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Improving Alcohol Use Outcomes in Active-Duty Air Force Members with Co-occurring Mental  
Health Diagnoses

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## IMPROVING ALCOHOL USE OUTCOMES

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## IMPROVING ALCOHOL USE OUTCOMES

### Abstract

**Phase II Site:** David Grant USAF Medical Center (DGMC), Travis AFB

**Project Title:** Improving Alcohol Use Outcomes in Active Duty Air Force Members with Co-occurring Mental Health Diagnoses

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**Background:** Alcohol use disorder (AUD) affected 14.5 million Americans in 2017 alone. Young adults aged 18-25 have the highest AUD risk and comprise over 45% of Active-Duty Air Force (ADAF) members. Excessive drinking in the military is linked to an estimated yearly loss of 320,000 workdays and 34,400 arrests. Strong empirical support exists for brief alcohol risk reduction education programs, like BASICS, in reducing hazardous drinking in young adults.

**Clinical Question:** In ADAF members aged 21-30, stationed at Travis AFB, with alcohol misuse and co-occurring mental health diagnoses, how does BASICS implementation affect alcohol use (as measured by AUDIT-C scores) over a 30-day period and monthly Alcohol and Drug Abuse Prevention and Treatment (ADAPT) referrals?

**Project Design:** This project is a single group pre/post evaluation of BASICS implementation. Two 50-minute educational sessions were provided 14 days apart. AUDIT-C scores were obtained before session one and 14-days after session two.

**Analyzing the Data:** 66.67% participants demonstrated a decrease in unhealthy alcohol use upon BASICS completion. AUDIT-C scores post-BASICS were significantly lower than pre-BASICS implementation. However, there were no differences in ADAPT referrals when comparing 6-months pre-implementation to 6-months post-implementation.

**Organizational Impact/Implications for Practice:** Implementing BASICS was helpful in reducing hazardous drinking in ADAF members receiving care at our clinic, consistent with current literature on benefits of BASICS. Early identification and reduction of hazardous drinking in ADAF members can enhance servicemember health, prevent alcohol-related incidents, and improve mission readiness and deployment eligibility.

**Future Directions for Research and Practice:** Future recommendations include: identification of project champions to sustain longer project implementation and include larger sample sizes; provision of regular educational sessions on BASICS use for providers to sustain its implementation given provider turnover rates typical in military settings; and utilization of our

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team-developed continuity binder that includes strategies and materials used for project implementation, to help sustain project benefits.

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### Improving Alcohol Use Outcomes in ADAF members with Comorbid Mental Health Diagnoses

#### **Introduction**

Alcohol abuse is a prevalent problem in both civilian and military populations, especially in young adults. In 2017, the National Survey on Drug Use and Health (NSDUH) reported that 19.3 million young adults aged 18 to 25 were current alcohol users, with 39.6% reporting binge drinking in the last 30 days. Additionally, 2.4 million young adults had co-occurring mental health issues with a substance use disorder (SUD) (Bose, Hedden, Lipari, & Park-Lee, 2018). Roughly 40-60% of the United States (US) Active Duty military population is between the ages of 18 and 24 (Reynolds & Shendruk, 2018), and AUDs constitute the most considerable portion of all SUDs in the military (Seal et al., 2011). Both the college population and the young, enlisted military ADAF members are comparable due to the high time of transition in life, increased stressors, and challenging environment.

Early identification and brief risk reduction/skills training programs, before the progression to AUD diagnosis, have been proven helpful in reducing harmful alcohol consumption and its associated consequences (Hennessy, Tanner-Smith, Mavridis, & Grant, 2019). One such program is the Brief Alcohol Screening and Intervention for College Students (BASICS) program. BASICS combines motivational interviewing, cognitive-behavioral techniques, and harm-reduction skills and consists of two educational sessions, 14 days apart, that includes education on self-management strategies to reduce hazardous drinking.

In between the two sessions, individuals track their alcohol consumption for 1-14 days. BASICS also includes patients' assessments of hazardous drinking using the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) within 14-days after the second session has been completed. This project is a single group pre/post evaluation of the implementation of

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BASICS in ADAF members aged 21-30 with alcohol misuse and co-occurring mental health diagnoses in a behavioral health care clinic at Travis AFB whereby we will examine changes in hazardous alcohol use (as measured by AUDIT-C scores) over a 30-day period and changes in monthly Alcohol and Drug Abuse Prevention and Treatment (ADAPT) referral rates over three months since implementation.

### **Significance of the Problem**

SUDs are a severe problem within the US and affect people of every race, ethnicity, gender, and location. Bose et al. (2018) reported that roughly 19.7 million people over the age of 12 had a SUD in the past year, of which 14.5 million people had an AUD. Excessive alcohol use results in elevated crime rates, decreased job productivity, increased need for foster care, increased medical care needs, and other social problems, ultimately costing the US approximately \$400 billion per year (US Department of Health and Human Services (HHS), Office of the Surgeon General, 2016). In a study of mental health disorders by Fink et al. (2016), AUD was the most common disorder with a lifetime prevalence of 44%.

Young adults are at the highest risk for alcohol abuse (Caldeira et al., 2009). Emerging adulthood is a significant transition time in life (going to college, joining the military, entering the workforce). These new experiences and stressors significantly influence young adults more than other populations (Jackson & White, 2004). In 2017, of the 5.1 million young adults with a SUD, 46.8% had a co-occurring mental illness within the past year (Bose, Hedden, Lipari, & Park-Lee, 2018). Alcohol misuse is the third leading preventable cause of death in the United States and accounts for an estimated \$223.5 billion annually (McDonnell et al., 2017). Caldeira et al. (2009) identify young adults as the least likely age group to seek substance abuse treatment. Of those with an AUD, 85% never receive treatment (McDonnell et al., 2017). Alcohol use

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negatively impacts psychiatric symptoms and is associated with increased homelessness, psychiatric hospitalization, HIV infection, cigarette smoking, and drug abuse (McDonnell et al., 2017).

Alcohol abuse is prevalent in 47 percent of ADAF members who reported binge drinking (NIDA, 2013). Alcohol misuse and abuse are a problem in the military; addressing this issue is essential because of the culture's uniqueness that puts military ADAF members at increased risk for substance use. AUDs can negatively affect military readiness by impeding ADAF members from deploying for up to 12 months, decreasing productivity, and increasing medical costs (USCENTCOM, 2020). Productivity is negatively affected as excessive drinking within the military is estimated to result in a loss of 320,000 workdays and 34,400 arrests per year, half of which is driving under the influence (Schumm & Chard, 2012). During a ten-year surveillance period, Stahlman & Oetting (2018) found that 9.9% (165,347) of ADAF members received AUD diagnosis. Of those ADAF members diagnosed with AUDs, 40.6% also had adjustment disorder, and 31.9% had a depressive disorder. In addition, the National Institute on Alcohol Abuse and Alcoholism reported that excessive alcohol consumption costs the US military \$1.12 billion per year (Harwood et al., 2009).

Regarding medical expenditures, studies have found that excessive alcohol use by military members results in an annual cost of \$425 million (Harwood et al., 2009). Unhealthy substance use may affect many aspects of an individual's life, personally and professionally, yet the stigma associated with seeking help further compounds the problem. That lack of seeking help could worsen the addiction and lead to an alcohol use disorder diagnosis.

### **Relevance to Military Nursing**

The unique conditions that ADAF members frequently experience include rigors of

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deployments, multiple and extended family separations, and increasing operational tempo, and the possibility for trauma and combat exposure could increase stress levels. Additionally, approximately 45 percent of ADAF members are under the age of 25, the age group at the highest risk for alcohol abuse (DoD, 2017; Stahlman & Oetting, 2018).

The VA/DoD Clinical Practice Guideline (CPG) Substance Use Disorders Management recommends brief alcohol risk reduction interventions for ADAF members with alcohol misuse (VA/DoD, 2009). The American Society of Addiction Medicine (ASAM) developed criteria for five distinct levels of care (Herron, 2015). The continuum of care provides a holistic approach for the appropriate level of treatment for a patient. The five broad stages are Level 0.5: Early Intervention, Level 1: Outpatient Services, Level 2: Intensive Outpatient or Partial Hospitalization Services, Level 3: Residential or Inpatient Services, and Level 4: Medically Managed Intensive Inpatient Services (ASAM Criteria, 2020). Also, there can be different subtypes within a level of care. For example, BASICS is a brief intervention that can be offered to patients before meeting the ASAM criteria for Level 0.5: Early Intervention.

BASICS is an ideal intervention for young ADAF members for it is consistent with the VA/DoD CPG, and it has been found useful in reducing alcohol-related hazardous behaviors and in improving alcohol-related decision making in similarly-aged college students with alcohol misuse (Stahlman & Oetting, 2018; University of Washington, 2019). Clinicians can use BASICS as an additional prevention step for early screening and intervention in ADAF members with alcohol misuse before their symptoms reach the AUD threshold or necessitate referral into a higher level of care. BASICS' combination of cognitive-behavioral aspects, motivational interviewing techniques, and harm-reduction skills, as well as its brief two 50 minute-session delivery method, make it an ideal approach to reduce hazardous drinking and decrease the need

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for referrals to higher-level SUDs programs, such as the Air Force ADAPT program.

The Air Force ADAPT program “provides comprehensive clinical assistance to ADAF members, and will support referral coordination for other eligible beneficiaries, seeking help for an alcohol problem” (Air Force Instruction [AFI] 44-121, 2018). ADAF members referred to ADAPT have access to an array of services commensurate with symptom severity. At a minimum, ADAF members whose symptoms do not yet meet the criteria for AUD are enrolled into Alcohol Brief Counseling (ABC), which meets the ASAM Criteria as a Level 0.5 early intervention program, consists of four 1-hour weekly sessions over one month. The next level of support that the ADAPT program establishes treatment for those with moderate to severe symptoms. Those with moderate to severe alcohol misuse or an AUD diagnosis attend an ASAM Criteria Level 1 program, which is intensive and time-consuming, requiring a minimum of 20 hours a month for the first month, then are followed up after treatment (AFI 44-121, 2018). As part of the intervention, ADAF members are also mandated to attend continuing care for a year after the program's first part (AFI 44-121, 2018). Because of the dysfunction caused by AUD and the amount of time away from their job during ADAPT, ADAF members cannot perform their current primary duties properly. All ADAF members with a diagnosis of AUD enrolled in the ADAPT program are placed on a code 31 profile which states they cannot deploy, receive a permanent change of station (PCS), or participate in temporary duty travel (TDY) (AFI 44-121, 2018). The inability to perform duties and deploy negatively affects the unit and mission readiness. Every Air Force installation has an ADAPT treatment team responsible for tracking all ADAF members engaged at every level of care from Level 0.5 to 4. Different military installations can provide different treatment levels offered at the local military treatment facility (MTF) versus providing the service member with the appropriate resources at a civilian

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facility. Travis MTF provides Levels 0.5 and 1 only; ADAF members requiring levels 2 through 4 are referred to civilian treatment centers.

Travis AFB adheres to Air Force Instruction 44-121 for referrals to ADAPT. There are currently three referral paths for entry into ADAPT's alcohol abuse/misuse program. The first path is self-identification, where a service member voluntarily seeks help (AFI 44-121). The second path is a Command referral, which typically occurs when there is misconduct (E.g., driving under the influence, public intoxication and disorderly, spouse/child abuse and maltreatment, underage drinking, and positive drug test (AFI 44-121). The third path is a medical referral, where ADAF members are referred by any medical personnel if: (a) that service member is observed, identified, or suspected to be under the influence of drugs during an appointment, (b) they are suspected of having a SUD, (c) they are receiving treatment for an injury that may be the result of substance use or (d) they are admitted to the inpatient unit for withdrawal management (AFI 44-121). The ADAPT program at Travis AFB, a higher level of care for substance use, currently has a rate of 12.5 referrals per month (J. Kelly, personal communication, 26 August 2020). Implementing BASICS at the mental health clinic level as an additional prevention step can help reduce hazardous drinking and reduce the need for higher-level care. Reduction of dangerous drinking is beneficial to the military, and APRNs in psychiatric outpatient departments are uniquely positioned to provide this kind of intervention.

### **System or Clinical Question**

In ADAF members aged 21-30 at Travis AFB with alcohol misuse and co-occurring mental health diagnoses, how does the implementation of the BASICS program, compared to pre-implementation of BASICS, affect hazardous alcohol use (as measured by AUDIT-C scores) over a 30-day period and affect monthly ADAPT medical referral rates?

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### Literature Review of Solutions

The PICOT question we used to guide our literature search was: (P): In young adults with alcohol misuse (I) how does the implementation of a brief alcohol risk reduction intervention (C) compared to before implementation (O) affect alcohol misuse levels (measured by AUDIT-C scores) (T) over a 30-day period? We searched the literature using the following databases: PubMed, CINAHL, PsycINFO, and Uniformed Services University institutional search Learning Resources Center Power Search.

We used these search terms: "brief intervention," "alcohol," "young adults," and "motivational interviewing." The search was limited to journal articles, full text online, and scholarly and peer-reviewed articles over the last five years. Filters were then applied to include alcohol use, research randomized control trials, college students, students, systematic review, research articles, and universities. Once the filters were applied, the search results across multiple databases yielded one hundred and three citations; eighteen articles were then eliminated due to duplication, leaving eighty-five articles for the initial review. We then focused our attention on the most recently published research, including randomized control trials, systematic reviews, and meta-analysis of systematic reviews. Those articles that only provided commentary, reviews, protocols, journal articles published outside of the US, or secondary analysis were eliminated, leaving only twenty-five articles for full-text review. The full-text assessment exclusion criteria eliminated articles that focused on children, adolescents, and adults over 30 years of age, irrelevant intervention or comparison, or any outcomes related to drugs, sex, or tobacco were discarded. The remaining four articles that met our inclusion criteria had an in-depth analysis that is contained within the attached evidence table, located in Appendix B. This literature review refined our criteria for framing and assessing our clinical question.

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This project design was empirically supported by two randomized control trials (RCTs), a network meta-analysis of randomized control trials, and an experimental study that did not randomize students to target a specific population. These studies were identified as Level I with high to good quality based on the Johns Hopkins nursing evidence-based practice: Evidence level and quality guide (2017). The articles reviewed in this project supported that BASICS is an effective Brief Alcohol Intervention (BAI) in reducing alcohol consumption and hazardous behaviors related to alcohol by enhancing decision-making processes and supplying patients with necessary coping strategies. For the evidence, table see Appendix B.

Four studies provided evidence in support of the proposed project to implement an evidence-based brief alcohol risk reduction education program. The Johns Hopkins nursing evidence-based practice: Evidence level and quality guide (2017) was utilized to appraise these articles as follows: two randomized control trials (RCTs) (level IA), a network meta-analysis of randomized control trials (level IA), and an experimental study that did not randomize students to target a specific population (level IIA/B). One study that employed a longitudinal RCT design included mandated and volunteer college students and found that BASICS-style brief motivational intervention (BMI) is efficacious in reducing hazardous alcohol use in both groups (Terlecki, Buckner, Larimer, & Copeland, 2015). Another longitudinal RCT that also investigated college students concluded that there was no significant difference in drinking and harm reduction when comparing BASICS alone with BASICS combined with educational commitment modalities focusing on vocational and academic aspects. The study also showed that in-person feedback is an intensive prevention strategy for at-risk college students. These conclusions reinforce the relevance of the components utilized in BASICS' to include one-on-one personalized feedback with patients (Bogg, Marshbanks, Doherty, & Vo, 2019). The

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network meta-analysis by Hennessy, Tanner-Smith, Mavridis, and Grant (2019) compared several brief alcohol misuse interventions. It identified BASICS as effective in reducing the frequency of heavy alcohol consumption, the quantity of alcohol consumption, and the quantity of alcohol consumption during a peak drinking period. Cimini et al. (2015) studied the effects of BASICS on college athletes that met the criteria for heavy episodic drinking. College students represent the same at-risk military population of young adults aged 18-25. The articles reviewed in this project support that BASICS is an effective brief intervention (BI) tool.

### **Focus Areas**

This project has three main focus areas. The initial focus is to design a strategy for BASICS implementation. After collaboration with key stakeholders at Travis MTF, including the Phase two Site Director (P2SD) and our USU senior mentor, it was decided that patients will be young ADAF members aged 21-30 at risk for alcohol misuse indicated by their AUDIT-C score. The secondary focus area includes providing an individualized treatment plan for the patient's risk factors, personal circumstances, and alcohol misuse severity. The third focus area includes evaluating the overall effectiveness of current BASICS intervention and considering future sustainment of BASICS as a risk prevention intervention tool before a medical referral to the ADAPT program.

### **Organizing Framework**

Our team selected Rosswurm and Larrabee's Model for Evidence-Based Practice (EBP) Change to guide our project as we found it most fitting for our project goals. The model consists of six steps: 1) Assessing the need for change and identifying the problem, 2) Linking the problem with the interventions and outcomes, 3) Synthesizing and critiquing the best evidence, 4) Designing the proposed change, 5) Implementing the change and evaluating its outcomes, 6)

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Integrating and maintaining the change with stakeholders' approval (Rosswurm & Larrabee, 1999).

Military ADAF members are more likely to misuse alcohol and tobacco than any other substance (NIDA, 2013). The ADAPT program at Travis AFB keeps track of high-risk individuals that meet these criteria (Kelly, personal communication, 23 September 2019). The identified need for change (step 1) at Travis AFB was to offer a prevention and risk reduction education program to individuals identified with alcohol misuse and comorbid mental health disorders to decrease medical referral rates to ADAPT and improve their AUDIT-C scores. We identified that additional support in the form of a brief evidence-based alcohol risk reduction educational intervention would fit the identified need and support the VA/DoD Clinical Practice Guideline for the management of substance use disorders (VA/DoD CPG, 2015). In linking the problem with the interventions and outcomes (step 2), one RCT demonstrated that BASICS caused sustained long-term reduction in alcohol consumption and alcohol-related issues such as decreases in the weekly intake and peak consumption in volunteer and mandated college students. This RCT validates the information contained with the BASICS workbook manual.

Furthermore, the study suggests that all the patients showed modest reductions in their alcohol intake at four weeks and 12 months, resulting in a decreased risk of developing negative alcohol tolerance consequences (Terlecki, Buckner, Larimer, & Copeland, 2015). In critiquing for best evidence (step 3), the Travis AFB DNP team referred to the clinical practice guidelines (CPGs) released by the Veterans Affairs (VA) and Department of Defense (DoD) for SUDs (2015), where it strongly recommends Motivational Enhancement Therapy (MET) as a psychosocial intervention for individuals with alcohol-related issues and additionally make a strong recommendation for BAIs and further stipulates the appropriate situation for a brief

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intervention based on the client's assessment and treatment (p. 9). The BASICS model meets the VA/DoD criteria for brief intervention discussed within the clinical practice guideline and supports the reduction of alcohol consumption. In general practice settings, substantial evidence supports BAI as a practical approach to reducing hazardous drinking behaviors (Galanter, Kleber, & Brady, 2015). BASICS utilizes aspects of both MET and BAI. In designing the proposed change (step 4), adherence to the original model is best so that the strength of previous studies can be replicated. Change implementation and evaluation (step 5) will occur as laid out by the original authors (Dimeff, Baer, Kivlahan, & Marlatt, 1999). Patients will be evaluated before BASICS and within 14-days after the second session has been completed using the AUDIT-C tool. Also, we will compare pre and post-implementation monthly ADAPT medical referral rates for six months (mean monthly rate pre-implementation, during the implementation of BASICS, and comparison mean monthly rate for three months post-implementation). Change integration and maintenance (step 6) will occur by creating a continuity binder to include all project information, training guidelines, evidence supporting intervention, and implementation tools to hand over to the mental health program director for future sustainment. The Travis AFB DNP team will train available staff and appoint a BASICS champion to sustain this project. Finally, project results will be disseminated to Travis AFB stakeholders and colleagues at Uniformed Services University (USU) and possibly at professional conferences.

### **Project Design**

#### **General Approach**

This project is a single group pre/post evaluation of the implementation of BASICS, a brief alcohol risk reduction educational intervention for ADAF members aged 21-30 with alcohol misuse and co-occurring mental health conditions as an additional prevention step within

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the mental health clinic to decrease hazardous alcohol use, as measured by AUDIT-C scores, and reduce ADAPT medical referral rates compared to pre-implementation (and pre-COVID-19) levels at Travis AFB mental health clinic.

### **Setting and Population**

This project will occur within the behavioral health clinic at the David Grant Medical Center (DGMC) at Travis AFB, CA. DGMC currently serves 130,000 TRICARE eligible patients in the San Francisco-Sacramento vicinity and 377,000 Department of Veterans Affairs Northern California Health Care System eligible (Air Force Medicine, 2019). The behavioral health clinic at DGMC has three prescribing providers, six social workers, with an additional five social work interns, three psychologists, and two neuropsychologists. The team is supported by an additional 15 enlisted medical technicians and three nurse case managers.

The target population will include: (1) ADAF members aged 21 to 30, (2) who are receiving care for a mental health diagnosis at Travis mental health clinic, and (3) who are at high risk for or demonstrate alcohol misuse at the time of assessment with an AUDIT-C score ranging from 3 to 7, but not yet reaching the threshold for an AUD diagnosis per DSM-5 criteria or warranting a medical referral to ADAPT per AFI guidance. Exclusion criteria are: ADAF members under the age of 21 as those would be subject to UCMJ action whereby they would automatically be referred to the ADAPT program. Also, the decision to focus on ADAF members aged 21-30 was based on the meta-analysis showing the effectiveness of BAIs (including BASICS) in patients under 30 years of age (Hennessy et al., 2019).

### **Procedural Steps**

All procedural steps are derived from the BASICS workbook manual. BASICS is a brief evidence-based alcohol risk reduction educational intervention based on a core curriculum called

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the Alcohol Skills Training Program (ASTP) (Dimeff, Baer, Kivlahan, & Marlatt, 1999). ASTP includes applying cognitive-behavioral self-management strategies, the use of motivational enhancement techniques, and the use of harm reduction principles (Dimeff et al., 1999, pp. 18-19). BASICS is the briefest developed ASTP and is cost-effective (Dimeff et al., 1999). It consists of two 50-minute sessions. The first session is used to assess the individual's drinking pattern while identifying their attitude about alcohol use and determining their motivation to change. The second session provides individually tailored feedback about the individual's risk factors and advice on drinking responsibly (Dimeff et al., 1999).

The project will be conducted in a method described in the procedural steps outlined in Appendix C. Coordination meetings between USU faculty and stakeholders at Travis AFB to discuss implementation strategies and any needed follow-up steps. Then, the project team will seek review by the institutional review board. Once the project is approved, project team members will closely collaborate with the phase two-site director to identify ADAF members who are candidates for this educational intervention based on the project's inclusion/exclusion criteria described in the previous section. It is important to note here that ADAF members who participate in this adjunct educational project maintain follow-up care through their primary mental health care provider at the clinic throughout project implementation.

Once individuals are identified, project team members will seek their informed consent and then schedule the initial assessment interview session. BASICS will be provided to the ADAF members by one of the two project team members. The ADAF member will arrive at the scheduled appointment 30 minutes prior to the session and complete the self-report questionnaire packet, including the AUDIT-C tool.

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The Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) is a brief alcohol screening instrument that reliably identifies persons who are hazardous drinkers or have active AUDs. Several studies recommend the AUDIT-C screening tool to assess for unhealthy alcohol use. The National Institute on Alcohol Abuse and Alcoholism (NIAA) and the US Preventive Services Task Force (USPSTF) recommends the AUDIT-C as an accurate tool to screen for unhealthy alcohol use. The test has three questions and is scored on a scale of 0-12. AUDIT-C score of  $\geq 4$  points for men or  $\geq 3$  points for women is considered a positive screen for unhealthy alcohol use (VA/DoD CPG, 2015). As described in the clinical practice guideline, ADAF members with AUDIT-C scores of eight or higher are deemed higher risk for an AUD and, based on clinician evaluation, may require further evaluation and possible referral to a higher level of care, such as ADAPT. This project will only examine those with an AUDIT-C score of seven or less. At any time, if a patient scores eight or higher, our procedures require that a provider evaluates them at the Behavioral Health Flight at Travis AFB, CA.

This information will be utilized to develop a personalized graphic feedback sheet that will be provided to each ADAF member at session 2. The second session will take place approximately 14 days after the initial session. During the 14 days between sessions, the ADAF member will use a log to monitor individual drinking episodes. Session 2 will be 50 minutes to review self-reported drinking episodes and the personalized graphic feedback sheet. After the ADAF member completes session 2, each patient will fill-out the AUDIT-C self-report measure a second time. Data will be analyzed in aggregates comparing the pre and post-intervention AUDIT-C scores to evaluate the BASICS program's implementation at Travis. Also, we will compare pre and post-implementation monthly ADAPT medical referral rates for 6 months (mean monthly rate for three months pre-implementation compared with the mean monthly rate

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for three months since implementation). Recommendations for program maintenance based on the results will be discussed and disseminated with stakeholders.

### **Data Analysis Plan**

We will compare participating patients' AUDIT-C scores before and after the BASICS intervention. The AUDIT-C scores will be compared within a 30-day time frame upon completion of the BASICS program. We will use descriptive statistics and paired-t-test to examine pre-post AUDIT-C scores. Also, we will compare pre and post-implementation of monthly ADAPT medical referral rates for 6 months (mean monthly rate for three months pre-implementation compared with the mean monthly rate for three months since implementation).

### **Potential Barriers**

Several potential barriers have been identified related to the planning and implementation of the BASICS intervention. The first barrier is the potential lack of clarity. To reduce possible confusion and maintain an organized structure, the staff and all patients, including the stakeholders, will meet regularly to provide updates on project implementation challenges and ways to address those promptly. The second potential barrier is organizational resistance to change. Open and effective communication, maintaining presence and availability at the site of implementation, and team collaboration will reduce complications. Another potential barrier identified can be the ADAF member's ambivalence to change, which is common when dealing with substance or alcohol misuse. The ADAF member's stage of readiness must be identified to ensure the proper techniques are applied. These stages include pre-contemplation, contemplation, preparation, action, and maintenance. The readiness for change will drive the intervention. BASICS operates with motivational interviewing as a core principle to work through ambivalence and improve the desire for change.

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It is essential to address that age is also a barrier to enrollment in this project. ADAF members under the age of 21 are at risk of punishment under the Uniformed Code of Military Justice (UCMJ). So, the exclusion of ADAF members under 21 years of age is for personal protection.

### **Sustainment and Dissemination Plan**

Future sustainment of the intervention will depend on the success of BASICS. Positive impacts that will promote the retention of BASICS include a reduction in monthly rates of medical referral to ADAPT pre and post-project implementation and a reduction in AUDIT-C scores. This project's sustainment will also depend on staff availability and their willingness and comfort in providing the intervention. To help mitigate future utilization hurdles, the Travis AFB DNP team will work with stakeholders to create a plan to train available staff and appoint a BASICS champion to help sustain the project. A continuity binder with resources will also be created and passed on to the mental health flight commander.

The dissemination plan begins with the analysis of the information gathered from the project. The strengths/weaknesses, positive outcomes, and recommendations will be condensed and presented to Travis stakeholders and leadership. Additionally, project results will be disseminated to peers and faculty at the annual USU Research Week in the Spring of 2021. Our team also anticipates submitting this work to the annual Triservice Nursing Research Program conference or another appropriate venue.

### **HIPAA Concerns/Ethical Considerations**

HIPAA concerns include handling of personally identifiable information (PII) and protected health information (PHI). This project will be submitted for review by the institutional review board in accordance with US Air Force guidance. This project consists of a process

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improvement initiative that involves implementing BASICS, an evidence-based alcohol risk reduction education program, as a prevention method to decrease the pre-COVID19 rate of medical referral to the ADAPT program and improve AUDIT-C scores. BASICS is offered to ADAF members to reduce hazardous alcohol drinking. Thus, the team anticipates this project being determined as an evidence-based initiative. The Travis AFB DNP team will ensure that project team members are current on their HIPAA training before project implementation. The patients' clinical, administrative, and survey data will meet the safe harbor de-identification standard. Each patient will be given a project identification number with which their data will be collected. All patient-related data will be de-identified and analyzed in aggregates on Common Access Card (CAC)-enabled government computers at the location that project team members will only access.

Ethical considerations include safeguarding the privacy of the patients participating in the implementation of BASICS. Before any project implementation, eligible patients will be offered the BASICS educational opportunity and asked if they wish to receive this educational intervention as an educational prevention tool. Project implementation will adhere as closely as possible to the original BASICS model as described by the authors and other later RCTs.

### **Project Results**

Nine ADAF members under the care of the behavioral health clinic participated in the evidence-based brief alcohol risk reduction educational intervention, BASICS. One air force member was unable to participate after selection due to a short-notice deployment. An additional member agreed to participate in completing the program making the final sample size a total of nine members. Every member that was asked to participate in the brief intervention voluntarily agreed. All nine members completed the pre-intervention AUDIT-C tool, the initial interview, a

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two-week follow-up with personalized feedback, and a post-intervention AUDIT-C assessment. Members' ages ranged from 21 to 28, with a mean age of 23.8 years (SD = 2.73). The sample consisted majorly of males (78%), and enlisted members (89%). The results that follow describe the outcomes of project implementation at our clinic and cannot be generalized to other clinics due to the small sample size.

The AUDIT-C consists of three questions with a total score that can range from 0 and 12. Within our project, the AUDIT-C scores ranged between 3 and 7 before BASICS implementation and between 2 and 5 after BASICS implementation. Consistent with the VA/DoD Clinical Practice Guideline for the Management of Substance Use Disorders, we considered AUDIT-C scores of  $\geq 4$  points for men or  $\geq 3$  points for women as a positive screen for unhealthy alcohol use (VA/DoD CPG, 2015). Considering these thresholds, we found that 89% of members (all-female participants and six male members) screened positive for unhealthy alcohol use before the BASICS intervention. After the BASICS intervention, only 67% of members continued to screen positive for unhealthy alcohol use (one female and five males). In total, 78% of the service members had a reduction in AUDIT-C scores after BASICS.

Pre-BASICS implementation, the mean AUDIT-C score was 4.78 (SD = 1.72), 95% CI [3.46-6.10] as compared to the post-implementation mean of 3.56 (SD = 1.13), 95% CI [2.69-4.42]. A paired t-test was performed to compare the AUDIT-C scores before and after the BASICS implementation and scores were significantly lower post-intervention compared to pre-intervention ( $p=.0054$ ) (Table 1)

Table 1

<i>Paired t-test</i>					
	<u>AUDIT-C PRE</u>		<u>AUDIT-C POST</u>		<i>t-test</i>
	M	SD	M	SD	
ADAF (n=9)	4.78	1.72	3.56	1.13	3.77**

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**( $p=.0054$ )
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We also compared ADAPT medical referral rates pre-implementation (and coincidentally pre-COVID-19) to the referral rates during and shortly after project implementation (which happened to coincide with the onset of the COVID-19 pandemic). We found no significant differences in referral rates in that, on average, medical referrals to ADAPT continued to constitute around 23-30% of total monthly referrals before and after BASICS implementation,  $t(10) = -1.194092, p = .286$  (Table 2).

Table 2

ADAPT medical referral rates by month							
	Pre COVID-19			During COVID-19			
	Medical	Total	Percent	Medical	Total	Percent	
Sep-19	1	10	10%	Sep-20	3	11	27%
Oct-19	2	11	18%	Oct-20	7	23	30%
Nov-19	2	13	15%	Nov-20	5	13	38%
Dec-19	6	17	35%	Dec-20	4	15	27%
Jan-20	6	19	32%	Jan-21	8	18	44%
Feb-20	4	15	27%	Feb-21	1	8	13%
Sum	21	85		Sum	28	88	
Average	3.5	14.16	23%	Average	4.67	14.67	30%
Std. Dev	1.98	3.18		Std. Dev	2.36	4.85	

### Analysis of the Results

BASICS implementation was generally well accepted at our clinic as all ADAF members approached in this project, voluntarily accepted and participated in all the implementation steps for this project. The VA/DoD guideline for management of substance use disorders (2015) considers individuals with an AUDIT-C score between 8 to 12 to be at higher risk for alcohol use disorder (AUD). Our project prioritized early intervention by focusing on members whose AUDIT-C scores were still less than 8 to allow early identification of hazardous alcohol use and

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implement BASICS in a timely manner. Consistent with research and clinical guidelines that consider lower cutoffs, specifically AUDIT-C scores  $\geq 3$  for females and  $\geq 4$  for males to be indicative of alcohol misuse (O'Connor et al., 2018, VA/DoD CPG, 2015), our project used these lower thresholds. ADAF members are subject to mandated alcohol use treatment when AUD criteria are met (AFI 44-121, 2018). This reason alone may have contributed to ADAF members minimizing alcohol use and underreporting. Understanding that it is possible for military members to potentially underreport their alcohol use due to possible fear of repercussions and using lower cut-offs for AUDIT-C in our project, allowed for more realistic and accurate identification of military members with hazardous drinking and thus earlier intervention.

Using the above cutoffs, our initial screening found that none of the participating members met the threshold for AUD, but rather that 89% screened positive for hazardous alcohol use during the pre-intervention evaluation and that several held some misconceptions regarding what constitutes unhealthy alcohol use and its impacts on one's life as described in the following quote by one of the members, "I never realized how few drinks could be unsafe, thanks." Although the percentage of members with hazardous alcohol use only dropped from 89% to 67% with the implementation of BASICS, a closer look at the item-by-item analyses revealed additional information. The AUDIT-C asks the following three questions:

- 1) How often do you have a drink containing alcohol? Response options were never (0 points), monthly (1 point), or less; 2-4 times a month (2 points); 2-3 times a week (3 points); 4 or more times a week (4 points).

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- 2) How many standard drinks containing alcohol do you have on a typical day? Response options were 1 or 2 (0 points); 3 to 4 (1 points); 5 to 6 (2 points); 7 to 9 (3 points); 10 or more (4 points).
- 3) How often do you have six or more drinks on one occasion? Response options were never (0 points); Less than monthly (1 point); monthly (2 points), weekly (3 points); daily or almost daily (4 points).

When comparing pre-to post-BASICS implementation AUDIT-C scores, question one was most improved with an average 0.67-point decrease indicating a reduction in the frequency of alcohol use. Question 2 also indicated an average decrease of 0.44-points, indicating a decrease in drinks consumed in a typical day. Question 3 examined alcohol use over a longer timeframe and had the least impact based on the brief intervention provided.

In summary, 6/9 (66.67%) participants demonstrated a decrease in unhealthy alcohol use upon completing the BASICS brief alcohol risk reduction educational program. Among the three participants whose AUDIT-C score did not decrease, none had baseline scores indicative of alcohol misuse indicating a possible floor effect. The post-implementation results were similar when those who did not have a change in reported alcohol use were excluded. It can be concluded that those excluded did not have unhealthy drinking habits, to begin with. While our project sample size was small, the results of decreased alcohol consumption with the provision of a brief intervention are consistent with existing literature. Hennessy (2019) found that BASICS was mostly successful in reducing the frequency of alcohol use, and similarly, Bogg (2019) reported a moderate decrease in alcohol use quantity and frequency. Our results were also consistent with findings by Cimini (2015) that a brief alcohol education intervention was linked to a reduction in misconceptions about alcohol use dangers. Comparable to extant literature that

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cautioned regarding results that are based on participants self-reports (Terlecki, 2015), our project findings also could have been influenced by issues pertaining to self-report such as social desirability and fear of military career repercussions secondary to reports of hazardous alcohol use.

Another important consideration regarding the analysis of our project results is the potential known relationship between experiencing the winter holidays and increased drinking behavior in some individuals, given that our program implementation ended right around the winter holiday season. Research conducted by Kushnir & Cunningham (2014) found a significant elevation in alcohol consumption and misuse during the winter holiday season. In our project, despite the reduction in AUDIT-C scores post-program implementation in most members, there was one alcohol-related incident that occurred over the holidays with a member who still had reported reduced drinking at the end of the program implementation. Given the close time proximity of the alcohol-related incident to the winter holidays, the holiday-to-increased drinking link needs to be considered, although it is difficult to draw any causal links.

Members are usually referred into ADAPT as: self-referrals, medical or command-directed referrals. The ADAPT program director's internal reporting processes indicated that from September 2019 to February 2020, medical referrals accounted for 23% of all ADAPT referrals compared to 30% during the same 6-months period post BASICS implementation (i.e. between September 2020 to February 2021) and our analysis found this difference to be nonsignificant. One possible explanation for this result could be the short implementation period of BASICS at our clinic as well as the limited sample size.

There are possible project limitations to consider. The project's small sample size does not allow generalizations of results to other populations. The strength and longevity of the

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provider-to-patient therapeutic relationship may have played a role in the accuracy of members' reports of alcohol use. This is because poor therapeutic alliance may have a negative impact on the trust that is necessary to elicit truthful data regarding unhealthy drinking behaviors. We found that ADAF members participated more freely when they were well-established patients of the PMHNP students delivering their care. Additionally, as mentioned earlier in this report, given that ADAF members are subject to consequences regarding their drinking behaviors and may receive disciplinary action under the Uniformed Code of Military Justice (UCMJ), it is possible that our results could reflect underreporting by members to start with, and this may have potentially obscured the efficacy of BASICS implementation (floor effects).

### **Organizational Impact / Implications to Practice & Policy**

This EBP project's findings showed that implementing BASICS as a brief educational alcohol risk reduction program reduced hazardous alcohol drinking at our implementation site, which was consistent with current literature (Bogg, 2019; Dimeff, 1999; Henessy, 2019; O'Connor et al., 2018). These results, although have limited generalizability to other military treatment facilities, provide our organization with important lessons learned regarding BASICS implementation. Based on our project results and the factors described below, we thus recommend sustainment of BASICS at our current organization.

Given that BASICS is manualized and supported by the Substance Abuse and Mental Health Services Administration (SAMSHA), it provides structured guidance to ensure consistent alcohol education to all participating members. Additionally, this intervention meets the recommendation of the VA/DoD (2015) CPG for the Management of Substance Use Disorders regarding the treatment of alcohol misuse with brief alcohol interventions. BASICS provides members with evidence-based alcohol prevention education to decrease alcohol-related

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incidents, which in turn contributes to enhancing service member military readiness. Identifying early signs of hazardous alcohol drinking and addressing alcohol misconceptions early with individuals who are still below the threshold for ADAPT medical referrals could contribute in the long run to a potential decrease in alcohol-related incidents in the military and thereby maintain a service members' deployability. For those that demonstrate elevated AUDIT-C scores that do not respond to BASICS, a stepped-care approach is recommended to offer those participants to a higher-level ADAPT intervention.

### **Future Directions for Research and Practice**

Based on our project results, we recommend that Travis AFB Medical Group consider implementing a three-pronged approach to addressing alcohol use that includes: (1) maintaining providers' educational needs, (2) fostering institutional requirements to meet the VA/DoD standards, and (3) developing a system to incorporate a brief intervention for unhealthy alcohol use in conjunction with the annual physical health assessment (PHA). Implementation of this three-pronged approach could help this program target a larger population, which in turn will provide the empirical support needed to scale-up this program to potentially include areas like the Behavioral Health Optimization Program (BHOP) intervention in the primary care clinic.

The first recommendation is that medical providers' have an initial educational training to effectively implement the BASICS program. The 60th MDG could invest in a high-quality standardized program to educate and train providers and offer yearly training refreshers to maintain proficiency.

Secondly, we recommend fostering institutional requirements to further bolster the VA/DoD standards that recommend annual screening for unhealthy alcohol use as a minimum. The current Department of Defense standard requires that all service members have an AUDIT-

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C annual assessment that is incorporated within the annual PHA (DD Form 3024). The alcohol use intervention matrix on the PHA requires a referral for further evaluation and brief counseling only when a member has an AUDIT-C score of  $\geq 8$ . If the PHA AUDIT-C score is between 5-7 for men and 4-7 for women, the DoD standard only advises the service member to stay below recommended alcohol consumption limits. We suggest that DGMC implement a program that further bolsters this DoD standard and considers offering a brief intervention to Air Force members with a PHA AUDIT-C score of  $\geq 3$  for women and  $\geq 4$  for males.

The final recommendation is for an administrative requirement for tracking clients who require an annual evaluation or a brief intervention. This tracking metric could be incorporated into the MHS Genesis software system. The provider could be notified by the EHR system when a client who requires either the evaluation or intervention is due. The 60th MDG executive leadership committee could define this requirement and collaborate with DHA for incorporation into the MHS Genesis platform.

### **Conclusion**

We found that offering BASICS, a brief evidence-based alcohol reduction educational intervention, was accepted by ADAF members at our clinic. We also found that BASICS helped decrease overall AUDIT-C scores as well as reduce the frequency and amounts of alcohol consumed in the majority of participating service members. Clarifying alcohol use misconceptions, providing personalized feedback, and utilizing motivational interviewing techniques were factors that helped produce these results and could improve overall awareness regarding the hazards of alcohol. Preventing and reducing alcohol misuse may further diminish alcohol-related incidents, thereby improving mission readiness and maintaining an ADAF eligible for deployment. Furthermore, this data was consistent with evidence-based research,

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which supports the use of brief interventions to address alcohol misuse and prevent punitive measures.

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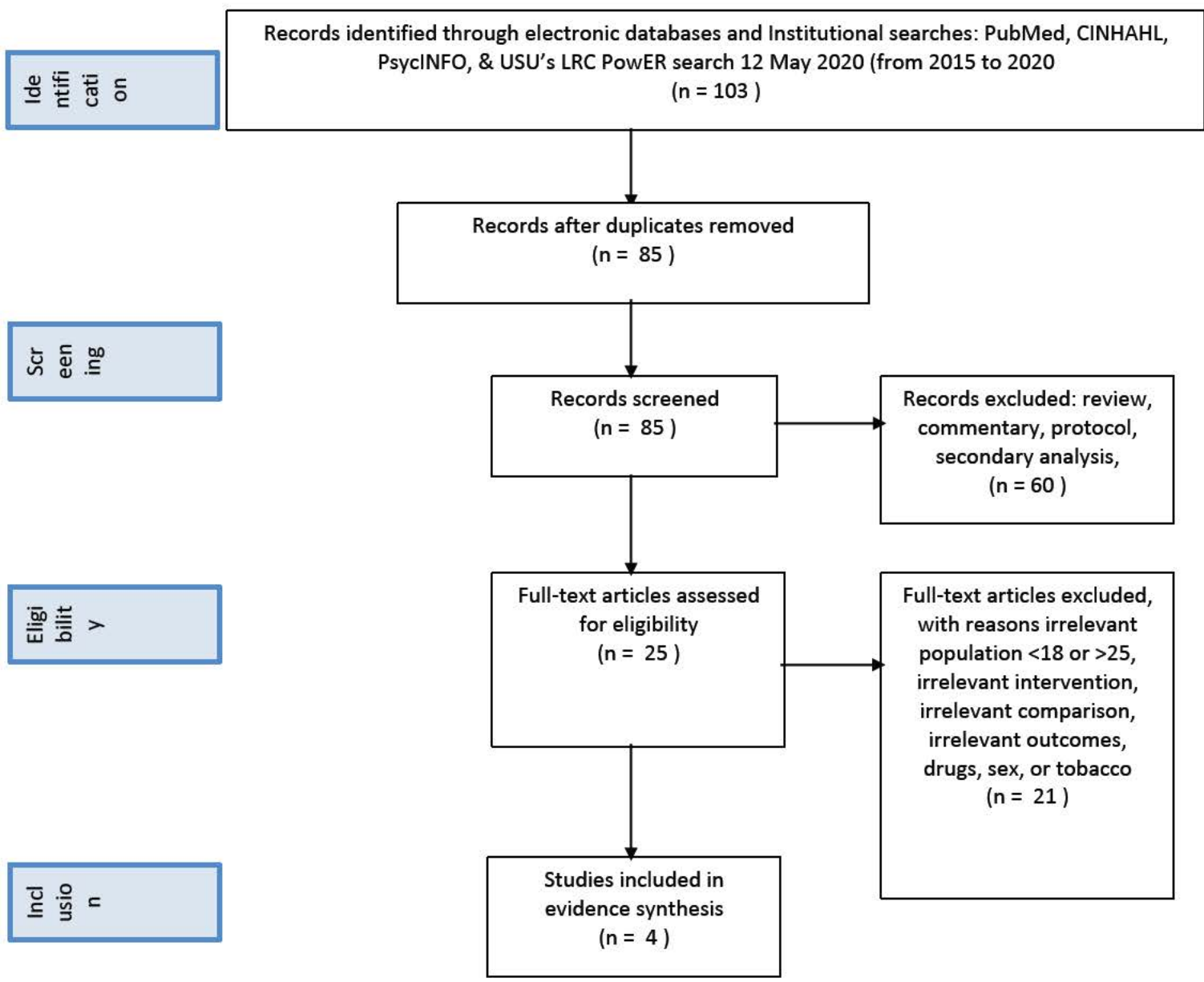
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Appendix A - PRISMA Flow Chart



## IMPROVING ALCOHOL USE OUTCOMES

Terlecki 2015	Purpose & Aims	Research Question	Design	Sample	Sampling Plan	IV	
	Build on pilot work. Contribute to the existing literature about longitudinal outcomes of the naturalistic high-risk comparison group in which to model naturalistic changes in drinking over time	Are the longitudinal changes to drinking outcomes d/t BASICS or expected changes in college drinking over time?	Longitudinal RCT	Total (n = 225); BASICS (n = 115) Assessment only (n = 110)	<u>Sampling unit</u> : undergraduates between 18-24y/o was invited. <u>Sampling size</u> : N – 550. Participants are all coming from different demographics primarily Caucasian (83.7%). <u>Sampling procedure</u> : inclusion criteria for both are drinking at least monthly and endorsing past month binge drinking and reporting at least alcohol-related issues on 3-5 occasions in the past year, scoring >6 in the AUDIT screen. Inclusion criteria for mandated students is a campus disciplinary referral following a recent first-time alcohol policy violation. Inclusion criteria for voluntary students are no past disciplinary referrals. Exclusions include not meeting inclusion criteria and endorsement of AUD/serious symptoms associated with AUD.	Controlled mandated students (n = 56); Controlled volunteer students (n = 54)	
JHNEB P Level of Evidence Level 1A	<b>Statistical Analyses</b>		<b>Results</b>		<b>Strengths</b>	<b>Weaknesses</b>	<b>DV</b>
	<u>Intent-to-treat strategy</u> : to reduce the likelihood of overestimating an intervention effect. Multilevel longitudinal models developed by IBM Statistical Package. Separate models were developed - to evaluate immediate and long-term changes in outcomes variables over time by aggregate intervention conditions and referral group, to control for baseline differences and within-subject correlations for each subject, to intercept for each subject, and a random effect for time. Gender was added as a covariate in BASICS outcome analyses given this difference. Greek-system membership status was added to the initial models to control for membership-related participant attrition – removed from the final models for each dependent variable,		Preliminary Analyses: The control group reported a higher baseline RAPI scores r/t the intervention condition controlling for gender. No significant differences were found between referral groups. Mandated students were more likely to be males (76.6%) r/t volunteer students (42.9%). Attrition analyses: indicated that participants who did not complete a 12-month follow-up assessment were significantly more likely to be former Greek-system members (71% non-completers-NC), mandated students (38% NC), and volunteer (18% NC). Greek-system membership was evaluated as a factor in the primary longitudinal analyses and subsequent attrition analyses. NC reported significantly fewer baseline peak drinks r/t completers controlling for gender and Greek-system membership.		1) Adherence to original BASICS model 2) checklist review was conducted by research assistant for fidelity 3) sample group representative of campus population 4) intent-to-treat strategy was put into place to lessen impact of attrition 5) use of heavy-drinking volunteer group as a comparison to help reduce risk of misinterpreting naturalistic or disciplinary event-related reductions in behavior as intervention effects among mandated students.	1) Data collected is primarily based on self-report which is biased 2) non-self-report measures of alcohol use are not available or useful for assessing college drinking behavior 3) Research is warranted to determine predictors of heavy-drinking relapse among mandated students, especially within a disciplinary setting 4) Our heavy drinking exclusion criteria likely included minority students who tend not to drink as heavily as Caucasian student 5) Emerging research suggests social anxiety might negatively impact BASICS outcomes	BASICS mandated students (n = 58); BASICS volunteer students (n = 57)

Appendix B - Evidence Table

## IMPROVING ALCOHOL USE OUTCOMES

Bogg 2019	Purpose & Aims	Research Question	Design	Sample	Sampling Plan	IV
<p><b>JHNEB P Level of Evidence</b> Level 1A</p>	<p>Purpose: Disambiguate this approach by focusing on educational self-views and developing strategies and actions to potentiate academic/vocational goals and actions. Aim: To assess the incremental drink and harm reduction efficacy of a novel complementary brief MI educational commitment (EC) module for an existing intervention for at-risk college student drinkers.</p>	<p>Compared to students assigned to the BASICS-only and Information-only groups, it was expected that the BASICS + EC group would show larger drink and harm reduction as a 2-month f/u and a longer-term 9-month f/u – owing to the EC module’s focus on educational goals and actions.</p>	<p>Longitudinal, RCT</p>	<p>Total (n = 180); Information only (n = 60); BASICS + EC (n = 60); BASICS only (n = 60)</p>	<p><u>Sampling unit:</u> college students between 18-23 y/o – all three groups are divided equally between the genders; <u>Sampling size:</u> N = 310 students responded to the advertisement and were screened by telephone; <u>Sampling procedure:</u> Inclusion criteria include – consumed &gt;3 drinks for women and &gt;4 for men on a typical drinking occasion and/or endorsed one or more of seven DSM-IV diagnostics criteria for alcohol dependence, not currently receiving counseling or treatment for substance use, not taking any Rx medications that affected behavior, no history of severe psychological problems/cognitive impairment/head trauma</p>	<p>Controlled mandated students (n = 56); Controlled volunteer students (n = 54)</p>
	<p><b>Statistical Analyses</b></p> <p>Data analyses were conducted using the per-protocol or “as-treated” approach. All linear models included condition as a between-subjects fixed effect and baseline scores on the DV as a covariate. D/t significant sex differences at baseline, 2-month/9-month drink quantity and risk behaviors, 2-month SSS disinhibition, and BFI conscientiousness also included sex as a covariate. Consistent with CONSORT Guidelines.</p>	<p><b>Results</b></p> <p>Primary outcomes: Significant conditions were observed for 2-months drink frequency and quantity, as well as 9-month drink quantity. Secondary outcomes: 2-month high0risk high-reward partying decision making showed a significant condition effect, with moderate-sized decreased observed in BASICS and BASICS + EC groups.</p>	<p><b>Strengths</b></p> <p>1) Interventionist training was given 2) a qualitative evaluation of the MI dynamic was used as part of the fidelity procedures</p>	<p><b>Weaknesses</b></p> <p>1) Although BASICS + EC condition showed small to negligible differences compared to the BASICS condition. It is possible the comparative efficacy of the EC module was attenuated by its brevity.</p>	<p><b>DV</b></p> <p>BASICS + EC (n =60)</p>	

## IMPROVING ALCOHOL USE OUTCOMES

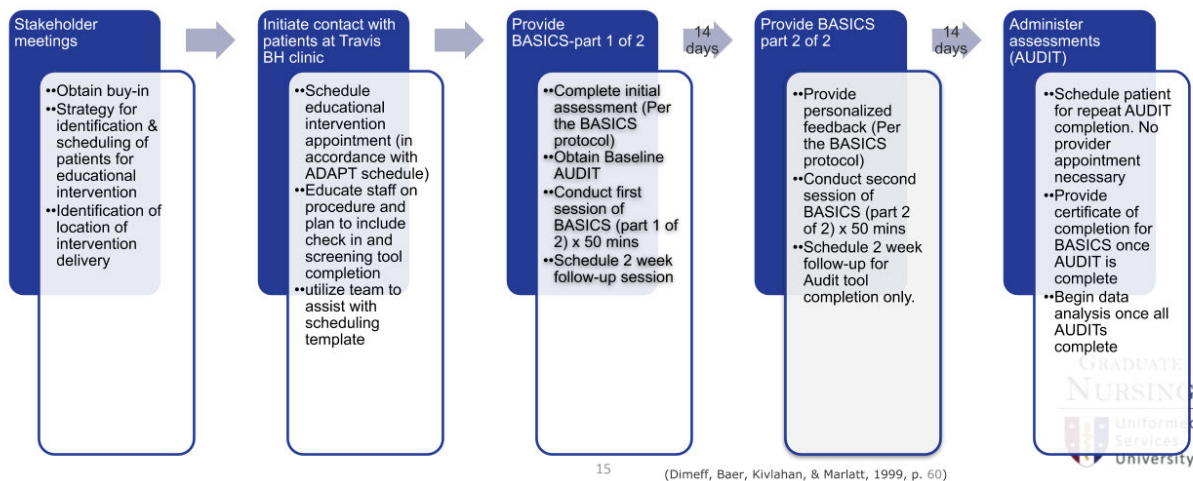
<b>Hennessy et al., 2019</b>	<b>Purpose &amp; Aims</b>	<b>Research Question</b>	<b>Design</b>	<b>Sample</b>	<b>Sampling Plan</b>	<b>IV</b>
	AIM: To compare the effectiveness of numerous manualized Brief alcohol interventions (BAIs) for reducing problematic alcohol use among college students	Which of the seven selected BAIs are effective in reducing students' problematic alcohol consumption	Meta-analytic review (Network Meta-analysis)	n=52 included studies	There were no geographic or language limitations. Studies were eligible if they were conducted in 1980 or later. Studies had to assess intervention effect is for undergraduate college students from any country who were no older than 30 years of age. Only RCTs were eligible for inclusion. Eligible trials were those that evaluated one of seven BAIs ( Alc 101, ALcEDU, BASICS, CTD, e-CHUG, CDCU, THRIVE, ACT-CT) and they had to report at least one of the following alcohol consumption outcomes: (1) frequency of heavy alcohol consumption (2) quantity of alcohol consumption (3) quantity of alcohol consumption during a peak drinking period	controlled BAIs n=7; changed demographics nominal: effect size: intervention duration: time between intervention end and posttest; study design; methods used to account f/missing outcome data; prgm fidelity
<b>JHNEB P Level of Evidence Level 1A</b>	<b>Statistical Analyses</b>	<b>Results</b>		<b>Strengths</b>	<b>Weaknesses</b>	<b>DV</b>
	Cox Transformation was used to convert log odds ratio effect sized into standardized mean difference effect sizes	AlcoholEDU, BASICS, e-CHUG and THRIVE interventions all led to reduced problematic alcohol use among college students relative to the AO-CT groups for outcomes measured 0-3 months post-intervention. However, only BASICS intervention consistently led to reductions across all alcohol outcomes including heavy frequency, quantity, and quantity during a peak drinking episode.		network meta-analysis can assess the comparative effectiveness of multiple interventions simultaneously by pooling direct and indirect evidence, if the included studies form a connected network of both direct and indirect information. Network meta-analyses can therefore provide more precise estimates of effects and permit comparison of interventions that were not directly compared in any one trial	risk for bias was unclear, multivariate meta-regression for moderators was not conducted due to the size of the study	controlled effectiveness of BAIs on college students under the age of 30; frequency of alcohol use quantity of alcohol use and peak quantity at 0-3, 3-6 and 6+ months

## IMPROVING ALCOHOL USE OUTCOMES

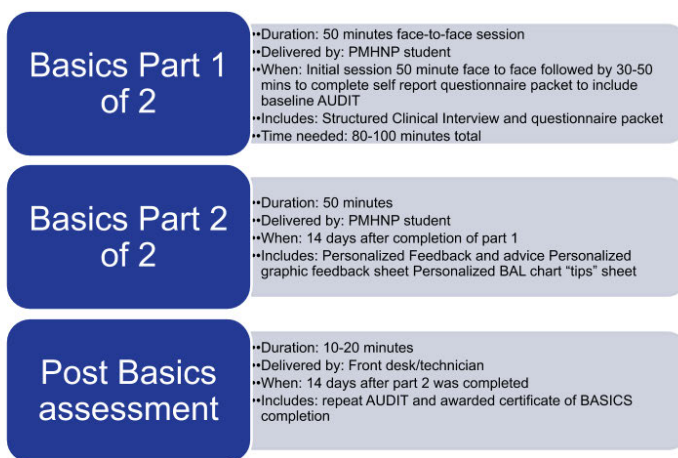
<b>Cimini et al., 2015</b>	<b>Purpose &amp; Aims</b>	<b>Research Question</b>	<b>Design</b>	<b>Sample</b>	<b>Sampling Plan</b>		<b>IV</b>
	This study examined the effects of a single session motivational interviewing–based in-person brief alcohol intervention that contained student-athlete–specific personalized drinking feedback	Do athletes that meet criteria for high risk/at-risk alcohol use that receive a BAI improve and decrease drinking compared to the at-risk control group that did not receive BAI	Experimental study	n= 170 total; n=72 completed the first session; n=43 who completed the entire study	Participants were 170 National Collegiate Athletic Association Division I student-athletes meeting screening criteria for heavy episodic drinking Recruitment for the study was conducted by selecting student-athletes from among the 19 varsity athletic teams that were out-of-season; participants were recruited from athletic teams such as football, baseball, track and field, golf, and other varsity sports, and recruitment was conducted within both men’s and women’s sports Student-athletes were also informed that they would receive a \$10 gift card to their choice of the university bookstore or a local movie theater and would earn 1 hour of credit to meet their mandatory study hall requirement for completing the alcohol screening baseline survey and 3 month follow-up assessment		n=98 no-treatment comparison group (control); BAI
<b>JHNEB P Level of Evidence 1B</b>	<b>Statistical Analyses</b>			<b>Results</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>DV</b>
	method of data collection for this study was through web-administered surveys, The specific aims of the study. Measures were: Alcohol Consumption, DDQ and AUDIT1 Reliability generalization analyses Alcohol-related consequences were measured using the Rutgers Alcohol Problem Index Norm perceptions were assessed using the Drinking Norms Rating Form Repeated-measures analyses of variance (ANOVAs) to compare			Quantitative data were analyzed using the Statistical Package for the Social Sciences, version 19 (IBM, Armonk, New York). Student-athletes participating in the athlete-specific brief intervention showed significant reductions in their alcohol use and alcohol-related negative consequences, increases in use of protective behavioral strategies, and corrections in norm misperceptions at 3 months post-intervention relative to a no-treatment comparison group.	2 sport psychologists on the counseling center service provider staff were trained in both the BASICS intervention and the student-athlete adapted brief alcohol intervention used in this study. Both staff members participated in a 2-day workshop conducted by the developers of the BASICS intervention as well as intensive MI training	Several limitations. Participants in this study were not randomized, firm conclusions about the causal effect of the study intervention cannot be made, and potential mediators of intervention effectiveness could not be tested. Additionally, there was a significant difference between the intervention and comparison group scores on the AUDIT; however, as baseline AUDIT scores were higher in the intervention group, student-athletes in most needs of the study intervention received it. A second limitation was a relatively low follow-up rate, and the study was conducted at only one university, which limits the generalizability of the findings. All data were self-report, although research has indicated that self-report data regarding drinking behaviors are generally reliable/ valid	Changed athletes receiving intervention n=170 enrolled; n=72 completed the intervention session; n=43 completed the 3 months follow up.

Appendix C- Procedural Steps

## Project Design: Procedural Steps



## Project Design: Procedural Steps (BASICS Etoh Harm Reduction Educational Intervention)



16 (Dimeff, Baer, Kivlahan, & Marlatt, 1999, p. 60)



(Leondike & Phillips, 2020)

IMPROVING ALCOHOL USE OUTCOMES

Appendix D – CITI Certificated for All Students



Completion Date 23-Aug-2018  
Expiration Date 22-Aug-2021  
Record ID 28237827

This is to certify that:

**Joseph Leondike**

Has completed the following CITI Program course:


**OUSD P&R Human Research** (Curriculum Group)  
**Biomedical Investigators and Research Study Team** (Course Learner Group)  
**1 - Biomedical Investigators** (Stage)

Under requirements set by:

**Office of the Under Secretary of Defense (Personnel and Readiness)**



Verify at [www.citiprogram.org/verify/?w0bcb71b9-4050-4e20-9422-ec639a42c154-28237827](http://www.citiprogram.org/verify/?w0bcb71b9-4050-4e20-9422-ec639a42c154-28237827)



Completion Date 29-Aug-2018  
Expiration Date 28-Aug-2021  
Record ID 28321607

This is to certify that:


**Elizabeth Phillips**

Has completed the following CITI Program course:

**OUSD P&R Human Research** (Curriculum Group)  
**Biomedical Investigators and Research Study Team** (Course Learner Group)  
**1 - Basic Course** (Stage)

Under requirements set by:


**Office of the Under Secretary of Defense (Personnel and Readiness)**



Verify at [www.citiprogram.org/verify/?wf3edf595-4e6b-4188-a265-410c02a3a35e-28321607](http://www.citiprogram.org/verify/?wf3edf595-4e6b-4188-a265-410c02a3a35e-28321607)

Not valid for renewal of certification through CME.

# IMPROVING ALCOHOL USE OUTCOMES



Completion Date 23-Aug-2018  
Expiration Date 22-Aug-2021  
Record ID 28237829

This is to certify that:


**Joseph Leondike**

Has completed the following CITI Program course:

**Responsible Conduct of Research (RCR)** (Curriculum Group)  
**Responsible Conduct of Research (RCR)** (Course Learner Group)  
**1 - Basic Course** (Stage)


Under requirements set by:

**Office of the Under Secretary of Defense (Personnel and Readiness)**



Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?w4d40f71c-5f6f-4571-b57b-cba59adc9732-28237829](http://www.citiprogram.org/verify/?w4d40f71c-5f6f-4571-b57b-cba59adc9732-28237829)



Completion Date 29-Aug-2018  
Expiration Date 28-Aug-2021  
Record ID 28321609

This is to certify that:


**Elizabeth Phillips**

Has completed the following CITI Program course:

**Responsible Conduct of Research (RCR)** (Curriculum Group)  
**Responsible Conduct of Research (RCR)** (Course Learner Group)  
**1 - Basic Course** (Stage)

Under requirements set by:

**Office of the Under Secretary of Defense (Personnel and Readiness)**





Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?wfe4b5444-d89a-493a-ad24-c486ab303896-28321609](http://www.citiprogram.org/verify/?wfe4b5444-d89a-493a-ad24-c486ab303896-28321609)

Not valid for renewal of certification through CME.

# IMPROVING ALCOHOL USE OUTCOMES

Completion Date 23-Aug-2018  
Expiration Date 22-Aug-2021  
Record ID 28237828

This is to certify that:


**Joseph Leondike**

Has completed the following CITI Program course:



**Good Clinical Practice (U.S. FDA Focus)** (Curriculum Group)  
**GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)** (Course Learner Group)  
**1 - GCP** (Stage)

Under requirements set by:

**Office of the Under Secretary of Defense (Personnel and Readiness)**

  
Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?w071ae1ca-0259-40f9-9f15-1f46f7e97b04-28237828](http://www.citiprogram.org/verify/?w071ae1ca-0259-40f9-9f15-1f46f7e97b04-28237828)

Completion Date 29-Aug-2018  
Expiration Date 28-Aug-2021  
Record ID 28321608

This is to certify that:


**Elizabeth Phillips**

Has completed the following CITI Program course:

**Good Clinical Practice (U.S. FDA Focus)** (Curriculum Group)  
**GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)** (Course Learner Group)  
**1 - GCP** (Stage)

Under requirements set by:

**Office of the Under Secretary of Defense (Personnel and Readiness)**

  
Collaborative Institutional Training Initiative

Verify at [www.citiprogram.org/verify/?wb8a8919e-7417-4d26-bc4a-8bc1225aa394-28321608](http://www.citiprogram.org/verify/?wb8a8919e-7417-4d26-bc4a-8bc1225aa394-28321608)

Not valid for renewal of certification through CME.

IMPROVING ALCOHOL USE OUTCOMES

Appendix E - USU (VPR) Form 3202N (final copy from USU (VPR))

USUHS FORM 3202N  
 DANIEL K. INOUE GRADUATE SCHOOL OF NURSING  
 EVIDENCE-BASED PRACTICE/PERFORMANCE IMPROVEMENT PROPOSAL

VPR Date Stamp

Project Number: \_\_\_\_\_ (VPR # if any)

Project Title: **Improving alcohol use outcomes in service members with co-occurring mental health diagnoses**

SECTION A: STUDENT POC INFORMATION	
1	Name (Last, First, MI): Leondike, Joseph C. Student E-mail: _____
2	Home Address: _____ Cell Number: _____
SECTION B: COMMITTEE CHAIR / SENIOR MENTOR INFORMATION	
3	Name (Last, First, MI): Bajjani-Gebara, Jouhayna
4	Telephone: (301) 295-1116 Fax: _____ E-mail: _____
5	USUHS Building/ Room No : GSN Bld, E-1
SECTION C: PROJECT INFORMATION	
6	Attach the Abstract for the proposal, including the following sections: Site Location of the Project, Title, Authors, Background or Problem/Issue, Clinical Question/Purpose, Project Design, Anticipated Organizational Impact/Implications for Practice and also include the Proposed Timeline Single space the abstract and use Times New Roman font, size 12
7	Is this proposal related to an active research project of the Chair/Senior Mentor identified in Section B? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, complete below; if no, proceed to Part 8 Project Number: _____ Project Title: _____ Project Start Date: _____ Project End Date: _____
8	Anticipated period of performance: Project Start Date: 8/1/2020 Project End Date: 5/2/2021
9	Performance Site(s): 60th Medical Group Travis AFB, CA
10	Does this project involve any classified information? (Contact the USUHS Security Office for guidance) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
11	Do you have a funding source for this project? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA If yes, specify the funding agency and the amount provided: _____
SECTION D: SIGNATURES	
The following signatures attest to the validity of the above information:	
Joseph Leondike Student (Project Point of Contact for the Group) _____ Chair/Program Director _____ DNP Project Director or PhD Director _____ Associate Dean for Research, GSN _____	BAJJANI GEBARAJOUHAYNAE.1536847983 Chair/Senior Mentor _____ Chair/Program Director _____ Associate Dean for Academic Affairs, GSN _____ Dean, DKJ Graduate School of Nursing _____
Date: 2020.04.09 10:47:43 -04'00'	
In light of the above signatures, the project is approved.	
USUHS Vice President for Research _____	Date _____

## IMPROVING ALCOHOL USE OUTCOMES

## Appendix F - MTF IRB/PI Letter of Determination



DEPARTMENT OF THE AIR FORCE  
59TH MEDICAL WING (AETC)  
JOINT BASE SAN ANTONIO - LACKLAND  
TEXAS

October 15, 2020

**FINAL DETERMINATION – NOT RESEARCH**

**Determination Date:** 6 Oct 20

**Project Lead:** Maj Joseph Leondike/USAF - 60th Medical Group Clinical Investigation Facility (60th MDG)

**Reference Number:** FWH20200194N

**Project Title:** Improving Alcohol Use Outcomes in Service Members with Co-occurring Mental Health Diagnoses

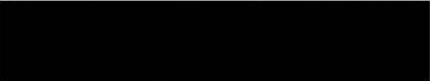
You may begin your project, as you would any other clinical or operational activity, with the approval and sponsorship of your leadership.

Your activity was determined on 6 Oct 20 to be considered **not research** as defined by DoD regulation 32 CFR 219 and FDA regulation 21 CFR 56. Continued IRB oversight for this activity is not required. The proposed activity is not funded by DHHS/DoD as research; is not a systematic investigation to test a hypothesis and permit conclusions to be drawn; is not designed to develop or contribute to generalizable knowledge; and the purpose is not to investigate the safety or effectiveness of a drug, medical device or biologic.

Since the IRB does not have regulatory oversight for your study, it is the investigator's responsibility to validate the study's scientific merit and research design and to ensure the conduct of the study is upheld by the highest ethical standards, as required by the Wing. Should you require assistance in reviewing the scientific merit and research design of your study, please contact the Protocol Office. Protection of subjects' rights safety and welfare and responsibility for protecting PHI/PII and research data now fall on the investigator and their commander.

In accord with DoDI 6000.08 any intramural funding of this study as research or as a clinical investigation may continue to be received or sought regardless of this IRB determination.

Your study has received a one-time research determination. If the goals and/or activities of the project change during the course of the project, or if new activities are proposed that would constitute human subjects research, re-contact the Protocol Office, so that a regulatory expert may determine whether or not the revised plan involves human subject research activities.

  
Earl Grant, Jr., PhD  
Designated Exempt Reviewer

## IMPROVING ALCOHOL USE OUTCOMES

## Appendix G - PAO Clearance for archiving final report to "USU Archives"



DEPARTMENT OF THE AIR FORCE  
60TH MEDICAL GROUP (AMC)

16 April 2021

MEMORANDUM FOR MAJOR JOSEPH LEONDIKE &amp; MAJOR ELIZABETH PHILLIPS

SUBJECT: Approval for Submission / Publication

1. On 16 April 2021, the Clinical Investigation Facility Publications Monitor received clearance/approval for your manuscript, poster, and PowerPoint presentation submissions titled: **"Improving Alcohol Use Outcomes in Active-Duty Air Force Members with Co-occurring Mental Health Diagnoses"**.
2. Please contact our office if your submission is published and provide a printed version for our records.
3. If you have any questions, I can be reached at 707-423-7316 / DSN 799 or e-mail at [eileen.m.foster4.civ@mail.mil](mailto:eileen.m.foster4.civ@mail.mil).

[REDACTED]

EILEEN M. FOSTER, CIV, DAF  
Gifts and Grants Technician

1<sup>st</sup> Ind, 60 AMW/PA

MEMORANDUM FOR MAJOR JOSEPH LEONDIKE &amp; MAJOR ELIZABETH PHILLIPS

PA Security and Policy Review was conducted per AFI 35-101, Chapter 9 and there were not any issues.

Approved/~~Disapproved~~ for publication.

X Tonya A. Racasner

TONYA A. RACASNER, GS-12, USAF  
Deputy Chief, Public Affairs  
Signed by: RACASNER.TONYA.A.1231677131

## IMPROVING ALCOHOL USE OUTCOMES

## Appendix H - All forms (blank) used in data collection

**AUDIT-C Questionnaire**

Patient Name \_\_\_\_\_ Date of Visit \_\_\_\_\_

1. Within the past year, how often did you have a drink of alcohol?
  - a. Never
  - b. Monthly (e.g. Special occasions/Rare)
  - c. 2-4 times a month (e.g. 1x on weekend - "Fridays only" or "every other Thursday")
  - d. 2-3 times a week (e.g. weekends – Friday-Saturday or Saturday-Sunday)
  - e. 4 or more times a week (e.g. daily or most days/week)
  
2. Within the past year, how many standard drinks containing alcohol did 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. Within the past year, how often did you have six or more drinks on one occasion?
  - a. Never
  - b. Less than monthly
  - c. Monthly
  - d. Weekly
  - e. Daily or almost daily

*AUDIT-C is available for use in the public domain.*

## IMPROVING ALCOHOL USE OUTCOMES

## Appendix I – Senior Mentor Approved Abstract and Impact Statement Form



**Appendix F:** Daniel K. Inouye Graduate School of Nursing  
DNP Project Senior Mentor Approved Abstract/Impact Statement Form

**DOCTOR OF NURSING PRACTICE PROJECT  
Senior Mentor Approved Abstract/Impact Statement Form**

**FINAL REPORT ABSTRACT/IMPACT STATEMENT OUTLINE**

**ABSTRACT**

**Phase II Site:** David Grant USAF Medical Center (DGMC), Travis AFB

**Project Title:** Improving Alcohol Use Outcomes in Active-Duty Air Force Members with Co-occurring Mental Health Diagnoses

**Authors:** Leondike, J.C. & Phillips, E.R.

**Background:** Alcohol use disorder (AUD) affected 14.5 million Americans in 2017 alone. Young adults aged 18-25 have the highest AUD risk and comprise over 45% of Active-Duty Air Force (ADAF) members. Excessive drinking in the military is linked to an estimated yearly loss of 320,000 workdays and 34,400 arrests. Strong empirical support exists for brief alcohol risk reduction education programs, like BASICS, in reducing hazardous drinking in young adults.

**Clinical Question:** In ADAF members aged 21-30, stationed at Travis AFB, with alcohol misuse and co-occurring mental health diagnoses, how does BASICS implementation affect alcohol use (as measured by AUDIT-C scores) over a 30-day period and monthly Alcohol and Drug Abuse Prevention and Treatment (ADAPT) referrals?

**Project Design:** This project is a single group pre/post evaluation of BASICS implementation. Two 50-minute educational sessions were provided 14 days apart. AUDIT-C scores were obtained before session one and 14-days after session two.

**Analyzing the Data:** 66.67% participants demonstrated a decrease in unhealthy alcohol use upon BASICS completion. AUDIT-C scores post-BASICS were significantly lower than pre-BASICS implementation. However, there were no differences in ADAPT referrals when comparing 6-months pre-implementation to 6-months post-implementation.

**Organizational Impact/Implications for Practice:** Implementing BASICS was helpful in reducing hazardous drinking in ADAF members receiving care at our clinic, consistent with current literature on benefits of BASICS. Early identification and reduction of hazardous drinking in ADAF members can enhance servicemember health, prevent alcohol-related incidents, and improve mission readiness and deployment eligibility.

**Future Directions for Research and Practice:** Future recommendations include: identification of project champions to sustain longer project implementation and include larger sample sizes; provision of regular educational sessions on BASICS use for providers to sustain its implementation given provider turnover rates typical in military settings; and utilization of our team-developed continuity binder that includes strategies and materials used for project implementation, to help sustain project benefits.

**\*\*NOTE** *Abstract word limit – no more than 300 words*

# IMPROVING ALCOHOL USE OUTCOMES



Appendix F: Daniel K. Inouye Graduate School of Nursing  
DNP Project Senior Mentor Approved Abstract/Impact Statement Form

**ABBREVIATED VERSION**

**Phase II Site:** David Grant USAF Medical Center (DGMC), Travis AFB

**Project:** In young adults, who have the highest risk of hazardous alcohol use, does providing a screening and brief intervention lower alcohol scores on the AUDIT-C test?

**Impact:** Implementing BASICS was helpful in reducing hazardous drinking in ADAF members receiving care at our clinic, consistent with current literature on benefits of BASICS.

**APPROVED:**

Dr. Jouhayna Bajjani-Gebara, PhD  
Senior Mentor

[Redacted Signature and Date Area]

*(Signature)*

*(Date)*

IMPROVING ALCOHOL USE OUTCOMES

Appendix J - DNP Project Completion Verification Form



Appendix G: Daniel K. Inouye Graduate School of Nursing  
DNP Project Completion Verification Form

DOCTOR OF NURSING PRACTICE PROJECT  
Completion Verification Form

The DNP Project titled: Improving Alcohol Use Outcomes in Active-Duty Air Force Members with Co-occurring Mental Health Diagnoses was completed at David Grant Medical Center, Travis Air Force Base, California by the following student(s):

Joseph C. Leondike

20 April 2021

Elizabeth R. Phillips

20 April 2021

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation of DNP project to the leadership/stakeholders at the Phase II Site,
- Abstract/Impact Statement (*Appendix F*), and
- DNP Project written report.

Verified by:

Dr. Jouhayna Bajjani-Gebara, PhD

Senior Mentor

Dr. Joseph G. Kelly, DNP

Team Mentor & Phase II Site