 and older, and has been used in primary care and emergency settings. According to several studies, CAGE is considered the most popular screening tool among U.S. primary care settings, (Bradley,

Kivlahan, & Williams, 2009; USPSTF, 2013) and is the most popular tool used in a sample of U.S. colleges at 68% (Winters, et al., 2011). The CAGE can be used in conjunction with SBI, but is less specific in guiding intervention due to inability to distinguish levels of alcohol use (American Public Health Association SBI Manual, 2008; Smith et al., 2009).

There are a number of screening tools that are used in practice, and could be feasible options for detecting alcohol use in the primary care setting. Some tools are geared towards certain age groups, but tools with the most widely proven validity and generalizability would be best for primary care settings in which any age group could be treated. The U.S Preventative Services Task Force (USPSTF) does not recommend one screening tool over another, but rather states that clinicians may choose evidence-based screening strategies that are appropriate for their own clinical population and setting (2013). In light of the statement, providers need to consider the previously mentioned research, and which methods have historically been the most beneficial for ease of administration, and effectiveness in reduced alcohol intake among the desired patient population.

Current evidence suggests that the most widely tested methods were the AUDIT, AUDIT-C, and CAGE. Many sources agree that AUDIT is effective and works well in conjunction with SBI (Fahy et al., 2011; Kypri et al., 2008 & 2009;), but could be limited by length for consistent use in busy primary care settings unless the tool is supported with appropriate algorithms (Bradley et al., 2009; Gold & Aronson, 2011; Meneses-Gaya et al., 2010; Smith et al., 2009). The AUDIT averages three minutes of time to conduct and score, in addition to the minimal amount of time taken for brief intervention, and is applicable to general populations (American Public Health Association SBI Manual, 2008). The AUDIT-C has proven validity (Frank et al., 2008; Smith et al., 2009; Williams et al., 2009) and sustainability (Bradley

et al, 2010; Gannon et al., 2011; Liszka-Rose et al., 2008; Macpherson et al., 2010) for alcohol screening and brief interventions in many settings. AUDIT-C has seen success as the Veteran Affairs Health Systems' primary screening tool used in over 90% of their outpatient visit (Bradley et al., 2010). The CAGE screening tool was shown to be as valid as AUDIT in detecting unhealthy alcohol use (Hodgeson et al., 2002; Meneses-Gaya et al., 2010), but less evidence was available in conjunction with brief interventions to demonstrate effectiveness of reducing unhealthy alcohol use. Despite CAGE's popularity, far less evidence for actual effectiveness was available.

Considering the evidence, the user-friendly AUDIT, AUDIT-C, and even a combination of both screening tools would be acceptable options for a primary care setting. Smith et al. (2009) claimed that brevity, ease of scoring, and validity for detecting alcohol use, all of which are qualities of the AUDIT, would promote widespread implementation of successful SBI tactics as recommended by current practice guidelines. The AUDIT is also consistently matched to International Classification of Diseases-9 (ICD) and ICD-10 definitions for harmful alcohol use and alcohol dependence, lending to an easier match for reimbursement (Babor & Higgins-Biddle, 2001; CMS, 2013). Commercial insurances, under Current Procedural Code (CPT) 99408, will reimburse providers \$33.41 for 15-30 minutes of SBI, and up to \$65.51 under CPT code 99409 for SBI greater than 30 minutes. Medicare, under code G0396, will reimburse \$29.42 for 15-30 minutes of SBI, and up to \$57.69 for SBI greater than 30 minutes under code G0397. Lastly, Medicaid code H0049 will reimburse \$24 for screening alone, and up to \$48 per 15 minutes of time spent for interventions under code H0050 (Substance Abuse and Mental Health Services Administration, 2012). To further support the use of AUDIT and SBI, the WHO (2012) stated:

Screening for alcohol consumption among patients in primary care carries many potential benefits. Screening provides an opportunity to educate patients about low-risk consumption levels and the risks of excessive alcohol use. Information about the amount and frequency of alcohol consumption may inform the diagnosis of the patient's presenting condition, and assessment may alert clinicians to the need to advise patients whose alcohol consumption might adversely affect their use of medications and other aspects of their treatment. Screening also offers the opportunity for practitioners to take preventative measures that have proven effective in reducing alcohol-related risks.

In light of the review of literature and overwhelming show of support from several reputable government health agencies, the AUDIT with AUDIT-C modifications was chosen as the screening method of choice for this practice improvement project.

CHAPTER THREE. THEORETICAL FRAMEWORK

Iowa Model of Evidence-Based Practice as Applied to Alcohol Screening

According to Titler (2006), evidence-based practice (EBP) is the conscientious and judicious use of current best evidence in conjunction with clinical expertise and patient values to guide healthcare decisions. Once sufficient research has been generated, the practice should be guided by the evidence in conjunction with clinical expertise and patient values. Models for evidence-based practice provide consistency, and provide clinicians with an algorithm aimed to building better practices. The Iowa Model for Evidence-Based Practice has been in existence since 1994, and begins with the formulation of a topic or question based on problems with clinical data or based on new knowledge generated by research. The organization then decides if the topic is a priority. A team is then formed that assembles and critiques relevant research that supports the desired change. Once there is a sufficient research base, a pilot trial is conducted using the following steps; selecting outcomes to be achieved, collecting baseline data, designing evidence-based guidelines, implementing pilot on unit, evaluating process outcomes, and modifying practice guidelines. Once the change has been deemed appropriate, the practice can be implemented and continually re-evaluated over time (Titler et al., 2001).

Knowledge Focused Trigger

Consistent with the Iowa Model, the topic of interest is generated through research and knowledge that has become a priority for two very important U.S. government agencies, the USPSFT and NCPP. Alcohol misuse is a significant problem. Providers need to actively screen their patients, and intervene appropriately for alcohol misuse. Alcohol screening among primary care patients is recommended by the U.S. Preventative Services Task Force (2013). Alcohol misuse screenings are ranked in the top five priorities for the U.S. according to the NCPP,

indicating a high level of clinical significance for primary providers (Gold & Aronson, 2011). However, screening is rarely performed, identifying a gap in necessary service provision (CDC, 2013; Town et al., 2006). In one study among alcohol dependent patients in primary care, only 10 percent received appropriate assessment and referral for treatment (Gold & Aronson, 2011).

Organizational Support and Congruence of Project to Strategic Goals

According to Bradley et al. (2011), screening for unhealthy alcohol use is now one of the measures for the Physician Quality Reporting Initiative implemented by the Center for Medicare and Medicaid Services, which could allow providers an incentive payment of two percent of their total charge for covered professional services. Greater financial reimbursement, along with previously mentioned benefits in patient satisfaction as a result of organized alcohol screenings should be very attractive to any healthcare facility wishing to provide quality care.

Implementation of alcohol screening and brief intervention methods is also supported by the USPSTF, the WHO, the NCPP, and the state of Minnesota, all of which are reputable and prestigious organizations. As for the implementation site, which is the Barnesville Area Clinic, the project shared a mutual goal of offering the utmost quality and comprehensive primary care services, as supported by evidence-based treatment guidelines.

Team Formation

The Iowa Model calls for the development of a team to perform research in support of the desired change. The project director in this case performed in-depth literature reviews on alcohol screening tools in primary care, which yielded sufficient evidence. Based on the identified need, and availability of an appropriate implementation site for a practice improvement project, an interdisciplinary team was formed. Members of the interdisciplinary team for this project included the student project leader, a nurse practitioner and physician who work in the chosen

rural primary care setting, support staff such as nursing and medical technicians, clinic executives, and the dissertation project committee of North Dakota State University.

Research and Supporting Evidence

The review of literature was performed prior to starting the majority of the practice improvement project. However, the review was very helpful in providing supporting evidence to continue with using alcohol screenings as a focus for implementation of a meaningful practice improvement study. Further support was also found through mutual goals that the project shares with the implementation site, NDSU, and several important government health agencies.

Pilot the Change in Practice

In light of the literature review, there was enough supporting evidence to proceed with a pilot implementation of AUDIT form with AUDIT-C modification in a primary care office. The evidence was presented to a physician and nurse practitioner at the Barnesville Area Clinic and both agreed to participate in the project. Patients presenting to the clinic were given a review of systems form to fill out on paper prior to the visit, which was then reviewed by the provider with special attention to areas of concern listed. The AUDIT form with AUDIT-C modification was distributed with review of systems forms for all willing adult patients presenting for a comprehensive physical exam. Positive screen responses were addressed in the visit accordingly. By having the patient fill out the questionnaire before the visit, the time constraint barrier was removed from the equation. The addition of the AUDIT form provided a more comprehensive analysis of alcohol use, as compared to asking the current question “Do you consume alcohol?” as that one question does not quantify the amount or severity of the issue. Positive AUDIT-C screens in the first few questions of the form would prompt the patient to proceed with the remaining AUDIT questions, leading to an in-depth assessment of the patient’s alcohol use.

Based on the final results of the screening form, the provider had the option to offer brief counseling during the appointment or arrange a referral for identified risky alcohol users.

Practice Implementation

If the clinical pilot trials of using AUDIT form with AUDIT-C modification showed improved patient outcomes, and provider satisfaction, the implementation team would compile the positives, such as the reimbursement incentive, and present them to the hospital/clinic executives for approval. An algorithm of the process would be developed and disseminated to all primary care providers in the system to ease use. Continual evaluation of patient outcomes, facility costs of screening, and provider/staff satisfaction would be performed. The implementation team would monitor the progress, and hold periodic meetings if necessary to implement changes to the process based on the results of the evaluations.

Practice Improvement Project Objectives

Objective One

A primary objective of the practice improvement project was to implement the evidence-based AUDIT screening tool for identifying alcohol use, which was further augmented by medical provider-led brief interventions as needed in the chosen setting. A primary outcome of the practice improvement project was to increase the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic (BAC). BAC provides comprehensive primary care services, but had not previously actively performed SBI to assess for alcohol use among patients. The population of Barnesville, Minnesota is roughly 2,600. However, the clinic has a patient base of nearly 16,000 between three healthcare providers, and is able to accommodate 40-50 patient appointments per day. Through the implementation of alcohol screening by using the AUDIT form with AUDIT-C modification,

and following a brief intervention algorithm guided by WHO's Brief Intervention Manual with supplemental materials, the project was to accomplish the following two projected outcomes:

Objective Two

Improve the clinical practice of the providers utilizing the AUDIT and SBI algorithms by increasing provider comfort and ease of administration of an evidence-based screening tool for alcohol use. The goal was to be achieved by removing barriers to implementation, such as providing access to provider-friendly instructional binders to guide the process. The benefits of utilizing supported treatment guidelines and possibly receiving reimbursement for billable ICD-9 screening codes would be tangible incentives.

Objective Three

Improve patient care through systematic alcohol screening, brief intervention, appropriate referral, and provision of education regarding alcohol cessation and health promotion.

CHAPTER FOUR. DESIGN AND IMPLEMENTATION

Project Design

Given the current gap of alcohol screening and brief intervention services in the primary care setting, despite the overwhelming support and recommendations by government health organizations, a decision was made to implement a practice improvement project aimed at addressing this issue. The Barnesville Area Clinic was chosen as an implementation site due to; familiarity to the project leader as a clinical site; function as a provider of primary care services to at-risk rural populations in Minnesota; the presence of a willing physician, Owen Thompson, MD, and a nurse practitioner, Adam Hohman, FNP-C; and the current lack of a standardized alcohol screening, intervention, and referral process for primary care patients. The practice improvement project was guided by the Iowa Model for Evidence-Based Practice. The model fit the project very well and helped the process mature and grow along the way. The project built on the knowledge-focused trigger of a gap in alcohol SBI services and a basic needs assessment, the enthusiastic support of BAC, focused research and evidence-based methods to support alcohol screening and brief intervention, and eventually the intentional implementation of the chosen change in practice. The project design focused on the implementation and evaluation of the USPSTF guidelines for alcohol SBI.

Project Resources

The resources necessary for the project were minimal. Primarily, the most significant resource was the time and efforts of both Dr. Owen Thompson and Adam Hohman, FNP-C, who administered the AUDIT tool, interpreted the results, and provided individualized brief interventions based on AUDIT results. The project leader was also involved in trending the data obtained during the project. As far as materials, the project leader was responsible for personally

funding the minimal paper and printing fees necessary to produce the AUDIT tool and educational pamphlets for patient distribution. The Barnesville Area Clinic supplied the clinical site and patient population free of charge, and volunteered the use of support staff to hand out the AUDIT tool to the chosen sample population prior to office visits. Kristy Shirley, of the North Dakota State Internal Review Board, volunteered her time to go to the BAC and provided IRB training to the participating BAC staff.

Protection of Human Subjects

The sample of patients asked to participate in the project was a convenience sample of adult primary care patients presenting to the Barnesville Area Clinic for comprehensive physical exams. As is the case with all medical care, the process was voluntary and confidential. The screening tool was described at the top of the distributed AUDIT form. Consent to participate was partially implied by reading the information and filling out the form. However, to ensure that complete disclosure of the project and adequate participant understanding of the project occurred, an informed consent form required participant review and signature prior to engaging in the process. Potential risks included psychological effects of bringing up possibly uncomfortable feelings, memories, or fear of stigma associated with alcohol use. The risk was minimized by assuring the patient that the process was confidential, with a primary goal of providing him or her with a more comprehensive medical exam and appropriate health promotion recommendation. The risk for breach of confidentiality was very minimal, as all BAC staff involved with the project received IRB on-site training and were held accountable for maintaining confidentiality as outlined by the Health Insurance Portability and Accountability Act. The knowledge gained from the project is of clinical significance because the practice improvement project yielded a more accurate assessment of risky alcohol use among the primary

care population in the Barnesville Area Clinic. By identifying previously undetected potential or actual alcohol misuse, providers may be better-equipped to intervene and guide the patient in healthier lifestyle choices. Through better detection and more intentional intervention for alcohol use, the provider will ideally make a difference in reducing unhealthy alcohol consumption and the associated consequences among his patient base. For the purpose of this project, women and minorities were included if the convenience sample permitted. However, children were excluded from the project sample due to differences in recommended screening techniques and due to low likelihood for their presence among the potential convenience sample available at the Barnesville Area Clinic.

Institutional Review Board Approval

Approval for protocol PH13179 was received from the North Dakota State University Institutional Review Board (Appendix A). An informed consent document outlining the purpose, risks and benefits, as well as the voluntary nature of the project, was developed (Appendix B). A revised IRB submission was approved on September 16, 2013 that included the addition of a brief survey for each provider to self-complete, which is included as Appendix C, and an informed consent for each provider, which is included as Appendix D.

Methods

The World Health Organization AUDIT questionnaire form with 3-question AUDIT-C modification was implemented, along with an algorithm to guide level of brief intervention as designated by individual patient scores (Appendix F). A permission email was obtained from the WHO to use the form, as well as the manual to guide the intervention process (Appendix E). Previously, a one-question screen was used to assess for alcohol use in a yes-no format on the Barnesville Area Clinic review of systems form, with no formal intervention for positive screens.

The project leader and participating providers determined that the sample population should include adult patients age 18 and older that present to the clinic for comprehensive physical exams. The choice to exclude those under the age of 18 was made to ease the process for the clinic and make the sample population easier to track for the support staff.

The AUDIT screening tools and consent forms were printed and placed at the BAC front desk with instruction as to what patients would receive them. Each adult patient presenting for a wellness exam was given a description of the practice improvement project with an informed consent document. After consenting to participate, the patient received a paper copy of the modified AUDIT questionnaire with instructions for the patient to self-complete the form along with the review of systems form required by Barnesville Area Clinic prior to each comprehensive physical exam. Providers were given access to the WHO's Brief Intervention Manual, as well as to educational patient handouts and referral information that was compiled for this project (Appendix G). Providers were offered assistance as needed by the project director if questions arose about the SBI process. However, no assistance was requested because the providers were comfortable with the process. All of the materials were organized into a binder and made available for provider convenience. The provided materials suggested levels of brief intervention, but implementation was left to provider discretion as to the extent of intervention that was chosen. While discussing positives on the review of systems form, the provider evaluated the patient's AUDIT score and provided education as to what the risk means to the patient's health. Based on patient score and associated risk level for alcohol intake, the provider followed the developed brief intervention algorithm for patient education, health promotion, and referral as necessary and at his own discretion. Intervention options ranged from a brief discussion about the score to actual referral for chemical dependency treatment for very high risk

patients. Educational patient handouts were available for each risk zone used in the AUDIT assessment, outlining appropriate recommendations about alcohol use and methods to reduce health risks associated with the patient's individual score category. The information was guided by the WHO AUDIT manual for healthcare providers. The AUDIT Brief Intervention Guideline has an established self-help booklet that could be distributed to those scoring within Zone 3 and 4 in addition to the respective pamphlet discussed earlier. For Zone 4 patients, or those indicating high suspicion for alcoholism, efforts should be made for appropriate referral to a counseling or treatment facility. A comprehensive list of facilities offering chemical dependency and alcohol treatment within a 100-mile radius of Barnesville, Minnesota was compiled and was available to providers for reference as needed (Appendix G).

Data from the AUDIT questionnaires were examined, along with the levels of intervention used. The AUDIT forms, as well as intervention, were reviewed by the project director. Identifiers were removed from the documents and would not become part of the patient's permanent medical chart. Due to the timeframe of the project, follow-up regarding subsequent individual AUDIT scores and progress post-intervention were not followed. By introducing the providers to the AUDIT method of alcohol screening and providing brief intervention resources, each provider was familiarized with more current practice guidelines to benefit their patients in screening for potential alcohol misuse and associated risks. The project was guided by current screening guidelines and recommendations by the U.S Preventative Services Task Force, which has called for more intentional alcohol screening and brief intervention efforts in the primary care setting at a Grade B level (2013).

Evaluation

The overall goal of the project was to successfully implement the evidence-based AUDIT with AUDIT-C modification screening tool for identifying alcohol use with guided brief intervention in the Barnesville Area Clinic. Through project-provided guidance, a projected outcome was to have an increase in the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic. The outcome was measured quantitatively by the number of screens performed. Previous practice included only a yes/no screening question for alcohol use among patients, so all AUDIT screens performed were an improvement and are more in accordance with current evidence-based guidelines for primary care practices. Another projected outcome, which was to improve patient care through alcohol screening, brief intervention, appropriate referral, and provision of education regarding alcohol cessation and health promotion, was evaluated partially based on the data trends in patient scores and subsequent interventions performed. Secondly, qualitative analysis was provided by Owen Thompson, MD, and Adam Hohman, FNP-C indicating whether or not they felt that the SBI process was directly beneficial to patient care. Another projected outcome, which was to increase provider comfort and ease of administration of an evidence-based screening tool for alcohol use, was evaluated qualitatively by surveying Dr. Thompson and Adam Hohman about how beneficial each felt the project was in improving the ease and quality of practice. At the conclusion of the trial period for patient screening at BAC, each provider was asked to complete an eleven-item questionnaire with a mix of Likert-scale ratings and open-ended response questions to address the objectives (See Appendix C). Perhaps the best indicator for the success of the project would be if BAC chose to implement the project as a sustained change in practice after the practice improvement project was finished.

CHAPTER FIVE. RESULTS

Barnesville Area Clinic serves a patient base of approximately 16,000 people. A verbal agreement was reached with Dr. Owen Thompson, the owner and director of the clinic, who allowed the project to take place at the BAC facility. The sample included in the project represented a convenience sample of adult patients that presented for comprehensive physical exams, and who demonstrated a willingness to participate by filling out the consent and AUDIT form. Due to time and resource constraints on clinic staff, a goal of 30 study participants was chosen. During the time span from June to mid-August of 2013, 30 patients were offered the AUDIT screening tool and brief intervention opportunity. Of the 30 patients, six declined participation. Five participants filled out the screening tool, but did not complete the attached consent form. The remaining 19 participants completed the screening tool and signed the attached consent form. Screening and brief intervention was performed by two providers at Barnesville Area Clinic, Owen Thompson, MD, and Adam Hohman, FNP-C. Based on the trial period in which the practice improvement project was implemented, the two providers were surveyed on the experience and perceived benefits or barriers of the project.

Sample Demographics

No information was provided about the six patients that refused participation. Five participants did not sign the consent but did complete the screening tool and therefore could not be included in the SBI process. In the group of 19 participants that filled out both the consent and screening tool, eight were male and 11 were female. The majority of those screened fell within Zone 1, or low-risk for alcohol use. Two individuals scored greater than 7, placing them in Zone 2 with increased risk of alcohol misuse.

In regards to the sample of providers who took part in the project, there were only two. Dr. Owen Thompson, the owner and collaborating physician in the clinic, has 30 years of experience in primary care. Adam Hohman, FNP-C, also participated in the project. He has over 5 years of experience in primary care.

Data Analysis

The practice improvement project and study did not yield any statistical data to be analyzed. The goal of the project was not to generate quantitative data, but to introduce evidence-based screening for alcohol misuse to the providers of BAC to be used as a means of identifying and reducing alcohol-related risks among the primary care patient base. Due to the limited sample size involved in the actual screening and brief intervention process, statistical analysis of this portion of the study was not performed and would not have provided any significance. Due to the limited number of providers involved in the project, the project leader felt that qualitative analysis on their part would provide the richest information as to whether the project was indeed beneficial and provided practice improvement for the clinical site.

Data Results

A primary goal of the practice improvement project was to increase the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic, which was achieved during the trial period. Implementation of the evidence-based AUDIT screening tool for identifying alcohol use, with optional further augmentation through medical provider-led brief interventions as needed in the chosen setting in and of itself fulfilled the overall project objective. Following, are the results from the provider-completed evaluation questionnaire:

Question One

The project was beneficial to your practice. If so, in what way? The purpose of the question was to help determine if, and to what extent, the project benefitted practice, as measured in the secondary objective by means of increasing provider comfort and ease of administration of an evidence-based screening tool for alcohol use and subsequently improve patient care. A five-point Likert scale was utilized, with response choices of *strongly agree, agree, neutral, disagree, and strongly disagree*. Both of the participating providers strongly agreed that the project was beneficial to their practice. One provider opted to offer further comment, stating “(The project) Enhanced my own awareness of the need to more formally address alcohol consumption.”

Question Two

The project increased the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic (compared to previous practice). The question was intended to address the primary project objective, as previously identified. The same Likert scale was used. Both providers agreed that the project increased the prevalence of systematic evidence-based alcohol screenings and brief intervention compared to the previous method, but offered no further comment.

Question Three

The AUDIT screening tool with brief intervention, as guided by this project was user-friendly and easy to utilize. This question was intended to address objective two, as previously listed. The Likert scale was used. Both providers strongly agreed that the project was user-friendly and easy to utilize, but offered no additional comment.

Question Four

The project improved patient care for those who took part in the study. The purpose of this question was to address objective three, as previously listed. The Likert scale was utilized. One provider strongly agreed that the project improved patient care for the participants, while the other felt neutral about this specific question.

Question Five

Did you perform any of the suggested interventions with patients in the study? If so, what types and what were your thoughts on that process? This question addressed the extent to which brief interventions were performed during the study period. Both providers admitted to using suggested intervention methods on patients in the study. However, each had a varied experience. One provider who used brief discussion as his intervention method, as supported by mostly low-risk scores among his patients, had the following experience: “When I found problematic alcohol use in individuals who thought their (alcohol) use was not of any concern, I found their willingness to discuss the issue was generally minimal or they were resistant to discuss it.” The other provider also experienced fairly low-risk scores in his patients, so the main form of intervention used was exposing the patient to the screening tool and individual risk level, followed by a very brief discussion in some cases. He offered this statement: “Unfortunately, many did not score high enough for intervention so practice approaches with them did not change.” Due to the low-risk levels among the patients screened, the providers did not need to pursue any in-depth interventions such as using the Zone 2 through 4 pamphlets, the WHO self-help booklet, or the referral chart for those who needed treatment. However, because the providers had no way of knowing the risk levels of the patients screened ahead of time, the participating members of the project team still felt the benefit of having those advanced

resources available in case patients of high risk had been identified, and may be identified in the future.

Question Six

Would the AUDIT screen with brief intervention be a clinical tool that BAC will utilize? If so, to what extent do you feel it would be used and on what patient populations? If not, what prevents AUDIT with SBI from being a sustainable change in practice? Responses to this open-ended question also varied among the two providers. One provider was “not certain as of yet” if the tool would be utilized at BAC in the future. The other provider was in support of using the tool, stating “I see its use as plausible at the annual CPE (comprehensive physical exam that is generally performed on an annual basis for BAC patients) or with patients where you have concerns about chemical misuse, etc.”

Question Seven

What barriers did you encounter in performing the AUDIT screen? One provider listed both a barrier and a benefit of using the tool for this question in the following response: “I thought some patients were not totally honest regarding their (alcohol) use but it (the project) allowed me to discuss their use with them.” The other provider had the following response in regard to barriers of the project: “Patient resistance and narrow patient population for study.” He went on to say that he felt this could be resolved, stating “however, if used (the tool) indiscriminately it would be less of a barrier.”

Question Eight

What barriers did you encounter in performing brief intervention? One provider simply stated “none”. The other provider stated “a few patients felt uncomfortable to an open discussion”, which was generally the intervention that he used.

Question Nine

Please share some suggestions that could have improved the process or made it more accessible for use in your practice. One provider responded by saying “if we use it (AUDIT with SBI) in the future, or some form of it, we would put it into our written systems review.” The other provider suggested “widening the scope of patient selection to include all visits where suspicion of alcohol misuse, etc. is present rather than just at annual exams.”

Question Ten

Provide suggestions for related future research, if any. One provider felt very strongly that future research should be aimed at developing an AUDIT-like tool for prescription drug abuse, to include narcotics and other controlled substances as this seemed to be a greater concern among some of his current patient base. The other provider shared a similar opinion, that patients under age 50 should also have some kind of screening to identify or raise awareness regarding recreational drug use.

Question Eleven

In addition to the previous questions, each provider was given the opportunity to voice any additional comments regarding the project. Only one provider voiced additional comments, stating that “overall, I thought it (the project) was well-designed, informative, and easy to use.”

CHAPTER SIX. DISCUSSION

Excessive alcohol use is the third-leading cause of preventable deaths in the United States (CDC, 2011). In efforts to curb the wide-reaching effects of alcohol misuse, especially among primary care patients, alcohol screening and brief intervention remains priority of the USPSTF and the NCPP. In 2013, the USPSTF updated recommendations for screening and behavioral counseling interventions in primary care to reduce alcohol misuse and calls for these efforts at a Grade B level indicating high importance. According to the new recommendation: “the USPSTF has clarified that it defines alcohol misuse as encompassing the full spectrum of unhealthy drinking behaviors, from risky drinking to alcohol dependence, rather than limiting its meaning to just risky, hazardous, or harmful drinking (as screening will detect a broad range of unhealthy drinking behaviors) (USPSTF, 2013).” A study has shown among alcohol dependent patients in primary care, only 10 percent received appropriate assessment and referral for treatment (Gold & Aronson, 2011). Additional studies have given a slightly more generous, but still woefully inadequate, estimate. Liszka-Rose et al. (2008) found that less than 50 percent of patients are adequately screened for alcohol misuse. More recent data from the CDC (2013) found that only one in six patients had ever been approached by a healthcare provider regarding alcohol use. With only a 10-50 percent utilization rate, providers including nurse practitioners are missing crucial health promotion and disease prevention opportunities. Nurse practitioners are known for the amount of time spent in interpersonal motivation and communication with patients, and are a solution to closing the gap in much needed alcohol screening and brief intervention efforts to reduce future patient risk (Antiss, 2009). The AUDIT tool and Brief Intervention Manual are user-friendly, evidence-based methods that can facilitate closing the gap on the provision of

necessary screening for alcohol use in the primary care setting, as was utilized in this project at the Barnesville Area Clinic.

During the practice improvement project trial at BAC, several trends and benefits were noted. The AUDIT with AUDIT-C modification form, along with guidance from the Brief Intervention Manual and additional project resources, resulted in subjectively enhanced knowledge levels and comfort of use for the participating providers in performing alcohol screening and brief intervention among the chosen patient base. The intentional exposure to successful evidence-based practice guidelines seemed to improve the willingness of both providers to include more evidence-based practices into their primary care clinic in the future. A literature review by Sweenen et al. identified that barriers to the implementation of evidence based practice often include lack of familiarity with the concept, fear of straying from current clinical routines, and lack of clinical support (2013). In the case of the BAC providers, these barriers were reduced by increasing exposure to evidence-based guidelines. The providers were very open and willing to participate, which made the project a success. The project clearly sparked an interest for both providers in pursuing screening and brief intervention methods for prescription drug abuse as well as the methods of alcohol SBI that each was exposed to during the project. By design, the project also increased the prevalence of evidence-based SBI among the chosen patient base. The exposure to alcohol SBI alone was beneficial and increased the likelihood that the providers would consider using the methods from the project in the future, although no specific plans have been implemented.

In light of the key finding of predominantly low risk screening scores among BAC patients presenting for annual physicals, several inferences could be made. The possibility exists that patients seeking annual preventative services and routine care such as annual physical exams

are more health-conscious than the general public and may not in fact be misusing alcohol to the extent of needing focused interventions. Previous research among alcohol users, especially high-risk users, showed a lower healthcare utilization rate than abstainers, to the point of avoiding necessary medical visits and preventative care services (Kaiser Permanente Center for Health Research, 2010; Zarkin, Bray, Babor, & Higgins-Biddle, 2004). Another inference could be that the patient base of BAC truly has a low prevalence of alcohol use, although the providers suspected that several of the screened patients under-reported their scores. A review of literature by the National Institute on Alcohol Abuse and Alcoholism (2004) found that the accuracy of individual self-reports for alcohol use is difficult to determine but is generally valid. Accuracy can be increased by written assurance of confidentiality, an interview environment that encourages honest interaction, and using clearly worded screening questions (NIAAA, 2004). Either way, the percentage of reported alcohol misuse and risk among BAC patients was much lower than national figures for primary care patients and Minnesota figures for residents in general, which begs the question if under-reporting was a factor during the practice improvement project at BAC. Locally, the rate of current (any use in past month) alcohol use among Minnesotans is 61.7 percent, compared with a much lower 51.3 percent nationally. Nationally, the population of risky drinkers ranges from 4% to 29% across multiple primary care populations. Furthermore, data from the American Academy of Family Physicians National Research Network show 21.3% of primary care patients reported risky/hazardous drinking (Vinson et al., 2010). With the higher prevalence of alcohol use both nationally and locally than what was noted in the sample, there is still potential that the prevalence of alcohol misuse at BAC was under-reported and that further SBI efforts could still identify more risky users in the future.

Advanced Practice Nursing Implications

Objective One

The primary objective of the practice improvement project was to implement the evidence-based AUDIT screening tool for identifying alcohol use, with optional further augmentation through healthcare provider-led brief interventions as needed in the chosen setting. A primary outcome of the practice improvement project was to increase the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic. This was achieved through the implementation process and trial period of study that took place from June 2013 to August 2013. During that time, 30 patients seeking annual exams were offered the screening and brief intervention services and 24 of those patients followed through with the process. Although the level of intervention was generally low, including mostly creating awareness of alcohol use through brief conversation as is appropriate with Zone 1 minimal to low-risk scores, the project was still felt to be beneficial. As opposed to the previous method of a one-question, yes or no, alcohol screening, this was an improvement in the use of an evidence-based and supported method. Both providers involved in the project agreed that this objective was met.

Objective Two

A secondary goal was to improve the clinical practice of the providers utilizing the AUDIT and SBI algorithms by increasing provider comfort and ease of administration of an evidence-based screening tool for alcohol use. Barriers encountered in previous use of SBI include lack of training about alcohol screening and brief counseling interventions, lack of provider comfort in discussing alcohol use, lack of referral resources if alcohol dependence is identified, lack of performance measures relating to alcohol screening, and lack of system-wide

approaches to encourage adherence to screening guidelines (Johnson et al., 2011; Town et al, 2006). A goal of the project was to remove such barriers at BAC. This was facilitated by providing access to provider-friendly instructional binders to guide the process. Both providers strongly agreed that the project improved their practice, one citing that the process enhanced his own awareness of the need to more formally address alcohol consumption among his patients. As far as sustainability in practice, the project was viewed as something that could be modified and used at provider discretion on an as needed basis. However, no formal plan has been made to implement the process at this time. The AUDIT resources used to guide the project were left with the providers at BAC to use as they desire and see appropriate for their patients.

Objective Three

Another secondary goal of the project was to improve patient care through systematic alcohol screening, brief intervention, appropriate referral, and provision of education regarding alcohol cessation and health promotion. Gauging the success of this objective was a bit more difficult. Exposing the participants to the screening tool at least may have raised some personal awareness of present or past alcohol use, potentially provided them with some insight as to the detriments of alcohol misuse, and tactics to cut down if necessary. This could have been beneficial information even to those who were minimal to low-risk to discourage future misuse. According to new CDC research, alcohol screening and brief intervention can reduce alcohol use by up to 25 percent (2013). Alcohol SBI also reduces the incidence of binge-drinking (USPSFT, 2013). Reducing alcohol intake to recommended levels can directly result in reduced health risks overall, specifically weight loss, reduced blood pressure, reduced depression and anxiety, improved sleep patterns and improved cognition (CDC, 2013). Provider opinions varied as to how beneficial the project was in directly improving patient care. One provider strongly agreed

that patient care was improved, while the other was neutral on the subject. In the 2013 update, the USPSTF indicated that evidence regarding the effectiveness of brief behavioral counseling interventions in the primary care setting remains largely restricted to persons engaging in risky or hazardous drinking (USPSTF, 2013). However, even in the context of the low risk patients at BAC, the brief interventions were seen as helpful and would likely have been even more beneficial if the study would have been opened up to higher-risk patient populations.

Project Limitations and Recommendations for Future Research

One limitation of the project was the narrow scope of screening and small sample size. The chosen sample was narrowed to adult patients presenting for an annual physical exam. This demographic was chosen to create continuity for the staff handing out the screening tool and for the providers performing the brief intervention. The exclusion of adolescents and episodic visits may have affected the outcomes seen during SBI efforts. Adding adolescents into the study may have provided opportunities for reaching potentially higher risk patients that could certainly also have benefited from the SBI activities, and potentially could have been used as a more primary prevention method in educating those with potential for future alcohol misuse. The sample size could have been widened to include all adult episodic visits as well, but both the project committee and the BAC staff felt that the SBI activities might be better received as an annual wellness screening rather than included with, for example, an episodic sore throat visit. By broadening the sample, there would have been greater potential for truly identifying patients at higher risk for alcohol misuse, and better opportunities for necessary brief interventions. The sample could have also been increased by extending the implementation period beyond August 2013. The scope of study, and potential net benefit for identifying and treating more patients, also could have been extended to other primary care clinics, but BAC was the most feasible site

given their willingness to participate and the timeframe for project implementation. Despite the small sample size, the primary goal of the project was not to generate large numbers of quantitative data, but rather to introduce evidence-based alcohol SBI methods to the clinic to be used now, and hopefully as a sustainable change in practice.

Another limitation was that the nature of the project could be seen as uncomfortable to the participants, as is generally the case in screening involving overuse or misuse of a substance that may result in shame or stigma for the patient. As discussed earlier, the providers felt that patients were not always honest in their self-reporting of alcohol use on the AUDIT form, which led to mainly minimal to low-risk scores. Under-reporting of alcohol use on self-administered surveys has been a well-known barrier to SBI activities throughout numerous studies and was a barrier that was anticipated in this project. Under-reporting is a topic of recent interest in the United Kingdom. A recent study indicated that individuals tend to under-report alcohol consumption by as much as 40-60 percent (Boniface & Shelton, 2013). Underestimating the size and strength of the alcohol beverage, as well as fear of judgment, were cited as potential reasons for under-reporting. Efforts were made to minimize stigma by emphasizing the confidential nature of individual answers, and that the true goal was to focus on health promotion for each person based on their score, as outlined in the description of the project and informed consent that each patient signed prior to participation. However, alcohol use and abuse can still be a very sensitive subject.

A limitation that was identified by this writer, in retrospect, was that more formal training efforts could have been conducted with the providers prior to implementing the project and screening patients. The providers seemed to feel that the guidance binders were helpful. The providers were comfortable with the process so neither one requested any further assistance after

the initial discussion of the implementation plan. However, this training could have been further augmented by utilizing the free continuing education module Comparative Effectiveness Review of Screening, Behavioral Counseling, and Referral in Primary Care to Reduce Alcohol Misuse that is offered online by the Agency for Healthcare Research and Quality (Jones et al., 2012). The module provides similar recommendations to the AUDIT with Brief Intervention Manual. The module is a bit more interactive, and does a great job of providing realistic case studies and specific methods of conversational screening and brief intervention, which is very beneficial for visual and auditory learners.

Several recommendations for future research resulted from the project, as a result of intentional exposure to evidence-based practice methods in screening and brief intervention. The participating providers were interested in opening up the screening and brief intervention efforts to all patients at the BAC, on an as-needed basis to be determined at the providers' discretion. Both providers felt that broadening the scope would help identify patients at higher risk and those who were more in need of brief interventions or referrals for alcohol misuse. One interesting recommendation that was shared by both providers was to create a screening and brief intervention process that incorporated prescription drug (mainly narcotics), alcohol, and other substance misuse all in one. Prescription drug abuse is certainly a worthy topic of research and is something that has become an area of concern among some BAC patients, per provider reports. In 2011, approximately seven million Americans were involved in prescription drug abuse, which is defined as intentional use of a medication without a prescription; in a way other than as prescribed; or for the experience or feeling the drug causes. Seventy percent chose narcotics as the drug of choice, partly due to misconceptions about safety, the increasing environmental availability of such drugs, and for the perceived benefits of counteracting other problems such as

pain, anxiety, and sleep disorders (National Institute of Health, 2011). The issue is certainly becoming more prevalent and also seems to have a close association with alcohol misuse, making prescription drug abuse a prime area of focus in future screening and brief intervention efforts. According to Ashton (2008), adults with alcohol use disorders are 18 times more likely to abuse prescription drugs than non-drinkers, placing them at significant risk for poly-substance overdoses and a multitude of medical consequences.

Project Implications for Nurse Practitioners' Practice

Despite overwhelming evidence to support screening and brief intervention to identify and curb alcohol misuse in primary care, very few primary care providers engage in the SBI activity and of those that do, few utilize evidence-based screening tools (Jones et al., 2012). By exposing the providers of the Barnesville Area Clinic to an evidence-based guide for alcohol SBI, an important step was taken to raise awareness and help remedy the problem. Interest was sparked among the providers regarding future evidence-based practice implementation, which was also a very positive step. Nurse practitioners and other primary care providers are in a unique position to have continued, meaningful interactions with their patients. This fits perfectly with alcohol SBI efforts, which are most successful through repeated assessment and interventions for identified misuse. When utilized effectively, alcohol SBI can have significant benefits in reducing overall alcohol consumption, encouraging safer drinking patterns, and reducing patient risk for medical, social, and psychological problems, all of which are tangible benefits for participating providers (Jones et al., 2012). Although this practice improvement project was done in one clinical site, the project provided a worthy venue to disseminate current evidence-based guidelines on alcohol screening and brief intervention, and seemed to have made a positive difference in one rural primary care clinic.

Personal Growth and Development

This writer began this practice improvement project out of a desire to encourage a more health-promoting, preventative approach to alcohol misuse. The desire resulted from direct care experiences with patients suffering from the devastating effects of chronic alcoholism that were frequently encountered by this writer as an emergency department (ED) nurse, which often cared for patients from rural Minnesota communities. After being more intentionally exposed to evidence-based guidelines for screening and treatment of various disease processes through my DNP classes, and exposure to the primary care setting of BAC, I realized that I could take my knowledge of evidence-based screening and use the information to reach patients at a preventative level. Intervening at an earlier stage would provide greater benefit before the patients had reached the kind of devastating alcoholism that I found so prevalent in the ED setting.

The project took me out of my comfort zone and placed me much more intentionally into a leadership role. Leadership is a very important expectation of an advanced practice nurse. This writer learned a great deal by reviewing the current guidelines for AUDIT with brief intervention in alcohol screenings and streamlining the recommendations into the user-friendly practice improvement project that was implemented at the Barnesville Area Clinic. The project itself was beneficial in teaching the importance of utilizing evidence-based practice. This writer hopes to serve as a leader by example in her own future practice to appropriately screen and intervene as needed for alcohol misuse among her patients, as well as incorporate other methods of evidence-based practice to improve patient care.

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APPENDIX A. INSTITUTIONAL REVIEW BOARD APPROVAL



April 10, 2013

FederalWide Assurance FWA00002439

Dean Gross
Department of Nursing
Sudro Hall

IRB Approval of Protocol #PH13179, "Implementation of the Alcohol Use Disorders Identification Test to Improve Practice in a Rural Primary Care Clinic"

Co-investigator(s) and research team: Kayla Thompson

Approval period: 4/10/2013 to 4/9/2014

Continuing Review Report Due: 3/1/14

Research site(s): **Barnesville Area Clinic**

Funding agency: **n/a**

Review Type: Expedited category # 5, 7

IRB approval is based on original submission, with revised: protocol and consent (received 4/9/2013).

Additional approval is required:

- o prior to implementation of any proposed changes to the protocol (*Protocol Amendment Request Form*).
- o for continuation of the project beyond the approval period (*Continuing Review/Completion Report Form*). A reminder is typically sent two months prior to the expiration date; timely submission of the report is your responsibility. To avoid a lapse in approval, suspension of recruitment, and/or data collection, a report must be received, and the protocol reviewed and approved prior to the expiration date.

A report is required for:

- o any research-related injuries, adverse events, or other unanticipated problems involving risks to participants or others within 72 hours of known occurrence (*Report of Unanticipated Problem or Serious Adverse Event Form*).
- o any significant new findings that may affect risks to participants.
- o closure of the project (*Continuing Review/Completion Report Form*).

Research records are subject to random or directed audits at any time to verify compliance with IRB regulations and NDSU policies.

Thank you for cooperating with NDSU IRB procedures, and best wishes for a successful study.

Sincerely,

Kristy Shirley, CIP
Research Compliance Administrator

INSTITUTIONAL REVIEW BOARD

NDSU Dept 4000 | PO Box 6050 | Fargo ND 58108-6050 | 701.231.8995 | Fax 701.231.8098 | ndsu.edu/irb

Shipping address: Research 1, 1735 NDSU Research Park Drive, Fargo, ND 58102

NDSU is an EO/AA university.

APPENDIX B. PARTICIPANT INFORMED CONSENT

NDSU North Dakota State University
Nursing Department
136 Sudro Hall, 222F
Dept. # 2670
PO Box 6050
Fargo, ND 58108-6050
(701) 231-8355

Title of Research Study:

Implementation of the Alcohol Use Disorders Identification Test to Improve Practice in a Rural Primary Care Clinic

This study is being conducted by:

Dean Gross, Ph.D., FNP, (701) 231-8355, primary researcher.
Kayla Thompson, RN, BSN, NP-S, (701) 388-9038, co-investigator

Why am I being asked to take part in this research study?

You are being asked to participate in this research study as a means to assess for levels of alcohol use among primary care patients. Individuals who are 18 years of age or older, who have a clear comprehension of written English, and who are undergoing a comprehensive physical exam will be included.

What is the reason for doing the study?

The purpose of the study is to implement screening and brief interventions for alcohol use among primary care patients at Barnesville Area Clinic not only during this research study, but hopefully afterwards as well to enhance the already comprehensive care that is provided. The hope then is to shed light on individuals who may previously have had undetected patterns of alcohol misuse and to provide them with brief motivational interventions to hopefully prevent or reduce problem drinking and lifelong problems with alcohol misuse.

What will I be asked to do?

You will be asked to complete an alcohol screening tool, the AUDIT, to determine whether or not you may be at risk for alcohol misuse. Based on your score, you may be offered brief intervention by the provider. You will still receive the health care that you have come to the clinic for today. Receiving medical care is not dependant in any way on your participation in this study.

What Information will be collected about me?

The results of the AUDIT tool, your medical provider's response to the score of the AUDIT tool, and then interventions performed will be collected by clinic staff as part of your chart. The information will be evaluated later through chart review by Kayla Thompson, a Doctor of Nursing Practice student at North Dakota State University, who is completing a practicum rotation at the clinic. The results of this study will be incorporated into a clinical dissertation project. The data may be used by the Barnesville Area Clinic as part of efforts to implement a practice improvement project if they so choose at the conclusion of the research study. Your

specific personal information will not be available to anyone other than your medical providers and Kayla Thompson. Following the chart review itself, personal identifiers will be removed from the data so that it can be included in the project.

Where is the study going to take place, and how long will it take?

The study will take place at Barnesville Area Clinic. Completion of the AUDIT tool will take approximately three to five minutes of your time. Based on your score, the medical provider seeing you for your clinic appointment today may offer to spend an additional 5 to 15 minutes with you in the form of a discussion about the meaning of the score and possibly a brief alcohol intervention. You may decline the intervention.

What are the risks and discomforts?

Common risks in research include loss of confidentiality and emotional, psychological distress and or social implications. It is not possible to identify all potential risks in research procedures, but the investigators have taken reasonable safeguards to minimize any known risks to you.

What are the benefits to me?

Potential benefits include allowing you an opportunity to reflect on your alcohol consumption. If results of the AUDIT tool indicate alcohol misuse, you may benefit from a brief intervention performed by a healthcare professional tailored to your individual situation. Alcohol misuse has been directly linked to many short and long term potential health effects. Identifying alcohol misuse can benefit individuals and offer help and counseling to individuals in need. If you are an individual who does not have a problem with alcohol misuse, you may not get any benefit from being in this research study.

What are the benefits to other people?

Alcohol misuse not only affects the individual, but may also potentially affect society negatively. The information gathered by this study will become a part of the continued research being performed and encouraged by reputable government agencies that are focused on ensuring health promotion and disease prevention among adult patients seeking primary care services. The U.S. Preventative Services Task Force and the National Commission on Prevention Priorities support screening for alcohol misuse and the provision of brief intervention for identified misuse in all adult patients at least annually and encourage screening and brief intervention as a part of routine medical care. If the project is deemed successful, it may assist in reducing alcohol consumption and associated risks among the Barnesville community or at least those seeking care at the clinic if they choose to implement future screening efforts.

Do I have to take part in the study?

Your participation in this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled. You are not required to complete the AUDIT survey, or the potential intervention, in order to receive the health care that you have come to the Barnesville Area Clinic for today.

What are the alternatives to being in this research study?

Instead of being in this research study, you may choose not to participate.

Who will see the information that I give?

The investigators will keep private all research records that identify you. Before we analyze the results of the study, your name will be de-identified from the information gathered during the study process. Your information will be combined with information from other patients taking part in the study. We may publish the results of the study; however, the results will be reported as a group, not individually. We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or specifics of the given information. For example, your name will be kept separate from your research records, and these two things will be securely stored in different places.

What if I have questions?

Before you decide whether to accept this invitation to take part in the research study, please ask any questions that might come to mind now. Later, if you have any questions about the study, you can contact the investigator, Dean Gross, PhD, FNP at (701) 231-8355 or the co-investigator Kayla Thompson, RN, BSN, DNP-S at (701) 388-9038.

What are my rights as a research participant?

You have rights as a participant in research. If you have questions about your rights, or complaints about this research, you may talk to the researcher or contact the NDSU Human Research Protection Program by:

- Telephone: 701.231.8908 or 1-855-800-6717
- Email: ndsu.irb@ndsu.edu
- Mail: NDSU HRPP Office, NDSU Dept. 4000, PO Box 6050, Fargo, ND 58108-6050.

The role of the Human Research Protection Program is to see that your rights are protected in this research; more information about your rights can be found at: www.ndsu.edu/irb .

Documentation of Informed Consent:

You are freely making a decision whether to be in this research study. Signing this form means that

1. you have read and understood this consent form
2. you have had your questions answered, and
3. you have decided to be in the study.

Your signature

Date

Your printed name

APPENDIX C. PROVIDER EVALUATION SURVEY

**PRACTICE IMPROVEMENT PROJECT EVALUATION:
IMPLEMENTATION OF THE ALCOHOL USE DISORDERS IDENTIFICATION TEST TO
IMPROVE PRACTICE IN A RURAL PRIMARY CARE CLINIC**

Purpose of the Project:

- 1) A primary objective to be achieved by the practice improvement project was to implement the evidence-based AUDIT screening tool for identifying alcohol use, with optional further augmentation through medical provider-led brief interventions as needed in the chosen setting. A primary outcome of the practice improvement project was to increase the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic.

- 2) Secondary Objectives:
 - a. Outcome One: The first projected goal was to improve patient care through systematic alcohol screening, brief intervention, appropriate referral, and provision of education regarding alcohol cessation and health promotion.

 - b. Outcome Two: The second goal was to improve the clinical practice of the providers utilizing the AUDIT and SBI algorithms by increasing provider comfort and ease of administration of an evidence-based screening tool for alcohol use. This was facilitated by removing barriers to implementation, such as providing access to provider-friendly instructional binders to guide the process.

Evaluation Process: Due to the nature of this project, quantitative or statistical analysis is not necessary. The effectiveness and worth of the project would be best-evaluated qualitatively, using meaningful individual responses of the participating healthcare providers. Your time and efforts both during the implementation and evaluation process are truly appreciated. Please feel free to answer the following questions honestly and to add additional comments if you would like (both positives and negatives are equally valued).

Evaluation Questions:

(questions 1-4 please rate using the provided Likert scale, providing narrative if you would like)

- 1) The project was beneficial to your practice. If so, in what way?
0-----0-----0-----0-----0
Strongly agree Agree Neutral Disagree Strongly Disagree

- 2) The project increased the prevalence of systematic, evidence-based alcohol screening and brief intervention efforts in the Barnesville Area Clinic (compared to previous practice).

0-----0-----0-----0-----0
Strongly agree Agree Neutral Disagree Strongly Disagree

- 3) The AUDIT screening tool with brief intervention, as guided by this project was user-friendly and easy to utilize.

0-----0-----0-----0-----0
Strongly agree Agree Neutral Disagree Strongly Disagree

- 4) The project improved patient care for those who took part in the study.

0-----0-----0-----0-----0
Strongly agree Agree Neutral Disagree Strongly Disagree

- 5) Did you perform any of the suggested interventions with patients in the study? If so, what types and what were your thoughts on that process?

APPENDIX D. PROVIDER INFORMED CONSENT

NDSU North Dakota State University

Nursing Department
136 Sudro Hall, 222F
Dept. # 2670
PO Box 6050
Fargo, ND 58108-6050
(701) 231-8355

Title of Research Study:

Implementation of the Alcohol Use Disorders Identification Test to Improve Practice in a Rural Primary Care Clinic

This study is being conducted by:

Dean Gross, Ph.D., FNP, (701) 231-8355, primary researcher.

Kayla Thompson, RN, BSN, NP-S, (701) 388-9038, co-investigator

Why am I being asked to take part in this evaluation?

You are being asked to complete an evaluation survey as a means to assess the worth and effectiveness of the above research project in which you participated. Having participated in the administration of the AUDIT tool and brief interventions among your patient base, your responses would provide meaningful feedback to the investigators of the project.

What is the reason for doing the study?

The purpose of the study was to implement screening and brief interventions for alcohol use among primary care patients at Barnesville Area Clinic not only during this research study, but hopefully afterwards as well to enhance the already comprehensive care that is provided. The hope then is to shed light on individuals who may previously have had undetected patterns of alcohol misuse and to provide them with brief motivational interventions to hopefully prevent or reduce problem drinking and lifelong problems with alcohol misuse.

What will I be asked to do?

You will be asked to complete a brief survey with some multiple choice and open-ended questions regarding how the research project impacted your practice. The information will be used to determine the worth of the project and to guide improvements in future best-practice efforts for alcohol screening and brief intervention in primary care.

What Information will be collected about me?

The only personal information that will be collected about you in the survey would be your personal responses to the posed questions. In publication of the study results, the information provided to evaluate the project will not be attributed specifically to you, but rather will be referred to as healthcare provider insight on the issue.

Where is the evaluation survey going to take place, and how long will it take?

The evaluation survey will be provided to you and can be filled out as you deem necessary. This can be done at any time of your choosing within reason. The time needed to fill out the survey will vary based on how much information you desire to share.

What are the risks and discomforts?

Common risks in research include loss of confidentiality and emotional, psychological distress and or social implications. It is not possible to identify all potential risks in research procedures, but the investigators have taken reasonable safeguards to minimize any known risks to you.

What are the benefits to me?

Potential benefits include allowing you an opportunity to reflect on the research study and what it meant to your practice. It will allow reflection as to whether or not the AUDIT screening process was beneficial or how the process could have been improved to better-suit and enrich your practice.

What are the benefits to other people?

Alcohol misuse not only affects the individual, but may also potentially affect society negatively. The information gathered by this study will become a part of the continued research being

performed and encouraged by reputable government agencies that are focused on ensuring health promotion and disease prevention among adult patients seeking primary care services. The U.S. Preventative Services Task Force and the National Commission on Prevention Priorities support screening for alcohol misuse and the provision of brief intervention for identified misuse in all adult patients at least annually and encourage screening and brief intervention as a part of routine medical care. If the project is deemed successful, it may assist in reducing alcohol consumption and associated risks among the Barnesville community or at least those seeking care at the clinic if they choose to implement future screening efforts. Your responses will be most valuable in determining best practice for future efforts for alcohol screening within the primary care patient population.

Do I have to take part in the study?

Your participation in evaluating this research is your choice. If you decide to participate in the study, you may change your mind and stop participating at any time without penalty or loss of benefits to which you are already entitled.

What are the alternatives to being in this research study?

Instead of filling out the evaluation survey for the research study, you may choose not to participate.

Who will see the information that I give?

The investigators of the research study will see your responses on the evaluation form. The information will be published as part of the dissertation created from the research project. The responses will be generalized in the publication and will not be linked specifically to your name.

What if I have questions?

Before you decide whether to accept this invitation to take part in the evaluation process of this research study, please ask any questions that might come to mind now. Later, if you have any questions about the study, you can contact the investigator, Dean Gross, PhD, FNP at (701) 231-8355 or the co-investigator Kayla Thompson, RN, BSN, DNP-S at (701) 388-9038.

What are my rights as a research participant?

You have rights as a participant in research. If you have questions about your rights, or complaints about this research, you may talk to the researcher or contact the NDSU Human Research Protection Program by:

- Telephone: 701.231.8908 or 1-855-800-6717
- Email: ndsu.irb@ndsu.edu
- Mail: NDSU HRPP Office, NDSU Dept. 4000, PO Box 6050, Fargo, ND 58108-6050.

The role of the Human Research Protection Program is to see that your rights are protected in this research; more information about your rights can be found at: www.ndsu.edu/irb .

Documentation of Informed Consent:

You are freely making a decision whether to complete the requested evaluation survey. Signing this form means that

4. you have read and understood this consent form
5. you have had your questions answered, and
6. you have decided to complete the evaluation survey.

Your signature

Date

Your printed name

APPENDIX E. WORLD HEALTH ORGANIZATION PERMISSION EMAIL

Dear Ms Kayla Thompson,

Thank you for your enquiry. On behalf of the World Health Organization, we are pleased to grant you permission to reproduce the following WHO item in a dissertation project that aims to implement AUDIT screening in a rural clinic as indicated in your message below:

Please note that this permission is granted under the following terms:

- This is a non-exclusive permission to reproduce the material detailed below.
- WHO material should not be reproduced for use in association with commercial nor promotional activities
- There should be no suggestion that WHO endorses any specific company nor products in the (article, book etc.) nor in the manner of distribution of the article, book etc.).
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APPENDIX F. AUDIT WITH AUDIT-C MODIFICATION FORM

As part of our health service it is important to examine lifestyle issues likely to affect the health of our patients. This information will assist in giving you the best treatment and highest possible standard of care. Therefore, we ask that you complete this questionnaire that asks about your use of alcoholic beverages during the past year. Please answer as accurately and honestly as possible. Your healthcare provider will discuss this issue with you. All information will be treated in strict confidence.

| Questions | Scoring system | | | | | Your score |
|--|----------------|-------------------|-------------------------------|----------------------|---------------------------|--------------|
| | 0 | 1 | 2 | 3 | 4 | |
| How often do you have a drink containing alcohol? | Never | Monthly or less | 2 - 4 times per month | 2 - 3 times per week | 4+ times per week | |
| How many units of alcohol do you drink on a typical day when you are drinking? | 1 - 2 | 3 - 4 | 5 - 6 | 7 - 9 | 10+ | |
| How often have you had 6 or more drinks if female, or 8 or more if male, on a single occasion in the last year? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily | |
| Add the score for questions 1,2, and 3. If men score less than 4 or women score less than 3, STOP here. Otherwise, proceed by filling out questions 4-10. | | | | | | AUDITC TOTAL |
| How often during the last year have you found that you were not able to stop drinking once you had started? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily | |
| How often during the last year have you failed to do what was normally expected from you because of your drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily | |
| How often during the last year have you needed an alcoholic drink in the morning to get yourself going after a heavy drinking session? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily | |
| 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 | |
| How often during the last year have you been unable to remember what happened the night before because you had been drinking? | Never | Less than monthly | Monthly | Weekly | Daily or almost daily | |
| Have you or somebody else been injured as a result of your drinking? | No | | Yes, but not in the last year | | Yes, during the last year | |
| Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested that you cut down? | No | | Yes, but not in the last year | | Yes, during the last year | |
| Scoring: 0 – 7 (Zone 1/Lower risk), 8 – 15 (Zone 2/Increasing risk), 16 – 19 (Zone 3/Higher risk), 20+(Zone 4/Possible dependence) | | | | | | |
| TOTAL SCORE | | | | | | |

APPENDIX G. INTERVENTION HANDOUTS AND REFERRAL CHART

Zone 1



What's the big deal?

- Excessive alcohol use is the 3rd leading cause of preventable deaths in the U.S.
- Alcohol use contributes to over 60 known disease processes.
- In Minnesota alone, alcohol related costs are reaching nearly \$5.06 billion annually, which is roughly \$975/resident/year
- Even if you don't drink, excessive alcohol use can still affect you.

Benefits of Drinking Less

Physical

- Healthier skin
- Weight loss instead of weight gain
- Having more energy to take up other interests
- Reduced anxiety
- Improved sleep pattern
- No hangovers
- Reduced risk for many medical problems
- Lower blood pressure

Financial, Social and Psychological

- Alcohol is expensive. Cutting down will save money
- Reduced risk of being involved in fights
- Reduced risk of unsafe sex and unplanned pregnancies
- Maintaining more respect from your peers
- Improved relationships with your friends and family
- Have more time for other interests and other people
- Be more productive and alert at work

Alcohol Use: What You Should Know



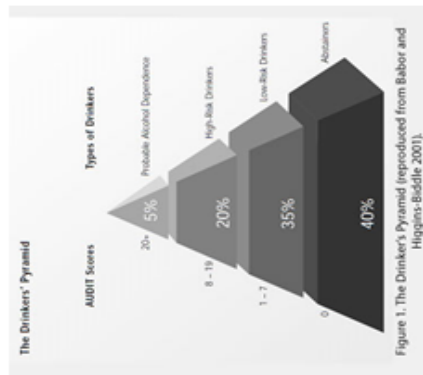
Helpful tips for low-risk patients
AUDIT Zone 1

References
Minnesota Department of Health
National Institute on Alcohol Abuse and Alcoholism
World Health Organization

The Basics:

Good News!

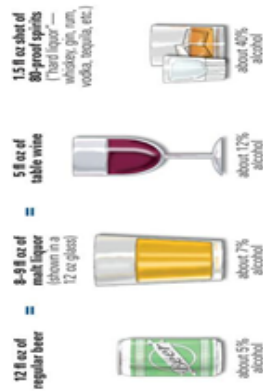
According to your score on the AUDIT screening test for alcohol use, you fall within the category for minimal-to-low risk levels of alcohol consumption. So what does this mean?



- Currently you either abstain from alcohol, or adhere to safe drinking levels, meaning less than one drink per day for women, and two per day for men.
- However, you could still be at risk for harmful alcohol use in the future.

What's in a Drink?

- Many people are surprised to learn the size of a standard drink, and often underestimate the amount being consumed. General serving sizes tend to be much larger than the recommended "standard drink" size as shown below.



Effects of Alcohol

- Consuming excessive amounts of alcohol can be detrimental to most systems in the body.
- Leads to increased risk for stroke, high blood pressure, heart disease, and cancers of the liver, breast, mouth, esophagus, and colon.
- Increased risk for suicide, intentional/violence-based injuries, accidental trauma-related injuries.

Tips to Stay Healthy and Avoid Excessive Alcohol Intake



- You should abstain from alcohol if you plan on operating a vehicle, have a history of alcoholism, are pregnant, or considering pregnancy, have high-risk medical problems such as liver disease, hepatitis, heart arrhythmias, or psychiatric disorders, or are taking medications that interact with alcohol.
- If you do drink, know your limits and be mindful of the number of "standard drinks" being consumed. Avoid drinking for at least 2 nights per week.
- If you are concerned that you may be consuming too much alcohol, please try to cut down or seek help.

How Cutting Down Can Help You

Physical

- Healthier skin
- Weight loss instead of weight gain
- Having more energy to take up other interests
- Reduced anxiety
- Improved sleep pattern
- No hangovers
- Reduced risk for many medical problems
- Lower blood pressure

Financial, Social and Psychological

- Alcohol is expensive. Cutting down will save money
- Reduced risk of being involved in fights
- Reduced risk of unsafe sex and unplanned pregnancies
- Maintaining more respect from your peers
- Improved relationships with your friends and family
- Have more time for other interests and other people
- Be more productive and alert at work

EVEN A SMALL CHANGE CAN MAKE A DIFFERENCE

References
Minnesota Department of Health
National Institute on Alcohol Abuse and Alcoholism
World Health Organization



What's the big deal?

- Excessive alcohol use is the 3rd leading cause of preventable deaths in the U.S.
- Alcohol use contributes to over 60 known disease processes.
- In Minnesota alone, alcohol related costs are reaching nearly \$5.06 billion annually, which is roughly \$975/resident/year
- Alcohol use not only impacts the drinker, it can negatively impact loved ones, friends, co-workers, and even complete strangers

**Alcohol Use:
What You Should
Know**

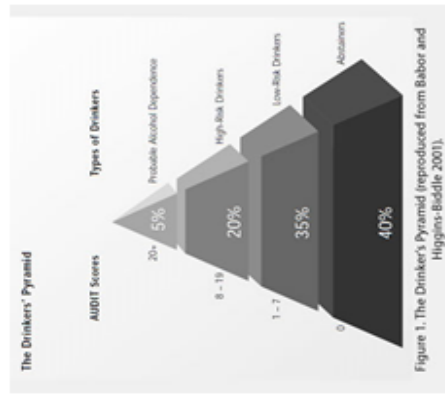


Helpful tips for moderate-high risk drinkers
AUDIT Zone 2

The Basics:

Understanding Your Score

According to your score on the AUDIT screening test for alcohol use, you fall within the category for increased-to-high-risk levels of alcohol use.



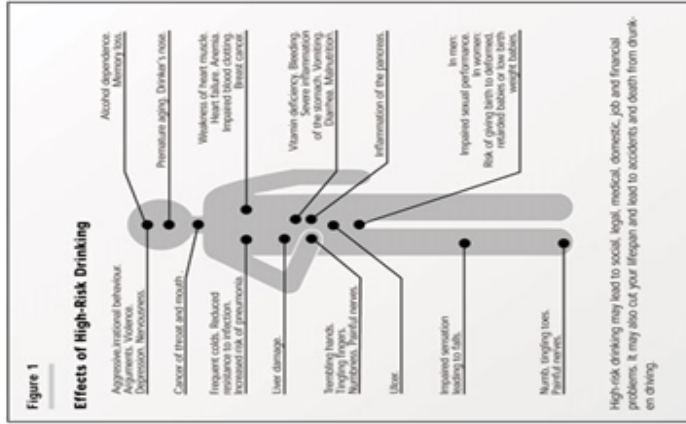
- You may or may not be experiencing harm at this point, but these levels indicate a potential risk for chronic health conditions due to repeated alcohol use in excess of current dietary recommendations

- You may be at risk for injury, violence, poor work performance, or social problems due to episodes of acute intoxication

Alcohol's Effects on the Body

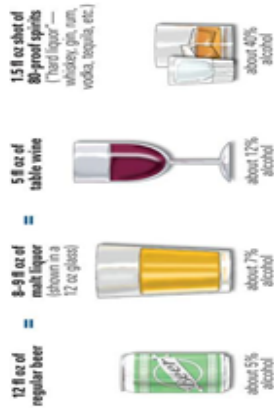
Short-term: Loss of inhibitions, euphoria, blackouts, dizziness, impaired judgment, slowed reactions, slurred speech.....enough to cause potential for unintended injury for example.

Fast-forward to the widespread, long-term effects of excessive overuse....



What's in a Drink?

- Men should consume no more than 2 standard drinks (see below) per day, and women no more than 1 drink per day.
- Consuming more than 4-6 drinks on any single occasion is considered a "binge" and leads to greater risk.



Tips to Reduce Risk

- Abstain or reduce alcohol intake to recommended amounts and refrain from drinking at least 2 nights a week to reduce chances for dependence.
- Always avoid potential for intoxication, try to stick to 2-3 drinks per occasion if not less.
- Consider current health problems and how reducing alcohol use would improve well-being.
- Examine reasons for why you choose to drink. Try to avoid situations that tempt you.
- Talk with your healthcare provider. Make a goal for when you will cut down, and by how much.

Alcohol Use: How is it Affecting Your Health?



Helpful tips for high risk drinkers
AUDIT Zone 3

THINGS TO CONSIDER

What triggers you to drink?

What are some things you enjoy doing that you could substitute for drinking?

How has alcohol negatively affected you?

On a scale of 0-10, how important is it for you to change your drinking?

If willing to cut down, when will you start and what goal would be acceptable for your drink/day limit?

How Will Cutting Down Help?

Physical

- Healthier skin
- Weight loss instead of weight gain
- Having more energy to take up other interests
- Reduced anxiety
- Improved sleep pattern
- No hangovers
- Reduced risk for many medical problems
- Lower blood pressure

Financial, Social and Psychological

- Alcohol is expensive. Cutting down will save money
- Reduced risk of being involved in fights
- Reduced risk of unsafe sex and unplanned pregnancies
- Maintaining more respect from your peers
- Improved relationships with your friends and family
- Have more time for other interests and other people
- Be more productive and alert at work

References

Babor, T. & Higgins-Biddle, L. (2001). [Brief intervention for hazardous and harmful drinking](#).
Minnesota: Department of Health

National Institute on Alcohol Abuse and Alcoholism
World Health Organization



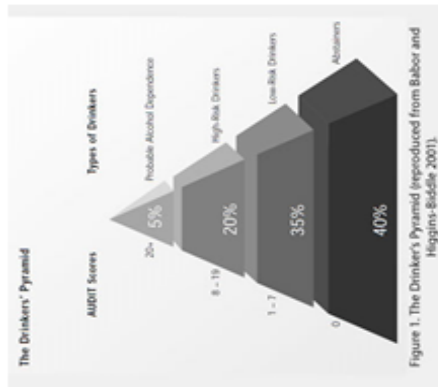
What's the big deal?

- Excessive alcohol use is the 3rd leading cause of preventable deaths in the U.S.
- Alcohol use contributes to over 60 known disease processes.
- Alcohol is the most widely abused substance in Minnesota, accounting for nearly 51% of a admission to treatment centers.
- In Minnesota alone, alcohol related costs are reaching nearly \$5.06 billion annually, which is roughly \$975/resident/year
- Alcohol use not only impacts the drinker, it can negatively impact loved ones, friends, co-workers, and even complete strangers

The Basics:

Understanding Your Score

According to your score on the AUDIT screening test for alcohol use, you fall within the category for increased-to-high-risk levels of alcohol use.

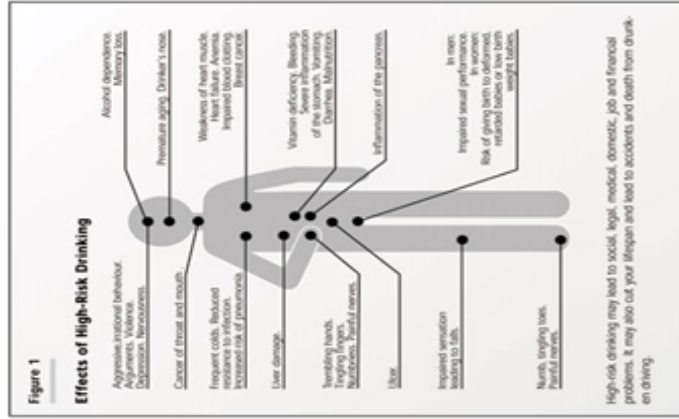


- You may or may not be experiencing harm at this point, but these levels indicate a potential risk for chronic health conditions due to repeated alcohol use in excess of current dietary recommendations
- You may be at risk for injury, violence, poor work performance, or social problems due to episodes of acute intoxication

Alcohol's Effects on the Body

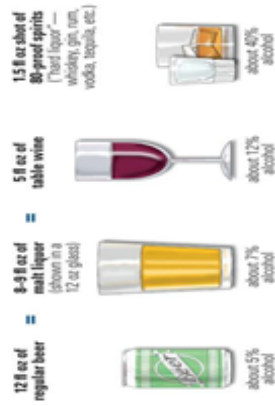
Short-term: Loss of inhibitions, euphoria, blackouts, dizziness, impaired judgment, slowed reactions, slurred speech....enough to cause potential for unintended injury for example.

Fast-forward to the widespread, long-term effects of excessive overuse...



What's in a Drink?

- Men should consume no more than 2 standard drinks (see below) per day, and women no more than 1 drink per day.
- Consuming more than 4-6 drinks on any single occasion is considered a "binge" and leads to greater risk.



Tips to Reduce Risk

- Abstain or reduce alcohol intake to recommended amounts and refrain from drinking at least 2 nights/week to reduce chances for dependence.
- Always avoid potential for intoxication, try to stick to 2-3 drinks per occasion if not less.
- Drink slowly, alternate with non-alcoholic drinks, and don't forget to eat.
- Keep exposure to drinking temptations to a minimum/avoid having alcohol available at home.
- Talk with your healthcare provider. Make a goal for when you will cut down, and by how much.



What's the big deal?

- Excessive alcohol use is the 3rd leading cause of preventable deaths in the U.S.
- Alcohol use contributes to over 60 known disease processes.
- In Minnesota alone, alcohol related costs are reaching nearly \$5.06 billion annually, which is roughly \$975/resident/year
- Alcohol use not only impacts the drinker, it can negatively impact loved ones, friends, co-workers, and even complete strangers

RESOURCES

Alcoholics Anonymous
www.aameetinglocator.org

Be Sober Hotline
1-800-BE-SOBER

National Drug and Alcohol Referral Line
1-800-662-HELP

National Suicide Prevention Lifeline
1-800-273-8255

Alcohol Use: The Damage Done by Dependence



Recommendations for dependent drinkers
AUDIT Zone 4

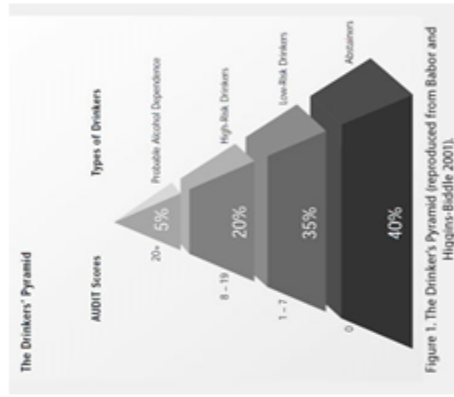
References

Babor, T., & Higgins-Biddle, J. (2001). *Brief intervention for hazardous and harmful drinking*.
Minnesota Department of Health
National Institute on Alcohol Abuse and Alcoholism
World Health Organization

The Basics:

Understanding Your Score

According to your score on the AUDIT screening test for alcohol use, you fall within the category for probable alcohol dependence, or alcoholism.

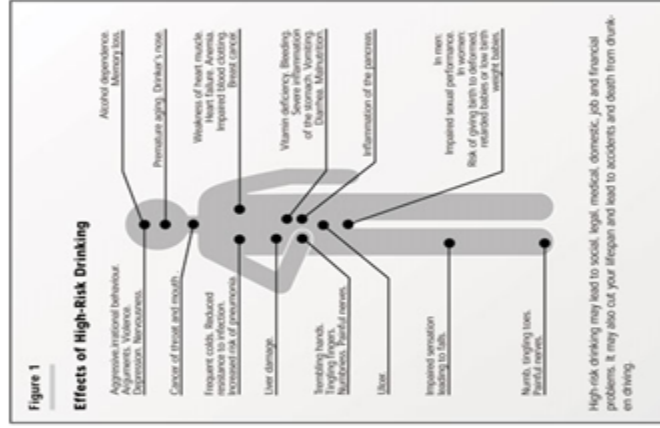


- At excessive and dangerous levels, it is likely that alcohol has negatively affected varying aspects of your health and well-being.
- Based on this score, you are at risk for adverse health outcomes, injury, violence, poor work performance, or social problems due to episodes of acute and chronic intoxication.

Alcohol's Effects on the Body

Short-term: Loss of inhibitions, euphoria, blackouts, dizziness, impaired judgment, slowed reactions, slurred speech....enough to cause potential for unintended injury for example.

Fast-forward to the widespread, long-term effects of excessive overuse...Alcohol's effects on the body are cumulative and exponentially increase as the years of repeated abuse continue.



Preventing Further Damage

- The only way to minimize your health risks at this point is to simply cut down or quit drinking all together
- Abstaining from alcohol use can partially reverse some of the changes suffered by the brain and can improve mental functions such as problem solving, memory, and attention.
- The liver, which metabolizes the alcohol, may suffer long-term effects but abstaining allows it a chance to possibly regenerate before the entire organ fails.
- Quitting will greatly reduce your risk for cancer, stroke, heart attack, and premature death (by about 5-10 years).
- Quitting will not be easy, and may likely require the help of friends, family, healthcare providers, addiction counselors, support groups, and treatment facilities.
- Treatment for alcohol dependence is generally very effective, but requires a fair amount of dedication and personal effort to be the most successful
- The good news is that there are support groups and many counseling services available in the area that can help get the recovery phase started.
- If you have suffered severe withdrawals (i.e. hallucinations, seizures) in past attempts to quit drinking, talk with your healthcare provider for direction.

Treatment Referral Chart

| Chemical Dependency Referral and Treatment Options | | | |
|---|--|--|--|
| FACILITY | LOCATION/ CONTACT INFO | SERVICES | FORMS OF PAYMENT ACCEPTED |
| 1 | Red River Recovery Center 701 Center Ave E Dilworth, MN 56529 218-284-7772 www.redriverrecovery.net | 66 male/female bed facility that provides substance abuse treatment and long-term residential treatment | Self-pay, Medicaid, State-financed insurance, Private insurance |
| 2 | Positive Solutions Counseling 6245 16th Street South Fargo, ND 58104 701-205-3410 | Outpatient substance abuse treatment. Specialize in DUI offenders/adolescents | Self-pay, Medicare, State-financed insurance (other than Medicaid), Private insurance |
| 3 | Anchorage 810 4th Avenue South Suite 152 Moorhead, MN 56560 218-287-1500 | Substance abuse/mental health treatment. Residential short and long-term options. | Self-pay, Medicare/Medicaid, State-financed insurance (other than Medicaid), Military insurance, Private insurance |
| 4 | ShareHouse Wellness Center 715 North 11th Street Suite 204 Moorhead, MN 56560 218-233-6398 www.sharehouse.org | Outpatient-partial hospitalization with daily program and intensive outpatient program with 1-3 meetings/week. Adolescent services. Service coordination/case-management. | Sliding-scale fee/income based. Self-pay and most insurances. |
| 5 | ShareHouse 4227 9th Avenue Fargo, ND 58103 701-282-6561 | Residential substance abuse treatment, holistic therapy, follow-up outpatient treatment, grief recovery, a dolescent therapy, and gender-specific trauma therapy groups. Also houses Robinson Recovery for meth treatment. | Self-pay, Private insurance, Military insurance |

| | | | |
|---|---|---|--|
| <p>6 ShareHouse Genesis Center</p> | <p>505 40th Street South Suite B Fargo, ND 58103</p> | <p>Outpatient therapy, relapse prevention, alcohol and drug evaluations, DUI seminars</p> | <p>Free consultations available.</p> |
| <p>7 Lakeland Mental Health</p> | <p>1010 32nd Avenue South Moorhead, MN 56560 218-233-7524 www.lmhcc.org 21333 County Hwy 1 Fergus Falls MN 56537 218-736-6987</p> | <p>Outpatient treatment, case-management for the chemically dependent, mentally ill and developmentally disabled.</p> | <p>Blue Cross of Minnesota, Medica/UBH, Preferred One, HealthPartners, UCare Minnesota, MinnesotaCare products, Medicare and Medical Assistance. A sliding fee is available for residents of Becker, Clay, Grant, Otter Tail and Pope counties</p> |
| <p>8 Prairie St. John</p> | <p>510 4th Street South Fargo, ND 58103 701-476-7200 www.prairie-stjohns.com</p> | <p>Mix of mental health and substance abuse treatment. Hospital inpatient, Residential short-term treatment (30 days or less), Residential long-term treatment (more than 30 days), Outpatient, Partial hospitalization/day treatment</p> | <p>Sliding scale fees available. Self-pay, Medicare/Medicaid, State-financed insurance (other than Medicaid), Military insurance, Private insurance</p> |
| <p>9 Drake Counseling Inc.</p> | <p>1202 23rd Street South Fargo, ND 58103 701-293-5429 www.drakecounselingservices.com Drake Residential 28579 Hwy 10 E. Detroit Lakes, MN 56501 218-847-1329</p> | <p>Outpatient chemical dependency treatment, partial hospitalization for adult/adolescents. DUI seminars. Chemical dependency, co-ed short and long-term residential treatment.</p> | <p>Free consultation. Self-pay, Medicaid, Private insurance.</p> |

| | | | | |
|-----------|--|--|---|---|
| 10 | First Step Recovery | 409 7th Street South Fargo, ND 58103 701-293-3384 www.firststep-recovery.com | Accepts both MN/ND residents. Offers outpatient substance abuse treatment, detoxification, partial hospitalization/day treatment. | Self-pay, State-funded insurance (other than Medicaid), Private insurance. BCBS |
| 11 | Clay County Detox | 715 11 th St. N Moorhead, MN 56560 218-299-5171 | Offers 10-bed (male/female) 24 hour supervised detox, nurses available to medically manage symptoms. | Sliding-scale, Payment assistance, Most insurance accepted. |
| 12 | Only Human Counseling | 118 Broadway Suite 502 Fargo ND 58102 701-476-0497 | Outpatient mental health and substance abuse treatment. DWI/DUI offenders. | Sliding-scale payment, Private insurance, Self-pay |
| 13 | Simon Chemical Dependency Services | 1445 1st Avenue North Fargo ND 58102 701-298-8108 | Outpatient treatment. DWI/DUI offenders. | Self-pay |
| 14 | Claudia McGrath Counseling | 417 38th Street SW Suite B Fargo, ND 58103 701-277-0654 www.claudiamcgrathcounseling.com | Outpatient addictions and mental health counseling. | Self-pay, Private insurance, Military Insurance, BCBS |
| 15 | ShareHouse Stepping Stones | 102 Miller Street New York Mills, MN 56567 | Intensive residential substance abuse treatment program for women, while allowing their children to reside with them. Also accept pregnant women. | |
| 16 | Saint Francis Healthcare Center-Hope Unit | 2400 Saint Francis Drive Breckenridge, MN 56520 218-643-0499 | Outpatient treatment, case management | Most insurance, Medicaid |
| 17 | Lake Region Half-way Homes Inc. | 217 North Union Avenue Fergus Falls, MN 56537 218-739-9084 | Residential substance abuse treatment, sober living, half-way house. Outpatient option | Self-pay, Most insurance, Medicaid, Medicare. |

| | | | | |
|-----------|--|---|--|---|
| 18 | Community Addictions Recovery Enterprise (C.A.R.E) | 1174 Western Avenue Fergus Falls, MN 56537 218-736-1800 | Inpatient and outpatient adult/adolescent treatment options. Can accommodate pregnant patients/those with high medical needs. Locked facility. | Self-pay, MN-funded insurance (except Medicaid), Private insurance, Military insurance. |
| 19 | Lake Region Half-way Homes Inc. | 217 North Union Avenue Fergus Falls, MN 56537 218-739-9084 | Residential substance abuse treatment, sober living, half-way house. Outpatient available. | Self-pay, Most insurance, Medicaid, Medicare. |
| 20 | Rewind Inc. | 840 East Main Street Perham, MN 56573 218-346-6100 www.rewindcenter.org | Male-only. Outpatient and long-term (possibly greater than 90 days if needed) residential treatment for alcohol and drug abuse. | Self-pay, Private insurance. |
| 21 | Bell Hill Recovery Center | 12214 200th Street Wadena, MN 56482 218-631-3610 www.bellhill.org | 9 female/64 male bed residential treatment facility for chemical dependency treatment (up to 90 days). Medical staff available. | Self-pay or State-funded. |
| 22 | New Vision Center | Inpatient 222 9th Avenue West Alexandria, MN 56308 320-763-3912 www.newvisionscenter.net Outpatient 909 Broadway Street Alexandria, MN 56308 320-763-0124 | Residential chemical dependency treatment up to 90 days with options for co-occurring medical management. Opiate withdrawal treatment/Suboxone program. Outpatient services. | Most insurance accepted. |
| 23 | Pine Manor Inc. | 22195 State 34 Nevis, MN 56467 218-732-4337 | Residential short/long-term chemical dependency treatment. Opiate withdrawal/Suboxone program. | Self-pay, Medicare, Private insurance. |

APPENDIX H. EXECUTIVE SUMMARY

Project Summary

The primary purpose of the practice improvement project was to increase the prevalence of evidence-based alcohol screening and brief intervention (SBI) efforts in the Barnesville Area Clinic, which provides primary care services to a rural Minnesota community. The evidence-based tool used for the project was the World Health Organization (WHO)'s Alcohol Use Disorders Identification Test (AUDIT), with brief intervention methods guided by the WHO's Brief Intervention Manual. A secondary objective of the project was to improve clinical practice by increasing provider comfort and ease of administration of the chosen evidence-based screening tool. Another secondary objective was to improve patient care through focused alcohol screening, brief intervention, appropriate referral, and provision of education regarding the benefits of alcohol cessation and health promotion.

Background

The topic of alcohol screening and brief intervention was chosen because of an identified gap in clinical services both nationally and locally.

- 2013-USPSFT updated guidelines called for annual screening and brief intervention for alcohol misuse among primary care patients as a Grade B preventative measure, using an evidence-based tool such as AUDIT.
- NCPP ranks alcohol SBI as a top-five priority for disease prevention/health promotion.
- Minnesota Department of Health supports alcohol SBI to reduce behavioral risks that contribute to the morbidity and mortality of the state's residents.
- Alcohol misuse directly related to over 60 disease processes (i.e. stroke, cancer, MI).
- Alcohol misuse is 3rd leading cause of preventable death, contributing to 88,000 annually.

- Despite risk and recommendations, only about 10% of primary care patients receive appropriate screening and referral for treatment for alcohol misuse.
- Primary care providers are a key contact important contact point for individuals who struggle with alcohol misuse and are currently missing valuable opportunities for health promotion/disease prevention.
- Barnesville Area Clinic is a rural, primary care clinic in Minnesota that represented an appropriate venue to implement a practice improvement project to introduce evidence-based alcohol SBI efforts to address gap in services.
 - Chosen due to familiarity to the project leader as a clinical site; function as a provider of primary care services to at-risk rural populations in Minnesota; the presence of willing providers, and the current lack of a standardized alcohol screening, intervention, and referral process for primary care patients.
 - Project completed in cooperation with North Dakota State University and Barnesville Area Clinic.

Process

The AUDIT questionnaire form with 3-question AUDIT-C modification screening tool was implemented, along with an algorithm to guide level of brief intervention as designated by individual patient scores.

- Providers were given access to resource binder that included AUDIT forms, WHO Brief Intervention Manual, risk-specific patient hand-outs, referral charts, and other resources.
 - Extent of actual intervention left to provider discretion.
- Sample-adults >18 years of age presenting for annual physical exams during trial period from June-August 2013.

- BAC support staff distributed informed consent outlining project and an AUDIT screening form to eligible participants to self-complete in lobby prior to exam.
- After exam, provider evaluated individual AUDIT score.
 - Brief interventions based on individual score/risk level.
 - Intervention options ranged from brief discussion to treatment referral if dependence had been identified.
 - Forms collected by provider after visit and held for project evaluation purposes. Did not become part of permanent medical record for participants.
- Evaluation of project performed after trial period by examining number of screens, type of interventions, and provider surveys results indicating qualitative analysis of the process.

Findings

The practice improvement project implementation process and overall objectives were achieved during the time span from June to mid-August of 2013.

- 30 patients offered SBI. 19 patients eligible for full participation. Scored within low to moderate risk, much lower than national and local averages.
 - Focus placed on annual physical patients. Potentially more health-conscious and lower risk than general public, resulting in lower scores.
 - Providers felt this was due to underreporting. Underreporting due to fear of stigma/lack of self-awareness of alcohol content or drink size consumed leads to underestimation by as much as 40-60%.
 - Efforts made to reduce stigma by confidentiality assurance and explanation on informed consent, but still a sensitive subject.

- Interventions performed by two providers. Consisted mainly of risk-specific discussion of AUDIT score/health concerns, and roughly half of participants received zone-specific handouts at provider discretion.
 - Providers witnessed patient reluctance to discuss scores and participate in brief interventions due to process being new and uncomfortable.
 - As process becomes part of everyday practice, patients may become more receptive and less leery of participation.
- After trial period, providers surveyed using an eleven-item questionnaire with a mix of Likert-scale ratings and open-ended response questions to gauge the experience and identify perceived benefits of the project.
 - Objective one met. Both providers strongly agreed that, as opposed to the previous method of a one-question, yes or no, alcohol screening, the project was an improvement in the use of an evidence-based and supported method for alcohol SBI.
 - Objective two met. Both providers strongly agreed that the project improved their practice, one citing that the process enhanced his own awareness of the need to more formally address alcohol consumption among his patients.
 - Facilitated by removing barriers that historically hinder SBI tactics including lack of training about alcohol screening and brief counseling interventions, lack of provider comfort in discussing alcohol use, lack of referral resources if alcohol dependence is identified, and lack of system-wide approaches to encourage adherence to screening guidelines

- Objective three partially met. Provider opinions varied as to how beneficial the project was in directly improving patient care. One provider strongly agreed that patient care was improved, while the other was neutral on the subject.
 - Raised patient awareness of present or past alcohol use, potentially provided them with some insight as to the detriments of alcohol misuse, and tactics to cut down if necessary.
- Several benefits noted:
 - Project resulted in subjectively enhanced knowledge levels and comfort of use for the participating providers in performing alcohol screening and brief intervention among the chosen patient base.
 - Intentional exposure to EBP and SBI tactics for alcohol misuse increased provider willingness to include other EBP ideas into clinical practice.
 - Generated interest in pursuing SBI methods for prescription drug misuse.

Recommendations

Several recommendations for future research were borne out of the project, as a result of intentional exposure to evidence-based practice methods in screening and brief intervention.

- Open SBI efforts to all clinic patients on an as-needed basis at provider discretion
 - Consider placing more focus on those with known history of substance abuse or those that raise higher suspicion such as chronic pain patients or those on chronic narcotics.
 - Open SBI efforts to adolescent population.
 - Greater potential for identifying high-risk patients with more meaningful intervention attempts.

- Continued use of EBP process for alcohol SBI would provide opportunity for financial reimbursement from CMS under preventative service designation and Affordable Care Act (\$33.41 per 15 minute SBI encounter).
- Minimal resources required. Free use of screening tools and resource binder.
- Promote same process in other similar rural health clinics.
 - Increased use of EBP and dissemination of current guidelines for alcohol SBI.
 - Potential for financial reimbursement from CMS under ACA coverage.
 - Benefit to patient care by offering more comprehensive services.
- Create an SBI process at BAC that includes prescription drug misuse and other substance misuse along with alcohol screening.
 - Prescription drug use becoming more common locally and nationally.
 - 2011-seven million people admit to prescription drug abuse
 - Misuse of alcohol makes individual 18 times more likely to abuse prescription drugs.
 - Consider use of already established online modified ASSIST screening tool created by the National Institute for Drug Abuse.
 - Incorporates alcohol, illicit drugs, and prescription drug screening
 - Offers brief intervention guidance based on patient scores and provider education about safe prescribing tactics and how to deal with addicted pain patients.

Conclusion

Despite overwhelming evidence to support screening and brief intervention to identify and curb alcohol misuse in primary care, very few primary care providers engage in the SBI

activity and of those that do, few utilize evidence-based screening tools. By exposing the providers of the Barnesville Area Clinic to an evidence-based guide for alcohol SBI, an important step was taken to raise awareness and help remedy the problem. Interest was sparked among the providers regarding future evidence-based practice implementation, which was also a very positive step. Continued alcohol SBI efforts would allow clinic providers a greater opportunity to screen and intervene for alcohol misuse. Greater numbers of at-risk patients would be screened, therefore, a greater net benefit would be realized from offering the services. BAC could build on the small success of the project and incorporate the alcohol SBI efforts into their billing process so that financial benefits could also be achieved in addition to the benefits for clinical practice such as reducing overall alcohol consumption, encouraging safer drinking patterns, and reducing patient risk for medical, social, and psychological problems.