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Alcohol Screening, Brief Intervention, and Referral to Treatment Protocol in the Emergency Department

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DOCTOR OF NURSING PRACTICE (DNP) PROGRAM

A DNP PROJECT

TITLE: Alcohol Screening, Brief Intervention, and Referral to Treatment Protocol in the Emergency Department

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DATE: April 25, 2020

The George Washington University

Alcohol Screening, Brief Intervention, and Referral to Treatment Protocol in the

Emergency Department

A Project Presented to the Faculty of the School of Nursing

The George Washington University

In partial fulfillment of the requirements

For the Degree of Doctor of Nursing Practice

By

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Abstract

Background: The impact that results from inappropriate alcohol consumption poses challenges to public health. The rate of alcohol-related visits to the Emergency Department (ED) has increased, which has resulted in an increased annual cost of alcohol-related visits. ED serves as a common portal of entry into the healthcare system for many patients and offers a unique opportunity to impact drinking behaviors.

Objectives: To increase the number of alcohol screenings and brief interventions when indicated to adult patients who visit the ED and increase ED nurses' knowledge regarding alcohol misuse and indications for brief interventions.

Methods: An educational module was delivered through the hospital's E-learning management system. Ten multiple-choice pretest/post-test questions were administered to the ED nurses. A consecutive sample of ED patients, 18 years and older, over a 3-month period was used. A 3 single-item screening questions were programmed into the ED electronic health record to detect alcohol use disorder. Patients with positive screening, a score above 7 were flagged to alert peer recovery coaches to provide brief intervention and referral to treatment.

Results: Seventy-nine nurses, representing 91% of the total number of ED nurses, completed the educational module. A dependent sample t-test indicated a statistically significant gain in nurse's knowledge ($t (78) = 15.91$, $p < .01$). The screening was conducted with 11,897 of 13,529 eligible patients, an 87% screening rate.

Conclusion: The findings from this study were encouraging to support the effect of an educational module on ED nurses' knowledge, and that an SBIRT procedure can impact alcohol use disorder through early identification.

Keywords: alcohol screening, brief intervention, and referral to treatment, emergency department, nurses, clinicians, SBIRT

Introduction

Clinician knowledge of a patients' unhealthy alcohol use serves as an opportunity for early intervention thereby reducing alcohol misuse, health care use, the trajectory to further illness, and injury (Johnson, Woychek, Vaughan, & Seale, 2013). In 2003, the Substance Abuse and Mental Health Services Administration (SAMHSA) launched the screening, brief intervention, and referral to treatment (SBIRT) program to help identify, reduce, and prevent problematic alcohol and illicit drug use, and dependence (Kaiser & Karuntzos, 2015). SBIRT is a set of services designed to identify an individual's level of risk from alcohol or other substance use that incorporates brief intervention and a referral component (Aseltine, 2010). SBIRT uses validated screens such as the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) to assess alcohol use and risk. Studies on SBIRT conducted in Emergency Departments (EDs) have shown positive effects in decreasing alcohol consumption, reducing driving after drinking, reducing injury recurrence, and decreasing trauma recidivism (Johnson et al., 2013). Despite the substantial evidence of SBIRT services being efficacious and a cost-effective modality for reducing harmful health behaviors related to alcohol use in healthcare settings, ED clinicians infrequently use these services due to lack of knowledge, skills, and time to engage patients (Aseltine, 2010). A potential means of increasing clinicians screening for alcohol use and providing brief intervention in EDs is to integrate an SBIRT protocol in electronic health records (EHRs) to identify patients who report at-risk alcohol use.

Background and Significance

Alcohol emergency department visits co-occur with injury-related presenting conditions, which include falls, motor vehicle collisions, poisonings, and both intentional and unintentional injuries (Knopf, 2015). Alcohol is the single most significant contributor to injury in the United States with approximately 88, 000 deaths annually with an attributed economic burden of $224,000 in personal and societal costs (Bacidore, Letizia, & Mitchel, 2017; Désy, Howard, Perhats, & Li, 2010). Based on research, increased risk for alcohol-related problems has been associated with men who drink more than 4 standard drinks in a day (or > 14 per week) and women including all adults aged 65 years or older who drink more than 3 standard drinks in a day (or > 7 per week) (Désy et al., 2010). Binge drinking is a pattern of drinking alcohol that brings blood alcohol concentration levels to 0.08-gram percent or above in a short period. For the typical adult, this corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours (Désy et al., 2010). For one adult who is alcohol dependent, there are more than 6 other adults who are not dependent and are at risk for problems due to their drinking habits (Désy et al., 2010). Annually, about 115 million visits are made to hospital EDs and adults between the ages of 20 to 50 years account for more than 30% of all ED visits in a given year more than other age groups (Désy et al., 2010; Sommers et al., 2013). Clinicians in EDs and trauma centers witness firsthand tragic events resulting from alcohol misuse and abuse that have left long-term consequences for victims, families, friends, and society (Désy et al., 2010). Many individuals that misuse and abuse alcohol are not screened and those who have been found in need of treatment do not receive it (Bacidore et al., 2017). Alcohol SBIRT aims at reducing alcohol use, related injuries, illnesses, and deaths by early identification and intervention of individuals with harmful drinking habits.

Problem Statement

The traumatic injury that results from inappropriate alcohol consumption poses challenges to public health. In the United States, the rate of alcohol-related visits to EDs increased by 47% between 2006 and 2014, which translates to an average annual increase of 210,000 alcohol-related ED visits (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2018). Also, the annual costs of alcohol-related visits increased from $4.1 billion to $15.3 billion within this time frame (Mitchell et al., 2017). An estimated 40% of ED visits are due to trauma, and between 40% and 50% of these visits are alcohol-related, with most of these patients being the at-risk non-dependent drinking individuals who represent 23% of the U. S. general adult population (Agerwala & McCance-Katz, 2012). At-risk drinking behavior increases the utilization of the ED and the likelihood to be readmitted to trauma centers because of injury recurrence (Emergency Nurses Association [ENA], 2008).

The ED serves as a common portal of entry into the healthcare system for many patients and offers a unique opportunity to impact drinking behavior. The ED visit also provides a potential "teachable moment" in influencing hazardous drinking behavior as patients may have perceptions of vulnerability about their health and, therefore may be particularly receptive to screening and counseling (ENA, 2008). The American College of Surgeons Committee on Trauma (ACS-COT) passed a resolution in 2005 recommending all level I and II trauma centers be equipped with mechanisms for screening injured patients for alcohol-use disorder and providing brief intervention when necessary (Agerwala & McCance-Katz, 2012). Despite the full endorsement of screening and triage of underlying alcohol use behaviors, the actual implementation is hampered by several barriers such as time constraints of the ED care setting, and ED staff's views on behavioral intervention (Agerwala & McCance-Katz, 2012). Also,

despite the success of SBIRT implementation in research settings, there is still a need for the adoption of SBIRT widely into routine emergency care.

Needs Assessment

Assessment of barriers and facilitators, as well as the organizational culture and readiness for this EBP initiative, is very crucial for success. For the SBIRT protocol to become a gold standard of practice in the ED, a SWOT analysis was performed to identify the strength, weaknesses, opportunities, and threats to the successful implementation of this DNP project. The results are presented in Appendix A. During the SWOT assessment, some ED professionals identified organizational barriers to include time constraints in the ED setting and the concerns of privacy and confidentiality due to the lack of private space to conduct behavioral interventions (BI). Some facilitating conditions identified included the presence of administrative support and leadership that values and models EBP such as SBIRT, dedicated talented and engaged workforce. Although social workers are already overburdened, the department of social work were onboard with the implementation of this project as they are specially trained to provide motivational interviewing and BI, thus alleviates the time constraints on ED nurses. The ED had two licensed social workers available 24/7. Also, the hospital had an infrastructure that provided tools to enhance the implementation of the SBIRT protocol such as an already built-in AUDIT-C tool in the electronic health record. Dedicated individual SBIRT champions are important to ensure continued protocol compliance and ongoing supervision. The director of the ED and the director of the trauma center believed strongly in this EBP initiative and were willing to take steps to facilitate the SBIRT protocol in their daily ED practice.

Clinical Questions

1. In adult patients ages 18 and older in the ED, how does the implementation of SBIRT

   protocol compared to usual care affect the rate of alcohol screening and brief

   interventions within 3 months?

2. In nurses working in the ED, how does an education program of SBIRT protocol,

   compared to baseline, affect nurse's knowledge regarding the problem of unhealthy

   alcohol consumption and the overarching purpose of SBIRT in the ED?

Aims and Objectives

SBIRT is an evidence-based strategy in injury prevention measures in reducing alcohol-

related recidivism resulting from risky alcohol use. Efforts to reduce the risk of injuries or their

recurrence are likely to be unsuccessful if the underlying risk factors are not treated (ENA,

2008). The overall purpose of this project was to develop, implement, and evaluate an alcohol

SBIRT protocol integrated into the routine care of all adult patients by the interprofessional team

of ED physicians, nurses and peer recovery coaches in the ED. The screening test for alcohol use

disorders, AUDIT-C was the selected screening tool for this project. The tool is brief and

appropriate for the ED setting as it provided a three-question screen that reliably identifies

patients that were hazardous drinkers or have active alcohol use disorders. A score of 4 or more

in men and 3 or more in women is considered positive. Patients with a positive screen were

referred to Peer Recovery Coaches (PRCs) in the ED for BI and referral to treatment. A PRC is

trained and licensed to bring the lived experience of recovery in assisting others to initiate and

maintain recovery, as well as help enhance the quality of personal and family life in long-term

(SAMHSA, 2017).

The project aims were to increase the number of alcohol screenings and brief interventions when indicated to adult patients who visit the ED. A goal of the project was to increase the knowledge of the ED nurses regarding alcohol misuse and indications for brief interventions. The ED where this project was implemented lacked a formal screening, and by incorporating such a program into routine care, the expectation was that the number of patients screened and identified for alcohol misuse, and the number of appropriate interventions will increase.

The objectives for this quality improvement project were to:

1. Increase identification, the rate of screening, and brief interventions for alcohol misuse among adult patients who visited the ED.

2. Increase knowledge about alcohol use disorders, the implications of hazardous drinking behaviors, and the indication for brief intervention among the ED clinicians.

Review of Literature

The review of literature focused on the use of SBIRT in the ED setting. Articles that were published between 2010 and 2019 were included, and the articles had to be written in English with research conducted in the United States. A total of 12 articles met the inclusion criteria, with 10 articles focused on the implementation of SBIRT by nurses in the ED, and 2 articles focused on the effectiveness of SBIRT in the ED.

The articles used several types of study designs, including one literature review, two quasi-experimental, three randomized controlled trials, one descriptive design, one prospective cohort, one mixed method, one longitudinal observational, one quality improvement and one program evaluation. There were 3 sources of evidence for Level I, 2 sources for level II, 3 sources for Level III, and 4 sources for Level V. Of the 12 included studies, 8 rated as good in

quality, and 4 rated as high in quality. All Level I studies (3 articles) and one Level V study rated high in quality while the remaining 8 studies rated good in quality.

Findings from the literature review were mostly positive indicating the use of SBIRT effectively reduced negative drinking behaviors or alcohol consumption and alcohol-related consequences in persons who were screened. Consistent with the aims of this project to increase the number of alcohol screenings and brief interventions when indicated to adult injured patients who visit the ED and to evaluate the rate of trauma recidivism, 9 studies suggested a decreased alcohol consumption upon follow-up with patients after SBIRT implementation. Reduction in alcohol consumption was the most common outcome assessed by studies in this review. Studies varied about the length of follow-up with most participants being assessed at baseline, 1.5, 3, 6, and 12 months.

Findings that suggested a decreased alcohol consumption or reduced negative drinking behaviors and alcohol-related consequences upon follow-up from Level 1 pieces of evidence indicated that at 1.5 months, the intervention group (IG) showed greater reductions in alcohol consumption and fewer patients continuing with at-risk alcohol-use (27.8% vs. 48.1%; p=0.01) (Bruguera et al., 2018). Also, BI delivered by computer and therapist significantly reduced alcohol consumption at 3 months, and consequences at 3- and 12-months with BI by therapist reducing alcohol-related injury at 12 months (Knopf, 2015). Additionaly, alcohol consumption and Self-reported risky driving behaviors were significantly lower in the BI group compared with the contact control group through 6 or 9 months but not at 12 months (Sommers et al., 2013). For Level II findings, at 3 months those that received SBIRT reported significantly fewer drinks per week than the control group although, at 6 and 12 months, differences were no longer significant (Aseltine, 2010). Also, alcohol consumption decreased by 70% in the IG compared to

20% in the usual care group, and fewer patients from IG (20%) had recurring ED visits compared to usual care group (31%) (Désy et al., 2010). Additionally, a Level III study finding indicated that 47% of the study sample of at-risk patients were no longer drinking over the NIAAA recommended limits (Vaca, Winn, Annerson, Kim, & Arcila, 2011).

Findings from Level V evidence that focused on nurse implementation were predominantly positive as they indicated emergency nurses were able to implement SBIRT effectively in the ED setting though there were challenges. In one study, 518 Patients (21%) were screened with 40 patients (8%) screening positive, 18 (45%) were admitted and received inpatient SBIRT while 22 received brief intervention and referral in the ED (Bacidore et al., 2017). Also, post-hoc tests revealed scores of nurses' SBIRT knowledge increased significantly from pre-training to post-training (p<0.01, 95% CI -2.87, -1.67). There was a small but non-significant difference from post-training to 30-day follow-up, indicating a sustained effect (Mitchell et al., 2017). In implementing SBIRT in the ED setting, providers rated pre-selected implementation facilitators higher than barriers. Content analysis of providers interview responses revealed that intra- and inter-organizational communication and collaboration enhances provider buy-in and model acceptance (Vendetti et al., 2017). Therefore, the authors Kaiser and Karuntzos (2016) recommended that all existing medical staff should be made aware of the SBIRT program and the 4 different phases within the SBIRT workflow process: intake, assessment, treatment, and discharge.

Based on the review of the literature, the overall strength of the evidence is good and consistent, suggesting that SBIRT has promise in many medical settings in facilitating early identification of risky substance use. The subjects in the studies are similar to the patients at the ED where this project was implemented. Thus, the implementation of SBIRT is feasible in the

ED practice setting that is under study. A SBIRT pilot change in the ED setting was compatible with the hospital's mission, goals, objectives, and priorities.

EBP Translation Model

The Iowa Model of Evidence-based Practice to Promote Quality did guide the implementation of this SBIRT protocol for alcohol use in the ED (Iowa Model Collaborative, 2017). The Iowa Model was selected because it offers an institutional EBP effort requiring decision making by an organization, easy to follow, and has been used in many health care organizations. The Iowa model provides seven conceptual steps to guide implementation and ensure that changes are sustainable to achieve quality outcomes in organizations.

Triggering issue/opportunity

Traumatic injury related to alcohol and illicit drug use remains a significant public health challenge. An alcohol-related illness or injury that requires emergency or trauma care can produce a crisis that helps motivate a person to change his or her drinking behavior thus, creating the optimal time for emergency personnel to intervene by providing an alcohol SBIRT when these patient populations enter the emergency medical care system. Admission to trauma centers offers a potential "teachable moment" because patients may have perceptions of vulnerability about their health and therefore, may be particularly receptive to screening and counseling (ENA, 2008). Additionally, the American College of Surgeons (ACS) passed a resolution in 2005 requiring level I trauma centers in the U. S. to have a mechanism for screening injured patients for alcohol-use disorder and providing intervention to patients who screen positive (Agerwala & McCance-Katz, 2012). Thus, the lack of a standardized alcohol SBIRT protocol or guidelines places the ED at risk for not meeting the ACS standards.

The question or purpose

The purpose of this project was to develop, implement, and evaluate an alcohol SBIRT protocol integrated into the routine care of all adult patients 18 years and older presenting to the ED.

Forming a team

The SBIRT project team was an interdisciplinary team and the topic selected had support from the team and fitted well with organizational priorities. The primary investigator (PI) reviewed the evidence and developed a protocol, then met with the team before implementation to review and make any necessary adjustments to the protocol. The team included:

- The DNP student

- The Director of Nursing of the ED

- The Director of Trauma Services

- The Director of Professional Development & Education

- The Clinical Educator of the ED

- ED Physicians

- ED Nurses

- Peer Recovery Coaches

Assemble, Appraise and Synthesize Body of Evidence

After a brainstorming session with a librarian to identify available sources and key terms to guide the search for and retrieval of evidence, a review of the literature was performed to evaluate existing evidence on SBIRT in identifying and managing individuals whose drinking behaviors place

them at risk for developing adverse health outcomes from various databases. The strength of

evidence for the body of knowledge was assessed using the Johns Hopkins Nursing Evidence-

Based Practice Evidence Level and Quality Guide (Dearholt & Dang, 2018).

Design and Pilot the Practice Change

The members of the SBIRT team met at least 3 times from May through September to

plan project implementation, discuss project logistics and decided the best modification for the

current ED workflow as the SBIRT process will be incorporated. The modifications made

created a standardized workflow within the ED. The PI developed educational materials that was

used as the new standard of training for nurses in the ED. ED staff were informally interviewed

before designing the workflow, and the materials or SBIRT packet to determine potential barriers

to the change. The SBIRT packet was comprised of a flow chart, an educational module, a

knowledge test, and laminated copies of standardized drink card and the AUDIT-C tool. The

flow chart mapped out the steps (including documentation) to be completed for a successful

SBIRT process in the ED. The SBIRT packet was available to facilitate the staff's understanding

of the process and the rationale behind each step of the process. Training regarding the

implementation of this project or its workflow was done in-person and through a computer-based

method. Data was gathered electronically to determine if the outcome metrics were being met.

These data were shared monthly with all the ED staff in their dashboard report. Additionally, the

PI created surveys and analyze the collected data regarding the staff's familiarity and comfort

with the newly standardized SBIRT process.

Integrate and Sustain the Practice Change

It was highly recommended that ongoing evaluation with information be incorporated

into this quality improvement project to promote integration. Also, monitoring and reporting

trends in outcome data with actionable feedback to ED clinicians for the sustainability of this

practice change. Also, the organization will continue to support PRCs by providing training in

developing motivational interviewing skills as these are the basis for the BI. Additionally,

protocol revisions will be shared with ED clinicians that are based on feedbacks from ED

clinicians, patient's, or family members.

Disseminate results

The result of this project was disseminated through professional presentations to the

practice site, local, regional, and national conferences, or meetings. Other ED as well as other

healthcare settings may use our findings as a guideline to implement a similar protocol in their

settings.

Methodology

Project Design

This is a quality improvement project of a convenience sample of ED patients screening

at risk for alcohol use problems by a comprehensive SBIRT program integrated into the ED. The

project also measured the effects of an SBIRT educational module regarding nurses' knowledge

on the problem of unhealthy alcohol consumption and the overarching purpose of SBIRT in the

ED using a pre/post-test study design.

Setting

The study was undertaken in the ED of a tertiary care hospital based in the Washington,

D.C metropolitan area. The tertiary hospital is jointly owned and operated by a partnership. The

tertiary hospital has 371 beds and houses a Level I trauma center. The ED has an annual census

of more than 79,000 visits.

Study Population

All patients 18yrs and older presenting to the ED were potentially eligible for the study. Those equal to or less than 17, nonverbal, critically ill, intoxication, police custody, patient refused, acute psychiatric illness, suspected overdose (opioid), suspected overdose (non-opioid, marijuana use only, provide request were excluded. Participants for this project also included all ED nurses and PRCs as they had an essential role in launching the SBIRT protocol. All ED nurses, approximately 87, were expected to participate in the protocol implementation.

Subject Recruitment

All patients meeting the inclusion criteria presenting to the ED and consenting for treatment were recruited for the study. Recruitment of nurses and PRCs were accomplished through emails, staff meetings, unit huddles, and E-learning assignment notification. Assuming a moderate effect size, a minimum of 31 nurses as well as a minimum of 31 patients were required based on statistical power analysis with a power of 0.8, alpha of 0.05. Although a minimum of 31 patients is required, retrospective chart review of medical records of all participants meeting the inclusion criteria was evaluated to collect data. Also, as a quality improvement project, all eligible participants as well as the entire population of ED nurses are expected to participate.

Risks/Harms, Subject Costs and Compensation

The alcohol SBIRT protocol offers no known significant risk. The administration of a psychometrically sound screening tool through an EHR poses no danger to the patient. Implementation of the protocol was consistent with evidence-based guidelines and recommendations. The screening and interventions were incorporated into the patient ED visits and did not interfere with the flow and the patient encounter. There were no subject costs and compensation. The protocol was patient-centered, timely, and efficient. The expectation was for all individuals of the target population be offered alcohol screening and BI, and no exclusions

was based on race, gender, socioeconomic level, and insurance status. Hence, this quality
improvement was equitable.

Study Interventions

This project involved two evidence-based interventions, the development of an
educational module administered to all ED nurses, and the integration of a standardized alcohol
SBIRT protocol into the EHR. The integration of alcohol and drug screening questions into the
EHR is part of a larger effort in implementing a comprehensive SBIRT program into the ED. In
addition to electronic screening, the project aimed to include continuous coverage by PRCs who
will provide appropriate SBIRT services to patients screening positive.

Alcohol SBIRT Protocol

The intake phase of the SBIRT workflow was initiated with the registration of the patient
meeting the inclusion criteria into the ED. The patient received screening with the AUDIT-C tool
verbally administered by the ED nurse (Assessment phase). The screening was automatically
scored within the EHR. Patients with negative screening received usual care whereas, for
patients with positive screening, the ED EHR was programmed to inform the PRCs when
patients had a screening score above 7. A pad and pencil icon was populated on the Electronic
tracking screens located throughout the ED that listed relevant patient information such as
location, length of time in the ED and pending orders that alerted PRCs of the patient's that
needed BI and referral to treatment (Treatment phase). Appendix C presents the phases of the
alcohol SBIRT protocol in the ED. In assisting staff in adhering to the alcohol SBIRT protocol,
printed copies of the AUDIT-C screening tool steps and process were placed at nursing stations,
and the ED lounge.

Educational Module Components

The educational module for this project was developed in accordance with the ENA

SBIRT educational program for nurses in the ED (ENA, 2008). The objectives for the

educational module included (1) the scope of the problem of unhealthy alcohol use; (2) the

overarching purpose and primary goal of SBIRT; (3) summaries of supporting evidence for

reducing alcohol-related harm; and (4) documentation in EHR. The module was delivered by

computer-based methodology through the hospital's E-learning management system with a

mandatory completion by all ED nurses. The nurses had 1 month to complete the E-learning

module, which was accessible 24/7. Daily reminders were made to the ED nurses to complete the

module during change of shift report. All newly hired nurses were automatically assigned to be

enrolled in the E-learning module. Ten multiple-choice pretest/post-test questions were

administered to the ED nurses based on the content of the educational module. The questions

were adapted from Bacidore and colleagues (2017). The content validity of this tool was

established through a calculated I-CVI of 1.00 for each question and S-CVI/Ave of 1.00. Internal

consistency of the test was established through a solid Cronbach's α coefficient of 0.95. Each

question had one correct answer and three distractors with a total score based on the number of

correct responses (Appendix F).

Measures

The primary outcome measures of interest were the rate of screening, BI, and nurse's

knowledge of unhealthy alcohol use and the overarching purpose of SBIRT in the ED. Patient

demographics (age, gender, and race), and marital status were collected. When evaluating the

effects of the alcohol SBIRT protocol implementation, the primary outcome measures were

compared between baseline and follow-up. Chart audits were conducted to review all ED visits

meeting the inclusion criteria 3 months after the alcohol SBIRT implementation. Each chart was evaluated for documentation of any alcohol screening or intervention that were conducted.

The total number of patients 18 years and older presenting to the ED; the total number of patients assessed for SBIRT screening; AUDIT screens and risk stratification, and the total number of positively screened patients that received BI and referral were collected. Screening rates were calculated by dividing the number of patients who received the AUDIT-C screen by the total number of patients 18 years and older presenting to the ED. Patients with an AUDIT-C score of 4 or more in men and 3 or more in women were considered positive.

A survey of self-report measures of current clinical behaviors about alcohol use disorders were provided to the ED nurses. Each item asks nurses how often they performed an indicated behavior with responses ranging from (1 = Always) to (5 = Never) (Table 3.). The self-report measures was adapted from the Agley and colleagues (2018) modifications of the Hettema and colleagues (2012) performance feedback tool. A calculated internal reliability for this adapted tool was established demonstrating good or excellent reliability (physicians: ask, $\alpha = 0.897$; intervene, $\alpha = 0.839$; screen, $\alpha = 0.843$; nurses: ask, $\alpha = 0.948$; intervene, $\alpha = 0.901$; screen, $\alpha = 0.864$).

Project Timeline

The project timeline was 3 months with a go-live date commencing October 2019. The implementation of this quality improvement initiative, data collection, and data analysis occurred from October 2019 through February 2020. Before the initiation of the delivery of SBIRT services, the AUDIT-C tool was programmed into the ED EHR to detect at-risk alcohol use (Appendix B). Integration and testing of the AUDIT-C tool and educational module occurred from May 2019 through September 2019. During this period, the SBIRT implementation team

met to discuss program logistics. Formal training for nurses commenced after IRB approval before the project go-live date. A week before the go-live date (October 2019), a member of the SBIRT administrative team conducted 5-minute in-service sessions with nurses during nursing report sessions (6:45 AM and 6:45 PM) to reach all nurses. During these sessions, SBIRT was briefly introduced, demonstration of the location of the screening tool in the EHR, and the importance of using the AUDIT-C tool was stressed. Evaluation of project outcomes occurred from February 2020 through March 2020 with the dissemination of project results to the practice site, local, regional, and national opportunities occurring from March 2020 through May 2020.

Resources Needed

The initial step of the project required an information technologist (IT) specialist. The hospital already had an AUDIT tool embedded in the EHR for admitted patients, but an IT specialist was needed to design and implement an EHR revision to include SBIRT in the ED. IT designed the AUDIT screening tool to automate scoring/risk stratification, an alert notification icon for positive screens and documentation section for BI and referral to treatment. Also, the educational module for this project was created using an authoring tool that was integrated into the hospital E-learning management system with the help of an IT specialist. REDCap, a mature, secure web application for building and managing online surveys and databases was used to design and manage pre-implementation surveys. SPSS software was used to analyze data from chart audits.

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Results

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Nurses' self-report measures

Given the importance of formal screening to identify individuals with problematic alcohol use, so that appropriate intervention is provided, a survey of self-report measures on the
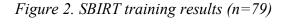
clinical use of SBIRT-related skills including screening among Emergency Department (ED)

Nurses at the George Washington University Hospital was sent out electronically with a closeout

date. The survey response rate was 24% (N = 22) relative to 93 nurses participating in the QI

initiative. Analyses provided data on the frequency of behavioral performance of ED nurses om

eight subscales. On the screening tool subscale, nurse's report use of a formal screening tool for

alcohol as always 18.2% (N = 4), often 40.9% (N = 9), sometimes 22.7% (N = 5), rarely 4.5%

(N = 1), and never 13.6% (N = 3). On whether drink subscale, nurse's report asking patients

whether they drink alcohol always 100% (N = 22). When looking at amount drink subscale,

nurse's report asking patients about the amount of alcohol drank always 45.5% (N = 10), often

36.4.8% (N = 8), sometimes 9.1% (N = 2), and never 9.1% (N = 2). In looking at nurses' actions

taken to relate to the patient's health to alcohol problem subscale, 9.1% (N = 2) always ask,

22.7% (N = 5) often ask, 40.9% (N = 9) sometimes ask, and 18.2% (N = 4) rarely ask , and 9.1%

(N = 2) never ask. Also, in intervening by advising patients on safe drinking limits nurse's

always 22.7% (N = 5), often 27.3% (N = 6), sometimes 18.2% (N = 4), rarely 13.6% (N = 3),

and never18.2% (N = 4). In addition, on the counseling subscale nurse's always 22.7% (N = 5),

often 50% (N = 11), sometimes 4.5% (N = 1), and 22.7% (N = 5) never counsel patients about

their alcohol problems. On the treatment subscale, nurse's always, 4.5% (N = 1), often 40.9% (N

= 9), sometimes 27.3% (N = 6), rarely 22.7% (N = 5), and never 4.5% (N =1) discuss treatment

options with patients. Lastly, nurse's always 13.6% (N = 3), often 40.9% (N = 9), sometime

9.1% (N = 2), rarely 31.8% (N = 7), and never 4.5% (N = 1) refer patients for treatment (see

Table 3).

Table 3. Number and (percent) of nurses' self-report measures on current clinical behaviors

Subscales	Always	Often	Sometimes	Rarely	Never
Screening tool	4 (18.2)	9 (40.9)	5 (22.7)	1 (4.5)	3 (13.6)
Whether drink	22 (100)				
Amount drink	10 (45.5)	8 (36.4)	2 (9.1)		2 (9.1)
Alcohol problem	2 (9.1)	5 (22.7)	9 (40.9)	4 (18.2)	2 (9.1)
Drinking limits	5 (22.7)	6 (27.3)	4 (18.2)	3 (13.6)	4 (18.2)
Counseling	5 (22.7)	11 (50.0)	1 (4.5)	5 (22.7)	
Discuss treatment	1 (4.5)	9 (40.9)	6 (27.3)	5 (22.7)	1 (4.5)
Treatment referral	3 (13.6)	9 (40.9)	2 (9.1)	7 (31.8)	1 (4.5)

Educational Module

This quality improvement project measured the effects of an SBIRT educational module regarding ED nurse's knowledge of SBIRT. Seventy-nine nurses, representing 91% of the total number of ED nurses, completed the educational module. A total of eight nurses were delinquent. The pretest scores of all participants ranged from 30% to 100% (M = 66.33; SD = 16.03). Post-test scores ranged from 90% to 100% (M = 95.4; SD = 5.01). Results of the SBIRT training module are shown graphically in Fig. 2. A dependent sample t-test was performed to assess the differences between the pretest and post-test scores with the results showing a statically significant gain in nurse's knowledge (t (78) = 15.91, p < .01) (See Table 4).
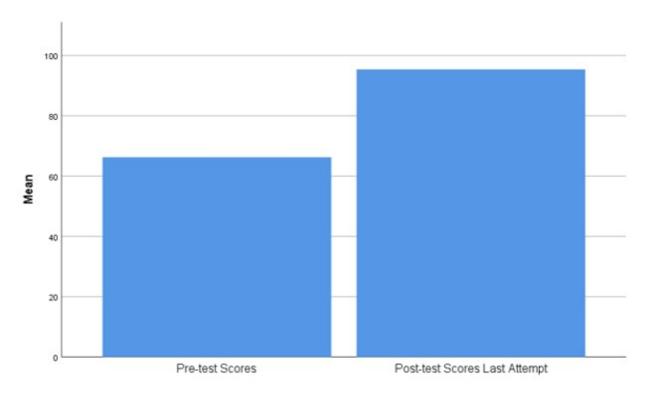
Figure 2. SBIRT training results (n=79)

Table 4. Pre- and Post-test training scores of nurses' SBIRT Knowledge

Outcome	Pretest		Posttest		n	95% CI for Mean Difference	r	t	df
	M	SD	M	SD					
	66.33	16.027	95.44	5.01	79	32.76 , 25.47	.11	15.91	78

*p < .05

SBIRT Protocol

A total of 18,184 patients 18 years and older presented to the ED during the 3-month period reported here (November 2019 to February 2020) with a mean age of 46.6 years. Of these, 46% were males and 54% were females. The characteristics of these patients are shown in Table 5. Black or African Americans was the majority racial group (64%), White (19%), other (15%), Asian (15%), American Indian or Alaska Native (2%) respectively. Ultimately, 17,264 (95%)
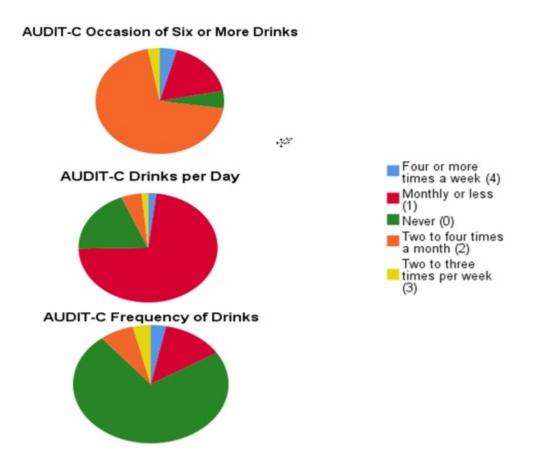
met inclusion criteria, and 920 did not meet inclusion criteria. Patients from all adult age groups

were represented, 23% ages 18-29 years, 26% ages 30-44 years, 15% ages 45-54 years, and 36%

ages ≥55 years. Of the eligible ED visits, 13,970 (81%), received the 3-question screen based on

the AUDIT-C documentation.

The number of patients who had an AUDIT-C score of 1 to 12 was 3,949 with a mean

score of 2.83. Of these, men who screened positive (score of 4 or more) were 519 (13%), and

females who screened positive (score of 3 or more) were 574 (15%), a total of 28% indicating

hazardous or harmful drinking. These findings are consistent as previous studies estimated up to

31% of the ED population would screen positive for hazardous drinking (Bacilore et al., 2017).

Amongst those positively screened, 284 (7%) patients had scores between 8 and 12 with males

representing 215 (76%) and females 69(24%) indicating possible alcohol dependence. Figure 3.

shows the characteristics of the drinking habits of eligible ED visits during the study period

based on the AUDIT-C screening tool. A total of 1141 brief interventions were provided by

PRCs with AUDIT-C scores ranging from 1 to 12. Of these patients who screened positive with

AUDIT-C scores > 7, 31% (89/284) received the brief intervention, and 27% received referrals

for further evaluation and treatment services.

Table 5. Demographics of ED Sample (n = 18184)

Characteristics	n (%)
Gender	
Male	8440 (46)
Female	9743 (54)
Age, y	
18-29	4163 (23)
30-44	4743 (26)
45-54	2685 (15)
≥55	6593 (36)
Race	
Black or African American	11,637 (64)
White	3, 539 (19)
Asian	335 (15)
American Indian or Alaska Native	8 (2)
Other	2665 (15)
Marital status	
Married	3108 (17)
Single	11,924 (66)
Divorced	814 (4)
Separated	179 (1)
Widowed	616 (3)
Unknown	1502 (8)
Life partner	41 (1)

Figure 3. Characteristics of Drinking Habits of Eligible ED Patients

Discussion

ED nurse's attitudes towards patients with alcohol use disorder can be improved through SBIRT education. A goal of this study was to increase the knowledge of the ED nurses regarding SBIRT, which will lead to improved screening and detection of at-risk alcohol drinking behaviors. Overall, the SBIRT educational model attained high rates of completion (>90%) and moderate screening rates (>80%) during a short period. Several factors contributed to the project's success, which came both from the internal and external aspects of the organization. Internally, assistance from information technology was vital to the implementation with the integration of the AUDIT-C into the ED EHR and setting up a flagging system for patients who screen positive for PRCs. The SBIRT administrative team engaged opinion leaders, and there was a great collaboration with ED staff. Externally, a grant was provided to the hospital that facilitated the introduction of SBIRT into the ED. Additional personnel, SBIRT specialists known as Peer Recovery Coaches, were recruited to follow up on positive screen results. Comparing our data from our small state-funded dissemination of ED-SBIRT with data from other funded studies, our results were consistent with current evidence that shows the number of people that screens positive for hazardous drinking. It is incumbent for emergency Departments to adopt a universal screening protocol for all ED patients as SBIRT has benefit and utility in a health care system with higher compliance from both ED healthcare providers and patients.

This study, along with other previously published study illustrates how a SBIRT program can be developed and executed with expected outcomes in the ED largely on the initiative and efforts of ED nurses and executive leadership. The study had a visible and multi-layered leadership that drove the alcohol SBIRT program in the ED. Leadership must have an overarching vision that reinforces professional values in to gain continued staff involvement.

Implementing an alcohol SBIRT protocol in the ED requires a vision focused on patient-centered care beyond the patient's ED presentation.

The Institute of Healthcare Improvement "Triple Aim" focuses on improving the patients' health care experience, the population health while reducing health care costs. SBIRT is a simple, adaptable, and cost-effective modality for reducing harmful health behaviors associated with alcohol use that should be adopted in healthcare settings. It is important for health care organizations to develop and execute a self-sustaining SBIRT program irrespective of available funding. The United States Preventive Services Task Force (USPSTF) recommends screening and behavioral counseling interventions for risky or harmful alcohol use as an effective public health approach in addressing problematic drinking. A comprehensive approach is needed to address alcohol use problems in the United States. A well-drafted advocacy plan can reduce alcohol abuse and protect the health, safety, and quality of life for all.

Plans for Sustainability and Future Scholarship

Johnson et al. (2013) implemented a brief alcohol and drug screening with AUDIT-C tool integration into the EHR of a Level I trauma hospital and reported a high screening rate of 96% over a 3-year period. In achieving and sustaining high screening rates, leadership should be able to monitor the real-time implementation of the project, provide ongoing performance feedback including individual feedback, provide subsequent training periodically to review and refresh nurse's SBIRT knowledge and skills that will reinforce earlier learning and practice. Further studies should broaden the knowledge of an SBIRT training program for nurses as a standard practice in the ED setting.

Conclusion

SBIRT is a promising evidence-based initiative to increase alcohol screening in the ED.

Moreover, the alcohol SBIRT protocol illustrated the capability of implementing SBIRT in a

busy Emergency Department setting. An alcohol SBIRT in the ED seems to detect a higher

percentage for at-risk drinkers in all age groups, genders, and race, and could potentially reduce

the harm associated with these individuals. Widespread adoption of SBIRT as a standard of care

in the ED could reduce alcohol-related morbidity and mortality. Nurses are key stakeholders in

the implementation of an alcohol SBIRT protocol in the ED. A well planned and executed

educational program for nurses in the ED is an efficient and effective mechanism to improve

SBIRT knowledge and skills.

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Appendix A

Table 1. SWOT analysis

(Problem)	(SWOT Analysis to identify a specific problem, list it here)
Strengths: • What is your organization's greatest strength? • Do you consider your organization leadership team strong? Why? • What does your organization offer to its employees that make it worthwhile to belong to your organization? What's in it for them? • Are your colleagues active and engaged? • Additional strengths	• A tradition of quality • A dedicated, talented, and engaged workforce • Culture of continuous improvement • Teamwork and great collaboration between nurses and physicians • Cultivates a spirit of inquiry which encourages health professionals to question their current practices • An infrastructure that provides tools to enhance evidence-based practice (EBP) • Administrative support and leadership that values and models EBP • Build-in AUDIT-C tool in the electronic health record
Weaknesses: • What is your organization's biggest weakness? • What can be improved? • What necessary expertise/manpower do you currently lack? • Does your organization have adequate resources for this project? • Additional weaknesses	• Lack of private space to conduct interviewing for behavioral intervention in the ED • Time constraints of the ED setting • Overburdened social worker • Lack of a formal mechanism for screening injured patients for alcohol-use disorder
Opportunities: • What is your organization's greatest opportunity? • What environmental trends might impact your organization? • What external changes or factors present interesting opportunities? • Additional opportunities	• Equipped with mechanisms for screening injured patients for alcohol-use disorder and providing brief intervention as recommended by The American College of Surgeons Committee on Trauma (ACS-COT) • Preventive services by addressing risky or harmful alcohol use as recommended by the United States Preventive Services Task Force (USPSTF) • Available resources outside the hospital for a referral to treatment
Threats: • What is your organization's biggest threat? • What obstacles do you face? • What are other organizations doing that yours is not? • What challenges can be turned into opportunities? • Are external economic forces affecting your organization?	• No geographical space for expansion • Significant increase in violence and drugs in the District of Columbia • Emergency Department and Trauma center combined • Closure of area hospitals, which increased the demand on the ED
What needs to happen to ensure your organization's health and success?	• Continues effort to improve the care of injured patients • Implement meaningful programs for trauma care in the community • Enhancement of knowledge and skills to advance the use of EBP

Figure 1. SWOT analysis

	Helpful To achieving the objective	**Harmful** To achieving the objective
Internal Origin {Attributes of the organization}	**Strengths** • A tradition of quality • A dedicated, talented, and engaged workforce • Culture of continuous improvement • Teamwork and great collaboration between nurses and physicians • Cultivates a spirit of inquiry which encourages health professionals to question their current practices • An infrastructure that provides tools to enhance evidence-based practice (EBP) • Administrative support and leadership that values and models EBP • Build-in AUDIT-C tool in the electronic health record	**Weaknesses** • Lack of private space to conduct interviewing for brief intervention (BI) in the ED • Time constraints of the ED setting • Overburdened social worker • Lack of a formal mechanism for screening injured patients for alcohol-use disorder
External Origin Attributes of the organization}	**Opportunities** • Equipped with mechanisms for screening injured patients for alcohol-use disorder and providing brief intervention as recommended by The American College of Surgeons Committee on Trauma (ACS-COT) • Preventive services by addressing risky or harmful alcohol use as recommended by the United States Preventive Services Task Force (USPSTF) • Available resources outside the hospital for a referral to treatment	**Threats** • No geographical space for expansion • Significant increase in violence and drugs in the District of Columbia • Emergency Department and Trauma center combined • Closure of surrounding area hospitals which increased the demand on the ED

Appendix B

Evidence Table

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study findings that help answer the EBP Question	Observable Measures	Limitations	Evidence Level & Quality
1	Agerwala, S. M., & McCance-Katz, E. F. (2012)	Literature review	N/A	SBIRT shows promise in many medical settings in facilitating early identification of risky substance use	N/A	N/A	Level V Good
3	Aseltine, Jr, R. H. (2010)	Quasi-experimental	N=1132 n=551 (Intervention) n=581 (Control) Emergency Department	. At 3 months those that received SBIRT reported significantly fewer drinks per week than the control group . At 6 and 12 months, differences no longer significant	Frequency of alcohol use, the quantity of alcohol use on a typical day, and a maximum number of drinks on any given day.	Suboptimal retention rates particularly at 12 months post-intervention. The rate of attrition due to the transient nature of the ED study population. A diverse group of medical institutions did not allow for efficiencies in data collection	Level II Good
4	Bacidore, V., Letizia, M., & Mitchel, A. M. (2017)	Quality improvement	80 ED nurses 4 social workers. Academic medical center	518 Patients (21%) were screened. 40 patients (8%) screened positive. . Pretest scores of all participants ranged from 20% to 100% (M=57.31;	Total number of patients admitted to the ED, AUDIT screens and risk stratification, the total number of positively screened	Less-than-expected number of patients screened positive due to: . Interviewer bias or the way the nurse asked permission to	Level V Good

				SD=15.13). Posttest scores ranged from 80% to 100%. There was a statistically significant difference (t 66 = 15.9, $p < .001$)	admitted to trauma service for inpatient brief intervention or referral	screen the patient. . Opt-out option on the screening in the EHR.	
5	Bruguera et al. (2018)	Randomized controlled trial	247 (12%) screened positive, 47 excluded (19%), and 200 participated N=200 n=101 (control) n=99 (Intervention) Emergency Department	. At 1.5 months, the IG showed greater reductions in alcohol consumption and fewer patients continuing with at-risk alcohol-use (27.8% vs 48.1%; p=0.01) . Probability of attending specialized treatment increased (23% vs. 9.8%, p=0.0119)	The proportion of at-risk drinkers The proportion of patients who attend specialized treatment following ED attendance	. Not possible to implement a 24-hour program due to lack of personnel. . AUDIT-C cutoff points were elevated to reduce the prevalence of risky drinkers may have lost a small percentage of patients who could have benefited. . Social desirability may have affected alcohol use self-reports at follow-up.	Level I High

| 7 | Désy, Howard, Perhats, & Li (2010) | Quasi-experimental | N=94 (10%) n=49 (Intervention) n=42 (Control) 3 patients withdrew during impact evaluation.

Emergency Department of University of Kentucky Chandler Medical Center. Level I trauma | Alcohol consumption decreased by 70% in the IG compared to 20% in the usual care group.

Fewer patients from IG (20%) had recurring ED visits compared to the usual care group (31%) | Alcohol consumption, recurring ED visits, compliance with referrals | Interviewer bias may have resulted in the lower-than-expected proportion of risky drinkers.

Increased in patient-boarding hours contributed to ED crowding and lack of privacy. | Level II Good |
| 11 | Johnson, Woychek, Vaughan, & Seale (2013) | Descriptive | N=145,394 patients screened

Emergency Department | An 89% screening rate 30 days postimplementation and gradually increased and stabilized at approximately 97% | Screening rates | Single-site study

All patients with a positive screen did not receive brief interventions due to limited SBIRT staffing and fast pace of many ED visits. | Level III |

| 12 | Kaiser & Karuntzos (2016) | Program evaluation | 59 SBIRT practitioners

21 SAMSHA-funded SBIRT performance sites characterized as Eds or ambulatory clinics | Observations revealed 4 different phases within the SBIRT workflow process: intake, assessment, treatment, and discharge.

. Prescreens serves as an important workflow function in busy medical care settings

. All existing medical staff should be made aware of the SBIRT program | Four phases of the SBIRT workflow process | Observation played a key role in understanding the SBIRT workflow processes so practitioners may have changed their behaviors because they knew they were being observed.

Observations could only be conducted for limited periods thus yielding a restricted understanding of workflow. | Level V Good |
|----|----|----|----|----|----|----|----|
| 13 | Knopf (2015) | Randomized controlled trial | N=836 BI computer 277 BI therapist 278 Control 281 | Of the 4,389 patients screened, 1,054 (24 percent) patients reported risky drinking | Screening rates

Screen positive rates | N/A | Level I High |
| 14 | Mitchell et al. (2017) | Prospective cohort | 62 ED nurses and other staff working in the Emergency Department | Post-hoc tests revealed scores increased significantly from pre-training to post-training ($p<0.01$, 95% CI -2.87, -1.67). A small decrease was seen from post-training to follow-up but not significant indicating sustained effect. | Role adequacy Role support Task-specific self-esteem Motivation Work satisfaction | N/A | Level V High |

18	Sommers et al. (2013)	Randomized controlled trial	N=476 n=150, brief intervention (BIG) n=162, contact control (CCG) n=164, no-contact control (NCG)	Outcomes were significantly lower in BIG compared with CCG through 6 or 9 months but not at 12 months	Alcohol consumption Self-reported risky driving behaviors	A 22% refusal rate in study participation. Additional patients (162) who screened positive were not enrolled as they left the ED before seeing research assistants or were unexpectedly admitted to the hospital thereby not eligible. Level of attrition may have biased study findings.	Level I High
19	Vaca, Winn, Anderson, Kim, & Arcila (2011)	Longitudinal observational	N=385 221 (57%) completed the 6-month follow-up Emergency Department	4375 patients was screened with a computerized alcohol screening brief intervention (CASI), 781 (18%) patients screened at risk for alcohol use problems. 742 (95%) completed a brief negotiated interview (BNI)	Screening rates Screen positive rates	No control group and only 57% of the enrolled subjects completed follow-up resulting in a possible substantial response bias Generalizability is limited due to convenience sampling	Level III Good

| 19 | Vendetti et al. (2017) | Mixed-methods | 102 SBIRT providers surveyed

221 stakeholders and staff interviewed

Multiple sites within the first seven programs of SAMHSA | Providers rated pre-selected implementation facilitators higher than barriers.

Content analysis of interview responses revealed intra- and inter-organizational communication and collaboration, provider buy-in and model acceptance | Provider ratings of implementation barriers and facilitators

SBIRT staff and key stakeholder interview responses | Some results may not be generalizable.

The cross-site evaluation focused on implementation barriers and facilitators common across the seven SAMHSA programs, but challenges depending on factors such as setting and patient characteristics | Level III Good |

Appendix C

AUDIT-C Tool

1. How often do you have a drink containing alcohol?
- ☐ a. Never
- ☐ b. Monthly or less
- ☐ c. 2-4 times a month
- ☐ d. 2-3 times a week
- ☐ e. 4 or more times a week

2. How many standard drinks containing alcohol do you have on a typical day?
- ☐ a. 1 or 2
- ☐ b. 3 or 4
- ☐ c. 5 or 6
- ☐ d. 7 to 9
- ☐ e. 10 or more

3. How often do you have six or more drinks on one occasion?
- ☐ a. Never
- ☐ b. Less than monthly
- ☐ c. Monthly
- ☐ d. Weekly
- ☐ e. Daily or almost daily

Scoring

The AUDIT-C is scored on a scale of 0-12.

Each AUDIT-C question has 5 answer choices. Points allotted are:

a = 0 points, b = 1 point, c = 2 points, d = 3 points, e = 4 points

- **In men**, a score of 4 or more is considered positive, optimal for identifying hazardous drinking or active alcohol use disorders.
- **In women**, a score of 3 or more is considered positive (same as above).
- However, when the points are all from Question #1 alone (#2 & #3 are zero), it can be assumed that the patient is drinking below recommended limits and it is suggested that the provider review the patient's alcohol intake over the past few months to confirm accuracy.[3]
- Generally, the higher the score, the more likely it is that the patient's drinking is affecting his or her safety.

(SAMHSA-HRSA Center for Integrated Health Solutions, n.d.)

Appendix D

Image of Standardized Drinks

A STANDARD DRINK
Any drink that contains about 14 grams of alcohol
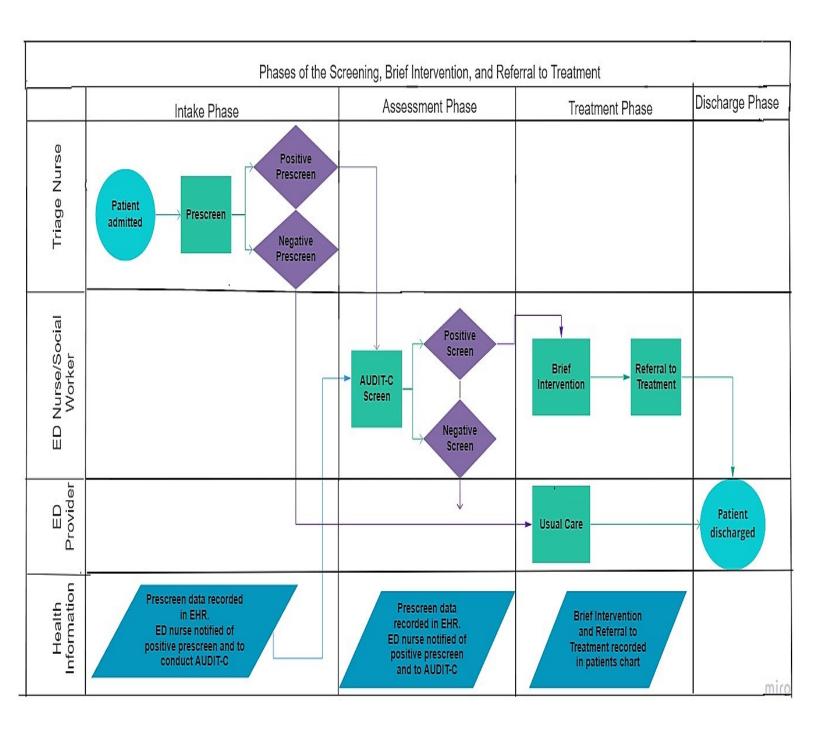
12 oz beer   5 oz wine   1.5 oz liquor

DRINK LIMITS

gender/age	per week	per occasion
MEN	> 14 drinks	> 4 drinks
WOMEN	> 7 drinks	> 3 drinks
AGE > 65	> 7 drinks	> 3 drinks

(ENA, 2008)

Appendix E

Emergency Department Screening, Brief Intervention, and Referral to Treatment Flow Diagram

Phases of the Screening, Brief Intervention, and Referral to Treatment

	Intake Phase	Assessment Phase	Treatment Phase	Discharge Phase
Triage Nurse	Patient admitted → Prescreen → Positive Prescreen / Negative Prescreen			
ED Nurse/Social Worker		AUDIT-C Screen → Positive Screen / Negative Screen	Brief Intervention → Referral to Treatment	
ED Provider			Usual Care	Patient discharged
Health Information	Prescreen data recorded in EHR. ED nurse notified of positive prescreen and to conduct AUDIT-C	Prescreen data recorded in EHR. ED nurse notified of positive prescreen and to AUDIT-C	Brief Intervention and Referral to Treatment recorded in patients chart	

(Kaiser & Karuntzos, 2016)

Appendix F

Emergency Department Nurses' Practice Survey

Participant ID   _____

In new patients, how often do you ask whether they drink
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In new patients, how often do you ask how much (the amount) they drink
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In new patients, how often do you use a formal screening tool for alcohol
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In patients who drink, how often do you advise safe drinking limits
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In patients who drink excessively, how often do you ask about health problems related to alcohol
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In patients who drink excessively, how often do you counsel them about alcohol problems
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In alcohol-dependent patients, how often do you discuss treatment
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

In alcohol-dependent patients, how often do you refer them for treatment
- ○ Always
- ○ Often
- ○ Sometimes
- ○ Rarely
- ○ Never

Appendix G

Emergency Department alcohol SBIRT Knowledge: Pretest/posttest

Participant ID _____

1. Unhealthy alcohol use can contribute to:
   - ○ Liver damage
   - ○ Inflammation of the pancreas
   - ○ Vitamin deficiency
   - ○ All of the above

2. According to NIAAA guidelines, which of the following is considered low-risk drinking limits?
   - ○ For a man, no more than four drinks on any single day and no more than 14 drinks per week
   - ○ For a woman, no more than three drinks on any single day and no more than seven drinks per week
   - ○ For adults older than 65 years, no more than three drinks on any single day and no more than seven drinks per week
   - ○ All of the above

3. The percentage of patients who are considered "at risk" or "harmful" alcohol users is approximately:
   - ○ 10%
   - ○ 15%
   - ○ 25%
   - ○ 45%

4. Which of the following is true regarding alcohol SBIRT?
   - ○ SBIRT is primarily intended to identify patients with high-risk alcohol use
   - ○ SBIRT is primarily intended to identify patients with risky/harmful alcohol use
   - ○ SBIRT is primarily intended to identify patients with low-risk alcohol use
   - ○ SBIRT is primarily intended to identify patients who are addicted to alcohol

5. Research investigations have demonstrated a number of positive outcomes related to alcohol SBIRT. Which of the following is the most compelling reason to initiate alcohol SBIRT in the emergency department?
   - ○ Fewer traffic incidents
   - ○ Potential to increase adherence to alcohol treatment
   - ○ Reductions in alcohol consumption
   - ○ Fewer repeat injuries, emergency department visits, and repeat hospitalizations

6. Which of the following is true about the AUDIT?
   - ○ The AUDIT focuses on recent alcohol use
   - ○ The AUDIT assesses multiple categories of substances, including alcohol
   - ○ The AUDIT identifies only hazardous and harmful drinkers
   - ○ The AUDIT consists of 4 brief questions

7. What strategies can the health care provider suggest, should the patient indicate that he/she is not interested in changing his/her behavior related to alcohol use?
   - ○ Reduce the amount and/or frequency of alcohol use
   - ○ Avoid driving while intoxicated
   - ○ Stress being safe, even when intoxicated
   - ○ All of the above

8. An effective step that the health care provider can take upon closing the intervention is to:
   - ○ Encourage the patient to drive to the nearest referral center upon discharge
   - ○ Tell the patient to call the referral center at discharge
   - ○ Provide the patient written information outlining a number of referral resources at discharge
   - ○ Insist on a signed written agreement or contract

9. Which of the following patients require referral to treatment?

○ Patients who have made the connection between drinking and problems
○ Patients who have high indicators of abuse
○ Patients who have stated perceived benefits of drinking
○ Patients who refuse to take the AUDIT test

10. The ED alcohol SBIRT protocol includes all of the following patient inclusion criteria except:

○ The patient is not impaired
○ The patient is > 18 years of age
○ The patient is triaged at a 2,3,4, or 5 Emergency Severity Index Level
○ The patient is presenting with an injury

(Bacidore, V., Letizia, M., & Mitchel, 2017)