Routine Alcohol Screening and Brief Intervention in the College-Aged Population: A Quality Improvement Project for University Health Services Staff

Rebecca Chevalier
University of Massachusetts Amherst

Follow this and additional works at: https://scholarworks.umass.edu/nursing_dnp_capstone

Part of the Nursing Commons

Chevalier, Rebecca, "Routine Alcohol Screening and Brief Intervention in the College-Aged Population: A Quality Improvement Project for University Health Services Staff" (2020). Doctor of Nursing Practice (DNP) Projects. 241.
https://doi.org/10.7275/17334016

This Open Access is brought to you for free and open access by the Elaine Marieb College of Nursing at ScholarWorks@UMass Amherst. It has been accepted for inclusion in Doctor of Nursing Practice (DNP) Projects by an authorized administrator of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.
Routine Alcohol Screening and Brief Intervention in the College-Aged Population:

A Quality Improvement Project for University Health Services Staff

Rebecca Chevalier

University of Massachusetts, Amherst

College of Nursing

DNP Project Chair: Dr. Jean DeMartinis, PhD, FNP-BC

DNP Project Mentor: Pauline Moran NP

Date of Submission: April 8, 2020
## Table of Contents

Abstract ................................................................................................................. 4  
Introduction ........................................................................................................... 5  
  Background ....................................................................................................... 6  
  Problem Statement ............................................................................................ 8  
  Organizational “Gap” Analysis of Project Site ................................................... 8  
Review of the Literature ....................................................................................... 10  
  Alcohol Screening Tool for the College Population ......................................... 11  
  Brief Educational Interventions for College Students ....................................... 12  
  Routine Screening and Brief Intervention Implementation Considerations ....... 14  
  Teach-Back Method .......................................................................................... 15  
  Review of Literature Synopsis ......................................................................... 16  
  Evidence Based Practice: Verification of Chosen Option ................................ 17  
Theoretical Framework/Evidence Based Practice Models ................................... 18  
  Lewin’s Change Theory ..................................................................................... 18  
  Teach-Back Method .......................................................................................... 19  
  Plan-Do-Check-Act (PDCA) Cycle ................................................................... 20  
Ethical Considerations/Protection of Human Subjects ...................................... 20  
Project Design ..................................................................................................... 21  
  Project Site and Population .............................................................................. 22  
Goals, Objectives & Expected Outcomes ............................................................ 23  
Methods ............................................................................................................... 26  
  Implementation ................................................................................................ 26
Data Analysis........................................................................................................29

Results .................................................................................................................30

Qualitative Findings.............................................................................................30

Quantitative Data..................................................................................................34

Interpretation/Discussion.......................................................................................35

Conclusion............................................................................................................39

References............................................................................................................42

Appendix A: AUDIT-C ...........................................................................................49

Appendix B: Lewin’s Change Theory Diagram.....................................................50

Appendix C: AHRQ Teach Back Model.................................................................51

Appendix D: Plan-Do-Check-Act (PDCA) Cycle.....................................................52

Appendix E: Westfield State University IRB Personnel Approval Email..............53

Appendix F: University of Massachusetts IRB Personnel Approval Email.............54

Appendix G: Permission for Tool kit Use.............................................................55

Appendix H: Educational Handouts from the Tool kit..........................................56

Appendix I: Outline of Teach-Back Session..........................................................60

Appendix J: Group Discussion Questions.............................................................61

Appendix K: Daily Checklist for Comparing Students Screened.........................62
Abstract

**Background:** Alcohol abuse is a significant concern in the college-aged population (18 to 24 years old) in the United States. Evidence supports the use of the alcohol screening and brief intervention (SBI) and the Alcohol Use Disorders Identification Test for Consumption (AUDIT-C) for this population in reducing negative consequences associated with high-risk alcohol use.

**Purpose:** The purpose of this quality improvement (QI) project was to engage University Health Services (UHS) staff to use a routine SBI protocol with the AUDIT-C on all students that entered UHS and based on risk profile, if necessary, staff performed a brief educational intervention.

**Methods:** This QI project used an educational intervention design using the teach-back method to educate UHS staff on the SBI protocol, which was implemented on students attending UHS for four weeks (October 1st through October 25th) in the fall 2019 semester. The DNP project leader monitored the project via weekly staff meetings including discussion of how the protocol was going and collection of daily checklists that compared the number of students who visited UHS, versus the number of students screened, and the total number of students that scored high-risk and received brief intervention. Data were analyzed for themes and numbers were totaled weekly from checklists concerning students seen, screened, and given brief intervention.

**Results/Interpretation:** Useful themes to evaluate sustainability were detected during the weekly discussion meetings. During the four weeks, staff screened 74% of the students seen and an alarming 22.6%, 74 students, scored high-risk and agreed to brief intervention education.

**Discussions/Conclusions:** Staff decided the routine SBI protocol would be sustainable for everyday practice to assist in the identification and intervention with high-risk students to reduce negative consequences associated with drinking and improve their overall health and well-being.

**Keywords:** alcohol screening and brief intervention, alcohol screening tool, binge drinking, alcohol prevention education, screening barriers, teach-back, and college students.
Routine Alcohol Screening and Brief Intervention in the College-Aged Population:
A Quality Improvement Project for University Health Services Staff

Introduction

Alcohol abuse is a major concern in the United States (U.S.) today (Centers for Disease Control and Prevention [CDC]; National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2015). According to the CDC (2018), excessive alcohol use led to approximately 88,000 deaths and 2.5 million years of potential life lost each year in the U.S. from 2006 to 2010. To first understand what it means to abuse alcohol, familiarity with what is considered a standard drink is required. In the U.S., a standard drink contains 0.6 ounces (14.0 grams or 1.2 tablespoons) of pure alcohol, which would be considered 12-ounces of beer (5% alcohol content), 8-ounces of malt liquor (7% alcohol content), 5-ounces of wine (12% alcohol content), and 1.5-ounces of 80-proof (40% alcohol content) distilled spirits or liquor (e.g., gin, rum, vodka, or whiskey) (CDC, 2018).

The term binge drinking is known as the most common form of excessive drinking and is defined as consuming four or more drinks during a single occasion for women or five or more drinks during a single occasion for men (CDC, 2018). Heavy drinking is a slightly different term and is defined as consuming eight or more drinks per week for women and 15 or more drinks per week for men (CDC, 2018). According to The Dietary Guidelines for Americans moderate drinking is defined as up to one drink per day for women or up to two drinks per day for men (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2019).

Alcohol abuse leads to numerous short-term and long-term negative health effects (CDC, 2018). Short-term effects often occur when alcohol has been consumed in the form of binge drinking and this includes: injuries (e.g. motor vehicle crashes, burns, falls, or drowning),
violence, (e.g. assault, sexual assault, homicide, suicide, or intimate partner violence), alcohol poisoning, and high risk sexual behaviors (e.g. unprotected sex or sex with multiple partners resulting in unintended pregnancy or sexually transmitted diseases) (CDC, 2018). Long-term excessive alcohol abuse can lead to the development of chronic diseases and other severe health problems including: heart disease, hypertension, stroke, liver disease, and digestive problems; can increase risks of breast, esophagus, mouth, throat, liver, and colon cancer; can cause learning disability and memory problems; worsen mental health problems (e.g. anxiety and depression); lead to social problems, including lost productivity, family conflict, and unemployment; and alcohol dependence (CDC, 2018).

**Background**

A specific population in the U.S. where alcohol abuse is a significant concern is the college-aged population (18 to 24 years old) (CDC 2018; NIAAA, 2015). Drinking in college has become a ritual that students tend to see as an important part of their college experience (NIAAA, 2015). Some students may arrive at college with previously established drinking habits, and the college environment can intensify the problem (NIAAA, 2015). Several factors increase the likelihood of the college student drinking such as unstructured time, varying enforcement of underage drinking laws, more extensive availability of alcohol, and reduced interactions with parents and other adults (NIAAA, 2015). Denering and Spear (2012) describe that drinking in groups or in social atmospheres brings increased levels of euphoria and greater levels of pleasure. The college experience is largely social in nature; students often find themselves participating in group activities, which may cause them to be more prone to consume alcohol.

About 20% of college students meet the criteria for the diagnosis of an Alcohol Use
ALCOHOL SCREENING AND BRIEF INTERVENTION IN COLLEGE

Disorder (AUD) (NIAAA, 2015). This age group is statistically most likely to drink in excess or binge drink (CDC, 2018). The Substance Abuse and Mental Health Services Administration’s (SAMHSA) National Survey on Drug Use and Health completed in 2015 states, 58% of college students reported drinking in the past month and 37.9% reported binge drinking. The CDC (2018) reports those less than 21 years old drink 11% of all alcohol consumed in the U.S., and more than 90% is consumed in the form of binge drinks.

Irresponsible drinking leads to numerous short-term and possible long-term negative consequences for college students that include: high levels of alcohol poisoning, alcohol addiction/dependency, academic issues, risky sexual behaviors, physical/sexual assaults, development of medical problems, and potential death from alcohol related accidental injuries (Bridges & Sharma, 2015; Strohman et al., 2016). The NIAAA (2018) reports the following statistics: 1,825 college students have died from alcohol-related injuries; 696,000 students have experienced alcohol-related assault; 97,000 students report experiencing alcohol-related sexual assault; and 1 in 4 students report academic consequences from drinking.

Alcohol abuse is also very costly. The CDC (2018) reported alcohol abuse in 2010 cost the U.S. $249 billion, resulting from excess health care expenditures and legal costs, with binge drinking responsible for 77% of these costs. Screening and brief intervention (SBI) is a cost-effective method for prevention of alcohol abuse (CDC, 2018). Screening and brief intervention models have been tested and shown to be effective in a variety of settings, including primary care offices and emergency rooms (Denering & Spear, 2012). Routine use of SBI could be a cost-effective method to catch, and intervene with, potential high-risk drinking behaviors before negative consequences result. The University of Missouri’s Partners in Prevention (PIP) (2014) reports that for every dollar spent on alcohol prevention programming, the returned benefits and
savings average over 100% of invested cost. Effective college alcohol abuse prevention programs can, on average, return over $2.00 for every dollar spent by decreasing injuries, accidents, crime, and unnecessary health costs on campus (PIP, 2014).

**Problem Statement**

Risk of excessive alcohol use among college students is indicted by both short-term and long-term negative consequences associated with drinking and results from lack of providers implementation of formal alcohol screening routinely, brief educational interventions for identified high-risk students, and referral to more intensive therapy as needed. In many colleges and universities in the U.S., performance of alcohol SBI by providers routinely in health services settings does not occur and exacerbates risks of negative consequences and increases the likelihood of AUD.

**Organizational “Gap” Analysis of Project Site**

The location of the QI project site was at a State University located in Western Massachusetts. The University has a total undergraduate enrollment of approximately 5,500 students where 60% of them live on campus (Westfield State University [WSU], 2019). With the majority of students living on or near campus, the chances for use of substances such as alcohol on campus increases.

The University has a specific *Alcohol and Other Drug Policy* which is in accordance with the Higher Education Amendments of 1998 (Public Law 105-244) that prohibits the individual under the legal drinking age of 21 from possessing, using, or being under the influence of alcohol, or being in the presence of alcohol or alcohol containers (WSU, 2019). Violators to the Policy are subject to the following sanctions: first offense includes 10 hours of participation in community events or a work project and completion of University substance education classes,
also a $100 service fee is charged for these classes; second offense includes suspension from University housing for one academic semester or more with readmission to occur after verification of completion of a counseling evaluation and any suggested follow-up treatment; third offense includes suspension from the University and University housing for one academic semester or more with readmission to occur after verification of completion of a counseling evaluation and any suggested follow-up treatment (WSU, 2019).

All first-year students attending the University are required to take a course called AlcoholEdu. This program empowers students to make educated decisions via the delivery of online alcohol-related content featuring videos, blogs, comics, instant message chats and useful tools, like a Blood Alcohol Concentration (BAC) calculator and safe partying strategies (WSU, 2019). AlcoholEdu is confidential and personalized for each student (WSU, 2019). Although the University offers this program in the students first year, no other alcohol screening and/or educational programs are delivered routinely.

According to the University’s Annual Security Report for 2017, in that year, campus security made 20 arrests for liquor law violations and a total of 373 (199 on campus, 164 in the residence halls, and 10 non campus) referrals to the Director of Student Conduct, Dean of Students, and the Title IX Coordinator for liquor law violations (WSU, 2018). These findings suggest that alcohol abuse continues to be a concern.

There is a gap in the consistency of alcohol education throughout a student’s college career at the University. The University Health Services (UHS) staff can play a leading role in routine alcohol SBI delivery for students seen at the clinic. Although this is not currently routine practice, the staff has reported an openness and motivation to change procedures and accept a
routine alcohol SBI protocol for a trial period to observe effectiveness (P. Berube & P. Moran, personal personal communication, February 15, 2019).

**Review of Literature**

A comprehensive search of evidence was completed using, Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, Google Scholar, and PsycINFO. The primary terms were *alcohol screening and brief intervention*. The secondary terms included: *alcohol screening tool, binge drinking, alcohol prevention education, college students, teach-back, and screening barriers*. Inclusion criteria included: peer-reviewed research studies or articles, written in the English language with full-text availability, and published in no greater than 10 years (2010 or newer). Articles were excluded if they did not meet this basic criterion. The studies were evaluated using the Johns Hopkins Nursing Evidence Based Practice (JHNEBP) Evidence Rating Scale (2007) to assess levels of strength.

An initial search of CINAHL was completed with an analysis of the keywords (alcohol SBI) and this yielded 395 results. A second search using expanded keywords was performed across the additional databases, including: PubMed (268 results), PsycINFO (95 results), and Google Scholar (485 results). The titles and indexes of key terms were reviewed for applicability related to the target population (college students) and target initiatives (routine alcohol SBI). Duplicated articles and those not applicable to the review were excluded. This narrowed the results down to approximately 100 articles.

The abstracts of relevant articles were reviewed then analyzed to render pertinence and deem operational efficiency to routine SBI implementation. This narrowed the search down to a total of 56 articles, with 16 articles related to alcohol screening, 20 articles related to intervention, 10 articles related to routine SBI, and 10 articles related to teach-back. The studies
were then evaluated using the JHNEBP Evidence Rating Scale (2007) to assess levels of strength and articles with highest grades of strength were chose to be utilized as evidence for this review of literature. This process gathered five articles related to alcohol screening, nine articles related to brief intervention, four articles concerning routine SBI use, and four articles related to teach-back use.

**Alcohol Screening Tool for the College Population**

The goal of this search was to determine the most effective alcohol screening tool for the target population. One noteworthy non-experimental study completed by Winters et al. (2011) [JHNEBP III/A] used an online survey to assess the use of formal alcohol screening tools across 333 U.S. colleges. They observed that only 44% of colleges used a formal alcohol screening tool and more consistent use of a formal screening tool would be encouraged.

The Alcohol Use Disorders Identification Test for Consumption (AUDIT-C) has been robustly investigated in the college population. The AUDIT-C is the first three items of the Alcohol Use Disorders Identification Test (AUDIT) scale (SAMHSA, 2018). See Appendix A for full AUDIT-C scale. The observational/non-experimental studies completed by Campbell and Maisto (2018), Demartini and Carey (2012), Hagman (2015) [JHNEBP III/A] and Barry, Chaney, Stellefson, and Dodd (2015) [JHNEBP III/B] assessed the validity of the AUDIT-C in detecting alcohol abuse in the college population.

Demartini and Carey (2012) compared the AUDIT and the AUDIT-C and found that the AUDIT-C performed significantly better in the detection of at-risk drinking in college students.

Hagman (2015) assessed the effectiveness of the AUDIT-C in screening for Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 AUDs and found that the AUDIT-C provided good discernment in the discovery of DSM-5 AUDs. Barry et al. (2015) evaluated the
psychometric properties (score validity, reliability, and stability) of the AUDIT-C by interviewing college student bar patrons to assess alcohol-related behaviors (AUDIT-C) and breath alcohol concentration and found positive correlations. Furthermore, Campbell and Maisto (2018) observed construct validity of the AUDIT-C by observing significant correlations with measured alcohol-related consequences.

Barry et al. (2015), Campbell and Maisto (2018), Demartini and Carey (2012), and Hagman (2015) also evaluated optimal cut-off scores of the AUDIT-C in the college population using Youden’s Index. These researchers assessed gender differences in cut-off scores maximizing both sensitivity and specificity were four to five for females and six to seven in males. Using a more gender-neutral approach, Hagman (2015) found a cut-off score of four provided sensitivity and specificity in the detection of AUDs in both genders, however there are gender differences in the way the body processes and metabolizes alcohol and there are some variations in drinking behaviors in males versus females that could, indeed, add variance to scores by gender as reported by Barry et al. (2015), Campbell and Maisto (2018), and Demartini and Carey (2012).

**Brief Educational Interventions for College Students**

A bulk of the evidence reviewed reported success in the use of the educational program Brief Alcohol Screening and Intervention for College Students (BASICS), which identifies patterns of alcohol abuse and describes its consequences (DiFulvio, Linowski, Mazziotti, & Puleo, 2012; Fachini, Aliane, Martinez, & Furtado, 2012; Kulesza, McVay, Larimer, & Copeland, 2013; Terlecki, Buckner, Larimer, & Copeland, 2015). Following BASICS, students use a self-monitoring tool that allowed them to evaluate alcohol consumption and consequences, along with the use of protective strategies, and then feedback is delivered (DiFulvio et al., 2012).
Fachini et al. (2012), Kulesza, et al. (2013), and Terlecki et al. (2015) [JHNEBP I/A] assessed the efficacy of a BASICS protocol. Fachini et al. (2012) completed a meta-analysis of randomized control trials (RCTs) and found 18 studies which showed that after 12 months of follow-up, students receiving BASICS exhibited a significant reduction in alcohol consumption and alcohol-related problems. Kulesza and team (2015) in their RCT found that both BASICS delivered in either a 10-minute or 50-minute intervention group produced similar results and both reported significantly less alcohol consumption at follow-up compared to their control. This is valuable information since provider time constraints are often a major reason that routine SBI does not occur.

Terlecki and colleagues (2015) conducted a RCT to ascertain whether undergraduates mandated to a BASICS program would benefit as much as volunteers using control groups with high-risk drinkers. At 12 months they observed their intervention group had significantly less alcohol consumption and BASICS participants reported significantly fewer alcohol problems (Terlecki et al., 2015). DiFulvio et al. (2012) [JHNEBP II/A] used a quasi-experimental design with an intervention group composed of mandated students who attended BASICS and a randomly selected comparison group of high-risk drinkers. The intervention group showed a decrease in alcohol consumption and they found this to be more effective in moderate drinkers (DiFulvio et al., 2012). Amaro et al. (2010) and Kazemi, Sun, Nies, Dmochowski, and Walford (2011) [JHNEBP III/A] used observational/non-experimental study designs to evaluate efficacy of BASICS and both studies observed a decrease in alcohol use and binging. Amaro et al. (2010) observed greatest effects in heavy drinkers. Kazemi et al.’s (2011) used the transtheoretical model (TTM) of intentional behavior change to tailor the BASICS intervention to their sample’s TTM stage and observed reduction negative drinking consequences.
Bridges and Sharma (2015) discussed methods of alcohol education for college students in their systematic review of RCTs and quasi-experimental design studies. They found a total of 18 interventions aimed at reducing binging, 14 were found effective and included: brief motivational interviewing (BMI), cognitive behavioral therapy (CBT), and Expectancy Challenge Alcohol Literacy Curriculum (ECALC) (Bridges & Sharma, 2015).

e-Interventions are additional alcohol reduction techniques that may be useful. Strohman et al. (2016) completed a RCT where they evaluated extent to which participation in Alcohol-Wise, a computerized intervention, was associated with changes in drinking with expectancies based on class level. They observed freshman/sophomore students in the intervention group showed significant reductions in alcohol use, but this was not seen with juniors/seniors (Strohman et al., 2016).

The qualitative study carried out by Barry, Hobbs, Haas, and Gibson (2016) utilized focus groups to assess student opinions on AlcoholEdu, an e-intervention. Their participants found the program to be informative, but reported that they would likely not change drinking behaviors (Barry et al., 2016). The students did offer suggestions for improvement such as, a pretest survey to determine baseline drinking to individualize education (Barry et al., 2016).

**Routine Screening and Brief Intervention Implementation Considerations**

Abidi, Oenema, Nilsen, Anderson, and Mheen (2016), Denering and Spear (2012), Johnson, Jackson, Guillaume, Meier, and Goyder (2011), and Agley, Walker, and Gassman (2013) all reported findings relative to positive effects in the use of SBI routinely for college-aged students in various settings. Denering and Spear (2012) in their observational study and Agley et al. (2013) in their SBI protocol development study found success in the integration of routine SBI procedures in reducing problematic substance abuse...
among college students. Agley et al. (2013) further investigated the effects of short training sequences for athletic staff members on BMI to perform alcohol Screening, Brief Intervention, and Referral to Treatment (SBIRT) on college athletes and observed positive impacts. The athletic staff members were trained to: approach the subject, confirm confidentiality and ask if the student felt they could be honest; then assess and enhance the student’s motivation to change; then negotiate/advise change practices; and schedule a follow-up meeting if deemed necessary (Agley et al., 2013).

Abidi et al. (2016) and Johnson et al. (2011) investigated provider perceived barriers and facilitators to routine alcohol SBI delivery in primary care practices. Abidi et al. (2016) utilized a three-round online Delphi study to discover tactics that could tackle barriers to SBI implementation and observed providers requested the following strategies: use of E-learning technology, universal screening by practice nurses or general practitioners, supportive materials, and clear guidelines. Johnson et al. (2011) in their systematic review of qualitative studies geared toward assessing primary care providers’ practices reported the following barriers to routine SBI implementation: lack of resources, limited training and support from management, as well as time constraints due to heavy workloads.

**Teach-Back Method**

A thorough and evidence-based strategy is necessary to educate healthcare providers on adoption of a new routine protocol. Teach-back is an evidence-based strategy recognized as a key intervention for improving communication during healthcare encounters due to reported high rates of understanding from the ability to reinforce teaching, clarify information, and correct misinterpretations when exercising this method (Klingbeil & Gibson, 2018; Kornburger, Gibson, Sadowski, Maletta, & Klingbeil, 2013).
Centrella-Nigro and Alexander (2017) [JHNEBP II/A], Klingbeil and Gibson (2018), Kornburger et al. (2013), and Peter et al. (2015) [JHNEBP III/A] discovered success in the use of the teach-back method in various settings and circumstances. Klingbeil and Gibson (2018) and Kornburger et al. (2013) observed that both nurses and other healthcare personnel believed that teach-back was a valuable strategy that can improve the process of learning new skills and further enhance the quality and safety of care delivered. Centrella-Nigro and Alexander (2017) educated nurses on teach-back to assess their knowledge, attitudes, and beliefs regarding routine use of the teach-back process and observed strong support for teach-back in their posttest. Peter et al. (2015) completed a quality improvement (QI) initiative piloting teach-back on patients hospitalized with heart failure, due to this population's high risk of readmission, and observed improvements in patients' understanding of their disease and reduced readmission rates with utilization of the teach-back method.

**Review of Literature Synopsis**

The evidence suggested the use of psychometrically robust formal alcohol screening tools (Winters et al., 2011). The evidence ultimately supported superiority of the reliability and validity of the AUDIT-C in detecting alcohol issues in the college population over other AUD screening tools (Barry et al., 2015; Campbell & Maisto, 2018; Demartini & Carey, 2012; Hagman, 2015). Therefore, the AUDIT-C was the chosen as the alcohol screening tool for this QI project and the decision was made to make the optimal cut-off scores: four for females and six in males (Barry et al., 2015; Campbell & Maisto, 2018; Demartini & Carey, 2012).

The evidence supported the use of BASICS as a successful method of SBI (Amaro et al., 2010; DiFulvio et al., 2012; Fachini et al., 2012; Kazemi et al., 2011; Kulesza et al., 2013; Terlecki et al., 2015). Interventions can be completed in a brief manner and serve as a concise
and cost-effective method for alcohol education (Bridges & Sharma, 2015; Kulesza et al., 2013). Students preferred shorter and more individualized interventions (Barry et al., 2016; Kazemi et al., 2011). Alcohol SBI was most successful in freshman and sophomore students, as this can aid in detecting alcohol problems and reduce negative consequences early on (Kazemi et al., 2011; Strohman et al., 2016). Brief alcohol intervention was found to be most beneficial in students that were baseline moderate or heavy drinkers (Amaro et al., 2010; DiFulvio et al., 2012; Fachini et al., 2012; Terlecki et al., 2015). Additionally, the evidence supported the routine use of SBI in college health settings (Denering & Spear, 2012).

Discovery of barriers and facilitators to SBI assisted in formulating an attainable plan. The majority of evidence demonstrated that time constraints and lack of thorough education and training were major barriers to the implementation of alcohol SBI routinely (Abidi et al., 2016; Johnson et al., 2011). The findings from the evidence supported focusing SBI training on the following functions for staff: education, training, enablement, modeling, and communication (Abidi et al., 2016; Johnson et al., 2011). The evidence supported the use of the teach-back method as a successful facilitator for both providers and then patients to learn new procedures, skills, and behaviors (Centrella-Nigro & Alexander, 2017; Klingbeil & Gibson, 2018; Kornburger et al. 2013; & Peter et al., 2015). Furthermore, Centrella-Nigro and Alexander (2017) found that nurses expressed support for the routine use of teach-back as an enforcer of taught material.

**Evidence Based Practice: Verification of Chosen Option**

Based on the review of current evidence-based literature, the evidence supported the use of routine delivery of alcohol SBI, particularly when including brief screening tools to identify those *high-risk* students, for college students to reduce negative consequences associated with
drinking and to improve overall health and well-being. The evidence also supported the use of the teach-back method for healthcare personnel education and training on new processes. This DNP Project was a QI project directed at four UHS staff (one RN and three NPs) members. The DNP student used the teach-back method to educate staff to adopt a routine SBI protocol utilizing the AUDIT-C and then based on student scores, if necessary, they received a brief intervention (5 to 10 minutes). The DNP student managed, supervised, and monitored this process via weekly follow-up meetings with the NPs and RN and staff opinions were considered and the SBI/AUDIT-C protocol was tailored as desired to meet their needs.

**Theoretical Framework/Evidence Based Practice Models**

**Lewin’s Change Theory**

The Change Theory developed by Kurt Lewin (1947) was utilized as the theoretical framework used to guide this QI project. See Appendix B for model diagram. This theory utilizes a three-stage model of change known as the Unfreezing-Change-Refreeze model (Lewin, 1947).

Unfreezing is the process which involves finding a feasible method for individuals to discard an old pattern that was ineffective, which is necessary to overcome the stressors of group conformity and/or individual resistance (Burnes, 2004; Lewin, 1947; Petiprin, 2016). This process involved educating the UHS NPs and RN regarding the effectiveness of routine alcohol SBI practices in various settings. This took place during the initial group meeting and educational teach-back session, as this was an ideal opportunity to discover resistance to the intervention procedures. This also involved education regarding the statistics of alcohol abuse at the University and the negative short-term and long-term consequences that can occur with high-
risk drinking behaviors. As healthcare providers, the UHS staff members have an ideal opportunity to be heard by students and potentially make a long-lasting impact on their futures.

The second stage, the Change stage, which is also known as the movement phase, encompasses the process of change in thoughts, attitudes, feelings, and behaviors that is more conducive for change (Burnes, 2004; Lewin, 1947; Petiprin, 2016). This process involved the implementation of the routine SBI/AUDIT-C protocol to all students that attended UHS over the course of four weeks of the intervention. It also involved frequent communication with staff in weekly group meetings and actively involving them in the process. This included empowering staff into seeing this as a beneficial addition to routine practice.

The Refreezing stage is establishing the change as the new routine, so that it becomes standard operating procedure (Burnes, 2004; Lewin, 1947; Petiprin, 2016). This process occurred at the post-intervention group discussion, where feedback regarding staff opinions was delivered to the DNP student. It also included modifying the protocol in a way that allowed the department to sustain this change in everyday practice.

**Teach-Back Method**

Current evidence supported the use of the teach-back as successful method for healthcare personnel to learn new processes or skills (Centrella-Nigro & Alexander, 2017; Klingbeil & Gibson, 2018; Kornburger et al. 2013; & Peter et al., 2015). The teach-back method designed and tested by the Agency for Healthcare Research and Quality (AHRQ) (2015) was an evidence-based practice model used to guide teaching the staff how to implement this QI project. See Appendix C for AHRQ Teach-Back Model. The teach-back method allowed the DNP student to assess UHS staff understanding by asking them to state in their own words what they needed to do to correctly complete the routine SBI/AUDIT-C protocol. In the pre-intervention meeting
following the education for the NPs and RN regarding the routine alcohol SBI/AUDIT-C protocol, the staff were asked to repeat this back to and practice it with the DNP student.

**Plan-Do-Check-Act Cycle**

This QI project also followed the Plan-Do-Check-Act (PDCA) cycle (American Society for Quality, 2020; Joshi, Ransom, Nash & Ransom, 2014). The PDCA cycle is a four-step process used for the implementation of quality improvement processes (American Society for Quality, 2020). In the first step (plan), a way to implement the improvement is developed. In the second step (do), the plan is performed. In the third step (check), an analysis occurs between what was predicted and what was observed in the previous step (do). In the last step (act), action should be completed to correct or enhance the process (American Society for Quality, 2020). See Appendix D for PDCA cycle graphic. See Implementation section for full description of the PDCA cycle in relation to this QI project.

**Ethical Considerations/Protection of Human Subjects**

Approval of the project site University and the University of Massachusetts, Amherst (UMass) Institutional Review Board (IRB) was obtained prior to implementing this QI project and deemed as exempt through both institutions. See Appendix E for email from the University IRB personnel of approval and see Appendix F for email from the UMass IRB personnel of approval. All the students that were seen in UHS were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which, among other guarantees and protects the privacy of the students’ health information. Additionally, the DNP student managed, supervised, and monitored the UHS NPs and RN involved as they carefully conducted this project following the Standards of Care for practice in a university health services department. There were no risks to participating in this project in comparison to standardized routine care.
As the QI project leader, the DNP student worked with only the UHS staff in a supervisory role and did not address students or their protected health information. Since this QI project was directed towards UHS NPs and RN and not students, there was no possible ways to compromise student protected health information. All information that was collected as part of evaluating the impact of this project was in the form of anonymous numerical data from the project participants and did not include any possible patient identifiers. Student confidentiality was secured by coding the participants using individual identification numbers on daily checklists to determine what students were seen in the clinic compared to what students were actually screened and/or given brief intervention. The daily checklist filled with the numerical codes of participants seen at the clinic was kept in a locked filing cabinet located in the UHS Department, and only accessible to the project coordinators.

**Project Design**

This DNP project followed a Quality Improvement (QI) framework utilizing an educational intervention to affect change and improve quality where UHS NPs and a RN were educated on performing a routine alcohol screening and delivery of a brief educational intervention to assess and educate students that were higher-risk drinkers on safer drinking practices. Qualitative data were collected from weekly discussion meetings with UHS staff and analyzed using thematic analysis to assess routine SBI/AUDIT-C protocol sustainability. Quantitative data were collected using daily checklists collected by the DNP student on a weekly basis. The checklists completed by the UHS NP project mentor compared the number of students screened in relation to all the students that were seen in the clinic and the total number of students that scored *high-risk* and were given brief intervention. This data was analyzed for weekly and final totals using descriptive statistical analyses.
Project Site and Population

The University is an undergraduate and graduate university located in Western Massachusetts. The student body has an enrollment of over 6,000 students and is composed of approximately 5,000 full-time undergraduate students, 600 part-time undergraduate students, and 800 graduate students (WSU, 2019). The student body is 51% female and 49% male and about 60% of students live on campus (WSU, 2019). Students at the University are 74.9% white or other Caucasian, 9.3% Hispanic/Latino, 4.8% Black or African American, 1.7% Asian, and 11.1% other ethnicity (College Factual, 2019). The age distribution of the students includes: 32.9% 18 to 19 years old, 30.9% 20 to 21 years old, 14.6% 22 to 24 years old, 7.8% 25 to 29 years old, 4% 30 to 34 years old, 0.7% under 18 years old, and 9.0% 35 years old and older (College Factual, 2019).

The University offers health insurance to all full-time undergraduate students. Additionally, all full-time undergraduate students, regardless of health insurance, can utilize the University’s Health Services Department's services (WSU, 2019). The UHS Department is open Monday through Thursday 8:30am to 5pm and Fridays 10am to 5pm. The clinic is closed daily for lunch from 1pm to 2pm. The students do not receive a fee or charge for visits or medications provided at the clinic (WSU, 2019). The Health Services Department also provides minimal First Aid care and certain preventative vaccine clinics as a service for the University employees, faculty, and staff members (WSU, 2019).

The key stakeholders involved in this QI project included the direct patient care UHS staff members that see students on daily basis, consisting of three NPs and one RN. The participants also included the three UHS NPs and one RN implementing the QI project, along with all of the students seen for care at the clinic during the four weeks of the intervention. The
The clinic sees approximately an average of 20 to 25 students per day. The most common visits students seek out care for at the clinic include cold like symptoms, concerns for sexually transmitted diseases, anxiety/depression issues, and musculoskeletal complaints.

In order to gain participation of the staff for the QI project, the DNP student met with the key stakeholders on February 15th, 2019 and educated them regarding the positive effects found in the evidence regarding routine SBI. The UHS NPs and RN were highly motivated to add the alcohol SBI/AUDIT-C protocol to their routine process, but did have some concerns since this is a sensitive topic. The Director of Health Services stated the department had attempted to perform a routine alcohol screening process in the past, but they were not consistent with it (P. B., personal communication, February 15, 2019). To encourage consistency, the DNP student used the teach-back method to thoroughly educate staff on the SBI/AUDIT-C protocol so they gained familiarity with the process. The use of the daily checklists comparing students seen versus students actually screened aided in reinforcing consistency. The DNP student also met with the staff weekly during the intervention phase during the Department lunch break to hold a brief group discussion on how the routine alcohol SBI/AUDIT-C protocol was going. At the completion of the intervention, the DNP student met with the NPs and RN for a final group discussion to evaluate staff beliefs of sustainability of the routine SBI/AUDIT-C protocol and to learn where modifications may be necessary for future practice.

**Goals, Objectives and Expected Outcomes**

The primary goals of the QI project were split into each phase of the implementation process concerning, pre-intervention, intervention, and post-intervention. The pre-intervention phase goals involved the initial meeting with the UHS NPs and RN, which involved alcohol SBI education, the SBI/AUDIT-C protocol teach-back, and the discussion regarding staff beliefs and
concerns regarding making this a routine process. The intervention phase lasted four weeks and goals included weekly measuring of students screened and that required brief intervention and weekly staff discussion meetings to discuss how the process was going. The post-intervention phase goals concerned final total results of amount of students screened and given brief intervention and the final discussion with staff regarding their beliefs of sustainability of the routine protocol and modifications necessary for future practice. See Tables 1 through 3.

**Table 1:**

*Pre-Intervention Phase Goals, Objectives, and Expected Outcomes*

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
<th>Expected Outcomes</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in pre alcohol SBI intervention education delivery.</td>
<td>• The NPs and RN were educated regarding current evidence concerning alcohol abuse in the college population. &lt;br&gt; • They were educated regarding the success supported in the evidence regarding routine SBI.</td>
<td>80% of the NPs and RN will attend and verbally report understanding.</td>
<td>Met &lt;br&gt; • 100% &lt;br&gt; • See Results section</td>
</tr>
<tr>
<td>Active participation in SBI/AUDIT-C protocol teach-back.</td>
<td>• The NPs and RN were educated regarding the SBI/AUDIT-C protocol. &lt;br&gt; • They were asked to explain it back to the DNP student. &lt;br&gt; • They practiced the process with the DNP student.</td>
<td>80% of the NPs and RN will participate in the teach-back process.</td>
<td>Met &lt;br&gt; • 100% &lt;br&gt; • See Results section</td>
</tr>
<tr>
<td>Attendance at group discussions with DNP student.</td>
<td>• The NPs and RN were questioned regarding their concerns and beliefs regarding implementing this new procedure.</td>
<td>80% of the NPs and RN attend the group meeting. Group themes discussed will be detected.</td>
<td>Met &lt;br&gt; • 100% &lt;br&gt; • Themes detected &lt;br&gt; • See Results section</td>
</tr>
</tbody>
</table>
Table 2:

*Intervention Phase Goals, Objectives, and Expected Outcomes*

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
<th>Expected Outcomes</th>
<th>Results</th>
</tr>
</thead>
</table>
| Routine SBI/AUDIT-C protocol delivery with all students seen at UHS. | • A daily checklist was completed by the project mentor where she checked off that each student seen was screened and, if necessary based on screening results, the students was given brief intervention.  
• The DNP student totaled the checklist numbers weekly | 80% of students seen will be screened. | Not met  
• 74%  
• See Results section |
| Attendance at weekly group discussions with DNP student. | • Weekly meetings took place with the DNP student and NPs and RN, so staff questions, comments, and concerns were addressed. | 80% of the NPs and RN will attend the group meetings.  
Group themes discussed will be detected. | Met  
• 100%  
• Themes detected  
• See Results section |

Table 3:

*Post-Intervention Phase Goals, Objectives, and Expected Outcomes*

<table>
<thead>
<tr>
<th>Goals</th>
<th>Objectives</th>
<th>Expected Outcomes</th>
<th>Results</th>
</tr>
</thead>
</table>
| Final results of number of students given SBI. | • Weekly results were added and the total number of students seen versus the number screened was compared.  
• Students given brief intervention was also totaled. | 80% of students seen will be screened.  
A total of 5 *high-risk* scoring students will receive brief intervention. | Partially met  
• 74% screened  
• 74 given brief intervention  
• See Results section |
| Final group discussion attendance. | • A group discussion was held to evaluate the NPs and RN beliefs of feasibility and to hear where modifications may be necessary for future practice. | 80% of the NPs and RN will attend.  
Group themes discussed will be detected. | Met  
• 100%  
• Themes detected  
• See Results section |
Methods

Implementation

The implementation of this QI project was split into three phases: pre-intervention phase, intervention phase, and post-intervention phase using the PDCA cycle as the evidence-based practice guide (American Society for Quality, 2020; Joshi et al., 2014). The project was completed over four weeks in the Fall 2019 semester, starting on September 30th to October 25th, 2019.

The “Plan” for this project completed in the pre-intervention phase was to design the SBI protocol by obtaining the most reliable and valid screening tool and method of intervention for the college-aged population. The evidence supported use of the AUDIT-C as the most reliable and valid alcohol screening tool for the college-aged population. According to the National Institute of Drug Abuse (2019), the AUDIT-C is available for use on the public domain. The evidence supported the use of brief educational interventions for high-risk alcohol use students. The U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) and The BACCHUS Network (2007) offer a toolkit called Screening and Brief Intervention Tool Kit for College and University Campuses that provides educational handouts on how alcohol affects individuals, impacts and risks associated with elevated BACs, suggestions for lower-risk drinking strategies, and visualizations of a drink defined as references for college students.

The DNP student was given permission for use of the toolkit from the NHTSA.dot.gov Response Team via email (see email in Appendix G). According to the NHTSA.dot.gov Response Team this toolkit is considered to be public domain and the information is authorized to be distributed and copied in any format. Therefore, the brief intervention materials were obtained from the handouts in the U.S. NHTSA and The BACCHUS Network (2007) tool kit
(see Appendix H for tool kit handouts). A meeting was also held on February 15, 2019 with the UHS Director and the other NPs where the DNP student gained verbal permission to complete the QI project during the fall 2019 semester and baseline ideas for the project were discussed and agreed upon.

The “Do” for this QI project began during the pre-intervention phase started on September 30, 2019 at the pre-intervention group meeting and included the education to the UHS staff on the identified screening tool (AUDIT-C) and brief intervention method (five-minute educational discussion based on the handouts on safe drinking for the college student as presented by the U.S. NHTSA and The BACCHUS Network, and delivery of the handouts to the student for them to take home). The education on the SBI/AUDIT-C protocol was performed using the teach-back method. During the teach-back session the protocol was practiced by having the DNP student and the staff perform the SBI/AUDIT-C protocol on each other. The initiation of the screening was a key area of focus and was practiced using a nonthreatening, nonjudgmental approach that provided feedback to the student participants in a respectful manner (see Appendix I for outline of teach-back session). Since talking about alcohol intake could be a sensitive topic for students, staff was educated to initiate each screening by explaining to the student that the screening was anonymous/confidential and their protected health information would not be compromised in any way. It was also expressed that if any student did not feel comfortable doing the SBI/AUDIT-C protocol, they could refuse. Also at that time, a brief group discussion took place utilizing open-ended questions to assess staff members’ comfort level with the use of the alcohol SBI/AUDIT-C protocol and their concerns and beliefs regarding implementing this routinely (see Appendix J for pre/post-intervention and weekly group discussion questions). At this pre-intervention meeting, the DNP student collected data including the number of staff present and common staff reported
themes from open-ended questions asked. The “Do” phase also included the intervention phase of this project including the implementation of the four-week evidence-based SBI/AUDIT-C protocol to all students that attended UHS by the NPs and RN.

The “Check” for this project included continuation of the intervention phase involving the weekly group discussions with the NPs and RN to examine how the intervention was going and to make modifications as deemed necessary based on staff suggestions. The DNP student consulted with the project mentor on a weekly basis to organize the weekly meetings on a day of the week that would best accommodate the staff. This phase included the use of a daily checklist completed by the UHS NP project mentor (see Appendix K for daily checklist). The daily checklists were collected at the weekly meetings and analyzed weekly by the DNP student to complete the tallies of the number of students that had been seen at UHS versus number of students screened, and the number of students that scored high-risk and were given brief intervention. The data collected during this phase also included attendance of the staff members at the group discussions and themes detected by the DNP student during the discussion.

This “Check” phase also included post-intervention work within the final staff group discussion that took place two-weeks post-intervention where staff were questioned using the same open-ended questions used pre-intervention and themes were compared to evaluate staff beliefs, in general, and on the potential sustainability of their use of the routine SBI/AUDIT-C protocol in the clinic. This also included the delivery to staff of the final analysis and comparison of the total number of students seen at UHS, versus number of students actually screened with the AUDIT-C, along with the final total number of students given brief intervention throughout the four-week intervention.
The “Act” phase of this project included aspects of the final components of the post-intervention phase: the final group discussion where the post-intervention questions were discussed. This phase also included the DNP student’s evaluation and analysis of themes from the discussion regarding the staff beliefs of sustainability of the project.

**Data Analysis**

The qualitative data obtained from the pre-intervention, weekly, and post-intervention group meetings were recorded in the form of journal notes via pen and paper by the DNP student. These written statements/phrases were analyzed and compared for themes. Content qualitative data analysis was utilized to analyze and discover common themes in staff responses to the questions asked by the DNP student at each group meeting (Bhatia, 2018). Narrative qualitative data analysis was also utilized to analyze and uncover staff commonalties in response to their shared stories and experiences that they expressed in relation to the adoption of the SBI/AUDIT-C routine protocol (Bhatia, 2018). Themes based on these analyses were clustered based on commonalties. Additionally, feedback from staff was considered and the protocol was modified throughout the intervention phase to accommodate to the staffs’ needs.

The quantitative data included the total number of students seen at UHS compared to the number of students that were actually screened, and the number of students who were delivered brief intervention throughout the four-week intervention. This data was summarized using descriptive statistics involving weekly comparative analyses of the total number of students seen in UHS compared to the total number of students actually screened with the AUDIT-C in terms of the total numbers and percentages. The total number of students that received the brief intervention was also measured based on data from the daily checklists completed by the NP project mentor. The staff attendance to the weekly discussions was also tracked and summarized.
Results

The results were split into qualitative and quantitative findings. The qualitative data concerned the themes discovered at the meetings with the NPs and RN. The quantitative data concerned the numerical results that were reviewed chronologically on a weekly basis when obtaining the weekly checklists and considering staff attendance to the weekly group meetings.

Qualitative Findings

Major themes were detected based on staff commonalities in the pre-intervention, weekly, and post-intervention group meetings. Areas where modifications were necessary were also discussed. The data was analyzed weekly. See table 4 for a brief description of analyzed themes detected form the discussion meetings. The bolded-italicized words/phrases were the common themes reported by the staff and recorded by the DNP student.

| Table 4 |
|-----------------|-----------------------------------------------|
| **Major Themes Observed by the DNP Student in Pre/Post and Weekly Meetings with Staff** |
| Week in Chronological Order | Major Themes Reported by Staff |
| Pre-Intervention Meeting | **Apprehension** to discuss drinking with students; **uncertain** about adding the protocol to routine procedures; concerns to **discover the best approach** to performing the SBI; **could possibly be** sustainable for everyday practice |
| Week One Meeting | SBI/AUDIT-C protocol was **going well**; trying to determine the **best approach**; offered **modifications** |
| Week Two Meeting | SBI/AUDIT-C protocol was going **smoothly**; offered **modifications** |
| Week Three Meeting | SBI/AUDIT-C protocol was going **very well** and **becoming a more routine element to** |
everyday practice; useful approach break the ice on this topic; no modifications were offered

Week Four Meeting

Process went well in the beginning of the week; impressed regarding the student’s honesty and significantly concerned about the high amount of students who were screened that were identified high-risk and warranted brief intervention; no modifications were offered

Post-Intervention Meeting

Felt more comfortable educating students about drinking; will likely continue to use the SBI protocol to a varying degree; reported concerns about the large amount of high-risk scorers; major problem was consistently remembering to do it routinely; process is sustainable for everyday use and determining the best method to continue using this process

Above was the abbreviated version of the main themes observed by the DNP student from the below full summary of the answers to the questions asked at the pre-intervention, weekly, and post-intervention meetings. See following text of block quotes from weekly journals completed by the DNP student in chronological order for full report of the meetings conducted by the DNP student with UHS staff. The bolded-italicized words/phrases in the block quotes were the common themes reported by the staff.

Pre-intervention group question themes: September 30, 2019.

1. Do you feel comfortable educating to students about potential risks and consequences associated with high-risk drinking?

A common theme was the staff felt some apprehension in questioning students about their drinking, since it is not something they usually question during a routine office visit, unless a student first initiates the discussion or the student is seen for a concern related to possible alcohol abuse (e.g. head injury or musculoskeletal trauma while drinking).

2. How do you feel about adding the screening and brief intervention to routine processes?
They were uncertain at the time but were eager to get the process started. They stated they attempted adding similar routine processes in the past but struggled to remember to perform them and eventually stopped doing them due to lack of planned follow through. With the weekly meetings throughout the intervention, they were hopeful this could assist in greater compliance/follow through.

3. What problems do you foresee with implementing this protocol?

They did not believe that it would be too time consuming. Their major concern was discovering the best approach to administering the AUDIT-C so it could be provided to the majority of students that enter the clinic. It was decided that the best approach would be to have the clinic secretary hand out the AUDIT-C screening tool to the student upon checking in along with their problem form they fill out for whatever complaint they have for attending the clinic. It was determined as a group that it would be best to keep the brief intervention handouts in each room so they could provide a student with the packet immediately if their score warrants intervention.

4. Do you think this is sustainable for everyday routine practice?

They think this likely could be but they wanted to see how it went over the next four weeks. They were not sure about how students would react to be questioned on such a sensitive subject, but felt slightly more comfortable with this after practicing a nonthreatening, nonjudgmental approach during the teach-back session. It was also discussed that if a student did not feel comfortable participating, they could refuse.

**Week one meeting: October 4, 2019.**

1. How do you feel the routine screening and brief intervention protocol is going? Any issues, comments, concerns, or suggestions for modification?

They felt as if the protocol was going well. They are trying to determine the best approach and offered some modifications. They found it most feasible to complete the checklist at the end of the day. So it was decided to indicate the numerical score on the checklist and if the student received brief intervention and on the AUDIT-C sheet that each student filled out. They also indicated if the student was male or female by writing their gender on the student’s AUDIT-C sheet since the cut off point was different for each gender. Since they do tend to see several follow-up visits at the clinic it was also decided to indicate on the checklist if the student had already gotten the screening by writing, “repeat.”

**Week two meeting: October 11, 2019.**

1. How do you feel the routine screening and brief intervention protocol is going? Any issues, comments, concerns, or suggestions for modification?
They felt as if the protocol was going **smoothly**. They struggled to remember to complete the screen in the beginning of the week, but improved throughout the week. They began marking student charts with an “AC” and checkmark to keep track for reference of what students were already screened due to frequent student follow-up visits. They offered some **modifications** to improve the SBI/AUDIT-C protocol. About midweek they began writing a reminder to perform the AUDIT-C on the whiteboard in the clinic outside of the patient rooms where they usually indicate if they called the lab for a sample pick-up and they found this extra reminder helpful in remembering to screen each student seen.

**Week three meeting: October 18, 2019.**

1. How do you feel the routine screening and brief intervention protocol is going? Any issues, comments, concerns, or suggestions for modification?

They felt as if the protocol was going **very well** this week. They described the protocol as **becoming a more routine element** to everyday practice. They also found the SBI to be a helpful method to approach discussing sensitive topics. One of the NPs described an instance with a student she saw that week that fell and hit their head twice while drinking alcohol and found the SBI/AUDIT-C protocol to be a useful approach **break the ice** on this topic and to educate the student on safety and the risks of binge drinking. The staff was also impressed that the students were being so honest and were surprised by the amount of students that scored high enough to require brief intervention. No modifications were made to the protocol this week.

**Week four meeting: October 28, 2019.**

1. How do you feel the routine screening and brief intervention protocol is going? Any issues, comments, concerns, or suggestions for modification?

They felt as if the SBI/AUDIT-C protocol **went well in the beginning** of the week, but they struggled towards the end week because two regular staff members (a NP and the RN) were at a conference on Wednesday, Thursday, and Friday so per diem staff members filled in. These per diem staff members had a difficult time remembering to complete the AUDIT-C screening since it was a change to their normal routine. However, they were **impressed regarding the student’s honesty and significantly concerned about the high amount of students who were screened that were identified high-risk and warranted brief intervention** this week. No modifications were made to the protocol this week.

**Post-intervention group question themes: November 8, 2019.**

1. Do you feel comfortable educating to students about potential risks and consequences associated with high-risk drinking?
Following completion of the four-week routine SBI/AUDIT-C protocol staff reported feeling more comfortable educating students about potential risks and consequences associated with high-risk drinking. They emphasized the assistance of the SBI protocol as a discussion initiating tool on several instances where they discussed unsafe drinking practices with students.

2. How do you feel about adding the screening and brief intervention to routine processes?

The staff reported they will likely continue to use the SBI protocol to a varying degree, such as using this based on student specific compliant or if this could pertain to the student’s current issue for their visit. They were considering possibly doing an email follow-up with students that scored higher risk since they were concerned about the large amount of high-risk scorers. They also reported they may consider using a SBI process for other significant issues observed in the college-aged population, such as electronic cigarette use/vaping.

3. What problems do you foresee with implementing this protocol?

The major problem staff reported with implementing the protocol was consistently remembering to do it routinely. They stated this did become more natural with time, but was challenging at first. They discussed the possibility of electronic medical records (EMRs) in the near future and stated the technology in the EMR could be helpful as this could have the capability of a visual reminder or a “flag” to screen the student before signing out of their chart.

4. Do you think this is sustainable for everyday routine practice?

They believe this is sustainable for everyday use. They were in the process of determining the best method to continue using this protocol. They were also considering expanding a routine SBI protocol to use with other substances (e.g. tobacco) and possibly for psychological issues (e.g. depression or anxiety).

Quantitative Data

The quantitative data was analyzed in terms of total numbers and percentages of students seen for an office visit compared to those students providers remembered to screen and the total numbers and percentages of students screened who scored high-risk and who agreed to receive the brief education intervention. All of the staff involved attended the single pre-intervention, four weekly intervention, and single post-intervention discussion meetings, so that yielded a 100% attendance. See table 5 for analysis concerning the weekly results of total number of students seen compared to the total number of students screened, and the number/percentage of
students scoring *high-risk* who received brief intervention. The final row of the table reveals the total final numbers and the final percentages.

**Table 5**

*Screening Results Analysis*

<table>
<thead>
<tr>
<th>Week Number</th>
<th>Total Seen</th>
<th>Total Screened</th>
<th>Percentage Seen of Those Screened</th>
<th>Total Scoring high-risk Given</th>
<th>Percentage Screened and Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>80</td>
<td>60</td>
<td>75%</td>
<td>20</td>
<td>25%</td>
</tr>
<tr>
<td>Two</td>
<td>77</td>
<td>53</td>
<td>68.8%</td>
<td>11</td>
<td>14.3%</td>
</tr>
<tr>
<td>Three</td>
<td>70</td>
<td>66</td>
<td>94.3%</td>
<td>19</td>
<td>27.1%</td>
</tr>
<tr>
<td>Four</td>
<td>100</td>
<td>63</td>
<td>63%</td>
<td>24</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Total Results</strong></td>
<td><strong>327</strong></td>
<td><strong>242</strong></td>
<td><strong>74%</strong></td>
<td><strong>74</strong></td>
<td><strong>22.6%</strong></td>
</tr>
</tbody>
</table>

*BI=Brief Intervention  
**No students screened and found to be high-risk did not accept brief intervention.

**Interpretation/Discussion**

Lewin’s Change Theory played a pivotal role in accomplishing this project. Staff successfully implemented the SBI/AUDIT-C protocol while moving through the Unfreezing, Change, and Refreeze stages (Lewin, 1947). This success was largely due to the Unfreezing phase of Lewin’s Change theory, which concerned modifying UHS staff attitudes and clarifying potential misconceptions of the change. Time constraints can be a major barrier when implementing a new protocol. This barrier was managed by explaining to the staff that the screening process would only take approximately one minute, and then if brief intervention was deemed necessary based on screening results, this process would take no more than five minutes. The achievability of the intervention was further clarified when practicing the teach-back of the SBI/AUDIT-C protocol with staff.
The following narrative includes discussion relative to degree of accomplishment of the planned goals and level of attainment of expected outcomes. See above Goals, Objectives, and Expected Outcome section for tables outlining the pre-intervention, intervention, and post-intervention goals, objectives, expected outcomes, and results.

Frequent communication between the DNP student project leader and the on-site project mentor assisted in making this DNP QI project successful for arranging the weekly discussion meetings on days most conducive for the staff, thus meeting the goal/expected outcome of 100% staff attendance at the meetings throughout the pre-intervention, intervention, and post-intervention phases. The DNP student also made it appoint from the pre-intervention meeting/teach-back session to encourage honest communication and openness regarding staff’s opinions from the initiation of the project, which aided in modifying the protocol accordingly to meet their needs.

The content and narrative analysis of the qualitative data from the DNP student recorded staff comments from the meetings met the goals/expected outcomes of detecting themes concerning staff beliefs of SBI/AUDIT-C protocol sustainability. When comparing the themes detected in the pre and post-intervention group meetings, it was observed that the staff felt more comfortable discussing sensitive topics such as drinking behaviors over the of course the four-week intervention. The apprehension that they expressed in the beginning decreased each week of the intervention and they even found the screening useful in several specific student situations as a method to break the ice to initiate discussions of the risks of binge drinking and safer drinking practices. Themes observed at the weekly group meetings throughout the intervention revealed that the staff expressed the routine SBI/AUDIT-C protocol went well and smoothly.
Necessary modifications were completed on a weekly basis to meet the staff’s needs and to promote ease of use (see modifications mentioned weekly in the above Results section).

Their largest issue was **consistently remembering** to complete the screening, although this did become more of a **routine and natural element** of their daily practice each week as demonstrated from the first two weeks (week one: 75% and week two 68.8%) compared to week three (week three: 94.3%) thus supporting this becoming more routine practice. Additionally, they mentioned the possibility of adding an EMR in the near future, which could aid in consistency of completing a routine screening process with enhanced technological notification capabilities (e.g. flagging or highlighting). Most importantly, the staff articulated **sustainability for everyday use** of the routine SBI/AUDIT-C protocol and that they plan to continue to utilize the protocol in a **varying degree** thus supporting sustainability of the protocol or similar processes for future use.

The intervention and post-intervention phases goals/expected outcomes that 80% of the students seen in the UHS would be screened and that at least five of the **high-risk** scoring students would receive brief intervention were partially met. Although the goal of 80% of the students would be screened was not met, it was close at 74%. The goal of 80% may have been too ambitious, but this was chosen as an optimistic estimate since staff seemed so interested in doing this project, the practice was small, and because setting goals and expected outcomes for this metric in studies reviewed did not exist. The staff screening percentages improved greatly from the first two weeks to week three. While they did lose this consistency in week four (week four: 63%) this could be attributed to half of the staff members involved being away at a conference for several days and per diem staff who were unfamiliar with this change in practice filled in for them.
The most significant challenge during in this project was in attempting to create a “best practice” method to assist the staff to consistently remember to perform the AUDIT-C screening on each student seen in the clinic each day. This did become more of a routine process for them over time throughout the intervention. However, this was most apparent when one per diem NP and one per diem RN untrained on the SBI/AUDIT-C protocol filled in while the usual NP and RN were at a conference and they struggled to remember to routinely screen the students. To have prevented this from occurring, the DNP student could have tried to arrange the pre-intervention meeting/teach-back session so per diem staff members could have also attended or the DNP student could have arranged to train the staff members who were unfamiliar to the protocol the week before they needed to work.

Perhaps the most profoundly concerning serendipitous findings were the larger than expected number of students who agreed to being screened with the AUDIT-C and of those that scored high-risk, and number who actually agreed to the brief intervention. An anticipated barrier to the success of this protocol was originally thought to be that the students might not agree to be screened at all or of those participants who agreed, they might not or, would not be truly honest in answering their questions during the AUDIT-C screening as this is a particularly sensitive topic, and therefore might not identify truly on the scale as at high-risk. The assumption resulted from the evidence reviewed suggested student reports may be misleading due to negative stigmas associated with drinking and fears of reporting alcohol use (Amaro et al., 2010; DiFulvio et al., 2012; Kulesza et al., 2013; Winters et al., 2011). However, in this project more students than expected agreed to be screened, were more candid and frank in their responses than expected, and for those that scored high-risk, all actually accepted the SBI as well. Therefore, the modest goal/expected outcome that at least five of the students that scored
high-risk would receive brief intervention was exceedingly surpassed in that a total of 74 students scoring at high-risk received brief intervention, meaning that 22.6%, nearly one-third, of all of the students seen and screened scored high-risk and agreed to receive brief intervention.

Staff reported that they were impressed regarding the student’s honesty and they were significantly concerned regarding the large number of high-risk drinking scorers identified throughout the intervention. This serendipitous finding could likely be attributed to the practiced approach of the screening in the teach-back session with the use of a nonthreatening, nonjudgmental approach that provided feedback to the student participants in a respectful manner (U.S. NHTSA & The BACCHUS Network, 2007). At the start of each screening students were told that the screening was confidential and their protected health information would not be compromised in any way. These factors likely increased student comfort fostering enhanced honesty. Or perhaps the potential for honesty of the students was underestimated and this may indicate a genuine desire by students for someone to pay attention and to help them with their drinking behaviors. Most importantly, this finding supports that binge drinking/high-risk drinking behaviors continue to be a concern, and likely more of a concern than providers realize, and an area where further identification and intervention is warranted in the college-aged population.

Conclusion

There is a substantial gap in practice in UHS clinics in the U.S. in terms of lack of appropriate alcohol screening and SBI/education for their college-aged students as evidenced by binge drinking/high-risk drinking behaviors continuing to be a significant issue in this age group (Bridges & Sharma, 2015; CDC, 2018; NIAAA, 2018; Strohman et al., 2016). The routine use of reliable and valid screening tools, such as the AUDIT-C, can assist in early identification of
high-risk drinking students (Barry et al., 2015; Campbell & Maisto, 2018; Demartini & Carey, 2012; Hagman, 2015; Winters et al., 2011). Early SBI/education intervention regarding high-risk drinking behaviors can reduce the risk of development of short-term and possibly long-term negative consequences associated with alcohol abuse (Amaro et al., 2010; DiFulvio et al., 2012; Fachini et al., 2012; Kazemi et al., 2011; Kulesza et al., 2013; Terlecki et al., 2015).

University health services providers are in an ideal position to be on the front line in identifying students with high-risk drinking behaviors. The use of routine alcohol SBI with AUDIT-C for the college-aged population can be the first step for providers to be able to engage and assist students in modifying their high-risk drinking behaviors and in promoting safer drinking practices (Agley et al., 2013; Denering & Spear, 2012). Furthermore, UHS NPs and RNs are also in a position where they can refer students for additional therapy such as campus counseling or Substance Use Disorder (SUD) services if further intervention may be required. Additionally, this is a cost-effective method to reduce unnecessary costs to both students and colleges/universities associated with high-risk drinking since the only costs of this project, in addition to staff time spent, included costs of printer paper/ink for the AUDIT-C screening and educational handouts.

This QI project, directed at UHS staff, focused on them accepting and learning how to utilize a routine SBI protocol by screening all students seen in the clinic using the AUDIT-C and then based on their score, if deemed high-risk, to deliver a brief educational intervention. The NPs and RN that performed the routine SBI/AUDIT-C protocol were thoroughly educated regarding the process utilizing the evidence-based teach-back method.

Over the four weeks of the intervention, the DNP student managed, supervised, and monitored the process via weekly follow-up meetings with staff to check in on progress of the
routine SBI/AUDIT-C protocol and made modifications to the protocol as necessary to meet the staffs’ needs. Useful themes to evaluate sustainability were detected and supported the staff’s belief that this process should become a sustainable routine procedure for their practice.

The use of the routine SBI/AUDIT-C protocol was helpful for the staff since they used this to initiate conversation about unsafe drinking practices on several instances during student visits. The UHS staff members successfully moved along Lewin’s Change Theory’s stages of Unfreezing, Change, and are currently in the Refreezing stage determining the best method for continued use of the protocol. Similar routine SBI/AUDIT-C protocols can be of assistance in practices at-large as this project demonstrated that high-risk drinking was more of a concern than UHS providers anticipated and this helped initiate educational conversation on this topic.

Consistent routine use of SBI/AUDIT-C protocols can be efficient and cost-effective therapeutic behavioral and educational interventions for students with university administrators benefiting by reducing unnecessary risks and costs associated with their students’ high-risk drinking behaviors (PIP, 2014). The DNP student is willing and available for consultation with anyone considering replicating the project. This project will also be presented during the University of Massachusetts, Amherst, College of Nursing’s Scholarship event in the form of a poster presentation.
References


Kornburger, C., Gibson, C., Sadowski, S., Maletta, K., & Klingbeil, C. (2013). Using “teach back” to promote a safe transition from hospital to home: An evidence-based approach to


Appendix A
AUDIT-C

AUDIT-C

Please circle the answer that is correct for you.

<table>
<thead>
<tr>
<th>1. How often do you have a drink containing alcohol?</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never (0)</td>
<td>Monthly or less (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. How many drinks containing alcohol do you have on a typical day when you are drinking?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 or 2 (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. How often do you have six or more drinks on one occasion?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never (0)</td>
</tr>
</tbody>
</table>

TOTAL SCORE
Add the number for each question to get your total score.

Maximum score is 12. A score of $\geq 4$ identifies 86% of men who report drinking above recommended levels or meets criteria for alcohol use disorders. A score of $> 2$ identifies 84% of women who report hazardous drinking or alcohol use disorders.

Appendix B  
Lewin’s Change Theory

LEWIN’S CHANGE MODEL  
Lewin’s Three Stage Change Process – Practical Steps

Unfreeze
- Determines what needs to change
- Ensure there is strong support from management
- Create the need for change
- Manage and understand the doubts and concerns

change
- Communicate often
- Dispel rumors
- Empower action
- Involve people in the process

refreeze
- Anchor the changes into the culture
- Develop ways to sustain the change
- Provide support and training
- Celebrate successes

Retrieved from https://www.process.st/change-management-models/
Appendix C
AHRQ Teach Back Model

Appendix D
Plan Do Check Act (PDCA) Model

Retrieved from https://asq.org/quality-resources/pdca-cycle
Appendix E
WSU IRB Personnel Approval Email

Dear Ms. Chevalier,

This email is to inform you that your study "Routine Alcohol Screening & Brief Intervention in the College-Aged Population: A Quality Improvement Project for University Health Services Staff" 18/19-060 has been reviewed by the WSU IRB Chair and has been approved as exempt. You are able to move ahead with your study.

If you have any questions or need further documentation of this approval, please do not hesitate to contact me.

At the end of your study or at the end of the year please submit a brief report to the IRB that summarizes all procedures and interactions with human subjects during the year/study.

This review is good for one year. If the data gathering process goes beyond one year please seek additional review from the IRB.

Good luck with your research.

Prof. Shelley

Lynn Shelley, Ph.D.
Professor and Chair
Department of Psychology
Westfield State University
Westfield, MA 01085-1520
Appendix F
UMass IRB Personnel Approval Email

Human Subject Research Determination #19-131
1 message

Iris Jenkins <iris.jenkins@umass.edu>
To: Rebecca Chevalier <rchevalier@umass.edu>  
Cc: "jmart@nursing.umass.edu" <jmart@nursing.umass.edu>

Rebecca,

Thank you for submitting a determination form for your project entitled, "Routine Alcohol Screening and Brief Intervention in the College-Aged Population: A Quality Improvement Project for University Health Services Staff" (#19-131) to our office for review. We note that the project has already been reviewed by the Westfield State University IRB and approved as Exempt. We will accept the review conducted by Westfield State University and require nothing further. You may proceed with your study.

Please don't hesitate to contact me if you have any questions.

Thanks,

Iris

------------------------------------------------------------------------
Iris L. Jenkins, Ph.D.
Assistant Director
Research & Engagement/Human Research Protection Office (HRPO)
University of Massachusetts Amherst
Mass Venture Center
100 Venture Way, Suite 116
Hartford, MA 01037
Appendix G
Permission for Tool Kit Use from U.S. Department of Transportation, National Highway Traffic Safety Administration

From: NHTSA Service Desk norply@holosihq.com
Subject: Request #173850 Screening and Brief Intervention Tool Kit for College and University Campuses
Date: March 7, 2019 at 2:06 PM
To: Rebecca Chevalier beckychevalier@gmail.com

@Rebecca Chevalier

Good Day Ms. Chevalier,

Thank you for contacting the U.S. Department of Transportation's Vehicle Safety Hotline Information Center.

Based on your request, the information presented on this Web site and our publications is considered to be public domain and therefore has no copyright. While the information and may be distributed or copied in any format, please do not change the content or its meaning, and attribute the information to the correct source.

We hope that you find this information helpful. However, if you need additional information on our services please feel free to contact us at 1-888-327-4238.

Thank you,

NHTSA.dot.gov Response Team

Disclaimer: “This response is for information purposes only and does not constitute an official communication of the U.S. Department of Transportation. For an official response, please write U.S. Department of Transportation, National Highway Traffic Safety Administration, 1200 New Jersey Ave, SE, West Building, Washington, DC 20590.”
Appendix H
Educational Handouts from the U.S. Department of Transportation, National Highway Traffic Safety Administration & The BACCHUS Network Tool Kit

How Alcohol Affects Us

Almost all of us have heard that alcohol is a drug, but many of us don’t think of the act of drinking alcohol as putting a drug into our bodies. It is important for people to understand that alcohol impairs their judgment and their peripheral and central nervous system.

Alcohol also affects different people in different ways. Some of the characteristics that determine the way alcohol affects you include:
- Gender
- Mood
- Body Weight
- Type of Alcohol
- Full/Empty Stomach
- Speed of Consumption
- Use of Medication or Other Drugs

But for most people, the effects of alcohol are determined by simple volume.

How does impairment happen?
Let’s take a look.

When a person drinks alcohol, it can enter the bloodstream as soon as you begin to drink. The molecular structure of alcohol (chemically known as ethanol) is small, so the alcohol can be absorbed or transferred into the blood through the mouth, the walls of the stomach, and the small intestine.

The stomach actually has a relatively slow absorption rate; it is the small intestine that absorbs most of the alcohol. That’s why we want to keep the alcohol in the stomach as long as possible by eating food, which dilutes the alcohol and keeps it from entering the small intestine so quickly. Once alcohol gets into the bloodstream, it moves through the body and comes into contact with virtually every organ. However, some of the highest concentrations, and certainly the highest impact, are caused by the alcohol that reaches the brain.

We need to know that the body is quite efficient when it comes to dealing with alcohol. The liver is designed to metabolize the alcohol as we drink it. Enzymes break down the alcohol into harmless products and then it is excreted. However, the liver can only handle so much alcohol at a time. For a person of average weight and body type, the liver and small intestine can handle alcohol at a rate of about one drink per hour.

If a person drinks at a faster rate than one drink per hour, the alcohol simply stays in the body, waiting its turn to be metabolized. Since there is more alcohol in the body than can be metabolized, the result is increasing levels of intoxication.

Blood Alcohol Concentration (BAC) Level Information and Chart

Of course, it’s important to define what we mean by a drink. Normally we think in terms of:
- One beer;
- One mixed drink;
- One glass of wine; or
- One shot of alcohol.

But it is important to understand that “one drink” equals:
- A 12-ounce beer;
- A 5-ounce glass of wine; or
- 1.5 ounces of 80 proof (40% ethanol) distilled spirits.

In other words, a 20-ounce mug of beer is considered more than a drink; it’s actually closer to a drink and a half. And, if a person ordered a mixed drink at a bar or at a party, it may be possible that whoever mixed the drink may have put in two or three ounces of alcohol.

All of these factors will determine the amount of alcohol in your body, which is measured by your BAC, or blood alcohol concentration. This is measured in grams per deciliter (g/dL).
### How Alcohol Affects Us (continued)

The following chart contains some of the more common symptoms people exhibit at various BAC levels, and the probable effects on driving ability.

<table>
<thead>
<tr>
<th>Blood Alcohol Concentration (BAC)</th>
<th>Typical Effects</th>
<th>Predictable Effects on Driving</th>
</tr>
</thead>
<tbody>
<tr>
<td>.02 g/dL</td>
<td>Judgment impaired, Muscles relaxed, Slight body warmth, Mood altered</td>
<td>Brain’s ability to control eye muscles declines, Ability to perform two tasks at the same time declines</td>
</tr>
<tr>
<td>.05 g/dL</td>
<td>Behavior/emotions exaggerated, Small loss of muscle control (e.g., focusing your eyes), Judgment Impaired, Alertness lowered</td>
<td>Coordination reduces, Ability to track moving objects reduces, Ability to respond to emergency situations declines, Ability to steer vehicle declines</td>
</tr>
<tr>
<td>.08 g/dL</td>
<td>Muscle coordination diminished (e.g., balance, speech, vision, reaction time, and hearing), Increased difficulty in detecting danger, Judgment, self-control, reasoning, and memory impaired</td>
<td>Ability to concentrate reduces, Short-term memory loss, Ability to control speed reduces, Recognition of traffic signals and signs slows, Ability to perceive traffic hazards diminishes</td>
</tr>
<tr>
<td>.10 g/dL</td>
<td>Reaction time delayed, Speech slurred, coordination is poor, Thinking slowed</td>
<td>Ability to maintain lane position and braking reduces</td>
</tr>
<tr>
<td>.15 g/dL</td>
<td>Loss of normal muscle control, Vomiting may occur, Major loss of balance</td>
<td>Ability to process information from sight and hearing slows, Substantial impairment and loss of vehicle control</td>
</tr>
</tbody>
</table>

1. Information in this table shows the BAC level at which the effect usually is first observed, and has been gathered from a variety of sources including NHTSA, the National Institute on Alcohol Abuse and Alcoholism, the American Medical Association, the National Commission Against Drunk Driving, and www.webMD.com.

It’s nearly impossible for a person to gauge their BAC level without diagnostic testing. Before choosing to drink, individuals should understand the effects of alcohol and the associated risks of misuse.
Lower-Risk Drinking Strategies

- Designate a non-drinking driver before you go out or arrange for a sober ride home.
- Engage in activities that do not involve drinking.
- Arrange to safely stay at your party host’s home or nearby hotel.
- Drink no more than one drink per hour.
- Eat a full meal shortly before you start drinking.
- Drink non-alcoholic drinks between alcoholic drinks to slow the rate of consumption.
- Do not mix alcohol with other drugs, prescription, over-the-counter, or illegal.
- Do not let others pressure you to drink.
- Know your limits and stick to them.
- Avoid drinking games, doing shots, and guzzling drinks.
- Leave any drinking situation that is out of control before you become involved.
- Always wear your seat belt — it’s your best defense against impaired drivers.
**Drinking Guidelines**

**A Drink Defined**

<table>
<thead>
<tr>
<th>12 oz. of Beer or Cooler</th>
<th>8-9 oz. of Malt Liquor</th>
<th>5 oz. of Table Wine</th>
<th>3-4 oz. of Fortified Wine</th>
<th>2-3 oz. of Cordial, Liqueur, or Aperitif</th>
<th>1.5 oz. of Brandy (a single jigger)</th>
<th>1.5 oz. of Spirits</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 oz.</td>
<td>8.5 oz.</td>
<td>5 oz.</td>
<td>3.5 oz.</td>
<td>2.5 oz.</td>
<td>1.5 oz.</td>
<td>1.5 oz.</td>
</tr>
</tbody>
</table>

*Note:* People buy many of these drinks in containers that hold multiple standard drinks. For example, malt liquor is often sold in 16-, 22-, or 40 oz. containers that hold two and five standard drinks, and table wine is typically sold in 25 oz. (750 ml) bottles that hold five standard drinks.

**2005 USDA Guidelines on Alcoholic Beverages**

- Those who choose to drink alcoholic beverages should do so sensibly and in moderation—defined as the consumption of up to one drink per day for women and up to two drinks per day for men.
- Alcoholic beverages should not be consumed by some people, including those who cannot restrict their alcohol intake, women of childbearing age who may become pregnant, pregnant and lactating women, children and adolescents, individuals taking medications that can interact with alcohol, and those with specific medical conditions.
- Alcoholic beverages should be avoided by individuals engaging in activities that require attention, skill, or coordination, such as driving or operating machinery.

**NIAAA Guidelines for Moderate Drinking**

For most adults, moderate alcohol use is up to two drinks per day for men and one drink per day for women and older people—causes few if any problems.

However, certain people should not drink at all:

- Women who are pregnant or trying to become pregnant;
- People who plan to drive or engage in other activities that require alertness and skill;
- People taking certain over-the-counter or prescription medications;
- People with medical conditions that can be made worse by drinking;
- Recovering alcoholics; and
- People younger than 21.

Updated: March 2003 [http://www.niaaa.nih.gov/FAQs/General-English/FAQs13.htm](http://www.niaaa.nih.gov/FAQs/General-English/FAQs13.htm) (See also "Publications" Alcohol Alert No. 16: Moderate Drinking; Alcohol Alert No. 27: Alcohol-Medication Interactions; and Alcohol Alert No. 52: Alcohol and Transportation Safety)
Appendix I
Outline of Teach-Back Session

1. Information on routine alcohol SBI procedures (approximately 5 minutes)
   a. Education regarding current evidence concerning alcohol abuse in the college population
   b. Delivery of statistics regarding University alcohol abuse
   c. Education on the success supported in the evidence regarding routine SBI

2. Education on the routine alcohol SBI process that will be implemented (approximately 10 minutes)
   a. Utilizing a nonthreatening, nonjudgmental approach staff educated to ask all students who attend Health Services for any compliant the three questions of the AUDIT-C
      i. The student may refuse if they wish not to answer
   b. Score the AUDIT-C to determine if high-risk score
      i. Score of 4 for females
      ii. Score of 6 for males
   c. If high-risk deliver brief intervention
      i. Provide the student with the safer drinking practices educational handouts from the U.S. Department of Transportation, National Highway Traffic Safety Administration & The BACCHUS Network Tool Kit
   d. Following completion of the student visit fill-out checklist
      i. Indicate with a check mark that the student was seen and if the student received the AUDIT-C screening
      ii. Indicate with a check mark if the student received the AUDIT-C screening and brief intervention educational handouts based on their AUDIT-C score

3. Teach-back with the DNP student (approximately 5 minutes)
   a. Explain the process back to the DNP student
   b. Practice the process with the DNP student
Appendix J
Group Discussion Questions

**Pre and Post-Intervention Group Questions**

5. Do you feel comfortable educating to students about potential risks and consequences associated with high-risk drinking?

6. How do you feel about adding the screening and brief intervention to routine processes?

7. What problems do you foresee with implementing this protocol?

8. Do you think this is sustainable for everyday routine practice?

**Weekly Group Check-In Questions**

2. How do you feel the routine screening and brief intervention protocol is going? Any issues, comments, concerns, or suggestions for modification?
Appendix K
Daily Checklist for Comparing Students Screened

<table>
<thead>
<tr>
<th>Day #</th>
<th>Number of Student Seen</th>
<th>Given AUDIT-C Screening</th>
<th>Given AUDIT-C Screening and Brief Intervention</th>
<th>Did Not Get AUDIT-C Screening or Brief Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Checklist Instructions
- Please fill out daily by numbering each student that attends Health Services
- Then please indicate with a check mark if the student received the AUDIT-C screening
- Please indicate with a check mark if the student received the AUDIT-C screening and brief intervention based on their AUDIT-C score
  - Score of 4 for females
  - Score of 6 for males
- Please indicate with a check mark if the student was seen and did not receive the AUDIT-C